



RHINOLOGY

Official Journal of the European and International Societies

VOLUME 52 | SUPPLEMENT 25 | JUNE 2014

Abstract book

*25th CONGRESS OF THE
EUROPEAN RHINOLOGIC SOCIETY*

in conjunction with

*32nd INTERNATIONAL SYMPOSIUM OF
INFECTION & ALLERGY OF THE NOSE*

*Amsterdam, the Netherlands
June 22-26, 2014*

2014

SCIENTIFIC PROGRAM SUNDAY, JUNE 22, 2014

12:30 - 14:00

Hall B (Glazenzaal)

**INSTRUCTIONAL SESSION: CADAVER DISSECTION 01: FESS INCLUDING
ENDOSCOPIC FRONTAL SINUS SURGERY**

C. Georgalas (The Netherlands)

1

14:00 - 14:30

Hall C (Keurzaal)

COFFEE BREAK

14:30 - 16:00

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: CADAVER DISSECTION 02: FESS WHAT TO AVOID

M. Bernal-Sprekelsen (Spain)

2

16:30 - 17:30

ePoster Station 1: Exhibition Area

JMA POSTER SESSION 1: CLINICAL RHINOLOGY I

Moderators:

C. Hopkins (United Kingdom)

E. Serrano (France)

T. Van Zele (Belgium)

**PREVALENCE OF CHRONIC RHINOSINUSITIS WITH NASAL
POLYPS AMONG THE POPULATION OF THE URBAN AREA**

3

E.V. Nosulua. I.A. Kim. B. Peric (Russia)

FUNGAL MAXILLARY SINUSITIS: CLINICAL, THERAPEUTIC AND EVOLUTIVE FEATURES: 28 CASES REPORT 4

A. Mardassi, N. Mathlouthi, S. Nefzaoui, K. Cheikh, S. Mezri, C. Zgolli, G. Chebbi, R. Ben M'hamed, K. Akkari, S. Benzarti (Tunisia)

SINONASAL COMPLICATIONS OF DENTAL TREATMENT: VALIDATION OF A CLASSIFICATION AND TREATMENT PROTOCOL 5

A.M. Saibene, G.C. Pipolo, P. Lozza, R. Borloni, M. Chiapasco, V. Bebi, F. Messina, G. Felisati (Italy)

BACTERIOLOGY OF CHRONIC RHINOSINUSITIS 6

S. Stern, E. Yaniv, T. Hadar, Y. Nachalon (Israel)

ISOLATED SPHENOID SINUS LESIONS 7

M. Bahgat, Y. Bahgat, A. Bahgat (Egypt)

PREDICTIVE ABILITY OF CT SCAN TO DETERMINE INVERTED PAPILLOMA SITE OF ATTACHMENT 8

T.S. Santos, P. Gonçalves, B. Moreira, A. Correia, M.G. Valente, C. Carvalho (Portugal)

CT SCANNING FOR CHRONIC RHINOSINUSITIS: COMPLIANCE WITH EPOS IN THE UK 9

R. Sproat, S. Qamar, R. Hettige (United Kingdom)

PRELIMINARY FINDINGS FROM THE FEASIBILITY STUDY FOR A RANDOMISED CONTROLLED TRIAL OF CLARITHROMYCIN IN CHRONIC RHINOSINUSITIS 10

J. Bewick, L. Masterson, S. Erskine, F. Egro, S. Carrie, S. Sunkaraneni, S. Ahmed, A. Sama, C. Hopkins, C. Philpott (United Kingdom)

UNUSUAL COMPLICATIONS OF ANTI-TNF THERAPY IN CRS PATIENTS: AN EMERGING DISEASE ENTITY? 11

S. Alromaih, B. Ibrahim, M. Desrosiers (Canada)

16:30 - 17:30

ePoster Station 2: Exhibition Area

JMA POSTER SESSION 2: CLINICAL RHINOLOGY II

Moderators:

P. Gevaert (Belgium)

T. Baudoin (Croatia)

C. Rennie (United Kingdom)

LONG-TERM EXPERIENCES IN THE THERAPY OF NASAL SINUS PLASMA CELLS TUMORS. 12

G. DE Bonnezaze, S. Vergez, B. Vairel, E. Uro-coste, E. Serrano (France)

INFLUENCE OF THE INFLAMMATORY PROCESS IN THE NASAL CAVITY AND PARANASAL SINUSES IN SNORE AND OBSTRUCTIVE SLEEP APNEA SYNDROME (OSAS). 13

M. Kozulina, B. Peric (Russia)

ASSESSMENT OF MALLAMAPATI SCALE BY ENT AND ANESTHESIOLOGIST IN PATIENTS WITH SLEEP DISORDERS 14

M.P. Cárdenas Escalante, M. Gonzalez Pena, C. Añez, E. Figuerola Massana (Spain)

SEPTOPLASTY: A REVIEW OF THE PATHOPHYSIOLOGY OF SEPTAL DEVIATION 15

P. Bell, G. McKee (United Kingdom)

RADIOLOGICAL STUDY OF THE ANATOMY OF THE KEYSTONE AREA OF THE NASAL SEPTUM USING COMPUTED TOMOGRAPHY. 16

S. Carr, S. Sinha, S. Mirza (United Kingdom)

CULTURAL ADAPTATION OF THE "SNIFFIN STICKS" OLFACTORY TEST FOR THE RUSSIAN-SPEAKING COUNTRIES 17

V. Bogdanov, V. Bogdanov (Ukraine)

A SELF-ADMINISTERED “TASTE STRIPS” TEST FOR THE ASSESSMENT OF GUSTATORY FUNCTION 18

A. Wolf, L.D. Varga, L. Wittibschlager, B. Renner, C.A. Mueller (Austria)

OLFACTORY FUNCTION IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH POLYPS 19

V. Bogdanov, V. Bogdanov (Ukraine)

EFFICACY AND PROGNOSTIC VALUE OF SYSTEMIC STEROID THERAPY OF OLFACTORY DISORDERS IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH POLYPS 20

V. Bogdanov (Ukraine)

16:30 - 17:30

ePoster Station 3: Exhibition Area

JMA POSTER SESSION 3: ENDOSCOPIC SINUS SURGERY AND ENDOSCOPIC SKULL BASE SURGERY

Moderators:

M. Bernal Sprekelsen (Spain)

P. Nicolai (Italy)

S. Reinartz (The Netherlands)

IMPROVED VISUALIZATION FOR PARAPHARYNGEAL EXTENSION OF SINO-NASAL TUMOR BY UTILIZING ANGLE ENDOSCOPE AND ROBOTIC SYSTEM-ASSISTED SURGERY 21

B. Roongpuvapaht, K. Tanjararak, W. Cheewareunroj, T. Bhongmakapat, A. Hansasuta (Thailand)

SUCCESSFUL COMBINED MAXILLARY SINUS FLOOR ELEVATION AND ENDOSCOPIC SINUS SURGERY: A PRELIMINARY STUDY 22

S. Abu-Ghanem, G. Horowitz, S. Balaban, V. Reiser, S. Kleinman, D.M. Fliss, I. Koren (Israel)

EFFICACY OF ENDOSCOPIC MARSUPIALIZATION FOR HUGE FRONTAL AND/OR ETHMOIDAL SINUS MUCOCELES WITH ORBITAL SYMPTOMS	23
T. Koh, W. Bae, J. Seo (Korea)	
ENDOSCOPIC SURGERY FOR TREATMENT OF SINONASAL INVERTED PAPILLOMA: OUR EXPERIENCE	24
T.S. Santos, P. Gonçalves, A. Correia, M.V. Valente, C. Carvalho (Portugal)	
INVERTED PAPILLOMAS: RETROSPECTIVE REVIEW	25
I.M. Moura, M.T. Soares, I.P. Delgado, T. Gabriel, M. Cardoso, J.P. Leandro, G. Veiga (Portugal)	
MAXILLARY AND SPHENOID SINUS FUNGUS BALL: A RETROSPECTIVE AND COMPARATIVE STUDY - ABOUT 66 PATIENTS.	26
A.L. Poirrier, C. Marlair, B. Weynand, B. Bertrand, P.H. Eloy (Belgium)	
ENDOSCOPIC RESECTION OF ESTHESIONEUROBLASTOMA: LONG TERM CARCINOLOGIC RESULTS	27
G. DE BONNECAZE, A. Al hawat, S. Vergez, B. Vairel, E. Serrano (France)	
SEVERE COMPLICATIONS AFTER ENDOSCOPIC SINUS SURGERY - SURGEON'S FAULT OR BAD LUCK? A LOOK BACK ON THE CASE.	28
A. Mickielewicz, I. Gwizdalska, K. Lazecka, R. Osmólski, E. Witkowska, M. Fus, H. Skarzynski, P.H. Skarzynski (Poland)	
MODIFIED SUBTOTAL-LOTHROP PROCEDURE FOR EXTENDED FRONTAL SINUS AND ANTERIOR SKULL-BASE ACCESS: A CASE SERIES	29
J. Eloy, E. Kalyoussef, L.J. Mady, V.V. Kanumuri, P.F. Svider, J.K. Liu (USA)	

IMAGE-GUIDANCE IN ENDOSCOPIC SINUS SURGERY: IS IT ASSOCIATED WITH DECREASED MEDICOLEGAL LIABILITY? 30

J. Eloy, E. Kalyoussef, P.F. Svider, C.M. D'Aguillo, S. Baredes, M. Setzen, A.J. Folbe (USA)

16:30 - 17:30

ePoster Station 4: Exhibition Area

JMA POSTER SESSION 4: PATHOPHYSIOLOGY OF RHINITIS AND RHINOSINUSITIS

Moderators:

P. Hellings (Belgium)

K. van Druenen (The Netherlands)

M. Soyka (Switzerland)

HOW RELIABLE ARE SINO-NASAL CELL LINES FOR STUDYING THE PATHOPHYSIOLOGY OF CHRONIC RHINO SINUSITIS? 31

S. Ball, M. Suwara, L. Borthwick, A. Fisher, D. Mann, J. Wilson (United Kingdom)

VALIDATION OF A HIGH OUTPUT CULTURE TECHNIQUE FOR OBTAINING NEURAL STEM CELLS FROM HUMAN OLFACTORY MUCOSA 32

A.M. Saibene, S. Pece, G.C. Pipolo, T. Tanos, A. Rubio, A. Maccari, A. Scotti, G. Felisati (Italy)

DEPLETION OF NATURAL KILLER CELLS AGGRAVATES SINUSITIS AND EOSINOPHILIA IN A MURINE MODEL OF ASPERGILLUS-INDUCED CHRONIC RHINOSINUSITIS 33

J. Kim, C. Gong, Y. Jang (Korea)

SYNERGY BETWEEN TLR-2 AND TLR-3 SIGNALLING IN PRIMARY HUMAN NASAL EPITHELIAL CELLS 34

J. Van Tongeren, K. Golebski, D. Van Egmond, E. De Groot, W. Fokkens, C. Van Druenen (The Netherlands)

ROLE OF IL-22/IL-22 RECEPTOR EXPRESSION IN THE PATHOGENESIS OF CHRONIC RHINOSINUSITIS: ASSOCIATION WITH ASTHMA AND ASPIRIN SENSITIVITY	35
Y. Noyama, M. Okano, T. Fujiwara, S. Kariya, T. Haruna, A. Torigoe, K. Uraguchi, K. Nishizaki (Japan)	
CD8+ LYMPHOCYTE IMMUNE DEFICIENCY IS FREQUENT IN CRS PATIENTS	36
S. Alromaih, F. Lariviere, M. Desrosiers (Canada)	
USE OF PAPER FILTER DISCS FOR MEASUREMENT OF LOCAL BIOMARKERS OF NASAL MUCOSAL INFLAMMATION	37
M. Berings, L. Calus, L. Devuyt, T. Van Zele, N. De Ruyck, C. Bachert, P. Gevaert (Belgium)	
THE ASSOCIATION BETWEEN BACTERIAL COLONIZATION AND CYTOKINE PROFILE IN BELGIAN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	38
I. Sintobin, G. Holtappels, K. Van Crombruggen, C. Bachert (Belgium)	
POTENTIAL ROLE OF THE LONG PENTRAXIN PTX3 AS A RECURRENCE BIOMARKER IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	39
G. Bertazzoni, M. Trimarchi, M.R. Yacoub, A.A. Manfredi, M. Bussi (Italy)	
DO BACTERIA CONTRIBUTE TO THE FORMATION OF NASAL POLYPS IN PATIENTS WITH CHRONIC RHINOSINUSITIS	40
T. Biggs, S. Hayes, H. Lamont, P. Harries, S. Pender, R. Salib (United Kingdom)	

17:30 - 19:30

Hall A (Effectenbeurszaal)

OPENING CEREMONY FOLLOWED BY WELCOME RECEPTION

OPENING REMARKS AND WELCOME 41

Dr. Madeline Ravesloot (The Netherlands)

WORDS OF WELCOME FROM CITY OF AMSTERDAM 42

**WORDS OF WELCOME FROM THE PRESIDENT OF
THE EXECUTIVE BOARD** 43

Prof. Louise Gunning (The Netherlands)

WORDS OF WELCOME FROM THE CONGRESS PRESIDENT

Prof. Wytske Fokkens

HISTORICAL OVERVIEW

Prof. Bert Huizing

AWARDS CEREMONY

Prof. Valerie Lund, CBE General Secretary ERS

APOPO: TRAINING RATS TO SAVE HUMAN LIVES

Bart Weetjens

LEVENDE NACHTWACHT

SCIENTIFIC PROGRAM

MONDAY, JUNE 23



ERS/ISIAN 2014

25th Congress of the European Rhinologic Society
32nd International Symposium of Infection & Allergy of the Nose

Amsterdam, The Netherlands
June 22-26, 2014

SCIENTIFIC PROGRAM MONDAY, JUNE 23, 2014

8:30 - 9:30

Hall A (Effectenbeurszaal)

PLENARY: UPDATE AND FUTURE PERSPECTIVES IN RHINOLOGY

	Chairperson: H. Stammberger (Austria)	44
8:30	STUDY THE PAST IF YOU WOULD DIVINE THE FUTURE V. Lund (United Kingdom)	45
9:00	THE FUTURE BELONGS TO THOSE WHO BELIEVE IN THE BEAUTY OF THEIR DREAMS W. Fokkens (The Netherlands)	46

8:30 - 9:30

Hall B (Glazenzaal)

PLENARY: THE ULTIMATE CHALLENGE OF RHINOPLASTY

	Chairperson: F. Apaydin (Turkey)	47
8:30	THE TRUE CHALLENGE OF RHINOPLASTY: THE PATIENT'S PERSPECTIVE P. Palma (Italy)	48
9:00	THE DOCTORS' PERSPECTIVE P. Hellings (Belgium)	49

9:00 - 10:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

9:30 - 10:45

Hall A (Effectenbeurszaal)

SYMPOSIUM: THE FRONTAL SINUS

	Chairperson: V. Lund (United Kingdom)	50
9:30	INDICATIONS FOR DRAF III J. Palmer (USA)	51
9:42	TYPE III FRONTAL SINUSOTOMY: INDICATIONS AND LIMITATIONS P. Eloy (Belgium)	52
9:54	THE OUTSIDE IN TECHNIQUE R. Harvey (Australia)	53
10:06	DRAF 3 REASONS FOR REVISION S. Reinartz, F. Hansen, G. Adriaensen, C. Georgalas, W. Fokkens (The Netherlands)	54
10:18	WHAT IS THE EVIDENCE FOR THE USE OF MUCOSAL FLAPS IN DRAF III PROCEDURES? A. Sama (UK)	55
10:30	DISCUSSION	56

9:30 - 10:45

Hall B (Glazenzaal)

SYMPOSIUM: PITFALLS IN FACIAL PLASTIC SURGERY

9:30	THE TRUE CHALLENGE OF RHINOPLASTY. THE PATIENT' PERSPECTIVE M. Prof. Pietro Palma (Italy)	57
9:40	PITFALLS IN BLEPHAROPLASTY K. Ingels (The Netherlands)	58

09:50	NUANCES IN THE MANAGEMENT OF THE SOFT TISSUE ENVELOPE OF THE NOSE	59
	A. DSouza (United Kingdom)	
10:00	PITFALLS OF NASAL TIP SURGERY DURING RHINOPLASTY	60
	A. Mesbahi (Iran)	
10:10	TRICKS AND HINTS IN EAR RECONSTRUCTION	61
	T.J. Woolford (United Kingdom)	
10:20	PITFALLS IN RHINOPLASTY	62
	D. Simmen (Switzerland)	
10:30	DISCUSSION	63

9:30 - 10:45

Hall C (Keurzaal)

SYMPOSIUM: SMELL DISORDERS, DIAGNOSIS AND TREATMENT

	Chairperson: D. Simmen (Switzerland)	64
9:30	OLFACTORY TESTING	65
	P. Rombaux (Belgium)	
9:42	SMELL TRAINING, SIGNS OF NEUROGENERATIVE DISEASES	66
	T. Hummel (Germany)	
9:54	REGENERATION OF OLFACTORY MUCOSA	67
	S. Katsunuma (Japan)	
10:06	TREATMENT OF SMELL DISORDERS	68
	D. Leopold, D. Hornung (USA)	
10:18	CONTROL OF LOCAL INFLAMMATION AMELIORATES OLFACTORY NERVE RECOVERY FOLLOWING INJURY	69
	M. Kobayashi, K. Tamari, T. Miyamura, K. Takeuchi, R. Costanzo (Japan)	
10:30	DISCUSSION	70

9:30 - 10:45

Hall D (Administatiezaal)

SYMPOSIUM: POSITIONAL THERAPY/NEW SURGERIES FOR SEVERE TO EXTREME OSAS

	Chairperson: A. Marzetti (Italy)	71
9:30	UPPER AIRWAY STIMULATION J.T. Maurer (Germany)	72
9:45	COMPLIANCE AND ADHERENCE IN DIFFERENT TREATMENT MODALITIES M. Ravesloot, N. De Vries (The Netherlands)	73
10:00	THE SLEEP POSITION TRAINER: A NEW TREATMENT FOR POSITIONAL OBSTRUCTIVE SLEEP APNEA J.P. Van Maanen, N. De Vries (The Netherlands)	74
10:15	COMBINED SPT AND ORAL DEVICE THERAPY O. Vanderveken, M. Dieltjens (Belgium)	75
10:30	DISCUSSION	76

9:30 - 10:45

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: SEPTAL SURGERY AND TURBINATE REDUCTION

	Chairperson: N. Keles (Turkey)	77
9:30	THE ROLE OF THE PEDICLE LATERAL NASAL WALL FLAP IN THE RECONSTRUCTION OF THE NASAL SEPTUM AFTER EXTENDED ENDONASAL SURGERY: A RADIOLOGICAL STUDY E. Mason, C.A. Soares, D. Prevedello, M. Bernal-Sprekelsen, R. Carrau	78
9:39	ASSESSMENT OF THE BENEFITS OF SEPTAL SURGERY BY MEANS OF ACOUSTIC RHINOMETRY, ANTERIOR ACTIVE RHINOMANOMETRY, VISUAL ANALOGICAL SCALE AND A QUESTIONNAIRE. J. Montserrat Gili, J.R. Gras Cabrerizo, K. Kolańczak, M. Lopez Vilas, J. Garcia Lorenzo, A. Pujol Olmo (Spain)	79

9:48	AN EVALUATION OF POST-OPERATIVE PACKING IN NASAL SEPTAL SURGERY: IS IT NECESSARY?	80
	D. Debevc, I. Zekovic, B. Cizmarevic, B. Lanisnik, M. Palfy, M. Zargi (Slovenia)	
9:57	ADVANTAGES OF GLOVE FINGER-COATED POLYVINYL ACETATE PACK IN PARTIAL INFERIOR TURBINATE SURGERY	81
	H. Woo (Korea)	
10:06	DIODE LASER VERSUS RADIOFREQUENCY TREATMENT OF THE INFERIOR TURBINATE - A RANDOMIZED CLINICAL TRIAL	82
	B. Olzowy, K. Stelter, U. Kissler (Germany)	
10:15	OUTCOMES OF SEPTAL SURGERY WITH OR WITHOUT TURBINATE AND/OR ALAR BATTEN SURGERY. AN EVALUATION USING THE NOSE SCALE AND GLOBAL SATISFACTION SURVEY.	83
	A. Poullos, M.M. Abo-Khatwa, H. Khalil (United Kingdom)	
10:24	CLOSURE OF NASAL SEPTAL PERFORATION VIA ENDONASAL APPROACH	84
	I. Tasca, G. Ceroni, C. Di Lieto, F. Sorace (Italy)	

9:30 - 10:45

Hall F (Verwey Kamer)

SYMPOSIUM: NASAL PROVOCATION TESTS

	Chairperson: P. Stjarne (Sweden)	85
9:30	ALLERGEN PROVOCATION IN LAR	86
	C. Rondon (Spain)	
9:45	COLD DRY AIR PROVOCATION IN THE DIAGNOSIS OF NAR	87
	C. Holland, C.L. Segboer, C. Georgalas, C.M. Van Drunen, W.J. Fokkens (The Netherlands)	

10:00	NASAL PROVOCATION TEST USING ALLERGEN EXTRACT VERSUS COLD DRY AIR PROVOCATION TEST: WHICH AND WHEN?	88
	<u>Y.H. Kim</u> (Korea)	
10:15	PROVOCATION TESTS IN THE DIAGNOSIS OF OCCUPATIONAL AIRWAY DISEASE	89
	<u>E. Toskala</u> (USA)	
10:30	DISCUSSION	90

9:30 - 10:45 **Hall G (Roland Holst Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: CRS BASIC 1

	Chairperson: H. Saleh (United Kingdom)	91
9:30	THE SERPINA1 GENE AS AN EXAMPLE OF PROTEASE-ANTIPROTEASE IMBALANCE IN CRS	92
	<u>S. Kilty</u> , <u>L. Mfunu</u> , <u>M. Desrosiers</u> (Canada)	
9:39	MICROARRAY GENE ANALYSIS OF NASAL EPITHELIAL CELLS IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS.	93
	<u>M. Cornet</u> , <u>K. Kostamo</u> , <u>A. Rinia</u> , <u>A. Zwinderman</u> , <u>W. Fokkens</u> , <u>C. Van Druenen</u> (The Netherlands)	
9:48	ROLE OF EOSINOPHILS IN TISSUE REMODELING OF CHRONIC RHINOSINUSITIS	94
	<u>T. Shimizu</u> , <u>K. Takezawa</u> , <u>T. Ogawa</u> , <u>I. Tojima</u> , <u>H. Kouzaki</u> , <u>S. Shimizu</u> (Japan)	
9:57	SIGNAL TRANSDUCTION OF THE INFLAMMATORY PROCESS IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	95
	<u>R. Linke</u> , <u>R. Pries</u> , <u>M. Koennecke</u> , <u>K. Bruchhage</u> , <u>M. Gebhard</u> , <u>R. Boescke</u> , <u>B. Wollenberg</u> (Germany)	

- 10:06 **RESVERATROL PREVENTS DEVELOPMENT OF EOSINOPHILIC RHINOSINUSITIS WITH NASAL POLYPS IN A MOUSE MODEL** 96
 S.W. Kim, D.Y. Chang, R. Khalmuratova, S.Y. Jeon, D.W. Kim, Y.G. Min (Korea)
- 10:15 **CHARACTERIZATION OF CCL3 IN NASAL POLYPS OF CHRONIC RHINOSINUSITIS AND IN NASAL EPITHELIUM** 97
 S. Tanaka, T. Hirota, K. Hatsushika, K. Tomita, S. Fujieda, J. Ishitoya, K. Masuyama, M. Tamari (Japan)
- 10:24 **GENOTYPE-SPECIFIC VARIATIONS IN THE TNFRSF1B GENE ARE ASSOCIATED WITH DISEASE SEVERITY IN CRS** 98
 F. Romano, L. Mfunu-Endam, Y. Bossé, A. Filali-Mouhim, M. Desrosiers (Brazil)

9:30 - 10:45**Hall H (Rode Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: SKULL BASE SURGERY 1**

- Chairperson: R. Weber (Germany) 99
- 9:30 **VISUAL OUTCOMES POST-ENDOSCOPIC ENDONASAL SURGERY IN CRANIOPHARYNGIOMA: A SYSTEMATIC REVIEW** 100
 Y. Ramakrishnan, C. Nicholson, A. Jenkins, J. Hill, S. Carrie, I. Iqbal (United Kingdom)
- 9:39 **OLFACTORY FUNCTIONS AFTER TRANSSPHEOIDAL PITUITARY SURGERY: ENDOSCOPIC VERSUS MICROSCOPIC APPROACH** 101
 C. Meco, G. Kahilogullari, S. Beton, E.S.M. Al-Beyati, E.O. Kantarcioglu, M. Bozkurt, E. Kantarcioglu, A. Comert, A. Unlu (Turkey)

- 9:48 **ENDOSCOPIC ENDONASAL TRANSPTERYGOID
TRANSMAXILLARY APPROACH TO THE INFRATEMPORAL
AND UPPER PARAPHARYNGEAL TUMORS: INDICATIONS
AND OUTCOMES.** 102
- M. Turri-Zanoni, P. Battaglia, I. Dallan, S. Gallo, E. Sica,
P. Castelnuovo (Italy)
- 9:57 **EVOLUTION IN THE TREATMENT OF SINONASAL
INVERTED PAPILOMA: THE PEDICLE ORIENTED
ENDOSCOPIC SURGERY (POES)** 103
- A. Pusateri, I. Avato, D. Zaccari, P. Carena, E. Matti, F. Pagella
(Italy)
- 10:06 **ENDOSCOPIC ENDONASAL RESECTION OF RESPIRATORY
EPITHELIAL ADENOMATOID HAMARTOMAS OF THE
SINONASAL TRACT** 104
- L. Volpi, M. Bignami, A. Karligkiotis, A. Pistoichini, F. De
Bernardi, F. Ferreli, F. Meloni, P. Herman, P. Castelnuovo (Italy)
- 10:15 **SINONASAL MORBIDITY AFTER ENDOSCOPIC
ENDONASAL PITUITARY SURGERY WITH MIDDLE
TURBINATE RESECTION** 105
- S. Fishpool, A. Amato-Watkins, C. Hayhurst (United Kingdom)
- 10:24 **ENDOSCOPIC TRANS-SPHENOIDAL SURGERY IN
CHILDREN: OUR INSTITUTIONAL EXPERIENCE** 106
- R. Mario, P. Frassanito, L. Massimi, C. Parrilla, L. Vargiu,
M. Caldarelli, C. Di Rocco, G. Paludetti (Italy)

9:30 - 10:45

Hall I (Berlage Zaal)

SYMPOSIUM: JUNIOR MEMBER SYMPOSIUM: AIRWAY MUCOSA

	Chairperson: T. Van Zele (Belgium)	107
9:30	DIAGNOSTIC AND THERAPEUTIC CONSEQUENCES OF MUCOSAL LYMPHOID AGGREGATES AND LOCAL IGE IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	108
	L. Calus, T. Van Zele, P. Gevaert (Belgium)	
9:50	RESVERATROL REVERSES TRANSEPIHELIAL FLUID AND ELECTROLYTE IMBALANCE IN A HYPOXIA-INDUCED MODEL OF ACQUIRED CFTR DEFICIENCY	109
	B.A. Woodworth (USA)	
10:10	SYNERGY BETWEEN TLR-2 AND TLR-3 SIGNALLING IN PRIMARY HUMAN NASAL EPITHELIAL CELLS	110
	K. Golebski, J. Van Tongeren, D. Van Egmond, E. De Groot, W. Fokkens, C. Van Drunen (The Netherlands)	
10:20	CHRONIC RHINOSINUSITIS WITH NASAL POLYPS AND ASTHMA: AN ANALYSIS OF UPPER AND LOWER AIRWAY INFLAMMATION	111
	K. Håkansson (Denmark)	
10:30	TAS2R38 GENOTYPE-ASSOCIATED ALTERATIONS IN SINUS MICROBIOTA	112
	V. Ramakrishnan, J. Kofonow, C. Robertson, D. Frank (USA)	
10:40	DISCUSSION	113

9:30 - 10:45

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: MICROBIOLOGY IN RHINOSINUSITIS 1

	Chairperson: A. Lane (France)	114
9:30	INTRACELLULAR STAPHYLOCOCCUS AUREUS: THE TROJAN HORSE OF RECALCITRANT CHRONIC RHINOSINUSITIS?	115
	N. Tan, A. Foreman, C. Jardeleza, R. Douglas, S. Vreugde, P.J. Wormald (Australia)	
9:39	IMPACT OF SINUS SURGERY ON PSEUDOMONAL AIRWAY COLONIZATION, BRONCHIOLITIS OBLITERANS SYNDROME AND SURVIVAL IN CYSTIC FIBROSIS LUNG TRANSPLANT RECIPIENTS	116
	D. Vital, M. Hofer, C. Benden, A. Boehler, M.B. Soyka, D. Holzmann (Switzerland)	
9:48	STAPHYLOCOCCUS ENTEROTOXIN A INDUCES MUC5B EXPRESSION VIA TLR2, ERK1/2 AND P38 MAPK IN HUMAN AIRWAY EPITHELIAL CELLS	117
	Y.D. Kim, Y.S. Choi, C.H. Bae, S.Y. Song (Korea)	
9:57	ACUTE BACTERIAL RHINOSINUSITIS: NEW ASPECTS REGARDING BACTERIAL SPECTRUM AND MICROBIOLOGIC DIAGNOSIS	118
	I. Sabaru, A. Neagu (Romania)	
10:06	BACTERIAL BIOFILM IN PATIENTS WITH CHRONIC RHINOSINUSITIS: A CONFOCAL SCANNING LASER MICROSCOPIC STUDY	119
	K.J. Danielsen, O. Eskeland, K. Fridrich-Aas, V.C. Orszagh, G. Bachmann-Harildstad, E. Burum-Auensen (Norway)	

- 10:15 **CHARACTERIZATION OF STAPHYLOCOCCUS AUREUS ENTEROTOXIN B-INDUCED IL-10 PRODUCTION BY NASAL POLYP CELLS IN THE PATHOGENESIS OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS** 120
 M. Okano, T. Fujiwara, S. Kariya, T. Haruna, T. Higaki, S. Makihara, Y. Noyama, A. Torigoe, U. Kensuke, N. Kazunori (Japan)
- 10:24 **SMALL COLONY VARIANTS AND PHENOTYPE SWITCHING OF INTRACELLULAR STAPHYLOCOCCUS AUREUS IN CHRONIC RHINOSINUSITIS** 121
 N. Tan, C. Cooksley, E. Roscioli, A. Drilling, R. Douglas, P.J. Wormald (Australia)

9:30 - 10:45**Hall K (Veilingzaal)****SYMPOSIUM: SURGERY OF THE ORBIT AND LACRIMAL PATHWAYS**

- Chairperson: M. Bernal-Sprekelsen (Spain) 122
- 9:30 **INTRAORBITAL TUMOURS, DIAGNOSTIC APPROACHES AND TREATMENT OPTIONS** 123
 P. Saeed (The Netherlands)
- 9:45 **DCR** 124
 M. Naraghi (Iran)
- 10:00 **DCR: ENDOSCOIC VERSUS EXTERNAL** 125
 R. Roithmann (Brazil)
- 10:15 **ORBITAL DECOMPRESSION** 126
 H. Welkoborsky, S. Grass (Germany)
- 10:30 **DISCUSSION** 127

10:45 - 11:15

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

11:15 - 12:30

Hall A (Effectenbeurszaal)

SYMPOSIUM: ENDOSCOPIC APPROACH TO ANTERIOR SKULL BASE TUMOUR

	Chairperson: C. Georgalas (The Netherlands)	128
11:15	INTERDISCIPLINARY APPROACHES TO ANTERIOR BASE OF SKULL LESIONS	129
	U. Bockmühl (Germany)	
11:30	APPROACHES AND LIMITATIONS OF ENDOSCOPIC SURGERY FOR BENIGN SKULL BASE TUMORS	130
	A. Stamm (Brazil)	
11:45	INFRA TEMPORAL AND UPPER PARAPHARYNGEAL TUMORS	131
	R. Carrau (USA)	
12:00	MALIGNANT SKULL BASE TUMOURS: THE LIMITS OF ENDOSCOPIC SURGERY	132
	P. Nicolai (Italy)	
12:15	DISCUSSION	133

11:15 - 12:30

Hall B (Glazenzaal)

SYMPOSIUM: ALL YOU NEED TO KNOW ABOUT SEPTAL CORRECTION

	Chairperson: D. Simmen (Switzerland)	134
11:15	SEPTOPLASTY AND QUALITY OF LIFE	135
	M. Hytönen (Finland)	

11:30	CRUCIAL ROLE OF THE SEPTUM IN RHINOPLASTY	136
	R. Xavier (Portugal)	
11:45	SEPTAL SURGERY IN CHILDREN	137
	N. Keles (Turkey)	
12:00	THE TWISTED NOSE	138
	K.S. Patel (United Kingdom)	
12:15	DISCUSSION	139

11:15 - 12:30**Hall C (Keurzaal)****SYMPOSIUM: LESSONS FROM MOLECULAR BIOLOGY IN RHINITIS**

	Chairperson: M. Desrosiers (Canada)	140
11:15	MOLECULAR MECHANISMS OF NASAL EPITHELIAL REPAIR AND REMODELING IN VIRAL INFECTION	141
	D. Wang, Z. Liu, H. Yu, J. Wang, X. Sun, J.U.A.N. Liu (China)	
11:30	MICRORNA PROFILES IN NASAL MUCOSA OF PATIENTS WITH ALLERGIC AND NONALLERGIC RHINITIS AND ASTHMA	142
	E. Toskala, H. Suojalehto, I. Lindström, M. Majuri, C. Mitts, H. Alenius, M. Kilpelainen, J. Sipilä (USA)	
11:45	THE MULTI-FACETED ROLE OF ALLERGEN EXPOSURE TO THE LOCAL AIRWAY MUCOSA	143
	K. Van Druenen, M. Van Kuijen, A. Vroling, K. Golebski, W. Fokkens (The Netherlands)	
12:00	CLARA CELL 10-KDA PROTEIN: AN IMPORTANT REGULATOR OF UPPER AIRWAY INFLAMMATION	144
	Z. Liu (China)	
12:15	DISCUSSION	145

11:15 - 12:30

Hall D (Administratiezaal)

SYMPOSIUM: CYSTIC FIBROSIS

	Chairperson: V. Ramakrishnan (USA)	146
11:15	EFFECTS OF SURGERY ON LOWER AIRWAYS K. Aanaes, H.K. Johansen, M. Skov, F. Buchvald, T. Hjuler, T. Pressler, N. Høiby, K.G. Nielsen, C. Buchwald (Denmark)	147
11:30	SINUS AND TEMPORAL BONE IN CYSTIC FIBROSIS M.C. Berkhout, E. Rijntjes, W.J. Fokkens, H.G.M. Heijerman (The Netherlands)	148
11:45	SINUS SURGERY IN CYSTIC FIBROSIS PATIENTS H. Saleh (United Kingdom)	149
12:00	NASAL POLYPOSIS IN LUNG TRANSPLANT RECIPIENTS WITH CYSTIC FIBROSIS D. Holzmann, M.B. Soyka, D. Vital (Switzerland)	150
12:15	DISCUSSION	151

11:15 - 12:30

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: EPISTAXIS

	Chairperson: A. Swift (United Kingdom)	152
11:15	TIMOLOL APPLICATION AS A PROTECTIVE TREATMENT FOR REPEATED EPISTAXIS IN HHT PATIENTS K. Ichimura, H. Kikuchi (Japan)	153
11:24	SEVERE IDIOPATHIC EPISTAXIS: RETROSPECTIVE STUDY IN A TERTIARY ENT CENTER E. Marin, T. Van Zele, J.B. Watelet (Belgium)	154
11:33	RHINOLOGIC PATHOLOGIES REQUIRING EMERGENCY ADMISSION TO HOSPITAL: A 3 YEAR REVIEW S. Keh, P. McLean, M. Subhani, A. Pannu, M. Shakeel (United Kingdom)	155

- 11:42 **TRANSNASAL ENDOSCOPIC SPHENOPALATINE ARTERY LIGATION FOR RECURRENT EPISTAXIS.** 156
 M. Hamdam Zavarce, C.M. Chiesa Estomba, R. Valdes Pons, J.M. Melendez Garcia, A.S. Araujo da Costa, T. Rivera Schmitz (Spain)
- 11:51 **ENDOSCOPIC ENDONASAL MINI-INVASIVE SURGICAL OPTIONS FOR EPISTAXIS TREATMENT IN HEREDITARY HEMORRHAGIC TELANGIECTASIA PATIENTS** 157
 A. Pusateri, F. Chu, M. Caputo, D. Zaccari, C. Danesino, C. Olivieri, E. Matti, F. Pagella (Italy)
- 12:00 **HOW TO IDENTIFY RISKS AND BEST TREATMENTS IN EPISTAXIS OR THE UNDERESTIMATION OF EPISTAXIS** 158
 M. Soyka, D. Vital, D. Holzmann (Switzerland)
- 12:09 **ENDOSCOPIC SPHENOPALATINE ARTERY LIGATION: OUR EXPERIENCE AT A DISTRICT GENERAL HOSPITAL IN SCOTLAND.** 159
 R. Crosbie, C. McCaffer, M. Wickham, N. Calder (United Kingdom)

11:15 - 12:30**Hall F (Verwey Kamer)****SYMPOSIUM: HEREDITARY HEMORRHAGIC TELANGIECTASIA (HHT)**

- Chairperson: J. Rimmer 160
- 11:15 **CLINICAL STRATEGY IN HEREDITARY HEMORRHAGIC TELANGIECTASIA** 161
 T. Kuhnel, C. Rohrmeier, K. Wirsching (Germany)
- 11:30 **GENETICS OF HEREDITARY HEMORRHAGIC TELANGIECTASIA** 162
 A.D. Kjeldsen (Denmark)
- 11:45 **WHEN ALL TREATMENT FAILS** 163
 V. Lund (United Kingdom)

12:00 **QOL IN HHT** 164
 G. Bachmann-Harildstad, S. Dheyauldeen, A. Geirdal,
 K. Heimdal (Norway)

12:15 **DISCUSSION** 165

11:15 - 12:30 **Hall G (Roland Holst Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: NAR

Chairperson: L. Van Gerven (Belgium) 166

11:15 **QUALITY OF LIFE AND USE OF MEDICATION IN CHRONIC ALLERGIC AND NON-ALLERGIC RHINITIS PATIENTS.** 167
 C.L. Segboer, C.T. Holland, S.M. Reinartz, I. Terreehorst,
 A. Gevorgyan, P.W. Hellings, C.M. Van Druenen, W.J. Fokkens
 (The Netherlands)

11:24 **DIFFERENTIATING GROUPS OF RHINITIS PATIENTS BASED ON MOLECULAR MARKERS IN NASAL SECRETIONS.** 168
 C.L. Segboer, C.T. Holland, S.M. Reinartz, D. Van Egmond,
 I. Terreehorst, W.J. Fokkens, C.M. Druenen (The Netherlands)

11:33 **CLINICAL CHARACTERISTICS OF PREGNANCY RHINITIS** 169
 U. Demir, B. Cetinkaya Demir (Turkey)

11:42 **THERAPEUTIC EVALUATION ON RADIOFREQUENCY COAGULATION OVER PERIPHERAL BRANCHES OF THE POSTERIOR NASAL NERVE IN PATIENTS WITH SEVERE ALLERGIC RHINITIS** 170
 W.Y. Su (Taiwan)

11:51 **NEW POSSIBILITIES FOR PRE-OPERATIVE ASSESSMENT OF PATIENTS WITH NASAL OBSTRUCTION WITH RHINOSYS** 171
 A. Glien, S. Plontke, T. Rahne, G. Mlynski (Germany)

11:15 - 12:30

Hall H (Rode Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: PATHOPHYSIOLOGY CRSWNP

- Chairperson: P. Gevaert (Belgium) 172
- 11:15 **P-GLYCOPROTEIN REGULATES IL-5, IL-6, AND TSLP SECRETION IN HUMAN SINONASAL POLYP EXPLANTS** 173
B. Bleier, J. Hoang, R. Feldman, A. Kocharyan, A. Singleton, X. Han (USA)
- 11:24 **LIPOPOLYSACCHARIDE MODULATES GLUCOCORTICOID RECEPTOR FUNCTION IN NASAL MUCOSA AND POLYP FIBROBLASTS** 174
L. Fernández-Bertolín, J. Mullol, M. Fuentes-Prado, J. Roca-Ferrer, I. Alobid, C. Picado, L. Pujols (Spain)
- 11:33 **IMMUNOMODULATORY EFFECT OF ADIPOSE TISSUE-DERIVED STEM CELLS ON T LYMPHOCYTES AND CYTOKINE EXPRESSIONS IN NASAL POLYPS** 175
Y.W. Kim, K. Cho, H. Roh, M.-J. Kang (Korea)
- 11:42 **ACTIVATION PATTERNS OF TOLL-LIKE RECEPTORS AND ANTIMICROBIAL PEPTIDES IN CHRONIC RHINOSINUSITIS WITH OR WITHOUT NASAL POLYPOSIS** 176
A. Hirschberg, M. Kiss, E. Kadocsa, H. Polyanka, Z.S. Razga, Z.S. Bella, L. Tiszlavicz, L. Kemeny (Hungary)
- 11:51 **ROLE OF HYPOXIA-INDUCIBLE FACTOR 1ALPHA EXPRESSION IN REGULATORY T CELLS ON NASAL POLYPOGENESIS** 177
Y. Kim, S. Kim, J. Jin, K. Rha (Korea)
- 12:00 **INTRINSIC BIOCHEMICAL AND FUNCTIONAL DIFFERENCES IN NASAL EPITHELIAL CELLS FROM PATIENTS WITH NASAL POLYPS** 178
C. Li, Y. Li, X. Yu, S. Chao, Y. Yan, L. Shi, D. Wang (Singapore)

12:09	DOWN-REGULATION OF EMP1 IN NASAL EPITHELIUM FROM NASAL POLYPS AND INVERTED PAPILLOMA	179
	<u>L. Shi</u> , C.W. Li, X.M. Yu, P. Jin, Z.B. Lin, T.Y. Li, L. Zhao, D.Y. Wang (China)	

11:15 - 12:30 **Hall I (Berlage Zaal)**

SYMPOSIUM: PROGNOSTIC FACTORS IN RHINOSINUSITIS

	Chairperson: A. Sama (United Kingdom)	180
11:15	FACTORS AFFECTING TIME TO REVISION SINUS SURGERY FOR NASAL POLYPS	181
	<u>R. Sacks</u> , R. Harvey, P.L. Sacks (Australia)	
11:30	PHENO- AND ENDOTYPING OF CRS - THE FUTURE IS NOW!	182
	<u>C. Bachert</u> , P. Tomassen, L.U.O. Zhang, X. Wang (Belgium)	
11:45	THE ROLE OF OSTEONEOGENESIS ON OUTCOMES OF FESS	183
	<u>K. Snidvongs</u> (Thailand)	
12:00	INFLAMMATORY PATTERNS IN UPPER AIRWAY DISEASE IN THE SAME GEOGRAPHICAL AREA MAY CHANGE OVER TIME	184
	<u>P. Tantilipikorn</u> , N. Sookrung, S. Muangsomboon, B. Pinkaew, T. Suwannavej, J. Lumyongsatien, A. Bedavanija, P. Assanasen, C. Bunnag (Thailand)	
12:15	DISCUSSION	185

11:15 - 12:30

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: RHINITIS BASIC

- Chairperson: L. Kalogjera (Croatia) 186
- 11:15 **SYNERGY BETWEEN TLR-2 AND TLR-3 SIGNALLING IN PRIMARY HUMAN NASAL EPITHELIAL CELLS** 187
 J. Van Tongeren, K. Golebski, D. Van Egmond, E. De Groot, W. Fokkens, C. Van Drunen (The Netherlands)
- 11:24 **THE ROLE OF TRPV1 IN ALLERGIC RHINITIS MOUSE MODEL** 188
 J. Mo, S. Ramachandran, H. Son (Korea)
- 11:33 **ALLERGEN-INDUCED IL-33 RELEASE FROM AIRWAY EPITHELIAL CELLS IS MEDIATED THROUGH PKC AND SYK PATHWAYS** 189
 I. Tojima, H. Kouzaki, H. Kita, T. Shimizu (Japan)
- 11:42 **BENZALDEHYDE HAS AN EXCELLENT ANTI-ALLERGIC EFFECT IN A MURINE MODEL OF ALLERGIC ASTHMA AND RHINITIS** 190
 Y.H. Kim, C.S. Park, M.J. Heo, T.Y. Jang (Korea)
- 11:51 **MESENCHYMAL STEM CELLS MODULATE ALLERGIC AIRWAY INFLAMMATION BY INDUCING REGULATORY T CELLS** 191
 K. Cho, M. Park, H. Park, H. Park, S. Hong, H. Yu, H. Roh (Korea)
- 12:00 **EFFECT OF ANTIHISTAMINE NASAL SPRAY ON TRACHEAL SMOOTH MUSCLE** 192
 Y.L. Chou, H.W. Wang (Taiwan)
- 12:09 **TH2 CYTOKINES DIFFERENTIALLY REGULATE PSORIASIN EXPRESSION IN HUMAN NASAL EPITHELIA** 193
 J.H. Yoon, D.Y. Park, H.J. Min, S.Y. Choi, T. Kim, H.J. Cho, C.H. Kim (Korea)

11:15 - 12:30

Hall K (Veilingzaal)

SYMPOSIUM: THE CLEFT LIP

	Chairperson: M. Holmstrom (Sweden)	194
11:15	RUNNING A SUCCESSFUL CLEFT LIP TEAM G. Hens, V. Vander Poorten (Belgium)	195
11:30	PRIMARY AND SECONDARY RHINOPLASTY P. Hellings (Belgium)	196
11:45	SECONDARY RHINOPLASTY IN THE CLEFT LIP PATIENT P.H. Rombaux (Belgium)	197
12:00	VESTIBULUM STENOSIS IN CLEFT LIP PATIENTS G. Rettinger (Germany)	198
12:15	DISCUSSION	199

11:15 - 12:45

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

12:30 - 14:00

LUNCH BREAK, EXHIBITION AND E-POSTER VIEWING

12:30 - 14:00

Hall B (Glazenzaal)

SPONSORED SESSION: INDUSTRY SUPPORTED SYMPOSIUM (NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT)

14:00 - 15:30

Hall A (Effectenbeurszaal)

INTERACTIVE ROUND TABLE: CLINICAL MANAGEMENT OF DIFFICULT CRS PATIENTS

Moderator: V. Lund (United Kingdom)	200
Panelist: H. Moriyama (Japan)	201
Panelist: D. Kennedy (USA)	202
Panelist: A. Lopatin (Russia)	203
Panelist: R. Weber (Germany)	204
Panelist: D. Simmen (Switzerland)	205
Panelist: T. Baudoin (Croatia)	206

14:00 - 15:30

Hall B (Glazenzaal)

INTERACTIVE ROUND TABLE: TIP SURGERY IN RHINOPLASTY

Moderator: F. Apaydin (Turkey)	207
Panelist: M. Boenisch (Austria)	208
Panelist: C. Cingi (Turkey)	209
Panelist: S. Paun (United Kingdom)	210
Panelist: A. Sousa Vieira	211
Panelist: P. Palma (Italy)	212
Panelist: K. Ingels (The Netherlands)	213

14:00 - 15:30

Hall C (Keurzaal)

INTERACTIVE ROUND TABLE: PERSISTENT INFECTION AFTER SURGERY

Moderator: M. Desrosiers (Canada)	214
Panelist: N. Cohen (USA)	215
Panelist: S. Steinsvag (Norway)	216
Panelist: C. Bachert (Belgium)	217
Panelist: R. Voegels (Brazil)	218
Panelist: T. Fuchiwaki (Japan)	219

14:00 - 15:30

Hall D (Administratiezaal)

INTERACTIVE ROUND TABLE: UPPER AIRWAY INFLAMMATION IN CHILDREN

Moderator: F. Baroody (USA)	220
Panelist: H. Ramadan (USA)	221
Panelist: L. Kalogjera (Croatia)	222
Panelist: K. Ichimura (Japan)	223
Panelist: N. Keles (Turkey)	224
Panelist: A. Schilder (United Kingdom)	225
Panelist: J.B. Watelet (Belgium)	226

14:00 - 15:30

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: RHINOPASTY AND FACIAL PLASTIC SURGERY

- Chairperson: K. Patel (United Kingdom) 227
- 14:00 **5 YEARS EXPERIENCE WITH ZX8 POLYDIAZONE PLATE IN RECONSTRUCTIVE SEPTORHINOPLASTY** 228
C.A. East, V. Sarju, R. Anmolsingh (United Kingdom)
- 14:05 **NASAL VALVE SURGERY FOR NASAL OBSTRUCTION: A SYSTEMATIC REVIEW** 229
M. Atfeh, P. Cheang, H. Khalil (United Kingdom)
- 14:10 **ULTRASONOGRAPHIC EVALUATION OF LONG-TERM RESULTS OF NASAL TIP DEFATTING IN RHINOPLASTY CASES** 230
S. Nemati, R. Banan, A. Alizadeh, E. Kazemnejad Leili, H. Kerdari (Iran)
- 14:15 **FIRST EXPERIENCE WITH A POSTOPERATIVE CUSTOMISED NOSE-FORMER (NASELLA®) IN RHINOPLASTY** 231
M. Soyka, M. Heller, N. Honegger, D. Vital, D. Holzmann, T.H. Roth (Switzerland)
- 14:20 **BILATERAL INTERDOMAL CARTILAGE GRAFTING FOR NASAL LENGTHENING AND TIP PROJECTION VIA ENDONASAL APPROACH** 232
J.W. Kwon, T.H. Kong, T.H. Ha, Y.H. Park, D.J. Park (Korea)
- 14:25 **AN ANATOMICAL COMPARISON OF CONVENTIONAL AND FACELIFT INCISIONS FOR PAROTID SURGERY** 233
J. Dabrowska-Bien, K. Lazecka, H. Skarzynski (Poland)
- 14:30 **RHINOSEPTOPLASTY-EXPECTED AND UNEXPECTED PSYCHOLOGICAL PATIENT REACTIONS** 234
G. Kopacheva Barsova, V. Gerazova, S. Arsova (Macedonia)

- 14:35 **COMPARISON OF PSYCHOPATHOLOGICAL SYMPTOMS IN AESTHETIC AND FUNCTIONAL RHINOPLASTY PATIENTS** 235
M. Naraghi, M. Atari (Iran)
- 14:40 **AETIOLOGY, MANAGEMENT, AND OUTCOME OF 483 PATIENTS WITH NASAL FRACTURE** 236
S. Hammarén-Malmi, S. Vehmanen, S. Paananen, A. Mäkitie, K. Blomgren (Finland)
- 14:45 **REPAIR OF ORBITAL FLOOR FRACTURE USING FOLDED SILASTIC TUBE THROUGH TRANSANTRAL APPROACH- A NOVEL TECHNIQUE** 237
J. Kwon, J. Kim (Korea)
- 14:50 **THE ART OF FACIAL HARMONY BY RHINOGENIOPLASTY** 238
M. Naraghi (Iran)
- 14:55 **SEPTUM HEAMATOMA AND ABSCESS OUT COMME OF LONG THERM FOLLOWUP** 239
S. Gade, A. Kjeldsen (Denmark)
- 15:00 **IMPROVEMENT OF EXTERNAL NASAL VALVE AIRWAY BY NON-SURGICAL AUGMENTATION** 240
M. Naraghi, A.F. Sontou (Iran)

14:00 - 15:30

Hall F (Verwey Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: RHINITIS CLINICAL

- Chairperson: A. Swift (United Kingdom) 241
- 14:00 **CONCENTRATION OF PRO-INFLAMMATORY CYTOKINES IN NASAL LAVAGE AND PLASMA IN PATIENTS WITH POSTOPERATIVE RHINITIS WITH USE OF IL-1 BETA RECEPTOR ANTAGONIST** 242
O.O. Mashinetc, H.T. Abdulkerimov (Russia)
- 14:05 **A NEW ALLERGIC RHINITIS THERAPY (MP29-02*) PROVIDES OCULAR SYMPTOM RELIEF DAYS FASTER THAN CURRENT FIRSTLINE MONOTHERAPIES** 243
J. Mullol, M. Gelardi, D. Deleanu, U. Munzel, P. Hellings (Spain)
- 14:10 **THE EFFECTIVENESS OF FEXOFENADINE VERSUS LEVOCETIRIZINE IN PERSISTENT ALLERGIC RHINITIS, A RANDOMIZED CONTROLLED STUDY** 244
K. Snidvongs, C. Rotjanasiriphong, C. Phannaso, S. Chusakul, S. Aeumjaturapat (Thailand)
- 14:15 **CLINICALLY RELEVANT EFFECT OF A NEW INTRANASAL THERAPY MP29-02* IN SEASONAL ALLERGIC RHINITIS (SAR) ASSESSED BY RESPONDER ANALYSIS** 245
P. Hellings, G. Rasp, A. Cuvillo, U. Munzel, D. Price (Belgium)
- 14:20 **A NEW THERAPY (MP29-02*) IS EFFECTIVE FOR THE TREATMENT OF CHRONIC RHINITIS: RESULTS FROM A RANDOMIZED LONG-TERM TRIAL** 246
D. Price, C. Bachert, P. Hellings, K. Peksis, G. Scadding, U. Munzel, W. Fokkens (United Kingdom)

- 14:25 **A NEW THERAPY (MP29-02*) EFFECTIVELY CONTROLS NASAL SYMPTOMS OF SEASONAL ALLERGIC RHINITIS IRRESPECTIVE OF SEVERITY AND EFFECTIVELY TARGETS OCULAR SYMPTOMS IN SYMPTOMATIC PATIENTS** 247
W. Fokkens, N. Lindblad, E. Serrano, M. Kalvet, U. Munzel, J. Mullol (The Netherlands)
- 14:30 **EFFICIENT UTILIZATION OF SKIN PRICK TEST FACILITY - 4 YEARS REVIEW** 248
M. Shakeel, I. Khan, Y.W. Chang, S. Keh, P. Ross (United Kingdom)
- 14:35 **COMPARISON OF SKIN PRICK TEST, MAST AND IMMUNOCAP IN DIAGNOSING ALLERGIC RHINITIS** 249
Y. Kim, J. Cho, W. Kim, M. Kim (Korea)
- 14:40 **RESPONSE OF NASAL MUCOSA TO CHOLINERGIC STIMULATION IN SUBJECTS WITH AND WITHOUT RHINITIS** 250
D. Milosevic (Serbia)
- 14:45 **PHYSIOLOGICAL PARAMETERS OF EARLY INTERVENTION IN CEDAR POLLINOSIS** 251
D. Sasaki, M. Miwa, A. Shiozawa, N. Ono, K. Ikeda (Japan)
- 14:50 **ASSESSING ALLERGIC RHINITIS SYMPTOM CONTROL: RESULTS FROM A DIGITAL SURVEY CONDUCTED DURING EAACI 2013** 252
P. Hellings, C. Bachert, W. Fokkens, D. Price, G. Rasp, R. Murray, J. Mullol (Belgium)
- 14:55 **REAL-WORLD EFFECTIVENESS OF A NEW ALLERGIC RHINITIS THERAPY (MP29-02*)** 253
L. Klimek, C. Virchow, U. Wahn, R. Moesges, M. Wagenmann, U. Munzel, C. Bachert (Germany)

- 15:00 **SUB-OPTIMAL CONTROL OF ALLERGIC RHINITIS: THE NEED FOR A NEW AND MORE EFFECTIVE TREATMENT OPTION** 254
 C. Bachert, D. Price, P. Hellings, G. Scadding, R. Dhillon, U. Munzel, J. Mullol (United Kingdom)
- 15:05 **THE INDOOR SPORT: IS IT A RISK FACTOR FOR ALLERGIC RHINITIS IN ATHLETES?** 255
 M. Denguezli, J.F. Dessanges, Z. Tabka (Tunisia)
- 15:10 **EFFECT OF PROBIOTIC COMBINATION ON THE BLOOD SERUM IN PATIENT WITH MODERATE TO SEVERE ALLERGIC RHINITIS** 256
 A. Sardjana, D. Soetoko, W. Wiratno (Indonesia)
- 15:15 **ACTIVE ANTERIOR RHINOMANOMETRY IN DETECTING THE PATIENTS SUFFERING FROM RHINITIS MEDICAMENTOSA** 257
 L.J. Janosevic, J. Dotlic (Serbia)
- 15:20 **USING THE UV LASER-INDUCED SPECTROFLUORIMETRY FOR DIAGNOSING ALLERGIC RHINITIS** 258
 M. Khorolskaia, V. Salmin, S. Vakhruhev, A. Salmina, D. Skomoroha (Russia)
- 15:25 **HOST RESPONSES OF IN VITRO DIFFERENTIATED NASAL EPITHELIAL CELLS TO GASEOUS FORMALDEHYDE EXPOSURE ON A MICROFLUIDIC PLATFORM** 259
 Y. Yan, C. Li, W. Wang, Y. Li, S. Chao, Z. Wang, D. Wang (Singapore)

14:00 - 15:30

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: OLFACTION

- Chairperson: P. Rombaux (Belgium) 260
- 14:00 **USEFULNESS OF UNIRHINAL OLFACTORY TESTS FOR THE EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE** 261
C. Huart, A. De Bont, P. Rombaux, A. Ivanoiu, A. Mouraux (Belgium)
- 14:09 **A PILOT STUDY OF COMPUTERIZED SMELL THRESHOLD TEST** 262
R. Jiang (Taiwan)
- 14:18 **OLFACTORY TRAINING IS HELPFUL IN PATIENTS WITH POST-TRAUMATIC OLFACTORY DYSFUNCTION: A RANDOMIZED, CONTROLLED STUDY** 263
E. Lehrer, F. Mariño-Sánchez, I. Alobid, J. Berenguer, M. Bernabeu, S. Centellas, S. Laxe, C. Marín, J. Mullol (Spain)
- 14:27 **IMMUNE MODELS OF POSTVIRAL OLFACTORY DISORDERS** 264
K. Kondo, K. Kanaya, K. Suzukawa, S. Kikuta, T. Sakamoto, T. Yamasoba (Japan)
- 14:36 **OLFACTORY DYSFUNCTION INDUCED BY EXCITOTOXICITY IN RATS AS A MODEL FOR SECONDARY NEURONAL DEGENERATION IN TRAUMATIC BRAIN INJURY** 265
I. Tejero, J. Mullol, I. Alobid, J. Berenguer, M. Bernabeu, S. Centellas, S. Laxe, E. Lehrer, F. Mariño-Sánchez, C. Marín (Spain)
- 14:45 **EFFECT OF ORAL STEROIDS ON SMELL REDUCTION OR LOSS IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPS.** 266
E. Proimos, F. Seferlis, Z. Memtsas, T. Chimona, C. Padadakis (Greece)

14:54	EXPRESSION PROFILE OF OLFACTORY RECEPTOR GENES IN HUMAN OLFACTORY MUCOSA	267
	C. Verbeurgt, F. Wilkin, M. Tarabichi, J.E. Dumont, S. Hassid, P. Chatelain (Belgium)	
15:03	DO CONCHOPEXY SUTURES (MIDDLE TURBINATE MEDIALISATION SUTURING) AFFECT OLFACTION?	268
	D. Siau, J. Walken, J. De Carpentier (United Kingdom)	
15:12	INFLUENCE OF SEPTOPLASTY ON OLFACTORY FUNCTION	269
	V. Bogdanov, V. Bogdanov (Ukraine)	
15:21	THE EXPERIENCES OF ANOSMIA SUFFERERS IN THE UK: A QUALITATIVE STUDY.	270
	T. Bradshaw, S. Erskine, D. Boak, C. Philpott, S. Ifran	

14:00 - 15:30

Hall H (Rode Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: NASAL FLOW AND RESISTANCE MEASUREMENTS

	Chairperson: G. Ottaviano (Italy)	271
14:00	WHAT'S NEW IN RHINOMANOMETRY? A COMPARISON OF 4-PHASE RHINOMANOMETRY WITH THE CLASSIC METHOD USING NOSE MODELS	272
	E. Wong, R. Eccles (United Kingdom)	
14:09	THE AGING NOSE. ITS ANATOMICAL AND PHYSIOLOGICAL SPECIALTIES AND NORMAL VALUES OF 4-PHASE-RHINOMANOMETRY	274
	K. Vogt, K. Peksis, A. Lizuma (Latvia)	
14:18	A NEW MANOMETRY METHOD TO MEASURE PRESSURES IN DIFFERENT NASAL AIRWAY LOCATIONS	275
	J. Araujo-Martins, C. Santos, E. Barros, P. Ribeiro, N. Neuparth (Portugal)	

14:27	LONG-TERM RHINOFLOWMETRY: PHYSIOLOGIC VARIETY AND HIGH-RESOLUTION DATA	276
	A. Beule, C. Bandt, W. Hosemann (Germany)	
14:36	IMPROVED METHOD FOR MEASURING THE DIFFERENTIAL PRESSURE AT THE ACTIVE ANTERIOR RHINOMANOMETRY	277
	A. Nechyporenko, O. Garyuk, V. Chmovzh (Ukraine)	
14:45	INVESTIGATION OF SINONASAL AIRFLOW AND TRANSPORT	278
	C. Rennie, N. Tolley, A. Bates, K. Gouder, D. Doorly (United Kingdom)	

14:00 - 15:30

Hall I (Berlage Zaal)

INTERACTIVE ROUND TABLE: ENDOSCOPIC SURGERY OF MALIGNANT TUMORS

Moderator: P. Nicolai (Italy)	279
Panelist: D. Wang (China)	280
Panelist: C. Georgalas (The Netherlands)	281
Panelist: A. Stamm (Brazil)	282
Panelist: J.E. Meyer	283
Panelist: R. Jankowski (France)	284

14:00 - 15:30

Hall J (Ontvang Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: MICROBIOLOGY IN RHINOSINUSITIS 2

- Chairperson: C. Hopkins (United Kingdom) 285
- 14:00 **THE ASSOCIATION BETWEEN BACTERIAL COLONIZATION AND CYTOKINE PROFILE IN BELGIAN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPS** 286
 J. Sintobin, G. Holtappels, K. Van Crombruggen, C. Bachert (Belgium)
- 14:05 **PSEUDOMONAS AERUGINOSA ELASTASE CAUSES TRANSIENT DISRUPTION OF TIGHT JUNCTIONS AND DOWNREGULATION OF PAR-2 IN HUMAN NASAL EPITHELIAL CELLS** 287
 K. Nomura, T. Kojima, K. Takano, T. Okuni, K. Obata, T. Keira, R. Miyata, S. Hirakawa, N. Sawada, T. Himi (Japan)
- 14:10 **SINUSITIS AS A PREDISPOSING FACTOR FOR INTRACRANIAL ABSCESES; A RETROSPECTIVE STUDY** 288
 A. Laulajainen-Hongisto, J. Jero, A.A. Aarnisalo (Finland)
- 14:15 **HERBAL DRY EXTRACT BNO 1011 SUPPRESSES HUMAN RHINOVIRUS-INDUCED PRO-INFLAMMATORY CYTOKINES IN SINONASAL TISSUE OF CHRONIC RHINOSINUSITIS PATIENTS** 289
 S. Seifert, N. Zhang, G. Holtappels, J. Haunschild, C. Bachert (Germany)
- 14:20 **APPLICATION OF BACTERIOTHERAPY IN HUMAN RHINOPHARYNX** 290
 M. Santagati, M. Scillato, V. Damiani, I. La Mantia, S. Stefani (Italy)

- 14:25 **SWAB-GUIDED TRANSNASAL CULTURE RETRIEVAL
DEVICE FOR BACTERIOLOGICAL ASSESSMENT OF ACUTE
MAXILLARY SINUSITIS** 291

O. Gluck, Y. Slovik, K. Rizenberg, I. Placht, M. Puterman
(Israel)
- 14:30 **CHARACTERIZATION OF HEMOLYSIN, THE NON-
SUPERANTIGENIC EXOTOXIN OF STAPHYLOCOCCUS
AUREUS, IN CHRONIC RHINOSINUSITIS** 292

T. Haruna, M. Okano, S. Kariya, T. Higaki, Y. Noyama,
K. Uraguchi, A. Torigoe, T. Koyama, K. Nishizaki (Japan)
- 14:35 **DO BACTERIA CONTRIBUTE TO THE FORMATION
OF NASAL POLYPS IN PATIENTS WITH CHRONIC
RHINOSINUSITIS** 293

T. Biggs, S. Hayes, H. Lamont, P. Harries, S. Pender, R. Salib
(United Kingdom)
- 14:40 **STAPHYLOCOCCUS AUREUS ENTEROTOXIN AND FUNGI
SPECIFIC IGE PRODUCTION IN ETHMOID SINUS MUCOSA
IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPS** 294

S. Matsune, N. Wakayama, K. Sekine, S. Yamaguchi, K. Okubo
(Japan)
- 14:45 **BACTERIOLOGY OF CHRONIC RHINOSINUSITIS** 295

S. Stern, E. Yaniv, T. Hadar, Y. Nachalon (Israel)
- 14:50 **ANTIBIOTICS IN THE TREATMENT OF CHRONIC
RHINOSINUSITIS WITHOUT NASAL POLYPOSIS:
A QUESTIONNAIRE STUDY OF CONSULTANT
MICROBIOLOGISTS** 296

R. Williams, C. Saxby, L. Jones, S. Hickey, C. Potter
(United Kingdom)

14:55	A CONCEPT OF COMPREHENSIVE BACTERIOLOGIC DIAGNOSTICS OF SINUS MUCOSA AFTER FESS AND PRELIMINARY DATA OF 10 PATIENTS	297
	B. Olzowy, A. Podbielski, T. Schuldt, K. Köller (Germany)	
15:00	MODIFIED TEXTILE FOR NASAL PACKING WITH PHYTO-NANOSTRUCTURED COATING TO PREVENT STAPHYLOCOCCAL, PSEUDOMONAL AND CANDIDA ALBICANS IN-VITRO BIOFILM DEVELOPMENT	298
	I. Anghel, A.M. Grumezescu, E. Andronescu, M.C. Chifiriuc, A.G. Anghel, M. Dumitru (Romania)	
15:05	BURKHOLDERIA CEPACIA COMPLEX: AN EMERGING PATHOGEN IN CHRONIC RHINOSINUSITIS?	299
	G. Ottaviano, C. Staffieri, N. Favaretto, E. Fasanaro, A. Staffieri, D. Abate, G. Marioni (Italy)	

14:00 - 15:30

Hall K (Veilingzaal)

INTERACTIVE ROUND TABLE: OSAS AND THE NOSE

	Moderator: N. de Vries (The Netherlands)	300
14:00	INTRODUCTORY LECTURE: NASAL SURGERY IN OSA, WORTH A RE-VISIT?	301
	Panelist: T. Verse (Germany)	
	Panelist: J. Maurer (Germany)	302
	Panelist: A. Neagos (Romania)	303
	Panelist: M. Gerek (Turkey)	304

14:00 - 15:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

15:30 - 16:00

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

16:00 - 16:45

Hall A (Effectenbeurszaal)

SPONSORED SESSION: INDUSTRY SUPPORTED SESSION (NOT INCLUDED
IN MAIN EVENT CME/CPD CREDIT)

16:00 - 16:45

Hall B (Glazenaaal)

INSTRUCTIONAL SESSION: PREOPERATIVE ASSESSMENT OF RHINOPLASTY
PATIENTS

PREOPERATIVE ASSESSMENT OF RHINOPLASTY PATIENTS 305

R. Xavier (Portugal)

16:00 - 16:45

Hall C (Keurzaal)

INSTRUCTIONAL SESSION: IS AN ACADEMIC CAREER IN RHINOLOGY FOR
YOU?

HOW TO BE A CLINICIAN SCIENTIST IN ENT 306

A. Schilder

16:00 - 16:45

Hall F (Verwey Kamer)

INSTRUCTIONAL SESSION: SMELL AND TASTE TESTING

SMELL AND TASTE TESTING 307

P.H. Rombaux, C. Huart (Belgium)

16:00 - 16:45

Hall I (Berlage Zaal)

INSTRUCTIONAL SESSION: RHINO NEUROSURGERY**RHINO NEUROSURGERY** 308

R. Carrau (USA)

16:00 - 16:45

Hall K (Veilingzaal)

INSTRUCTIONAL SESSION: HOW TO START A PRIVATE PRACTICE IN RHINOLOGY

E. Hadjihannas (Cyprus) 309

16:00 - 17:30

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: OSAS

Chairperson: M. Ravesloot (The Netherlands) 310

16:00 **POST-OPERATIVE OUTCOME AND CLINICAL IMPLICATION OF PALATAL ADVANCEMENT PHARYNGOPLASTY USING DRUG INDUCED SLEEP ENDOSCOPY (DISE) IN MODERATE AND SEVERE OBSTRUCTIVE SLEEP APNEA PATIENT** 311

H. LEE, Y. YIM (Korea)

16:09 **PATIENT REPORTED OUTCOME MEASURES (PROMS) IN PATIENTS WITH NON-APNOEIC SNORING UNDERGOING SNORING SURGERY - HOW DOES INJECTION SNOREPLASTY COMPARE?** 312

M.M. Khan, R. Kumar, D.J. Willatt (United Kingdom)

16:18 **AERODYNAMICS IN ANIMAL MODEL OF OBSTRUCTIVE SLEEP APNEA** 313

J. Kim, W. Lee, S.A.M. Cho (Korea)

- 16:27 **SHOULD WE TRUST RESULTS OBTAINED DURING DRUG INDUCED SLEEP ENDOSCOPY?** 314
M. Blumen, V. Latournerie, E. Bequignon, L. Guillere, F. Chabolle (France)
- 16:36 **COMPARISON BETWEEN MULTIDETECTOR COMPUTED TOMOGRAPHY AND DRUG-INDUCED SLEEP ENDOSCOPY FOR THE EVALUATION OF UPPER AIRWAY OBSTRUCTION** 315
S. Heo, H. Jo, C. Park, J. Kim (Korea)
- 16:45 **A CORRELATION STUDY BETWEEN DRUG-INDUCED SLEEP ENDOSCOPY AND 3D MDCT IN OBSTRUCTIVE SLEEP APNEA** 316
K. Lee, S. Hong, J. Lee, S. Lee (Korea)
- 16:54 **CLINICAL SIGNIFICANCE OF SLEEP STABILITY IN ADULT WITH OSA** 317
S.H. Lee, J.I. OH, H.M. Lee, J.H. Choi, T.H. Kim, I.H. Park, S.H. Lee (Korea)
- 17:03 **CARDIOPULMONARY COUPLING ANALYSIS: CHANGES BEFORE AND AFTER TREATMENT WITH A MANDIBULAR ADVANCEMENT DEVICE** 318
W. Lee, C. Rhee, C. Lee, J. Kim (Korea)
- 17:12 **ANALYSIS OF OBSTRUCTION SITE IN OBSTRUCTIVE SLEEP APNEA SYNDROME PATIENTS BY DRUG INDUCED SLEEP ENDOSCOPY** 319
E. Hernández-García, E. Amarillo, B. Vielva, A. Lara, G. Plaza (Spain)
- 17:21 **IMPACT OF OBSTRUCTIVE SLEEP APNEA ON PULMONARY FUNCTION** 320
G.H. Yum, J.H. Choi, J.I. Oh, S.H. Lee (Korea)

16:00 - 17:30**Hall H (Rode Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: CRS MISCELLANEOUS**

Chairperson: S. Joe (USA)

- 16:00 **TRENDS IN CHRONIC RHINOSINUSITIS RESEARCH IN THE PAST THREE DECADES.** 322
 S. Banglawala, R. Schlosser, W. Thomas, L. Overton, S. Lohia, Z. Soler (USA)
- 16:09 **HIDDEN UNILATERAL FRONTAL SINUS APLASIA - A RADIOANATOMIC STUDY** 323
 T. Gotlib, M. Held-Ziółkowska, K. Niemczyk (Poland)
- 16:18 **EOSINOPHILIC FUNGAL RHINOSINUSITIS: A SEPARATE CLINICAL ENTITY ?** 324
 S. Vlamincq, C. Speleman (Belgium)
- 16:27 **TIME TO CONSIDER DISCHARGING PATIENTS WITH ANTERIOR NASAL PACKS?** 325
 R. Costello, R. McLeod (United Kingdom)
- 16:36 **TOPICAL COCAINE AND ADRENALINE GEL APPLIED TO NASAL MUCOSA. A LOCAL AUDIT OF CLINICIAN AWARENESS OF MAXIMUM SAFE DOSE.** 326
 R. Costello, A. Murphy, A. Hyde, B. Symonds (United Kingdom)
- 16:45 **PREVALENCES OF CHRONIC RHINOSINUSITIS, NASAL SEPTAL DEVIATION AND ALLERGIC RHINITIS IN THE KOREAN POPULATION: RESULTS FROM THE KOREAN NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY 2008-2011** 327
 J. Ahn, S. Mun, D. Han, J. Kim, C. Lee, Y. Cho, C. Rhee (Korea)
- 16:54 **CRS ENDOTYPES AND DISEASE CONTROL IN CHRONIC RHINOSINUSITIS** 328
 P. Sacks, M. Lam, R. Sacks, R. Harvey (Australia)

16:00 - 17:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

16:45 - 17:30

Hall A (Effectenbeurszaal)

THE BIG DEBATE: MALIGNANT TUMOURS OF THE SINUS AND SKULL BASE CAN BE TREATED ENDOSCOPICALLY

	Moderator: R. Carrau (USA)	329
16:45	PRO	330
	P. Nicolai (Italy)	
16:55	CON	331
	G. Cantu (Italy)	
17:05	QUESTIONS FROM THE MODERATOR	332
	Moderator: R. Carrau (USA)	
17:15	REBUTTAL	333
	P. Nicolai (Italy)	
17:20	REBUTTAL	334
	G. Cantu (Italy)	

16:45 - 17:30

Hall C (Keurzaal)

INSTRUCTIONAL SESSION: SINUS SURGERY VIRTUAL REALITY SIMULATION

SINUS SURGERY VIRTUAL REALITY SIMULATION 335

A.S. Carney, K. Reynolds, E. Ooi, G. Ruthenbeck, C. Woods,
R. Sacks (Australia)

SINUS SURGERY VIRTUAL REALITY SIMULATION 336

K. Reynolds (Australia)

16:45 - 17:30

Hall D (Administratiezaal)

INSTRUCTIONAL SESSION: INVERTED PAPILLOMAS

INVERTED PAPILLOMAS 337

S. Reinartz, W. Fokkens, C. Georgalas (The Netherlands)

16:45 - 17:30

Hall I (Berlage Zaal)

INSTRUCTIONAL SESSION: ADVANCED RADIOLOGY OF THE SKULL BASE

ADVANCED RADIOLOGY OF THE SKULL BASE 338

E. Menif (Tunisia)

16:45 - 17:30

Hall K (Veilingzaal)

INSTRUCTIONAL SESSION: WRITING A PAPER RHINOLOGY WILL ACCEPT

WRITING A PAPER RHINOLOGY WILL ACCEPT 339

P. Hellings (Belgium)

SCIENTIFIC PROGRAM

TUESDAY, JUNE 24



ERS/ISIAN 2014

25th Congress of the European Rhinologic Society
32nd International Symposium of Infection & Allergy of the Nose

Amsterdam, The Netherlands
June 22-26, 2014

SCIENTIFIC PROGRAM TUESDAY, JUNE 24, 2014

8:30 - 9:30

Hall A (Effectenbeurszaal)

PLENARY: NOVEL TREATMENT OPTIONS IN ALLERGIC UPPER AND LOWER AIRWAY DISEASE: THEIR ROLES AND LIMITATIONS

	Chairperson: P. Hellings (Belgium)	340
8:30	NOVEL TREATMENT STRATEGIES IN UPPER AIRWAY INFLAMMATION	341
	C.A. Akdis (Switzerland)	
9:00	NOVEL TREATMENT STRATEGIES IN LOWER AIRWAY INFLAMMATION	342
	P. Howarth (United Kingdom)	

8:30 - 9:30

Hall B (Glazenzaal)

PLENARY: RHINO NEUROSURGERY

	Chairperson: A. Stamm (Brazil)	343
8:30	RHINO-NEUROSURGERY: A MATCH MADE IN HEAVEN OR A DIFFICULT RELATIONSHIP?	344
	C. Georgalas (The Netherlands)	
9:00	AVOIDING AND MANAGING COMPLICATIONS	345
	R. Carrau (USA)	

9:00 - 10:30

Hall L (Geluidstudio)

**SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN
EVENT CME/CPD CREDIT**

9:30 - 10:45

Hall A (Effectenbeurszaal)

**SYMPOSIUM: EPOS, THE EUROPEAN POSITION PAPER ON RHINOSINUSITIS:
EVIDENCE IN DIAGNOSIS AND TREATMENT**

	Chairperson: W. Fokkens (The Netherlands)	346
9:30	PATHOPHYSIOLOGY OF CRS FOR CLINICIANS R. Kern (USA)	347
9:45	EPIDEMIOLOGY AND PREDISPOSING FACTORS IN ARS AND CRS J. Mullol (Spain)	348
10:00	MANAGEMENT OF CRSSNP THE EVIDENCE V. Lund (United Kingdom)	349
10:15	MANAGEMENT OF CRSWNP THE EVIDENCE R. Harvey (Australia)	350
10:30	DISCUSSION	351

9:30 - 10:45**Hall B (Glazenzaal)****SYMPOSIUM: NASAL OBSTRUCTION IN CHILDREN AND ADULTS**

	Chairperson: R. Poublon (The Netherlands)	352
9:30	FINDING THE RIGHT PATIENT FOR SEPTAL CORRECTION A.G. Beule (Germany)	353
9:45	DIFFERENTIAL DIAGNOSIS OF NASAL OBSTRUCTION IN CHILDREN D. Van Rompaey (Belgium)	354
10:00	DIFFERENTIAL DIAGNOSIS OF NASAL OBSTRUCTION IN ADULTS P. Lekakis (Belgium)	355
10:15	NASAL GROWTH AFTER PEDIATRIC SEPTOPLASTY AT LONG-TERM FOLLOW-UP I. Tasca, G. Ceroni Compadretti (Italy)	356
10:30	DISCUSSION	357

9:30 - 10:45**Hall C (Keurzaal)****SYMPOSIUM: BASIC RESEARCH IN CRS**

	Chairperson: K. van Drunen (The Netherlands)	358
9:30	NASAL POLYP MURINE MODELS D.W. Kim (Korea)	359
9:45	REMODELING IN CRSWNP L. Pujols, F.B. Callejas, J. Mullol (Spain)	360

10:00	ROLE OF COAGULATION FACTORS IN TISSUE REMODELING OF CHRONIC RHINOSINUSITIS	361
	<u>T. Shimizu, S. Shimizu (Japan)</u>	
10:15	THE DEVELOPMENT OF NASAL POLYP DISEASE INVOLVES EARLY NASAL MUCOSAL INFLAMMATION AND REMODELLING	362
	<u>N. Zhang, J. MENG, C. BACHERT (Belgium)</u>	
10:30	DISCUSSION	363

9:30 - 10:45 **Hall D (Administratiezaal)**

SYMPOSIUM: JUNIOR MEMBER SYMPOSIUM: CRS AND ENDOSCOPIC SURGERY

	Chairperson: <u>P. Skarzynski (Poland)</u>	364
9:30	FRONTAL SINUS BALLOON SINUPLASTY: PITFALLS AND LIMITATIONS	365
	<u>P. Tomazic (Austria)</u>	
9:50	DIRECT CENTRAL NERVOUS SYSTEM PHARMACEUTICAL DELIVERY USING ENDOSCOPIC SKULL BASE MUCOSAL GRAFT RECONSTRUCTION TO BYPASS THE BLOOD BRAIN BARRIER	366
	<u>B. Bleier (USA)</u>	
10:10	THE ECONOMIC IMPACT OF CHRONIC RHINOSINUSITIS: DOES THE END JUSTIFY THE MEANS?	367
	<u>L. Rudmik (Canada)</u>	
10:20	QUALITY OF LIFE AMONG CHRONIC RHINOSINUSITIS PATIENTS IN BELGIUM (TRANSLATION, CULTURAL ADAPTATION AND VALIDATION OF THE SNOT-22)	368
	<u>A.L. Poirrier, C. De Dorlodot, M. Horoi, C. Cox, P. Costa, P.P. Lefebvre, P. Eloy (Belgium)</u>	

10:30 **IL-33 AND TYPE 2 INNATE LYMPHOID CELLS IN THE PATHOPHYSIOLOGY OF CHRONIC RHINOSINUSITIS** 369
 J. Shaw, S. Fakhri, M. Citardi, P. Porter, D. Corry, F. Kheradmand, Y. Liu, A. Luong (USA)

10:40 **DISCUSSION** 370

9:30 - 10:45 **Hall E (Mendes DaCosta Kamer)**

FREE PAPER SESSION: SHORT PRESENTATIONS: FUNGAL SINUSITIS

Chairperson: R. Kamel (Egypt) 371

9:30 **FUNGAL MAXILLARY SINUSITIS: CLINICAL, THERAPEUTIC AND EVOLUTIVE FEATURES: 28 CASES REPORT** 372
 A. Mardassi, N. Mathlouthi, S. Nefzaoui, K. Cheikh, S. Mezri, C. Zgolli, G. Chebbi, R. Ben M'hamed, K. Akkari, S. Benzarti (Tunisia)

9:35 **FUNGAL BALL OF THE PARANASAL SINUSES TREATED WITH ENDOSCOPIC SINUS SURGERY IN TAIWAN** 373
 Y. Chen, T. Huang (Taiwan)

9:40 **TREATMENT OUTCOME OF ISOLATED SPHENOID FUNGAL INFECTION** 374
 D.H. Lee, S. Chul Lim (Korea)

9:45 **OSTEITIC CHANGES IN UNILATERAL MAXILLARY SINUS FUNGAL BALL** 375
 B. Baek (Korea)

9:50 **EOSINOPHILIC CHRONIC RHINOSINUSITIS CAUSED BY FUNGAL SCHIZOPHYLLUM COMMUNE INFECTION; A CASE REPORT** 376
 D. Gacesa (Serbia)

9:55	SINONASAL FUNGAL DISEASE-ASPERGILLOSIS AFTER STOMATOLOGY TREATMENTS	377
	R. Grigore, C.R. Popescu, B. Popescu, D. Mirea, S.V.G. Bertesteanu (Romania)	
10:00	MANAGEMENT OF INVASIVE TYPE OF FUNGAL INFECTION IN PARANASAL SINUSES	378
	H. Kawauchi, T. Fuchiwaki, N. Aoi, I. Morikura, Y. Shimizu, Y. Hotta, K. Shimizu (Japan)	
10:05	EPIDIOLOGICAL, CLINICAL DIAGNOSTIC AND TREATMENT ASPECTS OF FUNGAL RHINOSINUSITIS: A 5-YEAR RETROSPECTIVE ANALYSIS	379
	J. Semjonova, K. Peksis (Latvia)	
10:10	LATERAL RECTUS PALSY SECONDARY TO ISOLATED SPHENOID FUNGAL SINUSITIS: UNUSUAL PRESENTATION	380
	R. Singh, G. Amrutha, R. Balakrishnan (India)	

9:30 - 10:45

Hall F (Verwey Kamer)

SYMPOSIUM: MUCOCILIARY DYSFUNCTION FROM DIAGNOSIS TO TREATMENT

	Chairperson: M. Rautiainen (Finland)	381
9:30	EFFECT OF TOPICAL DRUGS ON AIRWAY MUCOCILIARY CLEARANCE AND CILIARY BEAT FREQUENCY	382
	L. Zhang, J. Jiao (China)	
9:45	PCD NEW TREATMENT OPTIONS	383
	C. Von Buchwald (Denmark)	
10:00	PATHOPHYSIOLOGY AND DIAGNOSIS OF CILIARY DYSFUNCTION	384
	M. Armengot, J. Milara, M. Mata, C. Carda, J. Cortijo (Spain)	

10:15 **PRIMARY CILIARY DYSKINESIA, AN ORPHAN DISEASE** 385
M. Jorissen (Belgium)

10:30 **DISCUSSION**

9:30 - 10:45 **Hall G (Roland Holst Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: BALLOON SINUPLASTY AND OTHER DEVELOPMENTS

Chairperson: A. Leunig (Germany) 386

9:30 **FRONTAL SINUS BALLOON SINUPLASTY: PITFALLS AND LIMITATIONS** 387
P. Tomazic, H. Stammberger (Austria)

9:39 **COMPARISON OF INTRAOPERATIVE FACTORS, COMPLICATIONS AND SATISFACTION BETWEEN ENDOSCOPIC SINUS SURGERY AND BALLOON SINUPLASTY** 388
A. Koskinen, P. Mattila, M. Penttilä, J. Myller, J. Silvola, I. Alastalo, M. Hytönen, S. Toppila-Salmi (Finland)

9:48 **THE INFLUENCE OF BALLOON SINUPLASTY AND MINIMAL ENDOSCOPY SINUS SURGERY ON ANTRAL MUCOCILIARY CLEARANCE** 389
M. Rautiainen, A.J. Bizaki, J. Numminen, R. Taulu (Finland)

9:57 **A BALLOON DILATATION TECHNIQUE FOR THE TREATMENT OF INTRAMAXILLARY LESIONS USING A FOLEY CATHETER IN CHRONIC MAXILLARY SINUSITIS** 390
C. Park (Korea)

10:06 **PATIENT OUTCOME AND MUCOSAL HISTOPATHOLOGY AFTER ENDOSCOPIC SINUS SURGERY AND BALLOON SINUPLASTY** 391
M. Rautiainen, A.J. Bizaki, J. Numminen, R. Taulu (Finland)

9:30 - 10:45

Hall H (Rode Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: MALIGNANT TUMOURS

- Chairperson: M. Bernal-Sprekelsen (Spain) 392
- 9:30 **SQUAMOUS CELL CARCINOMA ARISING ON SINONASAL INVERTED PAPILLOMA: SURVIVAL OUTCOMES OF 27 PATIENTS TREATED WITH ENDOSCOPIC ENDONASAL RESECTION** 393
 A. Pistoichini, A. Karligkiotis, D. Lepera, L. Volpi, F. Ferreli, G. Zocco, F. Meloni, M. Bignami, P. Nicolai, P. Castelnovo (Italy)
- 9:39 **SINONASAL MUCOSAL MELANOMAS: THE PROGNOSTIC VALUE OF TUMOR CLASSIFICATIONS.** 394
 J. Michel, A. Perret Court, N. Fakhry, D. Braustein, S. Monestier, M.A. Richard, J.J. Grob, A. Giovanni, P. Dessi (France)
- 9:48 **KNOWLEDGE AND ATTITUDES OF SINGAPORE ENT RESIDENTS ON THE TYPES OF LEUKOCYTES IN NASAL POLYPOSIS** 395
 C.L. Ng, D.Y. Wang (Singapore)
- 9:57 **HOW OFTEN DOES ISOLATED SPHENOID SINUS DISEASE TURN OUT TO BE A NEOPLASM?** 396
 S. Beton, H. Basak, E. Ocak, B. Kucuk, I. Yorulmaz, C. Meco (Turkey)
- 10:06 **ENDONASAL ENDOSCOPIC TREATMENT OF ESTHESIONEUROBLASTOMA WITH INTRACRANIAL INVASION** 397
 J. Pimentel, P. Escada, G. Neto D'Almeida, L. Marques, J. Ruivo (Portugal)
- 10:15 **PRIMARY MUCOSAL MELANOMA OF THE SINONASAL TRACT: REPORT OF 24 PATIENTS AND LITERATURE REVIEW** 398
 C. Durao, A. Hebe, R. Pacheco, P. Montalvão, M. Magalhães (Portugal)

- 10:24 **CARCINOMAS OF NASAL CAVITY AND PARANASAL SINUSES: A CASE SERIES STUDY OF 51 PATIENTS** 399
 R. Teles, I. Ribeiro, J. Castro Silva, E. Monteiro (Portugal)

9:30 - 10:45 **Hall I (Berlage Zaal)**

SYMPOSIUM: WEGENER AND OTHER VASCULITIS -WHEN TO SUSPECT IN CRS

- Chairperson: A. Danielsen (Norway) 400
- 9:30 **WHEN TO EXPECT A VASCULITIS IN CRS** 401
 M. Laudjen (Germany)
- 9:45 **VASCULITIS, DIAGNOSIS BETWEEN LYMPHOMA AND COCAINE** 402
 M. Trimarchi, G. Bertazzoni (Italy)
- 10:00 **EOSINOPHILIC OTITIS MEDIA** 403
 N. Yoshida (Japan)
- 10:15 **NEW TREATMENT OPTIONS IN VASCULITIS** 404
 M. Caversaccio (Switzerland)
- 10:30 **DISCUSSION** 405

9:30 - 10:45 **Hall J (Ontvang Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: SIMULATION AND TRAINING

- Chairperson: M. Barnes (United Kingdom) 406
- 9:30 **VIRTUAL-REALITY SIMULATION FOR TEACHING ENDOSCOPIC SINUS SURGERY** 407
 K. Reynolds, A. Carney, G. Ruthenbeck, L. Diment,
 N. Dharmawardana, E. Ooi, C. Woods (Australia)

9:45	DESIGN AND VALIDATION OF THE MCGILL SIMULATOR FOR ENDOSCOPIC SINUS SURGERY (MSESS): A NOVEL HIGH FIDELITY SURGICAL SIMULATOR.	408
	M. Tewfik, R. Varshney, S. Frenkiel, L. Nguyen, A. Zeitouni, R. Del Maestro, R. DiRaddo (Canada)	
10:00	A MEDICAL STUDENT AUTHORED VIRTUAL PATIENT WITH EPISTAXIS	409
	R.S. Thorley, H. Khalil (United Kingdom)	
10:15	RHINOLOGY FELLOWSHIP TRAINING AT DERRIFORD HOSPITAL: A SURVEY OF FELLOWS FROM THE PAST 6 YEARS	410
	M. Abo-Khatwa, A. Poullos, H.S. Khalil (United Kingdom)	
10:30	SURGTECH.NET - FREE TO THE END-USER SURGICAL EDUCATION	411
	M. Barnes, B. Ram, J. Bretschneider	

9:30 - 10:45 **Hall K (Veilingzaal)**

SYMPOSIUM: TECHNICAL ADVANCES IN TREATMENT OF CRS

	Chairperson: M. Caversaccio (Switzerland)	412
9:30	SIMULATION IN RHINOLOGIC TRAINING	413
	A.S. Carney, K. Reynolds, E. Ooi, G. Ruthenbeck, R. Sacks, C. Woods (Australia)	
9:45	ROBOTIC-ASSISTED DISSECTION OF POSTERIOR VENTRAL SKULL BASE: PRELIMINARY PRECLINICAL IMPRESSIONS AND CRITICAL CONSIDERATIONS	414
	P. Battaglia, M. Turri-Zanoni, I. Dallan, P. Castelnuovo (Italy)	
10:00	3-D IMAGING IN CRS	415
	J. Pallanch (USA)	

10:15 **COMPARISON OF OPTICAL AND ELECTROMAGNETIC TRACKING FOR NAVIGATED LATERAL SKULL BASE SURGERY** 416
H. Riechelmann, W. Freysinger, F. Kral (Austria)

10:30 **DISCUSSION**

11:00 - 12:30 **Hall F (Verwey Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: PROGNOSTIC FACTORS IN CRS

Chairperson: P. Lekakis 417

11:00 **SYMPTOM COMPARISON BETWEEN CHRONIC RHINOSINUSITIS SUBTYPES: DATA FROM THE CHRONIC RHINOSINUSITIS EPIDEMIOLOGICAL STUDY (CRES)** 418
 K. Owden, J. Woods, C. Davis-Husband, S. Erskine, A. Clark, C. Hopkins, J. Wilson, C. Philpott, J. Bewick (United Kingdom)

11:09 **DIAGNOSTIC AND THERAPEUTIC CONSEQUENCES OF MUCOSAL LYMPHOID AGGREGATES AND LOCAL IGE IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS** 419
L. Calus, T. Van Zele, P. Gevaert (Belgium)

11:18 **CHRONIC RHINOSINUSITIS IS MORE PREVALENT IN PATIENTS WITH GASTRO-ESOPHAGEAL REFLUX DISEASE** 420
 I. Bohnhorst, S. Jawad, B. Lange, J. Kjeldsen, J.M. Hansen, A.D. Kjeldsen (Denmark)

11:27 **THE ROLE OF LARYNGOPHARYNGEAL REFLUX (LPR) IN CHRONIC SINUSITIS** 421
J. Fejza Bulaj (Albania)

11:36 **IS THERE A LINK BETWEEN VITAMIN D3 DEFICIENCY AND NASAL POLYPOSIS?** 422
I. Konstantinidis, E. Tsakiropoulou, A. Chatziavramidis, J. Constantinidis (Greece)



- 11:45 **PROGNOSTIC FACTORS IN NASAL POLYPOSIS
RECURRENCE AFTER ENDOSCOPIC SINUS SURGERY** 423
 R. Teles, R. Cerejeira, V. Henriques, A. Sousa, R. Rodrigues,
 R. Estevão, F. Moreira da Silva, F. Fernandes (Portugal)
- 11:54 **NEUTROPHIL EXTRACELLULAR TRAPS (NET) ARE MORE
EXPRESSED IN PERIPHERAL BLOOD AND NASAL MUCOSA
FROM CRSWNP PATIENTS RATHER THAN CONTROLS.** 424
 A. Barbosa, F. Valera, E. Arruda Neto, A. Murashima,
 V.M. Alves, M. Rossato, W. Anselmo-Lima, E. Tamashiro
 (Brazil)
- 12:03 **AUTONOMIC DYSFUNCTION (AD) - THE 'MISSING LINK'
IN SINONASAL SYMPTOM GENERATION?** 425
 N. Kara, J. Newton, H. Cocks, V. Deary, J. Wilson
 (United Kingdom)
- 12:12 **ANTINUCLEAR ANTIBODIES IN PATIENTS WITH CHRONIC
SINUSITIS** 426
 Y. Ota, I. Yoshihiro, S. Inokuma, M. Suzuki (Japan)

10:45 - 11:15

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

11:15 - 12:30

Hall A (Effectenbeurszaal)

SYMPOSIUM: AVOID THE WORST CASE SCENARIO IN SINUS SURGERY

- Chairperson: P. Hellings (Belgium) 427
- 11:15 **KNOW YOUR ANATOMY OR ...** 428
 D. Simmen (Switzerland)
- 11:30 **COMPLICATIONS IN ENDONASAL SINUS SURGERY:
A 5-YEAR RETROSPECTIVE STUDY OF 2,596 PATIENTS** 429
 A. Leunig, V. Von Holzschuher (Germany)

11:45	WHAT CAN YOU DO TO PREVENT WORST CASE SCENARIO'S	430
	M. Bernal-Sprekelsen (Spain)	
12:00	MAJOR COMPLICATIONS: HOW THEY HAPPEN AND HOW TO AVOID	431
	H. Stammberger (Austria)	
12:15	DISCUSSION	432

11:15 - 12:30

Hall B (Glazenaaal)

SYMPOSIUM: WHAT DO WE LEARN FROM OUR MISTAKES IN RHINOPLASTIC SURGERY

	Chairperson: R. Xavier (Portugal)	433
11:15	RHINOPLASTY IN CHILDREN	434
	D. Menger (The Netherlands)	
11:30	MY LEARNING PROCESS IN RHINOPLASTY	435
	G. Nolst Trenité (The Netherlands)	
11:45	OSTEOTOMIES: AVOIDING COMPLICATIONS	436
	F. Apaydin (Turkey)	
12:00	DORSAL AUGMENTATION AND ITS PITFALLS	437
	S. Paun (United Kingdom)	
12:15	DISCUSSION	

11:15 - 12:30

Hall C (Keurzaal)

**SYMPOSIUM: COMPREHENSIVE IMAGING OF THE NASAL CAVITY AND
PARANASAL SINUS**

	Chairperson: M. Jorissen (Belgium)	438
11:15	PITFALLS IN THE INTERPRETATION OF CT AND MRI S.J. Zinreich (USA)	439
11:30	ANATOMICAL VARIANCE IN CT AND MRI N. Freling (The Netherlands)	440
11:45	DIFFERENT SETTINGS OF THE MRI E. Menif (Tunisia)	441
12:00	FLYING THROUGH CONGESTED AIRSPACES: IMAGING OF CHRONIC RHINOSINUSITIS R. Maroldi (Italy)	442
12:15	DISCUSSION	443

11:15 - 12:30

Hall D (Administratiezaal)

**SYMPOSIUM: FROM THE ARS - BRINGING BASIC SCIENCE RESEARCH TO
THE CLINICAL PRACTICE OF RHINOLOGY**

	Chairperson: J. Palmer (USA)	444
11:15	CHORIDE SECRETAGOGUES FOR ACQUIRED CFTR DEFICIENCY IN CHRONIC RHINOSINUSITIS B.A. Woodworth (USA)	445
11:27	P-GLYCOPROTEIN IN CRS: NEW INSIGHTS INTO PATHOGENESIS AND THERAPEUTIC OPTIONS B. Bleier (USA)	446

11:39	BITTER RECEPTORS AND BITTER SOLUTIONS	447
	N. Cohen (USA)	
11:51	BAFF AND TSLP: KEY MOLECULES IN CRS PATHOGENESIS	448
	R. Kern (USA)	
12:03	MICROBIOME AND MANAGING DYSBIOSIS IN CRS	449
	V. Ramakrishnan, L. Hauser, L. Feazel, D. Ir, C. Robertson, D. Frank (USA)	
12:15	DISCUSSION	450

11:15 - 12:30 **Hall E (Mendes DaCosta Kamer)**

FREE PAPER SESSION: ORAL PRESENTATIONS: IMMUNOTHERAPY

	Chairperson: G. Hens (Belgium)	451
11:15	PROPHYLACTIC TREATMENT WITH SUBLINGUAL IMMUNOTHERAPY FOR ALLERGIC RHINITIS.	452
	Y. Okamoto, S. Yonekura, D. Sakurai, T. Iinuma (Japan)	
11:24	CLINICAL EFFICACY EVALUATION OF 5 YEAR SUBCUTANEOUS AND SUBLINGUAL IMMUNOTHERAPY IN PATIENTS MONOSENSITIZED TO HOUSE DUST MITES	453
	O. Yildirim, B.U. Coskun, Y.O. Ucal, I. Ucak, F. Tetik (Turkey)	
11:33	SUBLINGUAL IMMUNOTHERAPY WITH A RICE-BASED EDIBLE VACCINE EXPRESSING CEDAR POLLEN MULTIPLE T CELL EPITOPES ATTENUATES THE NASAL SYMPTOMS IN MURINE ALLERGIC RHINITIS MODEL WITH POLLINOSIS	454
	J. Qu, H. Kawauchi, N. Aoi, I. Morikura, T. Fuchiwaki, Y. Hotta, M. Tongu (Japan)	

- 11:42 **THE POLLEN LOW-DOSE INTRADERMAL THERAPY EVALUATION (POLLENLITE) DOUBLE-BLIND RANDOMISED CONTROL TRIAL (RCT); RATIONALE, DESIGN, RECRUITMENT AND BASELINE DEMOGRAPHICS** 455

A. Slovick, A. Douiri, R. Muir, A. Guerra, K. Tsioulos, M. Shamji, S. Ying, S. Durham, S. Till (United Kingdom)

- 11:51 **EFFECT OF CONTINUOUS SYSTEMIC IMMUNOTHERAPY FOR PATIENTS WITH ALLERGIC RHINITIS** 456

J. Cho (Korea)

11:15 - 12:30

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: RHINITIS BASIC

Chairperson: J. Mullol (Spain) 457

- 11:15 **EXPRESSION OF PERIOSTIN IN ALLERGIC RHINITIS TREATED WITH SUBLINGUAL IMMUNOTHERAPY** 458

S. Hamada, M. Asako, T. Shimano, Y. Kobayashi, A. Kanda, K. Tomoda (Japan)

- 11:20 **SUPPRESSIVE ACTIVITY OF LEVOCETIRIZIN ON OSTEOPOINTIN FUNCTIONS ON NASAL EPITHELIAL CELLS** 459

T. Komatsuzaki, I. Suzaki, K. Hirano, K. Kanai, K. Asano, H. Suzaki (Japan)

- 11:25 **ANTI-ALLERGIC EFFECT OF BEE VENOM IN AN ALLERGIC RHINITIS MOUSE MODEL** 460

S. Shin, K.I.M. Yee-Hyuk, Y.E. Mi-Kyung, S.H.I.N. Sun-Mi, K.I.M. Yu-Ri (Korea)

- 11:30 **THE EFFECT OF RETINOIC ACID IN A MOUSE MODEL OF ALLERGIC RHINITIS** 461

K. Soo Whan (Korea)

- 11:35 **MUCOSAL IMMUNITY OF NASOPHARYNX AND ITS CLINICAL IMPACT ON ALLERGIC RHINITIS** 462

H. Kawachi, I. Qu, M. Tongu, N. Aoi, I. Morikura, T. Fuchiwaki, F. Takaiwa, H. Takagi, E. Prokopakis (Japan)

- 11:40 **THE UPREGULATION OF CYSTATINS IN NASAL EPITHELIAL CELLS AMONG PATIENTS WITH ALLERGIC RHINITIS** 463
 Y. Imoto, T. Tokunaga, S. Fujieda (Japan)
- 11:45 **PHOSPHORYLCHOLINE SUPPRESSED THE ALLERGIC RHINITIS IN MICE** 464
 K. Miyashita, Y. Kurono (Japan)
- 11:50 **EFFECTS OF BENZALKONIUM CHLORIDE ON CULTURED HUMAN NASAL EPITHELIAL CELLS.** 465
 M. Kawabata, Y. Kurono (Japan)
- 11:55 **TRICELLULAR JUNCTION IN HUMAN NASAL MUCOSA** 466
 T. Okuni, K. Nomura, R. Miyata, T. Kakuki, N. Ogasawara, A. Kondo, M. Kurose, T. Ninomiya, K. Takano, T. Kojima, T. Himi (Japan)
- 12:00 **FUNCTIONAL ANALYSIS OF BASOPHIL AND SPECIFIC IGE IN SENSITIZED ASYMPTOMATIC SUBJECTS AND PATIENTS WITH CEDAR POLLINOSIS** 467
 D. Sakurai, S. Yonekura, T. Inuma, Y. Okamoto (Japan)
- 12:05 **THE ROLE OF DHMEQ (A NF-KAPPAB INHIBITOR) IN CRSWNP - AN EX-VIVO STUDY** 468
 F.C.P. Valera, F. Santos, K. Umezawa, M.S. Brassesco, A. Murashima, L.E. Costa, D.M. Garcia, L.G. Tone, E. Tamashiro, W.T.* Anselmo-Lima (Brazil)
- 12:10 **USE OF PAPER FILTER DISCS FOR MEASUREMENT OF LOCAL BIOMARKERS OF NASAL MUCOSAL INFLAMMATION** 469
 M. Berings, L. Calus, L. Devuyt, T. Van Zele, N. De Ruyck, C. Bachert, P. Gevaert (Belgium)
- 12:15 **PROGNOSIS OF NASAL VASOMOTOR REACTIONS BASED ON THE EVALUATION OF THE HEART RATE VARIABILITY** 470
 J. Ivaska, E. Lesinskas, A. Karuzas, S. Pusinskaite (Lithuania)

11:15 - 12:30

Hall H (Rode Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: PEDIATRIC RHINOLOGY

- Chairperson: J.B. Watelet (Belgium) 471
- 11:15 **EVALUATION OF AIRWAY OBSTRUCTION BY ADENOID TISSUE: COMPARISON OF MEASURES IN THE SITTING AND RECUMBENT** 472
 H. Oliveira, M. Nakanishi, P. Rafael Neto (Brazil)
- 11:20 **IN HUMAN NASAL EPITHELIAL CELLS AFTER RESPIRATORY SYNCYTIAL VIRUS INFECTION, MATRIX METALLOPROTEINASE-10 IS MARKEDLY INDUCED** 473
 S. Hirakawa, T. Kojima, K. Obata, T. Okabayashi, S. Yokota, K. Nomura, O. Toshimasa, J. Fuchimoto, T. Himi, H. Tsutsumi, N. Sawada (Japan)
- 11:25 **COMPUTED TOMOGRAPHY ANALYSIS OF NASAL REGION IN NEONATES AND YOUNG INFANTS** 474
 W. Likus, G. Bajor, J. Markowski, K. Gruszczynska, J. Baron, D. Milka (Poland)
- 11:30 **NASAL PYRIFORM APERTURE IN CHILDREN - NORMAL VALUES AND CLINICAL IMPLICATIONS** 475
 W. Likus, G. Bajor, J. Markowski, J. Baron, K. Gruszczynska, A. Piotrowska-Seweryn (Poland)
- 11:35 **RESPIRATORY SYNCYTIAL VIRUS INFECTION OF HUMAN NASAL EPITHELIAL CELLS** 476
 K. Takano, T. Okuni, N. Ogasawara, K. Obata, K. Nomura, T. Kojima, T. Himi (Japan)
- 11:40 **SURGERY FOR NASAL DERMoids IN CHILDREN: WHICH APPROACH?** 477
 A.M. Abd Elfattah, E. Kamal, A. Nageeb, A.M. Abdelwahab, A. Tawfik (Egypt)

- 11:45 **PREVALENCE OF INHALANT ALLERGIC RHINITIS IN QATARI CHILDREN ADMITTED FOR ADENOIDECTOMY- A PROSPECTIVE RADIO ALLERGO SORBENT TEST (RAST) STUDY** 478
 S. Ganesan, H. Al Saey, A. Al Bouainain, A. Larem, M. Magdi Hussain (Qatar)
- 11:50 **PAEDIATRIC NASAL FOREIGN BODY REMOVAL: MAINTAIN THE CHAIN OF COMMUNICATION** 479
 G. Tharmagajan, P. McLean, T. Valsamakis, S. Keh, M. Shakeel (United Kingdom)
- 11:55 **RATIONALISING USE OF CT SCANS IN ORBITAL CELLULITIS: AUDIT OF A MANAGEMENT PROTOCOL** 480
 J. Nairn, A. Bradley, J. McCutcheon, M.S.C. Morissey, H. Kubba (United Kingdom)
- 12:00 **NON-INVASIVE RADIOFREQUENCY TREATMENT OF ADENOIDAL HYPERTROPHY: AN INNOVATIVE ALTERNATIVE TO SURGERY** 481
 M. Naraghi (Iran)
- 12:05 **MICROBIOLOGICAL CONDITION OF SURGICAL FIELD DURING ENDOSCOPIC ADENOIDECTOMY** 482
 Y. Rusetsky, T. Sedykh (Russia)
- 12:10 **THE GROWING NOSE: CORRELATION BETWEEN NORMAL VALUES IN 4-PHASE-RHINOMANOMETRY WITH AGE AND ANTHROPOMETRIC PARAMETERS** 483
 K. Peksis, J. Unger, S. Indriksone, A. Emsina, K. Vogt (Latvia)
- 12:15 **CLINICAL AND HISTO-PATHOLOGIC FEATURES OF THE ANTROCHOANAL POLYP: STUDY OF 42 PATIENTS** 484
 M. Warman, Y. Bawnik, M. Huszar, D. Halperin (Israel)

- 12:20 **RADIOFREQUENCY ADENOIDECTOMY - ADVANTAGES IN CHRONIC OTITIS MEDIA WITH EFFUSION WITH A LOW DEGREE OF PNEUMATISATION OF THE MASTOID AIR CELLS - OUR EXPERIENCE** 485

V. Postelnicu, O. Constantinescu, C. Manea, C. Sarafoleanu
(Romania)

11:15 - 12:30

Hall I (Berlage Zaal)

SYMPOSIUM: LATEST UPDATE ON AR TREATMENT (IN COLLABORATION WITH EAACI)

- Chairperson: C. Cingi (Turkey) 486
- 11:15 **TREATMENT OF ALLERGIC RHINITIS, THE CURRENT GUIDELINES** 487
- L. Kalogjera (Croatia)
- 11:30 **NOVEL INSIGHT INTO TREATMENT OF LAR** 488
- C. Rondon (Spain)
- 11:45 **WHAT TO DO WHEN ALL TREATMENT FAILS** 489
- R. Moesges (Germany)
- 12:00 **LESSONS TO BE DRAWN FROM LOWER AIRWAYS** 490
- I. Agache (Romania)
- 12:15 **DISCUSSION**

11:15 - 12:30

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: CSF LEAK AND SKULL BASE

- Chairperson: P.V. Tomazic (Austria) 491
- 11:15 **ASSESSMENT OF MONOLAYER ABDOMINAL FAT GRAFT TO REPAIR SKULL BASE BY ENDOSCOPIC APPROACH** 492
P.L. Bastier, D. Fonmarty, A. Lechot, E. Gimbert, L. De Gabory (France)
- 11:24 **PRESERVATION OF FUNCTIONING SINUS IN FRONTAL SINUS POSTERIOR TABLE FRACTURES** 493
D. Chin, I. Loh (Singapore)
- 11:33 **THE FORGOTTEN FORAMINA: DESCRIPTIVE ANATOMY AND SURGICAL CONSEQUENCES OF THE ETHMOIDAL FISSURE AND ANTERIOR ETHMOIDAL SLIT.** 494
V. Patron, J. Berkaoui, R. Jankowski, S. Moreau, M. Hitier (France)
- 11:42 **ENDOSCOPIC ENDONASAL TREATMENT OF SPONTANEOUS CSF LEAKS OF THE ANTERIOR SKULL BASE** 495
A. Pusateri, E. Emanuelli, D. Borsetto, D. Cazzador, T. Volo, A. Berardi, E. Matti, F. Pagella (Italy)
- 11:51 **NASOSEPTAL FLAP FOR SKULL BASE RECONSTRUCTION USING CONE BEAM COMPUTED TOMOGRAPHY: A CADAVERIC STUDY** 496
E. Ten Dam, R.H. Schepers, W.J. Van der Meer, P.O. Gerrits, A.G.W. Korsten-Meijer, R.A. Feijen (The Netherlands)
- 12:00 **FAILURE OF SKULL BASE RECONSTRUCTION USING NASOSEPTAL FLAP; EXPERIENCE OF 85 CASES** 497
M. Jalessi, G. Sharifi, M. Farhadi (Iran)
- 12:09 **CONCOMITANT HIDDEN SKULL BASE DEFECTS IN PATIENTS WITH STERNBERG'S CANAL CSF FISTULAS** 498
C. Meco, H. Basak, S. Beton, S. Mulazimoglu, B. Kucuk, I. Yorulmaz (Turkey)

11:15 - 12:30 **Hall K (Veilingzaal)**

SYMPOSIUM: SEVERE EPISTAXIS

	Chairperson: S. Reinartz (The Netherlands)	499
11:15	WHICH PATIENTS REQUIRE A BLOOD TRANSFUSION? M. Soyka (Switzerland)	500
11:27	EPISTAXIS IN CHILDREN N. Calder (United Kingdom)	501
11:39	OUTCOMES ANALYSIS IN EPISTAXIS MANAGEMENT: DEVELOPMENT OF A THERAPEUTIC ALGORITHM E. Holbrook, J. Shargorodsky, B. Bleier, J. Cohen, N. Busaba, R. Metson, S. Gray (USA)	502
11:51	SPHENOPALATINE CLIPPING: INDICATIONS AND OUTCOMES A.C. Swift, S. Derbyshire (United Kingdom)	503
12:03	REASONS FOR CLINICAL TREATMENT OF EPISTAXIS T. Van Zele (Belgium)	504
12:15	DISCUSSION	505

11:15 - 12:45 **Hall L (Geluidstudio)**

**SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN
EVENT CME/CPD CREDIT**

12:30 - 14:00 **Hall A (Effectenbeurszaal)**

**SPONSORED SESSION: INDUSTRY SUPPORTED SYMPOSIUM (NOT
INCLUDED IN MAIN EVENT CME/CPD CREDIT)**

12:30 - 14:00

LUNCH BREAK, EXHIBITION AND E-POSTER VIEWING

14:00 - 15:30

Hall A (Effectenbeurszaal)

INTERACTIVE ROUND TABLE: THE FRONTAL SINUS

Moderator: R. Harvey (Australia)	506
Panelist: H.R. Briner (Switzerland)	507
Panelist: G. Vicente (Philippines)	508
Panelist: M.C. Ecevit (Turkey)	509
Panelist: W. Fokkens (The Netherlands)	510
Panelist: J. Palmer (USA)	511
Panelist: N. Otori (Japan)	512

14:00 - 15:30

Hall B (Glazenzaal)

INTERACTIVE ROUND TABLE: REVISION RHINOPLASTY

Moderator: P. Hellings (Belgium)	513
Panelist: S. Uslu (Turkey)	514
Panelist: C. Cingi (Turkey)	515
Panelist: A. Mesbahi (Iran)	516
Panelist: D. à Wengen (Switzerland)	517
Panelist: N. Keles (Turkey)	518
Panelist: R. Xavier (Portugal)	519

14:00 - 15:30

Hall C (Keurzaal)

**INTERACTIVE ROUND TABLE: NASAL OBSTRUCTION IN CHILDREN
(INCLUDING NEWBORN)**

Moderator: A. Konig (The Netherlands)	520
Panelist: S. Sütay (Turkey)	521
Panelist: G. Hens (Belgium)	522
Panelist: D. Bullens (Belgium)	523
Panelist: I. Tasca (Italy)	524
Panelist: C. Rhee (Korea)	525
Panelist: S.Y. Lin (USA)	526

14:00 - 15:30

Hall D (Administratiezaal)

INTERACTIVE ROUND TABLE: CSF LEAK

Moderator: I. Alobid (Spain)	527
Panelist: H. Stammberger (Austria)	528
Panelist: B. Woodworth (USA)	529
Panelist: I. Witterick (Canada)	530
Panelist: C. Meco (Turkey)	531
Panelist: G. Bachmann-Harildstad (Norway)	532

14:00 - 15:30

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: OUTCOMES IN CRS

	Chairperson: C. Hopkins (United Kingdom)	533
14:00	SUGGESTIONS ON THE SURGICAL CLASSIFICATION ON OPENING THE SPHENOID SINUS	534
	K. Yanagi, K. Wada, N. Otori, H. Moriyama (Japan)	

- 14:09 **FOR PATIENTS WITH CHRONIC RHINOSINUSITIS: DOES TIME TO ENDOSCOPIC SINUS SURGERY IMPACT OUTCOMES? RETROSPECTIVE ANALYSIS USING THE UK CLINICAL PRACTICE RESEARCH DATA** 535
C. Hopkins, P. Andrews, R. Levine, C. Holy (United Kingdom)
- 14:18 **DOES TIME TO ENDOSCOPIC SINUS SURGERY IMPACT OUTCOMES IN CHRONIC RHINOSINUSITIS? PROSPECTIVE FINDINGS FROM THE UK AUDIT OF SINUS SURGERY** 536
C. Hopkins, J. Rimmer, V. Lund (United Kingdom)
- 14:27 **THE IMPORTANCE OF EOSINOPHILIA IN THE SURGICAL OUTCOME OF CHRONIC RHINOSINUSITIS: A 3-YEAR PROSPECTIVE OBSERVATIONA STUDY** 537
S. Vlamincq, T. Vauterin, P. Hellings, M. Jorissen, F. Acke, P. Van Cauwenberge, C. Bachert, P. Gevaert (Belgium)
- 14:36 **POSTOPERATIVE EVALUATION USING E SCORE AFTER ENDOSCOPIC SINUS SURGERY FOR CHRONIC RHINOSINUSITIS** 538
Y. Kyo, A. Ishibashi, T. Komatsuzaki, S. Watanabe, Y. Hinohira, H. Suzuki (Japan)
- 14:45 **STEROID RESISTANT CHRONIC RHINOSINUSITIS** 539
N. Ohta, Y. Suzuki, A. Ishida, K. Kurakami, S. Kakehata (Japan)
- 14:54 **CHRONIC RHINOSINUSITIS AND MOOD DISTURBANCE** 540
S.E. Erskine, C.M. Philpott (United Kingdom)
- 15:03 **TRANSLATION, CULTURAL ADAPTATION AND VALIDATION OF THE SINONASAL OUTCOME TEST (SNOT)-22 TO FRENCH, FOR THE EVALUATION OF THE QUALITY OF LIFE AMONG RHINOLOGICAL PATIENTS.** 541
A.L. Poirrier, C. De Dorlodot, P. Eloy, S. Collet, B. Bertrand, S. Tombu, P.P. Lefebvre (Belgium)

14:00 - 15:30

Hall F (Verwey Kamer)

INTERACTIVE ROUND TABLE: MUCOCELES

Moderator: A. Sama (United Kingdom)	542
Panelist: R. Bhalla (United Kingdom)	543
Panelist: L. Devyani (USA)	544
Panelist: R. Wardani (Indonesia)	545
Panelist: Y. Sengas (Greece)	546
Panelist: M. Tewfik (Canada)	547

14:00 - 15:30

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: CRS BASIC 2

	Chairperson: R. Moesges (Germany)	548
14:00	NO EVIDENCE OF AUTOREACTIVITY IN NASAL POLYPOSIS E. De Schryver, L. Calus, H. Bonte, E. Donovan, D. Elewaut, R. Valenta, I. Mitterman, T. Van Zele, P. Gevaert (Belgium)	549
14:05	IMPACT OF MMAD, ACOUSTIC AIRFLOW AND BREATHING PATTERNS ON INTRASINUS DRUG DEPOSITION IN A REALISTIC NASAL CAST L. Leclerc, J. Pourchez, G. Aubert, L. Vecellio, S. Le Guellec, M. Cottier, M. Durand (France)	550
14:10	INVESTIGATION OF BLOOD SERUM PERIOSTIN LEVELS IN PATIENTS WITH CHRONIC SINUSITIS A. Ishida, N. Ota, Y. Suzuki, S. Kakehata (Japan)	551
14:15	OSTEITIS IS ASSOCIATED WITH P-GLYCOPROTEIN OVEREXPRESSION IN PATIENTS WITH CHRONIC SINUSITIS WITHOUT NASAL POLYPS C. Günel, R. Feldman, B. Bleier (Turkey)	552

- 14:20 **ANTIADHESIVE EFFECT OF HYALURONIC ACID/
CARBOXYMETHYLCELLULOSE SHEATH IN AN ANIMAL
ADHESION MODEL** 553
E. Lee, J. Kim, K. KIM (Korea)
- 14:25 **CD8+ LYMPHOCYTE IMMUNE DEFICIENCY IS FREQUENT
IN CRS PATIENTS** 554
S. Alromaih, F. Lariviere, M. Desrosiers (Canada)
- 14:30 **IMMUNOHISTOCHEMICAL STUDY OF IMMUNE REPOSE
IN CHRONIC BACTERIAL RHINOSINUSITIS** 555
C. Mogoanta, E. Ionita, S. Ciolofan, F. Anghelina, L. Mogoanta
(Romania)
- 14:35 **PERIOSTIN MAY PLAY A PROTECTIVE ROLE IN
THE DEVELOPMENT OF EOSINOPHILIC CHRONIC
RHINOSINUSITIS WITH NASAL POLYPS IN A MOUSE MODEL** 556
S. Jeon, S.W. Kim, D.Y. Chang, Y.H. Joo, D.W. Kim (Korea)
- 14:40 **POTENTIAL ROLE OF THE LONG PENTRAXIN PTX3 AS A
RECURRENCE BIOMARKER IN CHRONIC RHINOSINUSITIS
WITH NASAL POLYPS** 557
G. Bertazzoni, M. Trimarchi, M.R. Yacoub, A.A. Manfredi,
M. Bussi (Italy)
- 14:45 **LONICERA TATARICA AND VIBURNUM OPULUS PLANT
EXTRACTS PRESENT IN VITRO BACTERICIDAL AND
ANTIBIOFILM ACTIVITY SUITABLE FOR USE IN A NASAL
SPRAY** 558
A.G. Anghel, I. Anghel, M. Grumezescu, M.C. Chifiriuc,
M. Dumitru (Romania)
- 14:50 **HISTOPATHOLOGICAL ANALYSIS OF NASAL POLYPS PRE
AND AFTER TREATMENT: IS THERE ANY DIFFERENCE?** 559
L. Araújo Mohana Pinheiro, P. Leite da Silveira, C. Izaac
Alfredo, E. Ortiz, A. Altemani, E. Sakano (Brazil)

- 14:55 **NOVEL INSIGHTS INTO THE ORIGIN OF NASAL POLYPS** 560
S. Hayes, D. Johnston, R. Howlin, J. Webb, S. Clarke,
P. Stoodley, P. Harries, S. Faust, L. Hall-Stoodley, R. Salib
(United Kingdom)
- 15:00 **EFFECTS OF AN HEDERA HELIX AND RHIZOMA COPTIDIS
EXTRACT MIXTURE ON EX VIVO AND IN VIVO ASTHMA
MODEL** 561
J. KIM, K. Song, E. LEE, K. KIM (Korea)
- 15:05 **SUPPRESSION OF INFLAMMATORY CYTOKINES FROM
CULTURED EPITHELIAL CELLS BY CAM AND EM900 IN
CHRONIC RHINOSINUSITIS WITH NASAL POLYPS CASES.** 562
N. Wakayama, S. Matsune, K. Sekine, S. Yamaguchi,
Y. Yosioka, K. Okubo (Japan)
- 15:10 **DEPLETION OF NATURAL KILLER CELLS AGGRAVATES
SINUSITIS AND EOSINOPHILIA IN A MURINE MODEL OF
ASPERGILLUS-INDUCED CHRONIC RHINOSINUSITIS** 563
J. Kim, C. Gong, Y. Jang (Korea)
- 15:15 **MACROLIDE ANTIBIOTICS REGULATE THE EXPRESSION
OF 11BETA-HSD1 IN HUMAN NASAL EPITHELIUM,
CONTRIBUTING TO THE LOCAL GLUCOCORTICOID
ACTIVATION IN HUMAN NASAL MUCOSA** 564
S. Park, T. Kim, S. Lee (Korea)
- 15:20 **HYPOXIA INCREASES EPITHELIAL PERMEABILITY IN
HUMAN NASAL EPITHELIA** 565
S.Y. Seong, H.J. Min, H.J. Cho, S.Y. Choi, T.H. Kim, C.H. Kim,
J.H. Yoon (Korea)

14:00 - 15:30**Hall H (Rode Kamer)****FREE PAPER SESSION: SHORT PRESENTATIONS: SKULL BASE SURGERY 2**

- Chairperson: P. Nicolai (Italy) 566
- 14:00 **ENDOSCOPIC ENDONASAL APPROACH WITH PEDICLED NASOSEPTAL FLAP FOR CHOLESTEROL GRANULOMAS OF THE PETROUS APEX** 567
 A. Karligkiotis, F. Ferreli, A. Pistochini, L. Volpi, P. Terranova, C. Pigni, F. Meloni, M. Ciniglio Appiani, P. Herman, P. Castelnuovo (Italy)
- 14:05 **DIAGNOSIS AND MANAGEMENT OF SINONASAL LYMPHOMA** 568
 J. Suh, K. Peng, S. Bhuta, M. Wang (USA)
- 14:10 **SPHENOID SINUS PNEUMATIZATION TO ANTERIOR CLINOID PROCESS INCREASING THE RISK OF DEHISCENCE AND PROTRUSION OF INTERNAL CAROTID ARTERY AND OPTIC NERVE** 569
 C. Jenny, V. Wulani, R. Wardani, J. Prihartono (Indonesia)
- 14:15 **MODIFIED SUBTOTAL-LOTHROP PROCEDURE FOR EXTENDED FRONTAL SINUS AND ANTERIOR SKULL-BASE ACCESS: A CASE SERIES** 570
 J. Eloy, E. Kalyoussef, L.J. Mady, V.V. Kanumuri, P.F. Svider, J.K. Liu (USA)
- 14:20 **ISOLATED SPHENOID SINUS LESIONS** 571
 M. Bahgat, Y. Bahgat, A. Bahgat (Egypt)
- 14:25 **ENDOSCOPIC SINUS SURGERY IN NASAL TUMOURS - THE IPOLFG EXPERIENCE** 572
 S. Decq mota, A. Hebe, P. Montalvao, R. Fino, H. Estibeiro, M. Magalhes (Portugal)

- 14:30 **LONG-TERM EXPERIENCES IN THE THERAPY OF NASAL SINUS PLASMA CELLS TUMORS.** 573
G. DE BONNECAZE, S. Vergez, B. Vairel, E. Uro-coste, E. Serrano (France)
- 14:35 **RESECTION OF EXTENSIVE NASOPHARYNGEAL ANGIOFIBROMAS: ENDONASAL ENDOSCOPIC VERSUS COMBINED TRANSNASAL AND TRANSCRANIAL APPROACHES** 574
M. Naraghi, M. Boroojerdi (Iran)
- 14:40 **PREOPERATIVE EMBOLIZATION AND COBLATION-ASSISTED ENDOSCOPIC REMOVAL OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA** 575
S. Husain, S.Z. Syed Hamzah, B.S. Gendeh, M.R. Mohamad Yunus (Malaysia)
- 14:45 **ENDOSCOPIC RESECTION OF ESTHESIONEUROBLASTOMA: LONG TERM CARCINOLOGIC RESULTS** 576
G. DE BONNECAZE, A. Al hawat, S. Vergez, B. Vairel, E. Serrano (France)
- 14:50 **ENDOSCOPIC ENDONASAL TRANSPHENOIDAL RESECTION AS MAINSTAY TREATMENT OF CLIVAL CHORDOMAS** 577
C.A. Cheang, P. Bennett, H. Al-Reefy, D. Roberts, N. Thomas (United Kingdom)
- 14:55 **ENDOSCOPIC SURGERY FOR TREATMENT OF SINONASAL INVERTED PAPILLOMA: OUR EXPERIENCE** 578
T.S. Santos, P. Gonçalves, A. Correia, M.V. Valente, C. Carvalho (Portugal)
- 15:00 **RARE BENIGN PLEOMORPHIC ADENOMA OF THE NASAL SEPTUM AND FESS** 579
P. Burduk, M. Bodnar, M. Wierzchowska, W. Kazmierczak, A. Marszałek (Poland)

- 15:05 **SPHENOID SINUS FIBROMYXOMA: SYSTEMATIC REVIEW
FEATURING A CASE REPORT** 580
- S. Alves, S. Tavares, H. Rodrigues, H. Coelho, V. Proença,
M. Santos, J. O. Neta, L. Antunes (Portugal)

14:00 - 15:30**Hall I (Berlage Zaal)****INTERACTIVE ROUND TABLE: POST OPERATIVE CARE IN FESS**

- Moderator: M. Jorissen (Belgium) 581
- Panelist: S. Vlaminck (Belgium) 582
- Panelist: J.K. Han (United Kingdom) 583
- Panelist: L.H. Kalish (Australia) 584
- Panelist: B. Senior (USA) 585
- Panelist: J. Mo (Korea) 586

14:00 - 15:30**Hall J (Ontvang Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: IMAGING**

- Chairperson: S.J. Zinreich (USA) 587
- 14:00 **ASPECTS OF IMAGING QUALITY IN VISUALIZATION OF
PARANASAL SINUSES BY CONE BEAM CT (CBCT)** 588
- C. Guedner, I. Diogo, R. Leppek, M. Mandapathil, J. Werner
(Germany)
- 14:09 **CONFIGURATION OF ETHMOIDAL ROOF: A
RADIOLOGICAL ANATOMICAL STUDY** 589
- S. Thanaviratananich, S. Kessomboon, P. Kasemsiri,
P. Warinthorn (Thailand)
- 14:18 **LIMITS OF CONE BEAM COMPUTED TOMOGRAPHY
(CBCT) IN RHINOLOGY** 590
- C. Guedner, I. Diogo, R. Leppek, M. Mandapathil, J. Werner
(Germany)

14:27	NEURORADIOLOGICAL ASSESSMENT OF SPHENOID SINUS DISEASE: A RETROSPECTIVE ANALYSIS OF 116 CASES WITH CORRELATION AFTER ENDOSCOPIC SPENOIDECTOMY (2004-2014)	591
	P. Ziglinas, P. Mordasini, C. Pfeiffer, C. Ozdoba, M.D. Caversaccio (Switzerland)	
14:36	FRONTAL RECESS AND OSTEOMEATAL COMPLEX ANATOMY VARIATIONS: IDENTIFICATION AND PREVALENCE IN PATIENTS WITH SINONASAL SYMPTOMS	592
	C. Durao, I. Moura, M. Soares, J.P. Leandro, F. Freire (Portugal)	
14:45	THE USE OF CT IN DIAGNOSIS THE DIAGNOSIS OF PARANASAL SINUS DISEASE; DIFFERENCES BETWEEN SPECIALITIES.	593
	C. O'Rourke, S. Ryan, A. Rehman, J.E. Fenton (Ireland)	
14:54	ANATOMICAL VARIANTS OF THE UNCINATE PROCESS - CT SCAN IMAGING STUDY	594
	M.D. Cobzeanu, V. Baldea, O.D. Palade, F. Mihalcea, M.C. Baldea, B.M. Cobzeanu (Romania)	

14:00 - 15:30

Hall K (Veilingzaal)

INTERACTIVE ROUND TABLE: SEVERE CHRONIC UPPER AIRWAY DISEASES (SCUAD) INCLUDING LOWER AIRWAY

Moderator: M. Benninger (USA)	595
Panelist: A. Kjeldsen (Denmark)	596
Panelist: S. Joe (USA)	597
Panelist: E. Prokopakis (Greece)	598
Panelist: C. Bachert (Belgium)	599
Panelist: J.B. Watelet (Belgium)	600
Panelist: E. Toskala (USA)	601

14:00 - 15:30

Hall L (Geluidstudio)

**SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN
EVENT CME/CPD CREDIT**

15:30 - 16:00

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

16:00 - 16:45

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: INJECTABLES AND BOTOX

INJECTABLES AND BOTOX 608

C. Wever (The Netherlands)

16:00 - 16:45

Hall C (Keurzaal)

INSTRUCTIONAL SESSION: PREOPERATIVE ASSESSMENT OF CT SCAN

PREOPERATIVE ASSESSMENT OF CT SCAN 609

N. Freling, G. Adriaensen (The Netherlands)

PREOPERATIVE ASSESSMENT OF CT SCAN 610

G. Adriaensen (The Netherlands)

16:00 - 16:45

Hall D (Administatiezaal)

INSTRUCTIONAL SESSION: JUVENILE ANGIOFIBROMAS

JUVENILE ANGIOFIBROMAS 611

M. Bernal-Sprekelsen (Spain)

16:00 - 16:45

Hall F (Verwey Kamer)

**INSTRUCTIONAL SESSION: HEREDITARY HAEMORRHAGIC
TELANGIECTASIA**

HEREDITARY HAEMORRHAGIC TELANGIECTASIA 612

V. Lund (United Kingdom)

16:00 - 16:45

Hall I (Berlage Zaal)

**INSTRUCTIONAL SESSION: IN OFFICE SINUS PROCEDURES. WHAT NEW
TECHNOLOGY MAY PROVIDE**

P. Baptista (Spain) 613

16:00 - 17:30

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: CRS BASIC 3

Chairperson: S. Vlamincx (Belgium) 614

16:00 **LIPOPOLYSACCHARIDE INDUCES VEGF EXPRESSION VIA
TLR4/AKT PATHWAY IN NASAL POLYPS** 615

H. Lee, I.H. Park, J.S. Cho (Korea)

16:05 **PATHOGENIC MEMORY T CELL THAT EXPRESSES IL-25
RECEPTOR IS INVOLVED IN THE PATHOGENESIS OF
EOSINOPHILIC CHRONIC RHINOSINUSITIS** 616

T. Iinuma, S. Yonekura, D. Sakurai, Y. Okamoto (Japan)

16:10 **EPITHELIAL-TO-MESENCHYMAL TRANSITION IN
CHRONIC RHINOSINUSITIS WITH NASAL POLYPS** 617

M. Könnecke, M. Burmeister, R. Pries, R. Böske,
K.L. Bruchhage, L. Klimek, B. Wollenberg (Germany)

16:15 **INCREASED EXPRESSIONS OF THE EPITHELIAL CELL-
DERIVED CYTOKINES, TSLP, IL-25, AND IL-33 IN NASAL
POLYPS OF EOSINOPHILIC CHRONIC RHINOSINUSITIS** 618

H. Kouzaki, I. Tojima, S. Shimizu, T. Shimizu (Japan)

- 16:20 **ROLE OF IL-22/IL-22 RECEPTOR EXPRESSION IN THE PATHOGENESIS OF CHRONIC RHINOSINUSITIS: ASSOCIATION WITH ASTHMA AND ASPIRIN SENSITIVITY** 619
 Y. Noyama, M. Okano, T. Fujiwara, S. Kariya, T. Haruna, A. Torigoe, K. Uruguchi, K. Nishizaki (Japan)
- 16:25 **COMPARISON OF PERIPHERAL BLOOD EOSINOPHIL COUNTS IN CHRONIC RHINOSINUSITIS PATIENTS SINCE 1995 TO 2010 IN JAPAN.** 620
 T. Shikina, C. Masumura, S. Nishiike, H. Inohara (Japan)
- 16:30 **HOW RELIABLE ARE SINO-NASAL CELL LINES FOR STUDYING THE PATHOPHYSIOLOGY OF CHRONIC RHINOSINUSITIS?** 621
 S. Ball, M. Suwara, L. Borthwick, A. Fisher, D. Mann, J. Wilson (United Kingdom)
- 16:35 **EXPRESSION OF CC-CHEMOKINE RECEPTOR 3 AND EOTAXIN LEVELS IN NASAL POLYPS** 622
 K. Honda, H. Saito, C. Asaka, K. Ishikawa (Japan)
- 16:40 **EXPRESSION OF ADAM10 AND ADAM17 IN NASAL POLYP** 623
 S. Park, W. Bae (Korea)
- 16:45 **EOSINOPHIL CHEMOTAXIS ASSAY IN NASAL POLYPS BY USING A NOVEL OPTICAL DEVICE EZ-TAXISCAN: ROLE OF CCR3** 624
 H. Saito, K. Honda, K. Ishikawa (Japan)
- 16:50 **-954G/C GENETIC POLYMORPHISM OF NOS2 GENE IN NASAL POLYPOSIS: A CASE CONTROL STUDY IN A POPULATION GROUP OF ROMANIA** 625
 A. Catana, A. Maniu, R.A. Popp, M. Cosgarea, I.V. Catana (Romania)

- 16:55 **COMPARISON OF T-I IGE(TOTAL MINUS INDIVIDUAL SPECIFIC IGES) LEVEL IN THE PARANASAL SINUS MUCOSAL TISSUE BETWEEN EOSINOPHILIC CHRONIC SINUSITIS AND INFECTIOUS CHRONIC SINUSITIS** 626
 Y. Ikemiyagi, Y. Ota, M. Suzuki (Japan)
- 17:00 **MATRIX METALLOPROTEINASE-9 (MMP-9) PROFILE IN CHRONIC RHINOINUSITIS WITH NASAL POLYPS AT ENT DEPARTEMENT DR.SARDJITO HOSPITAL , YOGYAKARTA - INDONESIA** 627
 L. Lusy Indrawati (Indonesia)
- 17:05 **EXPRESSION OF TRANSIENT RECEPTOR POTENTIAL VANILLOID 1 (TRPV1) AND ANKYRIN 1 (TRPA1) RECEPTORS IN CHRONIC RHINOSINUSITIS** 628
 E. Tóth, J. Kun, A. Perkecz, T. Tornoczky, I. Gerlinger, J. Szolcsányi, E. Pinter (Hungary)
- 17:10 **EXPRESSION OF CHEMOKINE RECEPTOR 7 IN OTORHINOLARYNGOLOGIC NEOPLASMS** 629
 T. Tang, Q. Xia, X. Qiao, M. Xi (China)

16:00 - 17:30

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: MANAGEMENT OF CRS

- Chairperson: A. Kjeldsen (Denmark) 630
- 16:00 **NO EVIDENCE FOR LONG-TERM LOW-DOSE ERYTHROMYCIN AFTER SINUS SURGERY FOR CHRONIC RHINOSINUSITIS** 631
 B. Haxel, M. Clemens, N. Karaiskaki, U. Dippold, L. Utters, W. Mann (Germany)
- 16:09 **DOES THE ENDOSCOPIC MODIFIED LOTHROP PROCEDURE REDUCE SYSTEMIC STEROID REQUIRMENT IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS?** 632
 M. Aloulah, R.Y.A.N. Matthew, P.E.T.E. Batra, B. Marple (Saudi Arabia)

- 16:18 **LONG TERM RESULTS OF FRONTAL SINUS OBLITERATION PROCEDURE IN 40 PATIENTS** 633
 F.S. Hansen, G.F.J.P.M. Adriaensen, S.M. Reinartz, C. Georgalas, N.J.M. Freling, W.J. Fokkens (The Netherlands)
- 16:27 **ETHMOID DRUG-ELUTING CATHETER FOR NASOSINUSAL POLYPOSIS: A PROSPECTIVE RANDOMIZED CONTROLLED STUDY ASSESSING SAFETY AND EFFICACY** 634
 E. Hernandez-Garcia, E. Amarillo, G. Eisenberg, V. Garcia-Peces, J. Montojo, G. Plaza (Spain)
- 16:36 **LOW DOSE (100MG) ASPIRIN DESENSITIZATION PROVIDES A THERAPEUTIC OPTION IN INDIVIDUALS WITH ASPIRIN EXACERBATED RESPIRATORY DISEASE** 635
 K. Fruth, B. Pogorzelski, I. Schmidtman, D. Schaefer, W.J. Mann, J. Gosepath (Germany)
- 16:45 **RETROSPECTIVE ANALYSIS OF REVISION CASES IN ENDOSCOPIC SINUS SURGERY** 636
 F.M. Egro, L. Masterson, J. Bewick, C. Philpott (United Kingdom)
- 16:54 **LOW SALICYLATE DIET FOR ASPIRIN EXACERBATED RESPIRATORY DISEASE (AERD)- A PRELIMINARY EXPERIENCE** 637
 S. Nayan, D.D. Sommer, L. Sowerby, B. Rotenberg, A. Vescan, I. Witterick, A. Janjua, J. Lee, M. Gupta, M. Au (Canada)
- 17:03 **THE EFFECT OF INTRANASAL STEROID IRRIGATION ON WOUND HEALING AFTER ENDOSCOPIC SINUS SURGERY** 638
 Y. Chung, K. Min, Y. Park, H. Son, J. Mo (Korea)

16:00 - 17:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

16:45 - 17:30

Hall A (Effectenbeurszaal)

THE BIG DEBATE: ASPIRIN DESENSITISATION

	Moderator: V. Lund (United Kingdom)	602
16:00	PRO J. Gosepath (Germany)	603
16:10	CON C. Bachert (Belgium)	604
16:20	QUESTIONS FROM THE MODERATOR Moderator: V. Lund (United Kingdom)	605
16:30	REBUTTAL J. Gosepath (Germany)	606
16:35	REBUTTAL C. Bachert (Belgium)	607

16:45 - 17:30

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: SURGICAL APPROACHES TO THE MAXILLARY (OR SPHENOID) SINUS

	SURGICAL APPROACHES TO THE MAXILLARY (OR SPHENOID) SINUS	639
	A. Leunig (Germany)	
	SURGICAL APPROACHES TO THE MAXILLARY (OR SPHENOID) SINUS	640
	H.R. Briner, A. Leunig (Switzerland)	

16:45 - 17:30

Hall C (Keurzaal)

INSTRUCTIONAL SESSION: COMPREHENSIVE IMAGING OF THE NASAL CAVITY AND PARANASAL SINUSES

COMPREHENSIVE IMAGING OF THE NASAL CAVITY AND PARANASAL SINUSES 641

R. Maroldi (Italy)

16:45 - 17:30

Hall D (Administratiezaal)

INSTRUCTIONAL SESSION: OBJECTIVE NASAL AIRWAY ASSESSMENT

OBJECTIVE NASAL AIRWAY ASSESSMENT - RHINOMANOMETRY, ACOUSTIC RHINOMETRY OR PEAK NASAL AIRFLOW? 642

R. Eccles (United Kingdom)

16:45 - 17:30

Hall I (Berlage Zaal)

INSTRUCTIONAL SESSION: HOW TO LEARN FUNCTIONAL CORRECTIVE NASAL SURGERY

C. Cingi (Turkey) 643

SCIENTIFIC PROGRAM

WEDNESDAY, JUNE 25



ERS/ISIAN 2014

25th Congress of the European Rhinologic Society
32nd International Symposium of Infection & Allergy of the Nose

Amsterdam, The Netherlands
June 22-26, 2014

SCIENTIFIC PROGRAM WEDNESDAY, JUNE 25, 2014

8:30 - 9:30

Hall A (Effectenbeurszaal)

PLENARY: THE MICROBIOME IN CRS

Chairperson: C. Bachert (Belgium) 644

8:30 **CHANGING CONCEPTS IN MICROBIOLOGY OF CRS AND OTHER DISEASE** 645

S. Lynch (USA)

9:00 **THE MICROBIOME IN CRS AND THE RELATION TO TREATMENT** 646

A. Lane (France)

8:30 - 9:30

Hall B (Glazenzaal)

PLENARY: FACIAL PLASTIC - FACIAL SURGERY AND THE NOSE

Chairperson: G. Nolst Trenité (The Netherlands) 647

8:30 **HINTS TO SUCCESSFULLY BUILD AN FPS CLINIC** 648

F. Apaydin (Turkey)

9:00 **HINTS TO SUCCESSFULLY BUILD A FPS PRIVATE PRACTICE** 649

C. Wever (The Netherlands)

9:00 - 10:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

9:30 - 10:45**Hall A (Effectenbeurszaal)****SYMPOSIUM: NEW TREATMENT OPTIONS FOR CRS**

	Chairperson: D. Kennedy (USA)	650
9:30	NEW SYSTEMIC TREATMENTS, EVIDENCE AND PIPELINE P. Gevaert (Belgium)	651
9:15	MORE EXTENSIVE SURGERY, BETTER OUTCOMES? R. Harvey (Australia)	652
10:00	LOCAL DRUGS IN CRS: EVIDENCE FOR EFFICACY G. Adriaansen (The Netherlands)	653
10:15	UNMET NEEDS IN CRS R. Schlosser (USA)	654
10:30	DISCUSSION	

9:30 - 10:45**Hall B (Glazenzaal)****SYMPOSIUM: JUVENILE ANGIOFIBROMA**

	Chairperson: O. Ogretmenoglu	655
9:30	ETIOPATHOLOGY OF JUVENILE ANGIOFIBROMA M. Tewfik (Canada)	656
9:45	THE FOUR - HAND TECHNIQUE IN SURGERY OF JUVENILE ANGIOFIBROMA J. Constantinidis (Greece)	657
10:00	SURGICAL MANAGEMENT OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA: ANALYSIS OF 162 CASES 1995-2012 D. Wang, Y.A.N.G. Huang, Z. Liu, J. Wang, X. Sun, L.E.I. Yang (China)	658

10:15 **ENDOSCOPIC RESECTION OF EXTENDED JUVENILE ANGIOFIBROMAS** 659
 M. Bernal-Sprekelsen, C. Langdon, P. Herman, B. Verillaud, R. Carrau, D. Prevedello, P. Nicolai, A. Schreiber, P. Battaglia, P. Castelnuovo (Spain)

10:30 **DISCUSSION** 660

9:30 - 10:45 **Hall C (Keurzaal)**

SYMPOSIUM: NASAL HYPERREACTIVITY/NONALLERGIC RHINITIS

Chairperson: D. Milosevic (Serbia) 661

9:30 **TRP CHANNELS IN RHINITIS** 662
 P. Smith (Australia)

9:45 **HYPERREACTIVITY IN ALLERGIC AND NON-ALLERGIC RHINITIS** 663
 C. Segboer, C.T. Holland, S.M. Reinartz, T. I., A. Gevorgyan, P.W. Hellings, W.J. Fokkens (The Netherlands)

10:00 **GUSTATORY RHINITIS** 664
 L.J. Jovancevic, C. Georgalas (Serbia)

10:15 **CHARACTERISTICS OF NONALLERGIC VASOMOTOR RHINITIS** 665
 L. Van Gerven, B. Steelant, I. Kortekaas, P. Hellings (Belgium)

10:30 **DISCUSSION** 666

9:30 - 10:45 **Hall D (Administratiezaal)**

SYMPOSIUM: DRUGS, ALLERGIES AND OTHER (UN)DESIRABLE EFFECTS

Chairperson: L. Kalogjera (Croatia) 667

9:30	DRUG ALLERGY, WHAT AN OTORHINOLARYNGOLOGIST HAS TO KNOW	668
	<u>I. Terreehorst</u> (The Netherlands)	
9:45	ASPRIIN INTOLERANCE DIAGNOSIS AND TREATMENT	669
	<u>J. Mullol</u> (Spain)	
10:00	SIDE EFFECTS OF LOCAL AND SYSTEMIC CORTICOSTEROIDS	670
	<u>E. Margaritis</u> (Greece)	
10:15	THE RHINOLOGICAL SIDE-EFFECTS OF SYSTEMIC DRUGS	671
	<u>T.J. Woolford</u> , <u>M. Dowling</u> (United Kingdom)	
10:30	DISCUSSION	

9:30 - 10:45 **Hall E (Mendes DaCosta Kamer)**

SYMPOSIUM: THE EPITHELIAL BARRIER

	Chairperson: <u>N. Zhang</u> (Belgium)	672
9:30	ALLERGEN INTERACTIONS WITH EPITHELIUM	673
	<u>S. Toppila-Salmi</u> , <u>P. Mattila</u> , <u>S. Joenväärä</u> , <u>J. Renkonen</u> , <u>R. Renkonen</u> (Finland)	
9:45	INCREASED EXPRESSION OF THE EPITHELIAL CELL-DERIVED CYTOKINES IN EOSINOPHILIC CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	674
	<u>H. Kouzaki</u> , <u>I. Tojima</u> , <u>S. Shimizu</u> , <u>T. Shimizu</u> (Japan)	
10:00	EPITHELIAL CELL AS IMMUNOMODULATORS IN ALLERGIC AIRWAY DISEASE - BEYOND BARRIER FUNCTION	675
	<u>R. Pawankar</u> (Japan)	
10:15	INNATE LYMPHOID CELLS - NEW PLAYERS IN THE EPITHELIUM	676
	<u>K. Golebski</u> , <u>C. Van Druenen</u> , <u>W. Fokkens</u> (The Netherlands)	
10:30	DISCUSSION	677

9:30 - 10:45**Hall F (Verwey Kamer)****SYMPOSIUM: 3D ANATOMY AND SURGERY**

	Chairperson: H. Braun (Austria)	678
9:30	THE VALUE OF 3D IN SINUS SURGERY P. Battaglia, M. Turri-Zanoni, A. Karligkiotis, P. Castelnuovo (Italy)	679
9:45	3D ANATOMY WHAT IS DIFFERENT A. Gevorgyan, W.J. Fokkens (Canada)	680
10:00	3-D ENDOSCOPY SKULL BASE SURGERY A. Nassimizadeh, M. Nassimizadeh, J. Muzaffar, A. Paluzzi, S.K. Ahmed (United Kingdom)	681
10:15	3-D IMAGING IN CRS AND FACIAL PLASTIC J. Pallanch (USA)	682
10:30	DISCUSSION	683

9:30 - 10:45**Hall G (Roland Holst Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: RHINOPASTY AND FACIAL PLASTIC SURGERY**

	Chairperson: C. Wever (The Netherlands)	684
9:30	PREDICTIVITY OF SIMULATION IN RHINOPLASTY: MATHEMATICAL COMPARISON BETWEEN SIMULATIONS AND CLINICAL RESULTS AND EVALUATION OF PATIENTS' SATISFACTION F. Pilolli, S. Toma, F. Palonta, M. Trimarchi, M. Bussi (Italy)	685

- 9:39 **ARE SYMPTOMS OF POST-TRAUMATIC STRESS IN PATIENTS EXPERIENCING NASAL FRACTURES REDUCED FOLLOWING SURGERY? A PILOT STUDY.** 686
S. Gallagher, C. O'Rourke, C. Wijaya, J.C. Oosthuizen, J.E. Fenton (Ireland)
- 9:48 **SEPTORHINOPLASTY AND FUNCTIONAL ENDOSCOPIC SINUS SURGERY: IMPROVING DAY CASE RATES** 687
N. Ranga, P. Glossop, N. Bhalla (United Kingdom)
- 9:57 **OUTCOME OF NASAL RECONSTRUCTION FOLLOWING TUMOUR EXCISION IN 68 PATIENTS** 688
P. Surda, S. Hampal, H. Fowler (United Kingdom)
- 10:06 **RESORBABLE CHALLENGES NON-RESORBABLE SUTURES FOR TRANSCOLUMELLAR INCISIONS IN RHINOPLASTY** 689
B. Alinasab, P.O. Haraldsson (Sweden)
- 10:15 **AVOIDING ROUTINE NASAL PACKING FOLLOWING SEPTORHINOPLASTY DOES NOT COMPROMISE PATIENT OUTCOMES AS MEASURED USING THE GLASGOW BENEFIT INVENTORY** 690
N. Sethi, R. Simpson, S. Prowse, S. Sood, D. Strachan (United Kingdom)
- 10:24 **WHAT IS THE LENGTH DEFICIENCY OF THE MEDIAL CLEFT LIP ELEMENT?** 691
J.K. Bulger, S. Colbert, D. Drake (United Kingdom)

9:30 - 10:45**Hall H (Rode Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: PEDIATRIC RHINOLOGY**

- Chairperson: P. Stjarne (Sweden) 692
- 9:30 **UPPER AIRWAY OBSTRUCTION & THE DEVELOPMENT OF MALOCCLUSION OF THE TEETH** 693
E. AlKofide (Saudi Arabia)
- 9:39 **LONG-TERM RESULTS OF FUNCTIONAL ENDOSCOPIC SINUS SURGERY IN CHILDREN WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPS.** 694
M. Cornet, C. Georgalas, S. Reinartz, W. Fokkens (The Netherlands)
- 9:48 **STENTLESS ENDOSCOPIC TRANSNASAL REPAIR OF BILATERAL CHOANAL ATRESIA STARTING WITH RESECTION OF VOMER** 695
M. El-Ahl, M. El-Anwar (Egypt)
- 9:57 **SURGICAL OUTCOMES OF CHOANAL ATRESIA WITH ENDOSCOPIC CHOANOPLASTY WITHOUT STENTS** 696
V. Savastano, C. Tripodi, S. Bertin, T. Vittori (Italy)
- 10:06 **EFFICACY OF PARTIAL ENDOSCOPIC ADENOIDECTOMY** 697
Y. Rusetsky, I. Chernyshenko, V. Svistushkin (Russia)
- 10:15 **ANALYSIS OF MEDICAL THERAPY AND SURGICAL TREATMENT IN CHILDREN WITH CHRONIC SINUSITIS** 698
Z. Xu, C.H.A.O. Chen (China)
- 10:33 **VARIABILITY OF CHOANAL DIMENSIONS IN CHILDREN** 699
W. Likus, G. Bajor, J. Markowski, K. Gruszczynska, J. Baron, D. Milka (Poland)

9:30 - 10:45

Hall I (Berlage Zaal)

SYMPOSIUM: DEFECTS OF THE ANTERIOR SKULL BASE, FILLING THE GAP

	Chairperson: C. Georgalas (The Netherlands)	700
9:30	TRANSCRIBIFORM AND TRANSPANUM ENDOSCOPIC APPROACH FOR SKULL- BASE TUMORS	701
	W. Grant (United Kingdom)	
9:45	CLOSURE OF SKULL BASE DEFECTS AFTER EXPANDED ENDOSCOPIC SKULL BASE SURGERY	702
	I. Alobid (Spain)	
10:00	ENDOSCOPIC ANTERIOR SKULL BASE RESECTION AND RECONSTRUCTION: EVOLUTION OF TECHNIQUE OVER YEARS	703
	I. Herzallah (Saudi Arabia)	
10:15	MANAGEMENT OF CSF LEAKS	704
	T. Schmidt (Chile)	
10:30	DISCUSSION	705

9:30 - 10:45

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: EPIDEMIOLOGY

	Chairperson: R. Harvey (Australia)	706
9:30	AIR POLLUTION AND PREVALENCE OF CHRONIC RHINOSINUSITIS	707
	D. Hastan, D. Jarvis, K. De Hoogh, D. Vienneau, W.J. Fokkens, X. Collaborators of the GA2LEN network of excellence (The Netherlands)	

9:39	<p>THE BURDEN OF REVISION SURGERY IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS - DATA FROM THE UK CHRONIC RHINOSINUSITIS EPIDEMIOLOGY STUDY (CRES)</p> <p>S. Erskine, Liam Masterson, F. Egro, J. Bewick, C. Hopkins, C. Phillpot (United Kingdom)</p>	708
9:48	<p>A REVIEW OF THE MANAGEMENT OF NASAL POLYPOSIS IN A TERTIARY OTORHINOLARYNGOLOGY CENTRE</p> <p>P. Bell, N. Wooles, R. Adair (United Kingdom)</p>	709
9:57	<p>NASAL AND SINUS SYMPTOMS IN CHRONIC RHINOSINUSITIS AND NASAL ALLERGY; COMPARISON OF CT AND MRI IN THE NORMAL POPULATION.</p> <p>D. Hastan, N. Freling, W.J. Fokkens (The Netherlands)</p>	710
10:06	<p>SNOT 22 IN A CONTROL POPULATION</p> <p>S.E. Erskine, C.M. Philpott (United Kingdom)</p>	711
10:15	<p>SHOULD AVERAGE SNOT 22 SCORES BE CALCULATED REGIONALLY?</p> <p>I. Khan, S. Mohamad, S. Ansari, N. Calder (United Kingdom)</p>	712
10:24	<p>PREVALENCE OF NASAL POLYPS IN NORTHERN PORTUGAL - A CADAVER ENDOSCOPIC STUDY</p> <p>R. Cerejeira, R. Veloso-Teles, N. Lousan, C.P. Moura (Portugal)</p>	713

9:30 - 10:45

Hall K (Veilingzaal)

SYMPOSIUM: SMELL & TASTE

	<p>Chairperson: S. Lacroix (Switzerland)</p>	714
9:30	<p>OLFACTION AFTER ENDOSCOPIC SINUS SURGERY: LONG-TERM RESULTS</p> <p>H.R. Briner (Switzerland)</p>	715

9:45	TASTE AND RETRONASAL OLFACTION - CLINICAL ASPECTS	716
	B. Landis (Switzerland)	
10:00	TREATMENT OF OLFACTORY DISORDERS- WHAT HAVE WE ACHIEVED SO FAR?	717
	T. Hummel (Germany)	
10:15	LONG-TERM RECOVERY OF OLFACTORY DISORDERS	718
	A. Welge-Lüssen, A. Hilgenfeld, T. Meusel (Switzerland)	
10:30	DISCUSSION	719

10:45 - 11:15

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

11:15 - 12:30

Hall A (Effectenbeurszaal)

SYMPOSIUM: PEDIATRIC CHRONIC RHINOSINUSITIS

	Chairperson: I. Tasca (Italy)	720
11:15	THE IMPACT OF CRS AND ALLERGIC RHINITIS IN THE PEDIATRIC POPULATION	721
	P. Stjärne, M. Westman, M. Holmstrom, M. Wickman (Sweden)	
11:30	APPROPRIATE MAXIMAL MEDICAL THERAPY OF CHRONIC RHINOSINUSITIS IN THE PEDIATRIC POPULATION	722
	F. Baroody (USA)	
11:45	WHEN SHOULD WE PERFORM SURGERY IN PEDIATRIC CRS	723
	M. Cornet, W. Fokkens (The Netherlands)	
12:00	IMMUNODEFICIENCIES IN PEDIATRICS	724
	I. Meyts (Belgium)	
12:15	DISCUSSION	725

11:15 - 12:30**Hall B (Glazenaaal)****SYMPOSIUM: ALLERGIC RHINITIS**

	Chairperson: P. Hellings (Belgium)	726
11:15	QUALITY OF LIFE AND CONTROL OF ALLERGIC RHINITIS IN PATIENTS FROM REGIONS BEYOND WESTERN EUROPE AND THE UNITED STATES	727
	A. Lopatin (Russia)	
11:30	IMPACT OF ALLERGIC RHINITIS, SYMPTOMS BEYOND THE NOSE	728
	L. Klimek (Germany)	
11:45	IMMUNOTHERAPY TO BIOLOGICS: CURRENT AND FUTURE PERSPECTIVES IN ALLERGY THERAPEUTICS	729
	R. Pawankar (Japan)	
12:00	UNCONTROLLED ALLERGIC RHINITIS	730
	P. Hellings (Belgium)	
12:15	DISCUSSION	731

11:15 - 12:30**Hall C (Keurzaal)****SYMPOSIUM: DRUG INDUCED SLEEP ENDOSCOPY (DISE)**

	Chairperson: E. Hamans (Belgium)	732
11:15	PRESENTATION EUROPEAN POSITION CONSENSUS DOCUMENT ON DISE	733
	M. Carrasco, A. De Vito, V. Agnoletti, M. Bosi, A. Braghiroli, A. Campanini, N. De Vries, E. Hamans, W. Hohenhorst, B.T. Kotecha, J. Maurer, F. Montevecchi, O. Piccin, G. Sorrenti, O.M. Vanderveken, C. Vicini (Spain)	

11:30	COMPARISONS OF DIFFERENT DISE SCORING SYSTEMS	734
	A.V.M.T. Vroegop, D.I.S.E. Cooperative study groups (The Netherlands)	
11:45	DISE AND HEAD AND TRUCK POSITION	735
	N. De Vries, F. Safiruddin (The Netherlands)	
12:00	DISE AS A SELECTION TOOL FOR UPPER AIRWAY STIMULATION	736
	O.M. Vanderveken (Belgium)	
12:15	DISCUSSION	737

11:15 - 12:30 **Hall D (Administratiezaal)**

SYMPOSIUM: TREATMENT OPTIONS IN NAR

	Chairperson: H. Saleh (United Kingdom)	738
11:15	CLINICAL CHARACTERISTICS AND IMPLICATION FOR TREATMENT IN NAR	739
	S. Joe (USA)	
11:30	NEURO-IMMUNE MECHANISMS INVOLVED IN ALLERGIC AND NON-ALLERGIC RHINITIS INCLUDING CAPSAICIN TREATMENT	740
	L. Van Gerven, B. Steelant, I. Callebaut, I. Kortekaas, E. Dekimpe, M. Jorissen, P. Hellings (Belgium)	
11:45	EVIDENCE IN NAR TREATMENT	741
	A. Gevorgyan, C. Segboer, R. Gorissen, C.M. Van Drunen, W.J. Fokkens (Canada)	
12:00	VIDIAN NEURECTOMY IN THE TREATMENT OF NAR	742
	P.J. Wormald (Australia)	
12:15	DISCUSSION	

11:15 - 12:30

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: RHINITIS, CLINICAL 1

- Chairperson: J. Mullol (Spain) 743
- 11:15 **A NEW ALLERGIC RHINITIS THERAPY (MP29-02*) PROVIDES NASAL SYMPTOM RELIEF DAYS FASTER THAN CURRENT FIRSTLINE MONOTHERAPIES.** 744
C. Bachert, K. Jenko, S. Steinsvag, D. Rauba, U. Munzel, G. Scadding (Germany)
- 11:24 **CONCORDANCE BETWEEN SUBJECTIVE NASAL SYMPTOM AND OBJECTIVE FINDING IN SOUTH KOREA: THE 2010 KOREA NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY.** 745
S.K. Chung, M.S. Jang, H.J. Dhong, H.Y. Kim, S.D. Hong, H.J. Cho (Korea)
- 11:33 **INTRAOCULAR PRESSURE, GLAUCOMA, LENS OPACITY AND THE USE OF INTRANASAL CORTICOSTEROIDS: A SYSTEMATIC REVIEW** 746
N. Ahmadi, K. Snidvongs, L. Kalish, E. Pratt, N. Mrad, R. Sacks, R. Harvey (Australia)
- 11:42 **EFFECTS OF BEPOTASTINE BESILATE AS ADD-ON THERAPY TO INTRANASAL CORTICOSTEROID TREATMENT IN JAPANESE CEDER/CYPRESS POLLINOSIS.** 747
A. Torigoe, M. Okano, S. Kariya, T. Higaki, T. Haruna, T. Noyama, T. Koyama, K. Nishizaki (Japan)

11:15 - 12:30

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: IMAGING

	Chairperson: N. Freling (The Netherlands)	748
11:15	COMPARISON OF QUALITY OF LIFE AND LUND MACKAY SCORE IN SUBGROUPS OF RHINOSINUSITIS P. Catalano, D. Carlson (USA)	749
11:20	EVALUATING THE NORMAL INFERIOR TURBINATE BY MEASURING CROSS-SECTIONAL AREA ON COMPUTED TOMOGRAPHY S.E.J. Farmer, A. Hyde, B.C. Symonds, H.B. Whittet (United Kingdom)	750
11:25	FESS IMAGING - THE ROLE OF MDCT J. Plascak, K. Makaruha, L. Kavur, V. Vidjak (Croatia)	751
11:30	THE NEW METHOD OF THE SPHENOID SINUS ON THE CT IMAGE BY THE GROWTH OF ONODI CELL K. Wada, K. Yanagi, C. Arai, E. Mori, N. Otori, H. Edamatu (Japan)	752
11:35	ULTRASONOGRAPHIC EXAMINATION OF NASAL AND PARANASAL SINUSES PATHOLOGY, AN EXOTIC IMAGING TECHNIQUE M. Dumitru, I. Anghel, A. Costache, A.G. Anghel, C. Sarafoleanu (Romania)	753
11:40	NASAL HEMORRHAGE AND IMAGING Y. Kase, A. Kamijo, K. Sugizaki (Japan)	754
11:45	CT SCANNING FOR CHRONIC RHINOSINUSITIS: COMPLIANCE WITH EPOS IN THE UK R. Sproat, S. Qamar, R. Hettige (United Kingdom)	755

11:15 - 12:30

Hall H (Rode Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: BENIGN TUMOURS

- Chairperson: R. Harvey (Australia) 756
- 11:15 **SINONASAL PAPILOMAS: OUR EXPERIENCE OVER 10 YEARS** 757
B. Jones, A. Swift (United Kingdom)
- 11:24 **EXPANDED ENDOSCOPIC ENDONASAL SURGERY FOR ADVANCED STAGE JUVENILE ANGIOFIBROMAS: A RETROSPECTIVE MULTI-CENTER STUDY.** 758
C. Langdon, P. Herman, B. Verillaud, R. Carrau, D. Prevedello, P. Nicolai, A. Schreiber, P. Battaglia, M. Bernal-Sprekelsen (Spain)
- 11:33 **ENDOSCOPIC TRANSANASAL RESECTION OF ORBITAL APEX CAVERNOUS HAEMANGIOMA** 759
B. Zhou, Q. Huang, N. Zhang, J.T. Shi (China)
- 11:42 **OUTCOMES AFTER SURGERY IN RESPIRATORY EPITHELIAL ADENOMATOID HAMARTOMAS OF THE OLFACTORY CLEFT** 760
E. Mouchon, A. Al Hawat, G. De Bonnecaze, S. Vergez, E. Serrano (France)
- 11:51 **PREDICTORS OF RESPIRATORY EPITHELIAL ADENOMATOID HAMARTOMAS OF THE OLFACTORY CLEFTS IN PATIENTS WITH NASAL POLYPOSIS** 761
D.T. Nguyen, P.L. Nguyen-Thi, G. Gauchotte, F. Arous, J.M. Vignaud, R. Jankowski (France)
- 12:00 **OUR EXPERIENCE IN ENDOSCOPIC SURGERY OF JNA** 762
V. Budu, I. Bulescu (Romania)
- 12:09 **MANAGEMENT OF SINONASAL PAPILOMAS: RECURRENCE RELATED TO SURGICAL APPROACH** 763
A. Bilde, A. Nygren, M.H. Therkildsen, C. Von Buchwald (Denmark)

11:15 - 12:30

Hall I (Berlage Zaal)

SYMPOSIUM: EXTERNAL APPROACHES TO THE SINUS

	Chairperson: P. Maragkoudakis (Greece)	764
11:15	ARE THERE STILL INDICATIONS FOR EXTERNAL APPROACHES OF THE SINUS?	765
	R. Weber (Germany)	
11:30	CRANIOFACIAL APPROACHES FOR BENIGN AND MALIGNANT TUMOURS	766
	U. Bockmühl (Germany)	
11:45	FRONTAL OBLITERATION OR CRANALISATION, DO THEY STILL HAVE A PLACE IN TREATMENT OF FRONTAL DISEASE	767
	N. Busaba, J. Silverman, S. Gray (USA)	
12:00	EXTERNAL APPROACHES TO NASOPHARYNGEAL TUMOURS	768
	J. Kanagalingam (Singapore)	
12:15	DISCUSSION	769

11:15 - 12:30

Hall J (Ontvang Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: COMPLICATIONS IN RHINOLOGY

	Chairperson: N. Otori (Japan)	770
11:15	EVIDENCE BASED REVIEW OF ANTIBIOTIC PRESCRIBING IN ORBITAL CELLULITIS	771
	N. Amin, I. Syed, A. Toma (United Kingdom)	
11:20	UNUSUAL COMPLICATIONS OF ANTI-TNF THERAPY IN CRS PATIENTS: AN EMERGING DISEASE ENTITY?	772
	S. Alromaih, B. Ibrahim, M. Desrosiers (Canada)	

- 11:25 **SINONASAL COMPLICATIONS OF DENTAL TREATMENT: VALIDATION OF A CLASSIFICATION AND TREATMENT PROTOCOL** 773
A.M. Saibene, G.C. Pipolo, P. Lozza, R. Borloni, M. Chiapasco, V. Bebi, F. Messina, G. Felisati (Italy)
- 11:30 **FRONTAL SINUS MUCOCOELE AS A COMPLICATION OF EXTERNAL APPROACH DACRYOCYSTORHINOSTOMY** 774
I. Syed, T. Gupta, S. Osborne, A. Toma (United Kingdom)
- 11:35 **A CHANGE OF PERSPECTIVE: FROM ODONTOGENIC SINUSITIS TO SINONASAL COMPLICATIONS OF DENTAL TREATMENT** 775
A.M. Saibene, G.C. Pipolo, A. Maccari, A. Scotti, S.M. Portaleone, M. Chiapasco, G. Felisati (Italy)
- 11:40 **COMPARING THE COMPLICATION RATE BETWEEN MICRODEBRIDER ASSISTED INFERIOR TURBINOPLASTY AND SUBMUCOUS RESECTION.** 776
C.Y. Chan, S.T. Toh (Singapore)
- 11:45 **INTERNAL CAROTID ARTERY PSEUDOANEURYSM WITH LIFE-THREATENING EPISTAXIS AS A COMPLICATION OF DEEP NECK SPACE INFECTION** 777
Y. Ozono, S. Nishiike, T. Michiba, R. Imai, M. Nakamura, T. Kishikawa, Y. Tomiyama, T. Shikina, C. Masumura, H. Inohara (Japan)
- 11:50 **BILATERAL DIPLOPIA AND ABDUCENT NERVE PALSY SECONDARY TO ODONTOGENIC SINUSITIS: AN UNUSUAL PRESENTATION** 778
S. Malas, H. Al-Reefy (Bahrain)
- 11:55 **EXTERNAL DRAINAGE OF ORBITAL SUPERIOR SUBPERIOSTEAL ABSCESSSES - A SAFE AND REPRODUCIBLE TECHNIQUE** 779
V. Varadarajan, T. Moors, J. De Carpentier (United Kingdom)

- 12:00 **SINONASAL SURGICAL PROCEDURES: WHOM TO BLAME FOR FAILURE?** 780
Y. Nour (Egypt)

11:15 - 12:30 **Hall K (Veilingzaal)**

SYMPOSIUM: INVERTED PAPILLOMA

- Chairperson: P. Streck 781
- 11:15 **CLINICOPATHOLOGICAL FEATURES OF PATIENTS WITH INVERTED PAPILLOMA IN NASAL CAVITY AND PARANASAL SINUSES** 782
H. Kawauch, I. Morikura, N. Aoi, Y. Shimizu, T. Fuchiwaki (Izumo City)
- 11:30 **SURGICAL MANAGEMENT OF MAXILLARY SINONASAL INVERTED PAPILLOMA** 783
E. Serrano, E. Mouchon, S. Nadeau, G. De Bonnecaze (France)
- 11:45 **ENDOSCOPIC SURGERY FOR INVERTED PAPILLOMA: WHICH ARE THE LIMITS?** 784
T. Onerci (Turkey)
- 12:00 **INVERTED PAPILLOMA OF THE FRONTAL SINUS AND RECESS, NEW TREATMENT OPTIONS** 785
G. Adriaensen, S.M. Reinartz, C. Georgalas, W.J. Fokkens (The Netherlands)
- 12:15 **DISCUSSION** 786

11:15 - 12:45 **Hall L (Geluidstudio)**

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

12:30 - 14:00

LUNCH BREAK, EXHIBITION AND E-POSTER VIEWING

14:00 - 15:30

Hall A (Effectenbeurszaal)

INTERACTIVE ROUND TABLE: AMERICAN RHINOLOGIC SOCIETY SYMPOSIUM - SITUATIONS WE FACE IN SINUS SURGERY: EXPERT OPINION AND EVIDENCE

Moderator: T. Smith (USA)	787
Panelist: J. Palmer (USA)	788
Panelist: P. Hwang (USA)	789
Panelist: J.M. DelGaudio (USA)	790
Panelist: R. Orlandi (USA)	791

14:00 - 15:30

Hall B (Glazenzaal)

INTERACTIVE ROUND TABLE: IMMUNODEFICIENCIES IN CRS

Moderator: R. Douglas (New Zealand)	792
Panelist: I. Meyts (Belgium)	793
Panelist: S. Lacroix (Switzerland)	794
Panelist: P. Stjarne (Sweden)	795
Panelist: C. Hopkins (United Kingdom)	796

14:00 - 15:30**Hall C (Keurzaal)****INTERACTIVE ROUND TABLE: OBJECTIVE AIRWAY ASSESSMENT**

Moderator: G. Ottaviano (Italy)	797
Panelist: J. Sipilaa (Finland)	798
Panelist: C. Rennie (United Kingdom)	799
Panelist: S. Kim (Korea)	800
Panelist: D. Hornung (USA)	801
Panelist: K. Vogt (Germany)	802

14:00 - 15:30**Hall D (Administratiezaal)****INTERACTIVE ROUND TABLE: SEPTOPLASTY**

Moderator: N. Keles (Turkey)	803
Panelist: F. Jakimovska (Macedonia)	804
Panelist: G. Kobacheva (Macedonia)	805
Panelist: C. Philpott (United Kingdom)	806
Panelist: M. Desrosiers (Canada)	807

14:00 - 15:30**Hall E (Mendes DaCosta Kamer)****FREE PAPER SESSION: ORAL PRESENTATIONS: RHINITIS, CLINICAL 2**

	Chairperson: C. Bachert (Belgium)	808
14:00	INTRODUCTORY LECTURE: NEW TREATMENT OPTIONS IN ALLERGIC RHINITIS	809
	C. Bachert (Belgium)	
14:09	NOVEL EFFICACY PARAMETERS IN AR MANAGEMENT: RESULTS WITH A NEW AR THERAPY (MP29-02*)	810
	C. Bachert, J. Fenton, V. Ristioja, E. Lesinskas, S. Albu, U. Munzel, P. Hellings (Belgium)	

- 14:18 **A NEW ALLERGIC RHINITIS THERAPY (MP29-02*) IS MORE EFFECTIVE THAN CURRENT FIRSTLINE MONOTHERAPIES IN PROVIDING NASAL AND OCULAR SYMPTOM RELIEF IN SEASONAL ALLERGIC RHINITIS PATIENTS.** 811
 J. Mullol, M. Soyka, P. Roche, M. Adali, U. Munzel, W. Fokkens (Spain)
- 14:27 **NONINVASIVE MEASUREMENT OF NASAL NO AND FRACTIONAL EXHALED NO IN HEALTHY PEOPLE AND PATIENTS WITH ALLERGIC RHINITIS** 812
 H. Wang, S. You, J. Zhang, L. Ji, Y. Bai (China)
- 14:36 **EFFICACY AND SAFETY OF SUBLINGUAL IMMUNOTHERAPY IN ASIAN CHILDREN** 813
 H. Lee, J. Shin, I.L.H.O. Park (Korea)
- 14:54 **A STUDY OF LATE-PHASE REACTION IN ALLERGIC RHINITIS USING ENVIRONMENTAL CHALLENGE CHAMBER** 814
 S. Yonekura, Y. Okamoto (Japan)
- 15:04 **INTRANASAL CORTICOSTEROID TREATMENT FAILURE IN ALLERGIC RHINITIS: ASSESSMENT OF UNMET NEED BY MEASURING SHIFT TO MULTIPLE THERAPIES** 815
 D. Price, G. Scadding, C. Bachert, H. Saleh, S. Nasser, V. Carter, J. Von Ziegenweidt, D. Ryan (United Kingdom)
- 15:13 **ASSESSING ALLERGIC RHINITIS SYMPTOM CONTROL USING A SIMPLE VISUAL ANALOGUE SCALE: THE DIGITAL SOLUTION** 816
 D. Price, P. Demoly, C. Bachert, S. Acaster, R. Murray, J. Bousquet (United Kingdom)

14:00 - 15:30**Hall F (Verwey Kamer)****INTERACTIVE ROUND TABLE: MANAGEMENT OF MAXILLARY RHINOSINUSITIS**

Moderator: B. Ferguson (USA)	817
Panelist: E. Giotakis (Germany)	818
Panelist: P. Stierna (Sweden)	819
Panelist: V. Kozlov (Russia)	820
Panelist: D. Smyth (Ireland)	821
Panelist: S. Toppila-Salmi (Finland)	822
Panelist: C. Sarafoleanu (Romania)	823

14:00 - 15:30**Hall G (Roland Holst Kamer)****FREE PAPER SESSION: SHORT PRESENTATIONS: OLFACTION**

	Chairperson: B. Landis (Switzerland)	824
14:00	OBJECTIVE ASSESSMENT OF OLFACTION FOLLOWING MODIFIED ENDOSCOPIC LOTHROP PROCEDURE	825
	N. Tan, K. Sieberling, P.J. Wormald (Australia)	
14:05	CULTURAL ADAPTATION OF THE "SNIFFIN STICKS" OLFACTORY TEST FOR THE RUSSIAN-SPEAKING COUNTRIES	826
	V. Bogdanov, V. Bogdanov (Ukraine)	
14:10	EFFICACY AND PROGNOSTIC VALUE OF SYSTEMIC STEROID THERAPY OF OLFACTORY DISORDERS IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH POLYPS	827
	V. Bogdanov (Ukraine)	
14:15	A NEW ODOR MEMORY TEST USING THE SNIFFIN'STICKS	828
	C. Mueller, L. Jobs, B. Renner (Austria)	
14:20	ODOR PROCESSING CAN TAKE PLACE AMONG CONGENITAL ANOSMICS - FMRI STUDY	829
	S. Shushan, Y. Yeshurun, A. Arzi, Y. Roth, N. Sobel (Israel)	

- 14:25 **A SELF-ADMINISTERED "TASTE STRIPS" TEST FOR THE ASSESSMENT OF GUSTATORY FUNCTION** 830
 A. Wolf, L.D. Varga, L. Wittibschlager, B. Renner, C.A. Mueller (Austria)
- 14:30 **GENDER DIFFERENCES IN TASTE THRESHOLD** 831
 M. Ye, S. Shin, J. Lee (Korea)
- 14:35 **VALIDATION OF A HIGH OUTPUT CULTURE TECHNIQUE FOR OBTAINING NEURAL STEM CELLS FROM HUMAN OLFACTORY MUCOSA** 832
 A.M. Saibene, S. Pece, G.C. Pipolo, T. Tanos, A. Rubio, A. Maccari, A. Scotti, G. Felisati (Italy)
- 14:40 **RETROSPECTIVE AND DESCRIPTIVE STUDY ABOUT THE EVOLUTION OF ANOSMIA ACCORDING TO ITS ETIOLOGY** 833
 V. AMARILLO ESPITIA, G. EISENBERG PLAZA, E. HERNANDEZ GARCÍA, J. ALVAREZ LÓPEZ, G. PLAZA MAYOR (Spain)
- 14:45 **OLFACTORY FUNCTION IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH POLYPS** 834
 V. Bogdanov, V. Bogdanov (Ukraine)
- 14:50 **EFFECTIVE NASAL AIRFLOW-INDUCING MANEUVER FOR OLFACTION ACQUISITION AFTER TOTAL LARYNGECTOMY - INCLUDE RESULT OF TASTE EXAMINATION -** 835
 N. Katayama, Y. Fujimoto, M. Hiramatsu, T. Maruo, N. Nishio, K. Suga, M. Shimono, T. Nakada, M. Sone, T. Nakashima (Japan)
- 14:55 **OBJECTIVE ASSESSMENT OF THE EFFECTS OF LONG-DURATION WEARING OF N95 RESPIRATORS AND SURGICAL FACEMASKS ON UPPER AIRWAY FUNCTIONS** 836
 J. Zhu, D. Wang, S. Lee, H. Lee (Singapore)

- 15:00 **COMPARISON OF OLFACTORY FUNCTION MEASURED BY SNIFFIN' STICKS TEST AND SUBJECTIVE EVALUATION OF SMELL IMPAIRMENT IN PATIENTS WITH CHRONIC RHINOSINUSITIS** 837
 A. Minovi, S. Dazert, F. Minwegen (Germany)
- 15:05 **OLFACTORY DYSFUNCTION IN PATIENTS WITH BRONCHIAL ASTHMA** 838
 A. Kamijo, K. Sugizaki, Y. Kase, M. Nagata (Japan)

14:00 - 15:30 **Hall H (Rode Kamer)**

FREE PAPER SESSION: SHORT PRESENTATIONS: OSAS

- Chairperson: N. de Vries (The Netherlands) 839
- 14:00 **HEIDELBERG SCALP ACUPUNCTURE AS A POTENCIAL THERAPY IN OBSTRUCTIVE SLEEP APNEA. A PROSPECTIVE CLINICAL PRE-STUDY** 840
 M.J. Santos, N. Correia, T. Efferth, J. Vent, J. Machado, M. Sá, J.C. Wick, H.J. Greden (Portugal)
- 14:05 **ANALYSIS OF AGE-RELATED SLEEP QUESTIONNAIRES: ARE SLEEP QUESTIONNAIRES VALID IN ALL ADULT AGE GROUP AS SCREENING TOOLS OF OBSTRUCTIVE SLEEP APNEA SYNDROME?** 841
 L.E.E. Tae Hoon, K. Do Hyun, K.I.M. Bo Young (Korea)
- 14:10 **THE ROLE OF NASAL OBSTRUCTION IN OSA** 842
 S. Reshetnikov, O. Reshetnikova, V. Reshetnikov (Russia)
- 14:15 **ASSESSMENT OF MALLAMAPATI SCALE BY ENT AND ANESTHESIOLOGIST IN PATIENTS WITH SLEEP DISORDERS** 843
 M.P. Cárdenas Escalante, M. Gonzalez Pena, C. Añez, E. Figuerola Massana (Spain)

- 14:20 **COMPARING SURGICAL RESULTS OF DIFFERENT UVULOPALATOPHARYNGOPLATIES IN OBSTRUCTIVE SLEEP APNEA HIPOPNEA PATIENTS.** 844
 M. Carrasco, V. Zerpa, G. Agostini, J. Dalmau (Spain)
- 14:25 **THE CONTRIBUTION OF NASAL VALVE DYSFUNCTION TO NASAL OBSTRUCTION IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME** 845
 Z. Kaliadzich, L. Makaryna-Kibak, A. Makaryn-Kibak, Y. Eremenko (Belarus)
- 14:30 **INFLUENCE OF THE INFLAMMATORY PROCESS IN THE NASAL CAVITY AND PARANASAL SINUSES IN SNORE AND OBSTRUCTIVE SLEEP APNEA SYNDROME (OSAS).** 846
 M. Kozulina, B. Peric (Russia)
- 14:35 **RAPID MAXILLARY EXPANSION IN CHILDREN WITH OBSTRUCTIVE SLEEP APNEA (OSA): META-ANALYSIS.** 847
 A.J. Machado Júnior, E. Zancanella, A.N. Crespo (Brazil)
- 14:40 **UVULOPALATOPHARYNGOPLASTY OUTCOME ASSESSMENT WITH WATCHPAT®** 848
 M. Shin, M.S. Shin (Korea)
- 14:45 **THE INFLUENCE OF BODY POSITION ON NASAL VENTILATION IN HEALTHY SUBJECTS. A STUDY BY 4-PHASE-RHINOMANOMETRY.** 849
 K. Vogt, K. Peksis, A. Gramatniece, L. Sperla (Latvia)
- 14:50 **THE VALUE OF DRUG-INDUCED SLEEP ENDOSCOPY FOR THE TREATMENT AND INDIVIDUALIZED TAILORING OF SURGERY TO PATIENTS WITH SNORING AND OBSTRUCTIVE SLEEP APNEA** 850
 I. Braverman (Israel)

14:55	VALUE OF THE NOSE IN SLEEP DISORDERED BREATHING	851
	M.P. Cárdenas Escalante, M.D. Martinez Novoa, E. Figuerola Massana (Spain)	
15:00	LACK OF ASSOCIATION BETWEEN MATRIX METALLOPROTEINASE-9 PROMOTER GENE POLYMORPHISM (-1562C>T) AND OBSTRUCTIVE SLEEP APNEA SYNDROME	852
	M. Yalçinkaya, S.S. Erbek, S.T. Babakurban, E. Küpeli, S. Bozbas, Y.K. Terzi, F.I. Sahin (Turkey)	
15:05	ALTERATION OF UVULAR/VELAR CONSONANT “R” AFTER SLEEP-DISORDER SURGERY - A CASE REPORT	853
	J. Plzak, J. Kastner, J. Zabrodsky, J. Klozar (Czech Republic)	
15:10	PROPER OSTEOTOMY INCLUDING GENIAL TUBERCLE: AN ANATOMICAL ANALYSIS AND IMPLICATIONS FOR GENIOGLOSSUS IN CADAVER	854
	S.W. KIM, S.Y. Jung, S.Y. Shin, K.H. Lee, J.S. Cho (Korea)	
15:15	CLINICAL SAFETY OF PMR(PALATAL MUSCLE RESECTION) IN WHICH PERFORMED OSAS PATIENTS	855
	S. Koo, H. Lee, Y. Kim, Y. Kim (Korea)	
15:20	INFLUENCE OF POSITIVE AIRWAY PRESSURE ON NASAL VENTILATION	856
	J. Vent, C.H.R. Götz, J. Maurer, K. Vogt, K. Hörmann (Germany)	

14:00 - 15:30**Hall I (Berlage Zaal)****INTERACTIVE ROUND TABLE: MANAGEMENT OF (INVASIVE) FUNGAL DISEASES IN THE PARANASAL SINUSES**

Moderator: R. Kamel (Egypt)	857
Panelist: B. Gendeh (Malaysia)	858
Panelist: S. Haruna (Japan)	859
Panelist: O. Sharfy Abdel Kader (Sudan)	860
Panelist: M. Zahran (Saudi Arabia)	861
Panelist: W. Anselmo-Lima (Brazil)	862
Panelist: A. Gulati (India)	863

14:00 - 15:30**Hall J (Ontvang Kamer)****FREE PAPER SESSION: SHORT PRESENTATIONS: CRS MISCELLANEOUS**

	Chairperson: G. Adriaensen (The Netherlands)	864
14:00	CLINICAL PROFILE OF PATIENTS WITH CHRONIC RHINOSINUSITIS.	865
	C.M. Chiesa Estomba, A.S. Araujo da Costa, T. Rivera Schmitz, C.C. Ossa Echeverri, D. Alonso Parraga (Spain)	
14:05	THE PROTECTIVE ROLES OF ANTIOXIDANTS IN EOSINOPHILIC CHRONIC RHINOSINUSITIS WITH NASAL POLYPS	866
	K. Ikeda, N. Ono, T. Kusunoki (Japan)	
14:10	IMMUNE DYSFUNCTION IN MEDICALLY RESISITANT CRS	867
	M. Al-Qudah (Jordan)	

- 14:15 **EXTRAESOPHAGEAL REFLUX IS OFTEN PRESENT IN PATIENTS WITH CHRONIC RHINOSINUSITIS AND SIMULTANEOUS BRONCHIAL ASTHMA** 868
 K. Zelenik, P. Matousek, M. Formanek, P. Kominek (Czech Republic)
- 14:20 **IMAGE-GUIDANCE IN ENDOSCOPIC SINUS SURGERY: IS IT ASSOCIATED WITH DECREASED MEDICOLEGAL LIABILITY?** 869
 J. Eloy, E. Kalyoussef, P.F. Svider, C.M. D'Aguillo, S. Baredes, M. Setzen, A.J. Folbe (USA)
- 14:25 **NOSE BIOPSY- A COMPARISON BETWEEN TWO SAMPLING TECHNIQUES** 870
 N. Segal, J. Olchowski, S. Kordeliok, I. Plackt (Israel)
- 14:30 **SUCCESSFUL COMBINED MAXILLARY SINUS FLOOR ELEVATION AND ENDOSCOPIC SINUS SURGERY: A PRELIMINARY STUDY** 871
 S. Abu-Ghanem, G. Horowitz, S. Balaban, V. Reiser, S. Kleinman, D.M. Fliss, I. Koren (Israel)
- 14:35 **OUTCOME OF FESS IN OPTIC NEUROPATHY DUE TO RHINOSINUSITIS** 872
 I. Konstantinidis, Z. Tsinaslanidou, A. Chatziavramidis, J. Constantinidis (Greece)
- 14:40 **REVIEW ARTICLE: OCCUPATIONAL RHINOSINUSITIS** 873
 I. Picoli Dantas, R. Araújo Rêgo, R.U.F. Teixeira, R.M. Knoll, J.E. Baptistella, W.T.A. Lima (Brazil)
- 14:45 **ABNORMAL MAXILLARY SINUS FINDINGS BEFORE SINUS LIFT IN ASYMPTOMATIC PATIENTS - A NEW INDICATION FOR ESS** 874
 A. Margulis, R.O.E.E. Landesberg, R.O.N. Elishar (Israel)

14:50	CLINICAL STUDIES OF PRIMARY PARANASAL SINUS CYST	875
	H. Awakura, A. Ishibashi, T. Komatsuzaki, Y. Kyo, S. Watanabe, Y. Hinohira, H. Suzaki (Japan)	
14:55	IATROGENIC FOREIGN BODIES OF THE MAXILLARY SINUS	876
	C. Manea, C. Sarafoleanu, V. Postelnicu (Romania)	
15:00	PATIENT'S EXPERIENCE OF ANTRAL IRRIGATION IN ACUTE SYMPTOMS OF RHINOSINUSITIS	877
	P. Virkkula, K. Blomgren, M. Ylitalo, M. Hytönen (Finland)	
15:05	PARANASAL SINUSITIS AND THE QUALITY OF THE VOICE.	878
	K. Zaharia, A. Shehi, B. Boci (Albania)	
15:10	SILENT SINUS SYNDROME IN PATIENTS WITH LATERALIZATION OF INFUNDIBULUM	879
	M.Z. Dzhafarova, D.M. Savvateeva, V.M. Svistushkin (Russia)	

14:00 - 15:30

Hall K (Veilingzaal)

INTERACTIVE ROUND TABLE: MANAGEMENT OF COMPLICATIONS OF ACUTE RHINOSINUSITIS

Moderator: A. Swift (United Kingdom)	880
Panelist: H. Braun (Austria)	881
Panelist: H. Babar-Craig (United Kingdom)	882
Panelist: S. Vlaminck (Belgium)	883
Panelist: M. Wagenmann (Germany)	884
Panelist: N. Otori (Japan)	885

14:00 - 15:30

Hall L (Geluidstudio)

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

15:30 - 16:15

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

15:30 - 16:15

Hall A (Effectenbeurszaal)

ERS GENERAL ASSEMBLY

WELCOME BY THE CONGRESS PRESIDENT

APPROVAL OF THE MINUTES

REPORT OF THE PRESIDENT

REPORT OF THE GENERAL SECRETARY

REPORT OF THE TREASURER

REPORT OF THE EDITOR IN CHIEF "RHINOLOGY"

APPOINTMENTS

GENERAL SECRETARY

DELEGATES

CHANGES STATUTES/BYLAWS

PRIZES, FELLOWSHIPS, COURSES UNDER ERS-AUSPICES

COOPERATION WITH OTHER SOCIETIES

FUTURE CONGRESSES

ANY OTHER BUSINESS

16:15 - 17:00**Hall A (Effectenbeurszaal)****THE BIG DEBATE: GENETIC VERSUS ENVIRONMENT**

	Moderator: B. Ferguson (USA)	886
16:15	ENVIRONMENT E. Toskala (USA)	887
16:25	GENETICS M. Desrosiers (Canada)	888
16:35	QUESTIONS FROM THE MODERATOR Moderator: B. Ferguson (USA)	889
16:45	REBUTTAL E. Toskala (USA)	890
16:50	REBUTTAL M. Desrosiers (Canada)	891

16:15 - 17:00**Hall B (Glazenzaal)****INSTRUCTIONAL SESSION: THE FRONTAL SINUS**

	THE FRONTAL SINUS	892
	R. Harvey (Australia)	

16:15 - 17:00**Hall D (Administratiezaal)****INSTRUCTIONAL SESSION: EVOLUTION AND DEVELOPMENT: A WAY TO UNDERSTAND THE NOSE**

	EVOLUTION AND DEVELOPMENT: A WAY TO UNDERSTAND THE NOSE	893
	R. Jankowski (France)	

16:15 - 17:45

Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: UNITED AIRWAYS

- Chairperson: P. Howarth (United Kingdom) 894
- 16:15 **THE IMPACT OF ENDOSCOPIC SINUS SURGERY ON HEALTHCARE USE IN PATIENTS WITH RESPIRATORY COMORBIDITIES - ANALYSIS OF 9,105 PATIENTS OVER 5 YEARS** 895
M. Benninger, C. Holy (USA)
- 16:24 **RHINITIS AND CHRONIC RHINOSINUSITIS WITH OR WITHOUT NASAL POLYPS IN ADULT ASTHMA: COMORBIDITY WITH ASTHMA IN RELATION TO ITS SEVERITY, AND ASPIRIN SENSITIVITY (IRIS-ASMA STUDY)** 896
J. Castillo, V. Plaza, G. Rodrigo, B. Juliá, C. Picado, J. Mullol (Spain)
- 16:33 **INFLAMMATORY MEDIATOR LEVELS IN NASAL SECRETIONS AND SEVERITY OF NASAL POLYPOSIS - IS THERE A RELATIONSHIP?** 897
A. Peric, D. Vojvodic, V. Radulovic, N. Baletic (Serbia)
- 16:42 **NASAL POLYPOSIS IN LUNG TRANSPLANT RECIPIENTS WITH CYSTIC FIBROSIS: PREVALENCE, RISK FACTORS AND IMPLICATIONS ON OUTCOME** 898
D. Vital, M. Hofer, A. Boehler, M.B. Soyka, D. Holzmann (Switzerland)
- 16:51 **THE IMPORTANCE OF ATOPY, ASTHMA AND ASPIRIN INTOLERANCE TO CHRONIC RHINOSINUSITIS RECURRENCE** 899
W. Anselmo-Lima, G.C.P. Sella, J.W. Spies, T.N. Mendonça, L.K. Arruda, E. Tamashiro, F.C.P. Valera (Brazil)
- 17:00 **EFFECT OF ENDOSCOPIC SINUS SURGERY FOR CHRONIC RHINOSINUSITIS IN LUNG TRANSPLANT RECIPIENTS: A SINGLE INSTITUTIONAL EXPERIENCE** 900
K. Uraguchi, S. Kariya, M. Okano, T. Haruna, A. Torigoe, Y. Noyama, K. Nishizaki (Japan)

17:09 **PULMONARY FUNCTION IN CHRONIC RHINOSINUSITIS** 901

S. Kariya, M. Okano, T. Haruna, A. Torigoe, K. Uruguchi,
Y. Noyama, K. Nishizaki (Japan)

17:18 **CHRONIC RHINOSINUSITIS WITH NASAL POLYPS AND
ASTHMA: AN ANALYSIS OF UPPER AND LOWER AIRWAY
INFLAMMATION** 902

K. Håkansson, C. Bachert, L. Konge, S.F. Thomsen,
A.E. Pedersen, S.S. Poulsen, T. Martin-Bertelsen, O. Winther,
V. Backer, C. Von Buchwald (Denmark)

16:15 - 17:00 **Hall F (Verwey Kamer)**

**INSTRUCTIONAL SESSION: SPHENOID LATERAL RECESS
MENINGOENCEPHALOCELES**

SPHENOID LATERAL RECESS MENINGOENCEPHALOCELES 903

H. Stammberger (Austria)

16:15 - 17:00 **Hall G (Roland Holst Kamer)**

INSTRUCTIONAL SESSION: RHINOSPORIDIOSIS & RHINOSCLEROMA

RHINOSPORIDIOSIS & RHINOSCLEROMA 904

R. Singh (India)

16:15 - 17:00 **Hall I (Berlage Zaal)**

INSTRUCTIONAL SESSION: NASAL PROVOCATION TESTING

NASAL PROVOCATION TESTING 905

C. Rondon (Spain)

16:15 - 17:45

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: RARE DISEASES IN THE NOSE AND SINUSES

- Chairperson: R. Kamel (Egypt) 906
- 16:15 **SINONASAL MANIFESTATIONS OF SARCOIDOSIS: A SINGLE INSTITUTION EXPERIENCE WITH 38 CASES** 907
 M. Aloulah, R. Matthew, P. Batra, B. Marple (Saudi Arabia)
- 16:24 **NASAL MUCOSA NARROW BAND IMAGING (NBI) IN GRANULOMATOSIS WITH POLIANGIITIS (WEGENER GRANULOMATOSIS): A PRELIMINARY STUDY** 908
 M. Trimarchi, F. Pilolli, G. Bertazzoni, C. Campochiaro, E. Bozzolo, M.G. Sabbadini, M. Bussi (Italy)
- 16:33 **THE INTERACTION BETWEEN SINUS- AND LUNG INFECTIONS IN PATIENTS WITH PRIMARY CILIARY DYSKINESIA** 909
 M. Alanin, H.K. Johansen, N. Hoiby, M. Skov, T. Pressler, K. Aanaes, K.G. Nielsen, C.V. Buchwald (Denmark)
- 16:42 **THE ASSOCIATION BETWEEN INTRACTABLE MIDDLE EAR EFFUSION, NASAL POLYPS AND CHURG STRAUSS SYNDROME** 910
 W. Hasan, D. Smyth, J.E. Fenton (Ireland)
- 16:51 **TEMPORAL BONE PNEUMATIZATION IN CYSTIC FIBROSIS: A CORRELATION WITH GENOTYPE?** 911
 M. Berkhout, C.J. Van Rooden, R.C. Aalbers, L.H. El Bouazzaoui, W.J. Fokkens, E. Rijntjes, H.G.M. Heijerman (The Netherlands)
- 17:00 **NASO-SINUSAL TUBERCULOSIS : DIAGNOSTIC DIFFICULTIES AND THERAPEUTIC MANAGEMENT** 912
 A. Mardassi, N. Mathlouthi, H. Dimassi, S. Kdous, S. Mezri, C. Zgolli, G. Chebbi, R. Ben M'hamed, K. Akkari, S. Benzarti (Tunisia)

- 17:09 **PHARMACOKINETICS OF NASALLY ADMINISTERED TOBRAMYCIN, COLISTIN SULPHOMETHATE SODIUM AND A COMBINATION OF TOBRAMYCIN AND COLISTIN SULPHOMETHATE SODIUM.** 913
 M.C. Berkhout, A.J. Van Velzen, D.J. Touw, B.M. De Kok, W.J. Fokkens, H.G.M. Heijerman (The Netherlands)
- 17:18 **A NEW TOOL FOR CF DIAGNOSIS : SHORT CIRCUIT CURRENT MEASUREMENTS IN HUMAN NASAL EPITHELIAL CELLS COLLECTED BY NASAL BRUSHING** 914
 V. PRULIERE ESCABASSE, I. Fajac, A. Lorot, P. Zadique, P. Fanen (France)
- 17:27 **EVIDENCE LINKING CHRONIC RHINOSINUSITIS AND MIDDLE EAR INFLAMMATION IN ADULT** 915
 S. Azrial, R. Wardani, A. Hafil, W. Alviandi, S. Bardosono (Indonesia)

16:15 - 17:00 **Hall K (Veilingzaal)**

INSTRUCTIONAL SESSION: RHINO NEUROSURGERY MORE EFFICIENT

RHINO NEUROSURGERY MORE EFFICIENT 925

S.K. Ahmed, A.L. McDermott, L. McClelland, S. Rose, R. Finn, A. Paluzzi, R. Mitchell (United Kingdom)

16:15 - 17:45 **Hall L (Geluidstudio)**

SPONSORED SESSION: INDUSTRY WORKSHOP NOT INCLUDED IN MAIN EVENT CME/CPD CREDIT

17:00 - 17:45

Hall A (Effectenbeurszaal)

THE BIG DEBATE: MORPHING IN RHINOPLASTY

	Moderator: P. Hellings (Belgium)	916
17:00	PRO P. Lekakis (Belgium)	917
17:10	CON A. Mesbahi (Iran)	918
17:20	QUESTIONS FROM THE MODERATOR Moderator: P. Hellings (Belgium)	919
17:30	REBUTTAL P. Lekakis (Belgium)	920
17:35	REBUTTAL A. Mesbahi (Iran)	921

17:00 - 17:45

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: MANAGEMENT OF SEVERE EPISTAXIS

	MANAGEMENT OF SEVERE EPISTAXIS	922
	A.C. Swift (United Kingdom)	

17:00 - 17:45

Hall F (Verwey Kamer)

INSTRUCTIONAL SESSION: GERD IN RHINOSINUSITIS

	GERD IN RHINOSINUSITIS	923
	S. Steinsvag (Norway)	

17:00 - 17:45

Hall I (Berlage Zaal)

INSTRUCTIONAL SESSION: ASPIRIN PROVOCATION TESTS AND INDUCING TOLERANCE

ASPIRIN PROVOCATION TESTS AND INDUCING TOLERANCE 924

I. Terreehorst (The Netherlands)

SCIENTIFIC PROGRAM

THURSDAY, JUNE 26



ERS/ISIAN 2014

25th Congress of the European Rhinologic Society
32nd International Symposium of Infection & Allergy of the Nose

Amsterdam, The Netherlands
June 22-26, 2014

SCIENTIFIC PROGRAM THURSDAY, JUNE 26, 2014

8:30 - 9:30

Hall A (Effectenbeurszaal)

PLENARY: FRONTAL SINUS

	Chairperson: W. Fokkens (The Netherlands)	926
8:30	FUNCTIONAL APPROACHES TO THE FRONTAL SINUS	927
	H. Stammberger (Austria)	
9:00	EXTENDED APPROACHES TO THE FRONTAL SINUS	928
	P.J. Wormald (Australia)	

8:30 - 9:30

Hall C (Keurzaal)

PLENARY: OUTCOME ASSESSMENT ON CRS

	Chairperson: C. Georgalas (The Netherlands)	929
8:30	DEVELOPMENT AND UTILISATION OF OUTCOME MEASUREMENTS IN CRS	930
	T. Smith (USA)	
9:00	SURGEON LEVEL DATA AND OUTCOMES	931
	C. Hopkins (United Kingdom)	

9:30 - 10:45

Hall A (Effectenbeurszaal)

SYMPOSIUM: MANAGEMENT OF THE PATIENT WHO HAS FAILED FESS

	Chairperson: P.J. Wormald (Australia)	932
9:30	DIFFICULT TO TREAT PATIENTS WITH CRS: HOW TO REACH CONTROL	933
	S. Reinartz, C. Georgalas, G. Adriaensen, W. Fokkens (The Netherlands)	
9:45	MORE EXTENDED SURGERY: AN OPTION FOR PATIENTS WHO FAIL FESS?	934
	R. Jankowski (France)	
10:00	MEDICAL OPTIONS IN DIFFICULT TO TREAT PATIENTS WITH CRS	935
	H.J. Dhong (Korea)	
10:15	MEDIAL MAXILLECTOMY IN THE TREATMENT OF CRS	936
	I. Konstantinidis (Greece)	
10:30	DISCUSSION	937

9:30 - 10:45

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: CADAVER DISSECTION 03: THE ENDOSCOPIC APPROACH TO THE ANTERIOR SKULL BASE

	D. Simmen (Switzerland)	938
--	-------------------------	-----

9:30 - 10:45

Hall C (Keurzaal)

SYMPOSIUM: EUROPEAN RESPIRATORY SOCIETY - THE RELATION BETWEEN UPPER AND LOWER AIRWAYS

	Chairperson: P. Howarth (United Kingdom)	939
9:30	THE ELECTRONIC NOSE: OPTIONS IN THE LOWER AND UPPER AIRWAYS	940
	M. Van der Schee (The Netherlands)	

9:45	NEW TREATMENT OPTIONS IN THE LOWER AIRWAYS David Price (United Kingdom)	
10:00	LATE ONSET ASTHMA, THE RELATIONSHIP WITH THE UPPER AIRWAYS AND THE RISKS OF DECLINING LUNG FUNCTION A. Ten Brinke (The Netherlands)	941
10:15	THE RELATIONSHIP BETWEEN UPPER AND LOWER AIRWAYS IN PATIENTS WITH CRS AND ASTHMA M. Nonaka (Japan)	942
10:30	DISCUSSION	943

9:30 - 10:45

Hall D (Administratiezaal)

SYMPOSIUM: IMMUNOTHERAPY UPDATE 2014

	Chairperson: E. Prokopakis (Greece)	944
9:30	INTRALYMPHATIC IMMUNOTHERAPY L. Hellkvist, T. Hylander, U. Peterson Westin, L.O. Cardell (Sweden)	945
9:42	SLIT OR SCIT, DOES IT MAKE A DIFFERENCE? I. Terreehorst (The Netherlands)	946
9:54	IMMUNOTHERAPY IN AN ENT CLINIC O. Pfaar (Germany)	947
10:06	SUBJECTIVE VERSUS OBJECTIVE TOOLS TO EVALUATE THE SUCCESS OF IMMUNOTHERAPY Y. Okamoto (Japan)	948

10:18	THE FUTURE OF IMMUNOTHERAPY	949
	C. Akdis (Switzerland)	
10:30	DISCUSSION	950

9:30 - 10:45

Hall F (Verwey Kamer)

SYMPOSIUM: BASIC RESEARCH IN RHINOSINUSITIS

	Chairperson: J. Vokurka (Czech Republic)	951
9:30	EXCESSIVE FIBRIN DEPOSITION IN PATENTS WITH CRSWNP	952
	T. Takabayashi, R. Schleimer, S. Fujieda (Japan)	
9:42	INDUCTION OF NASAL POLYPOID LESIONS IN AN ALLERGIC RHINOSINUSITIS	953
	D.W. Kim (Korea)	
9:54	ANIMAL MODELS IN CRS	954
	P. Stierna (Sweden)	
10:06	THE ROLE OF BIOFILMS IN CRS	955
	A.J. Psaltis, P.J. Wormald, S. Vreugde (Australia)	
10:18	CROSSTALK OF MICROBIAL ANTIGENS AND COX METABOLISM IN THE PATHOGENESIS OF CRS	956
	M. Okano, T. Higaki, S. Kariya, T. Haruna, Y. Noyama, K. Uraguchi, A. Torigoe, K. Nishizaki (Japan)	
10:30	DISCUSSION	957

9:30 - 10:45

Hall G (Roland Holst Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: SKULL BASE SURGERY 3

	Chairperson: M. Bernal-Sprekelsen (Spain)	958
9:30	INTRATHECAL FLUORESCHEIN IN SURGICAL TREATMENT OF CEPHALORACHIDEAN FISTULAE	959
	V. AMARILLO ESPITIA, E. HERNANDEZ GARCÍA, J. ALVAREZ LÓPEZ, G. EISENBERG PLAZA, V. GARCIA PECES, G. PLAZA MAYOR (Spain)	
9:35	NASAL CSF LEAKS RELAPSES SURGICAL TREATMENT	960
	K.T. Abdulkerimov, R.S. Davydov, K.I. Kartashova (Russia)	
9:40	ENDOSCOPIC TRANS-NASAL REPAIR OF CSF LEAK WITH SYNTHETIC, BIODEGRADABLE NEUROFILM	961
	I.M. Syed, P. Modayil, S. Little, A. Toma (United Kingdom)	
9:45	IMPROVED VISUALIZATION FOR PARAPHARYNGEAL EXTENSION OF SINO-NASAL TUMOR BY UTILIZING ANGLE ENDOSCOPE AND ROBOTIC SYSTEM-ASSISTED SURGERY	962
	B. Roongpuvapaht, K. Tanjararak, W. Cheewarengroj, T. Bhongmakapat, A. Hansasuta (Thailand)	
9:50	3T-INTRAOPERATIVE MR IMAGING - A COST EFFECTIVE IMPROVEMENT IN INTRAOPERATIVE IMAGING IN ENDOSCOPIC SKULL BASE SURGERY	963
	D. Holzmann, M.B. Soyka, D. Vital, L. Regli (Switzerland)	
9:55	ELECTROMAGNETIC TRACKING IN MICROSCOPIC FRONTAL SKULL BASE SURGERY	964
	A. Giotakis, H. Riechelmann, W. Freysinger, F. Kral (Austria)	
10:00	CURRENT SIGNIFICANCE OF SUBFRONTAL CRANIOTOMY	965
	F. Kral, A. Giotakis, M. Scheithauer, H. Riechelmann (Austria)	

10:05	GERIATRIC ENDOSCOPIC SKULL BASE SURGERY	966
	T. Beech, S. Ahmed, J. Matteucci, Z. Wyrko, A. Shad, A. Paluzzi, R. Mitchell (United Kingdom)	
10:10	BIRMINGHAM EXPERIENCE WITH OPTIC NERVE DECOMPRESSION	967
	T. Beech, S. Ahmed, T. Matthews, A. Paluzzi, R. Mitchell (United Kingdom)	
10:15	ENDONASAL ENDOSCOPIC MANAGEMENT OF SINONASAL NEOPLASMS	968
	M. Naraghi, M. Borojerd (Iran)	
10:20	PREDICTIVE ABILITY OF CT SCAN TO DETERMINE INVERTED PAPILLOMA SITE OF ATTACHMENT	969
	T.S. Santos, P. Gonçalves, B. Moreira, A. Correia, M.G. Valente, C. Carvalho (Portugal)	
10:25	ENDOSCOPIC SURGERY OF RARE BENIGN VASCULAR TUMORS OF THE NASAL CAVITY	970
	P. Burduk, M. Wierzchowska, M. Bodnar, B. Grzeskowiak (Poland)	
10:30	CLINICAL FEATURE OF SINONASAL INVERTED PAPILLOMA: AN ANALYSIS OF 50 CASES	971
	S. Kwon (Korea)	
10:35	COMPARISON OF PRE-OPERATIVE CT-SCAN AND MRI ASSESSMENT WITH THE INTRA OPERATIVE FINDINGS ON SINONASAL INVERTED PAPILLOMA USING SURGICAL NAVIGATION PANEL UNIT	972
	A. Budi, R.S. Wardani, V. Wulani, A. Djurzan (Indonesia)	

9:30 - 10:45

Hall H (Rode Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: CRS SURGICAL TECHNIQUES

- Chairperson: V. Lund (United Kingdom) 973
- 9:30 **TRANSNASAL ENDOSCOPIC PRELACRIMAL RECESS APPROACH -- AN ALTERNATIVE APPROACH FOR MAXILLARY SINUS DISEASES** 974
T. Huang, Y. Hsu, T. Chiu (Taiwan)
- 9:35 **NEW ENDONASAL FLAPS FOR RECONSTRUCTION OF LARGE MUCOSA DEFECTS IN FRONTAL SINUS SURGERY** 975
T. Kühnel (Germany)
- 9:40 **PRESERVATION OF THE FRONTAL BEAK IN THE MODIFIED ENDOSCOPIC LOTHROP PROCEDURE** 976
S. Nishiike, T. Kishikawa, M. Nakamura, Y. Tomiyama, T. Shikina, C. Masumura, H. Inohara (Japan)
- 9:45 **COMPARISON OF 3-DIMENSIONAL ENDOSCOPIC SINONASAL SURGERY BETWEEN SINGLE AND DUAL VIDEO CHIPS : 'INSECT EYE' 3-D ENDOSCOPE VERSUS 'TWIN LENS' 3-D ENDOSCOPE** 977
C. Kim, S. Seong, J. Kang, J. Lee, J. Yoon (Yonsei University College of Medicine)
- 9:50 **ENDOSCOPIC REMOVAL OF ECTOPIC TEETH IN THE MAXILLARY SINUS: A MULTICENTER EXPERIENCE** 978
A. Margulis, R.O.E.E. Landesberg, N.I.L.I. Segal, A. Yakirevich, U.R.I. Peleg, R.O.N. Elishar (Israel)
- 9:55 **CURRENT POSITION OF EXTERNAL FRONTAL SEPTECTOMY** 979
J. Michel, M. Achache, V. Rossi, A. Paganelli, P. Dessi (France)

10:00	MUCOCELES OF THE FRONTAL SINUS TREATED WITH CONVENTIONAL ENDOSCOPIC SINUS SURGERY (DRAF TYPE IIA)	980
	K. Nomura, Y. Honkura, D. Ozawa, M. Sugawara, K. Arakawa, Y. Katori (Japan)	
10:05	COMPARING ENDOSCOPIC SINUS SURGERY WITH TRADITIONAL APPROACH IN CASES OF MAXILLARY SINUS INVERTED PAPILOMA.	981
	T. Tsuda, M. Hayama, K. Yoshinami, T. Kawashima, T. Shikina (Japan)	
10:10	ENDOSCOPIC SINUS SURGERY FOR SINUS MUCOCELES	982
	U.S. Dharmabakti, R.S. Wardani, K. Prameswari (Indonesia)	

9:30 - 10:45

Hall I (Berlage Zaal)

SYMPOSIUM: FACIAL PAIN AND HEADACHE

	Chairperson: M. Barnes (United Kingdom)	983
9:30	DIFFERENTIAL DIAGNOSIS OF FACIAL PAIN	984
	C. Nguyen (USA)	
9:45	WHAT CAUSES FACIAL PAIN IN SINUSITIS	985
	N. Busaba (USA)	
10:00	HOW TO TREAT FACIAL PAIN	986
	A.M. Agius, N.S. Jones, R. Muscat (Malta)	
10:15	HEADACHE AND THE RHINOLOGIST - RHINOGENIC OR NOT	987
	M. Setzen (USA)	
10:30	DISCUSSION	988

9:30 - 10:45

Hall J (Ontvang Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: EPISTAXIS

- Chairperson: T. Van Zele (Belgium) 989
- 9:30 **MULTI-CENTRE AUDIT OF EPISTAXIS MANAGEMENT IN THE UNITED KINGDOM: IS THERE A CASE FOR A NATIONAL REVIEW OF PRACTICE?** 990
A. Hall, H. Blanchford, P. Chatrath, C. Hopkins (United Kingdom)
- 9:39 **THE RELATIONSHIP BETWEEN ADMISSION SERUM UREA LEVELS AND CLINICAL OUTCOME IN PATIENTS WITH EPISTAXIS** 991
S. Fishpool, K. Foley, S. Bull, H. Whittet (United Kingdom)
- 9:48 **ENDOSCOPIC SPHENOPALATINE ARTERY LIGATION IN A TEACHING HOSPITAL SETTING: OUTCOME AND RECOMMENDATIONS** 992
S.Y. Hey, N.K.F. Koo Ng, G.W. McGarry (United Kingdom)
- 9:57 **INSERTION OF A SECOND NASAL PACK IN EPISTAXIS - A SIGNIFICANT INDICATOR FOR REQUIREMENT OF DEFINITIVE SURGERY** 993
V. Varadarajan, O. Mirza, E. Ridyard, S. Loughran (United Kingdom)
- 10:06 **DOMICILIARY FLOSEAL PREVENTS HOSPITAL ADMISSION FOR EPISTAXIS IN PATIENTS WITH HEREDITARY HAEMORRHAGIC TELANGIECTASIA.** 994
L. Warner, V. Varadarajan, J. Halliday, K. James, J. De Carpentier (United Kingdom)
- 10:15 **ACCURATE NASAL MEASUREMENTS FOR EFFECTIVE NASAL PACKING.** 995
R.C. Costello, A. Williams, H.B. Whittet (United Kingdom)

- 10:24 **PRELIMINARY RESULTS OF A SURVEY OF HEREDITARY HAEMORRHAGIC TELANGECTASIA (HHT) IN THE NORTHEAST** 996
 Y. Ramakrishnan, I. Iqbal, M. Puvanendran, P.A. Corris, S. Carrie (United Kingdom)

9:30 - 10:45 **Hall K (Veilingzaal)**

SYMPOSIUM: ENDOSCOPIC PITUITARY SURGERY

- Chairperson: A. Rokade (United Kingdom) 997
- 9:30 **IS THERE REALLY A ROLE FOR THE ENT SURGEON IN PITUITARY DISEASE?** 998
 S. Carrie (United Kingdom)
- 9:45 **COMPLICATIONS OF ENDOSCOPIC PITUITARY SURGERY** 999
 C. Georgalas (The Netherlands)
- 10:00 **OLFACTORY AND SINONASAL OUTCOMES IN ENDOSCOPIC TRANSSPHENOIDAL SKULL-BASE SURGERY** 1000
 E.D. Wright (Canada)
- 10:15 **VISUAL OUTCOMES AFTER ENDOSCOPIC PITUITARY SURGERY** 1001
 T. Schmidt, J. Pinto (Chile)
- 10:30 **DISCUSSION**

10:45 - 11:15

COFFEE BREAK, EXHIBITION AND E-POSTER VIEWING

11:15 - 12:45

Hall A (Effectenbeurszaal)

INTERACTIVE ROUND TABLE: COMPLICATIONS IN FESS - HOW TO PREVENT THEM

Moderator: I. Braverman (Israel)	1002
Panelist: A. Krzeski (Poland)	1003
Panelist: V. Lund (United Kingdom)	1004
Panelist: D. Simmen (Switzerland)	1005
Panelist: R. Landsberg (Israel)	1006
Panelist: M. Bernal-Sprekelsen (Spain)	1007

11:15 - 12:45

Hall B (Glazenzaal)

INSTRUCTIONAL SESSION: CADAVER DISSECTION 04: RHINOPLASTY

P. Hellings (Belgium)	1008
-----------------------	------

11:15 - 12:45

Hall C (Keurzaal)

INTERACTIVE ROUND TABLE: TRAINING FESS AND SKULL BASE (VIRTUAL REALITY)

Moderator: S. Carney (Australia)	1009
Panelist: P. Hwang (USA)	1010
Panelist: P. Surda (Slovakia)	1011
Panelist: M. Barnes (United Kingdom)	1012

11:15 - 12:30

Hall D (Administratiezaal)

FREE PAPER SESSION: SHORT PRESENTATIONS: UNITED AIRWAYS

- Chairperson: I. Terreehorst (The Netherlands) 1013
- 11:15 **NASAL MUCOSA BIOPSY IN SEVERE ASTHMA PATIENTS AS A TOOL FOR THE PREDICTION OF THE INFLAMMATORY CHANGES IN LOWER AIRWAYS** 1014
 V. Hrabec, O. Ruzickova-Kirchnerova, I. Malkusova, M. Terl, P. Panzner, J. Kuntscherova (Czech Republic)
- 11:20 **RHINOLOGICAL FINDINGS AND THEIR CLINICAL USEFULNESS FOR CLOSER ASTHMA FENOTYPING** 1015
 V. Hrabec, O. Ruzickova-Kirchnerova, I. Malkusova, M. Terl, P. Panzner, J. Kuntscherova (Czech Republic)
- 11:25 **EFFECT OF ESS ON PULMONARY FUNCTION OF CRS WITH ASTHMA** 1016
 M. Asako, Y. Kobayashi, H. Ooka, S. Hamada, A. Kanda, K. Tomoda (Japan)
- 11:30 **EFFICACY OF ENDOSCOPIC SINUS SURGERY-BASED ON MULTIDISCIPLINARY TREATMENT FOR CHRONIC RHINOSINUSITIS WITH ASTHMA** 1017
 N. Ohta, Y. Suzuki, K. Kurakami, T. Furukawa, K. Chida, K. Futai, S. Kakehata (Japan)
- 11:35 **ALLERGIC RHINITIS IS A KEY FACTOR OF CHRONIC RHINOSINUSITIS WITH ASTHMA ASSOCIATION IN ADULT** 1018
 F. Balfas, R. Wardani, N. Irawati, C. Wicaksono, I. Rengganis, S. Bardosono (Indonesia)
- 11:40 **CHRONIC RHINOSINUSITIS WITH NASAL POLYPS (CRSWNP): DOES THE NEED FOR SURGERY PREDICT A HIGHER ASTHMA PREVALENCE? AN ONGOING TRIAL.** 1019
 M. Frendø, K. Håkansson, S. Schwer, V. Backer, C. Von Buchwald (Denmark)

- 11:45 **ASSESSING THE COUGH OF JAPANESE POLLINOSIS PATIENTS** 1020
 K. Sugizaki, A. Kamijo, Y. Kase (Japan)

11:15 - 12:30 Hall E (Mendes DaCosta Kamer)

FREE PAPER SESSION: ORAL PRESENTATIONS: FUNGAL SINUSITIS

- Chairperson: S. Reinartz (The Netherlands) 1021
- 11:15 **SURVIVAL OUTCOMES IN PATIENTS WITH ACUTE INVASIVE FUNGAL RHINOSINUSITIS: C-REACTIVE PROTEIN AS AN IMPORTANT PROGNOSTIC FACTOR** 1022
 H.J. Cho, H.J. Dhong (Samsung Medical Center)
- 11:24 **INVASIVE FUNGAL RHINOSINUSITIS: OUR EXPERIENCE WITH 23 CASES** 1023
 K. Rha, K. Ryu, Y. Kim (Korea)
- 11:33 **CAN ORAL STEROIDS BE A BETTER ADJUNCT TO SURGERY IN ALLERGIC FUNGAL RHINOSINUSITIS?** 1024
 A. Shankar, N. Panda, A. Chakrabarti, A. Gupta, A.S.I.M. Das (India)
- 11:42 **CLINICAL REVIEW OF 57 CASES OF PARANASAL SINUS MYCETOMA** 1025
 H. Akazawa, T. Shikina, C. Masumura, S. Nishiike, H. Inohara (Japan)
- 11:51 **ORBITAL PRESERVATION IN EXTENSIVE INVOLVEMENT WITH ACUTE INVASIVE FUNGAL SINUSITIS: CONSIDERATIONS, RESULTS AND SYSTEMATIC LITERATURE REVIEW** 1026
 D. Lal (USA)

- 12:00 **TO ESTIMATE THE RATE OF RECURRENCE ON THE CONTRALATERAL SIDE IN OPERATED CASES OF UNILATERAL ALLERGIC FUNGAL SINUSITIS.** 1027
 O. Marglani, A. Shaikh (Saudi Arabia)
- 12:09 **COMPARISON OF THE EFFICACY OF STEROID NASAL SPRAY WITH STEROID NASAL DOUCHING IN THE MANAGEMENT OF ALLERGIC FUNGAL RHINOSINUSITIS** 1028
 R. Virk, A. Babel, A. Gupta, S. Bansal, S. Malhotra (India)

11:15 - 12:45

Hall F (Verwey Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: SEPTAL SURGERY AND TURBINATE REDUCTION

- Chairperson: S. Carrie (United Kingdom) 1029
- 11:15 **COMPARISON OF LONG-TERM EFFICACY BETWEEN INTRATURBINAL AND EXTRATURBINAL MICRODEBRIDER-ASSISTED INFERIOR TURBINOPLASTY IN PATIENTS WITH PERENNIAL ALLERGIC RHINITIS** 1030
 J. Lee, J. Byun, J. Shin, B. Baek (Korea)
- 11:20 **QUESTIONABLE EFFECT OF A CROSS-HATCHING INCISION IN SEPTOPLASTY** 1031
 J. Kim, S. Heo, C. Park (Korea)
- 11:25 **HEMODYNAMIC EFFECTS OF TOPICAL ADRENALIN TO DURING SEPTOPLASTY** 1032
 C. Günel, S. Sari, H. Basak (Turkey)
- 11:30 **ANTERIOR ETHMOIDAL ARTERY SEPTAL FLAP FOR THE MANAGEMENT OF SEPTAL PERFORATION** 1033
 F. Ferrelj, A. Karligkiotis, L. Volpi, A. Pistochini, P. Palma, P. Castelnuovo (Italy)

- 11:35 **SEPTOPLASTY: A REVIEW OF THE PATHOPHYSIOLOGY OF SEPTAL DEVIATION** 1034
P. Bell, G. McKee (United Kingdom)
- 11:40 **RADIOLOGICAL STUDY OF THE ANATOMY OF THE KEYSTONE AREA OF THE NASAL SEPTUM USING COMPUTED TOMOGRAPHY.** 1035
S. Carr, S. Sinha, S. Mirza (United Kingdom)
- 11:45 **NASAL SEPTAL PERFORATIONS: AN ETIOLOGICAL ANALYSIS** 1036
M. Lavor, P. Leite da Silveira, C. Izaac Alfredo, M. Aliperti Ferreira, V. Gonçalves Silva, L. Mohana Araújo Pinheiro, E. Ortiz, E. Sakano (Brazil)
- 11:50 **THE INFLUENCE OF SEPTOPLASTICS ON SYMPTOMS OF CHRONIC RHINOSINUSITIS IN PATIENTS WITH CHRONIC RHINOSINUSITIS AND DISTINCTIVE NASAL SEPTUM DEFORMITY** 1037
S. Savovic, M. Buljicik-Cupic, L.J. Jovancevic, V. Kljajic (Serbia)
- 11:55 **NASAL SUBMUCOSAL IMPLANTATION OF ACELLULAR DERMAL MATRIX (STRATTICE™) IN ATROPHIC RHINITIS – CASE REPORT** 1038
V. Oliveira, R. Santos, D. Silva, P. Escada (Portugal)
- 12:00 **NASAL ROOT SURGERY: A REVIEW OF EIGHT CASES OF A NOVEL SURGICAL TECHNIQUE.** 1039
P. Bell, G. McKee (United Kingdom)
- 12:05 **OUR EXPERIENCE IN THE EXTERNAL NASAL VALVE SURGERY** 1040
D. Zabolotnyi, D. Zinchenko, D. Zabolotna, V. Gaiduk, N. Peleshenko (Ukraine)

- 12:10 **THE RATE OF DONOR AND RECIPIENT SITE COMPLICATIONS ASSOCIATED WITH THE USE OF AUTOLOGOUS COSTAL CARTILAGE IN RHINOPLASTY- A SYSTEMATIC REVIEW** 1041
 P. Sethukumar, K. Varadharajan, M. Anwar, K. Patel
 (United Kingdom)
- 12:15 **TURBINOPLASTY FOR INFERIOR TURBINATE HYPERTROPHY DUE TO CRANIOMETAPHYSEAL DYSPLASIA** 1042
 S. Carr, S. Mirza (United Kingdom)
- 12:20 **ENDOSCOPIC ASSISTED SEPTOPLASTY: SURGICAL TECHNIQUE AND OUTCOME** 1043
 Y. Nour (Egypt)

11:15 - 12:30 **Hall G (Roland Holst Kamer)**

FREE PAPER SESSION: SHORT PRESENTATIONS: SKULL BASE SURGERY 4

Chairperson: T. Schmidt (Chile)

- 11:15 **PERIOPERATIVE IMAGE-ADAPTED BRACHYTHERAPY (IABT) AFTER SURGERY FOR THE TREATMENT OF PARANASAL SINUS AND NASAL CAVITY MALIGNANCIES** 1045
 J. Meyer, I.U. Teudt, B. Wollenberg, G. Kovács (Germany)
- 11:20 **COMPLICATIONS AFTER RADIOTHERAPY IN NASOPHARYNGEAL CARCINOMAS** 1046
 C.M. Chiesa Estomba, A.S. Araujo da Costa, T. Rivera Schmitz, J.M. Melendez Melgar, M. Hamdam Zavarce (Spain)
- 11:25 **CLINICAL FEATURES AND TREATMENT OUTCOMES OF PARANASAL SINUS OSTEOMAS** 1047
 D.H. Lee, S.C. Lim (Korea)
- 11:30 **CLINICAL STUDY OF 56 CASES OF SINONASAL INVERTED PAPILOMA** 1048
 S. Ito, K. Ikeda (Japan)

- 11:35 **A PROPOSED CLASSIFICATION FOR APICAL CYSTIC LESION INVOLVING MAXILLARY SINUS** 1049
M.S. Jang, S.K. Chung, J.R. Hong, H.J. Dhong, H.Y. Kim (Korea)
- 11:40 **TREATMENT OUTCOME OF SINONASAL INVERTED PAPILOMA IN OUR DEPARTMENT** 1050
Y. Suzuki, H. Tokano, Y. Inaba, M. Nagaoka, K. Kitamura (Japan)
- 11:45 **WHAT KIND OF ROLE DOES ENDOSCOPIC SURGERY HAVE ON THE MANAGEMENT OF FIBROUS LESIONS AT DIFFICULT LOCATIONS?** 1051
H. Basak, S. Beton, B. Kucuk, I. Yorulmaz, C. Meco (Turkey)
- 11:50 **FIBRODYSPLASIA OF PARANASAL SINUSES AND SKULL BASE; WHEN AND HOW TO INTERVENE** 1052
M. Jalessi, M. Farhadi, G. Sharifi (Iran)
- 11:55 **RESPIRATORY EPITHELIAL ADENOMATOID HAMARTOMA AND OLFACTORY FUNCTION** 1053
L. De gabory, C. Nagouas, P. Bastier, A. Lechot (France)
- 12:00 **STEPWISE SURGICAL APPROACH TO INVERTED PAPILOMAS ORIGINATING FROM THE MAXILLARY SINUS** 1054
H. Roh, S. Hong, K. Cho (Korea)
- 12:05 **ENDONASAL ENDOSCOPIC SURGICAL TREATMENT OF INVERTED PAPILOMA OF POSTERIOR ETHMOID AND SPHENOID SINUS: A MULTICENTER STUDY** 1055
A. Varini, M. Spanio, G. Tirelli, M. Renco (Italy)
- 12:10 **INVERTED PAPILOMAS: RETROSPECTIVE REVIEW** 1056
I.M. Moura, M.T. Soares, I.P. Delgado, T. Gabriel, M. Cardoso, J.P. Leandro, G. Veiga (Portugal)

11:15 - 12:30

Hall H (Rode Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: ORBIT LACRIMAL SYSTEM

- Chairperson: I. Konstantinidis (Greece) 1057
- 11:15 **EXTERNAL VERSUS TRANS-NASAL ENDOSCOPIC MANAGEMENT OF NASOLACRIMAL OBSTRUCTION** 1058
B. Abdel hak, A.D.E.L. Abdelbaki, A. Desoky, M. Farag (Egypt)
- 11:20 **OUTCOMES OF ENDONASAL ENDOSCOPIC DACRYOCYSTORHINOSTOMY AFTER MAXILLECTOMY IN PATIENTS WITH PARANASAL SINUS AND SKULL BASE TUMORS** 1059
S. Abu-Ghanem, D.M. Fliss, R. Ben-Cnaan, I. Leibovitch, G. Horowitz, A. Abergel (Israel)
- 11:25 **STILL NO RELIABLE CONSENSUS IN MANAGEMENT OF BLOW-OUT FRACTURE** 1060
B. Alinasab, M. Ryott, P. Stjärne (Sweden)
- 11:30 **ORBITAL INFECTIONS: FIVE-YEAR CASE SERIES, LITERATURE REVIEW, AND GUIDELINE DEVELOPMENT** 1061
M. Atfeh, H. Khalil (United Kingdom)
- 11:35 **ENDONASAL ENDOSCOPIC DACRYOCYSTORHINOSTOMY: GOOD RESULTS, FAILURES AND PATIENTS SATISFACTION** 1062
P. Burduk, M. Daroszewski, M. Seredyka-Burduk, M. Wierzychowska, A. Koszewska-Kolodziejczak (Poland)
- 11:40 **ENDOSCOPIC DCR IN A UK TERTIARY CENTRE; A 2 CYCLE AUDIT** 1063
H.S. Khalil, C. Tanner (United Kingdom)

11:45	ENDOSCOPIC NASAL DACRYOCYSTORHINOSTOMY: RESULTS OF A DISTRICT HOSPITAL'S EXPERIENCE	1064
	L. Barbosa, M. Soares, A. Guimarães, F. Freire (Portugal)	
11:50	ENDOSCOPIC TREATMENT OF BLOW OUT FRACTURE: OUR EXPERIENCE	1065
	M. Rigante, C. Parrilla, G. Bastanza, M. Pandolfini, E. Scarano, J. Galli, G. Paludetti (Italy)	
11:55	ENDONASAL ENDOSCOPIC APPROACHES TO ORBIT	1066
	M. Naraghi, M. Borojerdi (Iran)	
12:00	BALANCED TWO-WALLED ORBITAL DECOMPRESSION, OUR EXPERIENCE	1067
	D. Siau, A. Daudia (United Kingdom)	

11:15 - 12:45

Hall I (Berlage Zaal)

INTERACTIVE ROUND TABLE: SMELL AND TASTE

Moderator: B. Landis (Switzerland)	1068
Panelist: P. Rombaux (Belgium)	1070
Panelist: D. Leopold (USA)	1071
Panelist: D. Hornung (USA)	1072

11:15 - 12:45

Hall J (Ontvang Kamer)

FREE PAPER SESSION: SHORT PRESENTATIONS: MANAGEMENT OF CRS

- Chairperson: G. Adriaensen (The Netherlands) 1073
- 11:15 **SEVERE COMPLICATIONS AFTER ENDOSCOPIC SINUS SURGERY - SURGEON'S FAULT OR BAD LUCK? A LOOK BACK ON THE CASE.** 1074
 A. Mickielewicz, I. Gwizdalska, K. Lazecka, R. Osmólski, E. Witkowska, M. Fus, H. Skarzynski, P.H. Skarzynski (Poland)
- 11:20 **PRELIMINARY FINDINGS FROM THE FEASIBILITY STUDY FOR A RANDOMISED CONTROLLED TRIAL OF CLARITHROMYCIN IN CHRONIC RHINOSINUSITIS** 1075
 J. Bewick, L. Masterson, S. Erskine, F. Egro, S. Carrie, S. Sunkaraneni, S. Ahmed, A. Sama, C. Hopkins, C. Philpott (United Kingdom)
- 11:25 **THE ROLE OF MACROLIDES IN THE TREATMENT OF CHRONIC RHINOSINUSITIS: AN UPDATE ON THE EVIDENCE AND SAFETY.** 1076
 S. Toma, C. Theokli, N. Gibbins, C. Hopkins (United Kingdom)
- 11:30 **DOSE ESCALATION OF MONTELUKAST IN THE TREATMENT OF NASAL POLYPOSIS** 1077
 S.I. Vento, O. Tahkokallio, M. Seppänen, M. Hytönen (Finland)
- 11:35 **EFFICACY OF ENDOSCOPIC MARSUPIALIZATION FOR HUGE FRONTAL AND/OR ETHMOIDAL SINUS MUCOCELES WITH ORBITAL SYMPTOMS** 1078
 T. Koh, W. Bae, J. Seo (Korea)
- 11:40 **OPEN, PROSPECTIVE, MULTICENTRIC STUDY TO EVALUATE THE EFFICACY OF POSTOPERATIVE INTRANASAL PHOTOTHERAPY IN THE PREVENTION OF RECURRENCE OF NASAL POLYPS** 1079
 Z. Bella, A. Kiricsi, Z.S. Szabó, L. Kemény, J. Jóri, L. Rovó, E. Kadocsa (Hungary)

- 11:45 **CLOSURE OF ACCESSORY MAXILLARY OSTIUM DURING ENDOSCOPIC SINUS SURGERY FOR CRS** 1080
 M.A. Penttilä (Finland)
- 11:50 **SEVERITY OF SYMPTOMS AND IMPAIRMENT OF HEALTH RELATED QUALITY OF LIFE IN CHRONIC RHINOSINUSITIS WITH AND WITHOUT NASAL POLYPS** 1081
 T. Greguric, D. Tomljenovic, M. Grgic, T. Baudoin, L. Kalogjera (Croatia)
- 11:55 **DIFFERENCES IN LONG-TERM QUALITY OF LIFE OUTCOMES IN PATIENTS WITH RECURRENT ACUTE RHINOSINUSITIS AND CHRONIC RHINOSINUSITIS WITHOUT NASAL POLYPS.** 1082
 P. Catalano (USA)
- 12:00 **ENDOSCOPIC OUTCOME AND PATIENTS SATISFACTION OF BIODEGRADABLE VS TRADITIONAL NASAL PACKING AFTER FUNCTIONAL ENDOSCOPIC SINUS SURGERY** 1083
 P. Burduk, M. Wierzchowska, W. Kazmierczak, B. Grzeskowiak (Poland)
- 12:05 **DATA COLLECTION OF PATIENTS WITH CRS; THE FESS BOOKLET** 1084
 C. Cheang, H. Al-Reefy, N. Salama (United Kingdom)
- 12:10 **EFFICIENCY OF ESS IN DANISH CRS PATIENTS, EVALUATED FOR SURGERY, ACCORDING TO THE EPOS CRITERIA.** 1085
 G. Joergensen, H. Lind, B. Lange, F. Svendstrup, A. Kjeldsen (Denmark)
- 12:15 **THE CORRELATION BETWEEN SNOT-22 SCORE AND VISUAL ANALOGUE SCORE IN CRS** 1086
 S. Fishpool, S. Kumar, E. Conlan, D. Owens (United Kingdom)

- 12:20 **JAPANESE EPIDEMIOLOGICAL SURVEY OF REFRACTORY EOSINOPHILIC CHRONIC RHINOSINUSITIS (JESREC STUDY)** 1087
S. Fujieda, T. Tokunaga, M. Sakashita, Y. Imoto, G. JESREC Study group (Japan)
- 12:25 **QUALITY OF LIFE AND ASSOCIATED FACTORS IN PERSONS WITH CHRONIC RHINOSINUSITIS IN THE GENERAL POPULATION** 1088
B. Lange, R. Holst, T. Thilsing, J. Baelum, A. Kjeldsen (Denmark)

11:15 - 12:45

Hall K (Veilingzaal)

INTERACTIVE ROUND TABLE: BENIGN TUMOURS OF THE NOSE AND SINUS

Moderator: TBC

Panelist: J. Michel (France) 1089

Panelist: S. Sunkaraneni (United Kingdom) 1090

Panelist: P. Maragkoudakis (Greece) 1091

Panelist: R. Kamel (Egypt) 1092

E-POSTER VIEWING



ERS/ISIAN 2014

25th Congress of the European Rhinologic Society
32nd International Symposium of Infection & Allergy of the Nose

Amsterdam, The Netherlands
June 22-26, 2014

E-POSTER VIEWING

MONDAY, JUNE 23 - THURSDAY, JUNE 26

ePoster Stations

EPOSTER SESSION: ACUTE RHINOSINUSITIS

**SINUSITIS ORBITAL AND PALPEBRAL ABSCESS
COMPLICATIONS** 1093

N. Balica, M. Poenaru, A.H. Marin, C. Doros, M. Dobre,
H. Stefanescu (Romania)

**PERIORBITAL CELLULITIS SECONDARY TO ACUTE
ETHMOIDITIS. (CONSERVATIVE TREATMENT)** 1094

C.M. Chiesa Estomba, A.S. Araujo da Costa, T. Rivera Schmitz,
J.M. Melendez Melgar, C. Ossa Echeverri, M. Hamdam Zavarce
(Spain)

**SINONASAL SYMPTOMS AND SIGNS TELL A LITTLE
ABOUT THE DIFFERENTIAL DIAGNOSIS OF THE ACUTE
RHINOSINUSITIS** 1095

M. Hytönen, K. Blomgren, A. Pitkäranta (Finland)

**ENDOSCOPIC ASSISTED DEBRIDEMENT OF
ACUTE INVASIVE FUNGAL RHINOSINUSITIS IN
IMMUNOCOMPROMISED PATIENT UNDER LOCAL
ANESTHESIA - CASE REPORT** 1096

V. Oliveira, P. Vale, D. Silva, P. Escada (Portugal)

OCULAR AND ORBITAL COMPLICATIONS IN A 16 YEAR OLD PATIENT WITH SINUSITIS WITHOUT COMORBIDITIES 1097

B. Popescu, R. Grigore, S.V.G. Bertesteanu, I. Briceag,
A. Nicolaescu, C.R. Popescu (Romania)

RHINOSINUSAL MUCORMYCOSIS IN TRIPLE IMMUNOSUPPRESSED PATIENT: CASE PRESENTATION 1098

B. Popescu, R. Grigore, S.V.G. Bertesteanu, A. Nicolaescu,
C.R. Popescu (Romania)

ORBITAL ABSCESS CAUSED BY FUSOBACTERIUM AFTER INFECTIOUS MONONUCLEOSIS 1099

R. Teles, P.T. Bjerre, C. Buchwald (Portugal)

POTT'S PUFFY TUMOR: A RARE CLINICAL ENTITY 1100

M.T. Türkmen, A. Akinci, S. Osman, M.K. Adali (Turkey)

ePoster Stations

EPOSTER SESSION: DIAGNOSIS OF CHRONIC RHINOSINUSITIS

MASSIVE FRONTAL MUCOCELE WITH ORBITAL EXTENSION AND POSTOPERATIVE ORBITAL ABSCESS 1101

M.T. Türkmen, M. Koten, Z. Arslan, M.K. Adali (Turkey)

THE CHOANAL POLIP ORIGINATING FROM UNUSUAL LOCALIZATION: A CASE REPORT 1102

M.T. Türkmen, A. Yildiz, A. Tas, M.K. Adali, M. Koten,
A.R. Karasalihoglu (Turkey)

A CASE OF FUNGAL BALL IN THE SPHENOETHMOIDAL RECESS 1103

J. Lee (Korea)

DIAGNOSTIC FEATURES OF KIRLIAN'S METHOD WITH DIFFERENT FORMS OF RHINOSINUSITIS 1104

D. Toguzbayeva (Kazakhstan)

DIAGNOSTIC DILEMMA OF FUNGAL SINUSITIS 1105

J. Jawad, G. Zgheib (Saudi Arabia)

IMMUNOLOGICAL PARAMETERS OF BLOOD SERUM IN PATIENTS WITH CHRONIC POLYPOID RHINOSINUSITIS 1106

Y. Yaromenka, L. Makaryna-Kibak, S. Sidelova, P. Kulchitsky (Belarus)

ePoster Stations**EPOSTER SESSION: MANAGEMENT OF CRS MEDICALLY****DIPOTASSIUM GLICIRIZZINATE AND MANNITOL NASAL SPRAY (NARIVENT) IN RHINOSINUSAL PATHOLOGIES IN ADULTS: A SINGLE CENTRE BEFORE-AFTER STUDY ON SHORT AND LONG-TERM EFFICACY** 1107

V. Damiani, C. Viti, M. Simone, I. Sinopoli, A. Camaioni (Italy)

WOULD YOU ALWAYS PERFORM A SINUS SURGERY IN SEVERE CHRONIC RHINOSINUSITIS WITH NASAL POLYPS? 1108

C. Morales Minovi (Germany)

COMPARISON OF THREE MODALITIES OF CORTICOSTEROIDS ADMINISTRATION IN CHRONIC RHINOSINUSITIS AND CHANGES IN OLFACTORY FUNCTION 1109

C. Colbrant, G. Reychler, C. Huart, P. Rombaux (Belgium)

ePoster Stations**EPOSTER SESSION: MANAGEMENT OF CRS SURGICALLY****POSTERIOR APPROACH TO THE MAXILLARY SINUS: QUICKER, EASIER AND SAFER** 1110

D.F. A Wengen (Switzerland)

- THE LATERAL NASAL WALL IS A MULTI-TRIANGULAR STRUCTURE** 1111
D.F. A Wengen (Switzerland)
- ALLERGIC FUNGAL SINUSITIS INFRATEMPORAL FOSSA INVOLVEMENT SAUDI EXPERIENCE** 1112
S. AL DOUSARY (Saudi Arabia)
- MAXILLARY AND SPHENOID SINUS FUNGUS BALL: A RETROSPECTIVE AND COMPARATIVE STUDY - ABOUT 66 PATIENTS.** 1113
A.L. Poirrier, C. Marlair, B. Weynand, B. Bertrand, P.H. Eloy (Belgium)
- FUNGAL BALL WITHIN ONODI CELL MUCOCELE CAUSING VISUAL LOSS: A RARE CLINICAL ENTITY** 1114
Y.I. Cheon, S.L. Hong, H.J. Roh, K.S. Cho (Korea)
- RESPIRATORY EPITHELIAL ADENOMATOID HAMARTOMA OF THE MAXILLARY SINUS: A CASE REPORT AND REVIEW OF LITERATURE** 1115
V. Henriques, R. Teles, A. Sousa, R. Estevão, J. Rodrigues, R. Moura, A. Fernandes, F. Fernandes (Portugal)
- PROSPECTIVE EVALUATION OF THE EFFECTS OF ENDOSCOPIC POLYPECTOMY PERFORMED IN CLINIC ON NASAL AIRFLOW AND SINUS SYMPTOMATOLOGY FOR PATIENTS WITH CHRONIC RHINOSINUSITIS WITH POLYPS** 1116
S. Kilty (Canada)
- USE OF SINUS SURGERY NAVIGATION SYSTEMS IN TREATMENT OF RECURRENT CRS WITH OR WITHOUT NASAL POLYPS** 1117
K. Lazecka, I. Gwizdalska, P.H. Skarzynski, A. Mickielewicz, H. Skarzynski (Poland)

- EFFECTIVENESS OF HYDRODEBRIDER IN TREATMENT OF RECURRENT CRS AND SAMTER'S TRIAD** 1118
 K. Lazecka, I. Gwizdalska, P.H. Skarzynski, A. Mickielewicz, H. Skarzynski (Poland)
- MODIFIED ENDOSCOPIC LOTHROP PROCEDURE IN TREATMENT OF CHRONIC FRONTAL SINUSITIS** 1119
 A. Mickielewicz, A. Stepień, E. Witkowska, R. Osmolski, P.H. Skarzynski, H. Skarzynski (Poland)
- NONCOMPLIANT FRONTAL SINUS- ALL OR NOTHING AND ON TIME- HISTORY OF TEN PATIENTS WHO FINALLY HAD UNDERGONE MODIFIED ENDOSCOPIC LOTHROP PROCEDURE** 1120
 A. Mickielewicz, I. Gwizdalska, A. Stepień, E. Witkowska, R. Osmolski, P.H. Skarzynski, H. Skarzynski (Poland)
- RADIOLOGICAL ANATOMY OF FRONTAL RECESS** 1121
 A. Mickielewicz, K. Lazecka, R. Osmolski, P.H. Skarzynski, H. Skarzynski (Poland)
- SILENT SINUS SYNDROME: A CASE REPORT** 1122
 R. Teles, R. Cerejeira, A. Sousa, V. Henriques, R. Estevão, J. Rodrigues, F. Moreira da Silva, F. Fernandes (Portugal)
- THE PRESENCE OF EOSINOPHILIC MUCIN INFLUENCES THE SURGICAL OUTCOME IN NASAL POLYP PATIENTS.** 1123
 S. Vlamincx, T. Vauterin, H. Kawauchi, E. Prokopakis, P. Hellings, M. Jorissen, F. Acke, P. Van Cauwenberge, C. Bachert, P. Gevaert (Belgium)
- ORBITAL CELLULITIS AS COMPLICATION OF CHRONIC RHINOSINUSITIS** 1124
 A. Zakiah, F. Perkasa, A. Punagi (Indonesia)

AVAILABILITY OF PREOPERATIVE SYSTEMIC STEROIDS ON ENDOSCOPIC SINUS SURGERY FOR CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS COMPARISON WITH OTHER CLINICOPATHOLOGICAL FACTORS 1125

K. Lee, J.Y. Lee, S. Hong (Korea)

PRE OPERATIVE ASSESSMENT OF DIFFICULTIES IN EXPLORING THE MAXILLARY SINUS DISEASE BY STUDYING CT SCANS CALLED MIDDLE MEATAL ANTOSTOMY (MMA) CONCEPT
1126

M. Chittaloor (India)

FRONTAL TREPHINE IS A SAFE, SECURE, SURE AND EASY TECHNIQUE IN LOCATING FRONTAL DRAINAGE PATHWAY IN DIFFICULT FRONTAL RECESS EXPLORATIONS. 1127

M. Chittaloor (India)

OUTCOMES OF IMAGE GUIDED SINUS SURGERY FOR CHRONIC RHINOSINUSITIS IN A TERTIARY REFERRAL CENTRE 1128

F. Egro, L. Masterson, J. Bewick, C. Philpott (United Kingdom)

THE THERAPY OF FIRST-TIME IDENTIFIED CHRONIC RHINOSINUSITIS WITH NASAL POLYPS (CRSWNP): RESULTS OF STUDY WITH 7-YEAR FOLLOW-UP. 1129

G. Piskunov (Russia)

ePoster Stations

EPOSTER SESSION: PATHOPHYSIOLOGY OF CRS

TEAR PUMP FUNCTION IN PATIENTS WITH SEPTAL DEVIATION AND TURBINATE HYPERTROPHY. 1130

I. Lazarevich (Russia)

- CD105 EXPRESSION IN SINONASAL POLYPOSIS** 1131
 G. Ottaviano, F. Marino, R. Cappellesso, I. Mylonakis,
 N. Favaretto, L. Giacomelli, A. Staffieri, G. Marioni (Italy)
- ASSESSMENT OF EPITHELIAL INNATE ANTIMICROBIAL
 FACTORS IN SINUS TISSUE FROM PATIENTS WITH AND
 WITHOUT CHRONIC RHINOSINUSITIS** 1132
 J. Lee, O. Escobar, R. Anouseyan, A. Janisiewicz, E. Porter
 (USA)
- NASAL LAVAGE LEVELS OF GM-CSF AND CHRONIC
 NASAL HYPEREOSINOPHILIA.** 1133
 E. De Corso, D. Lucidi, S. Baroni, M. Battista, M. Romanello,
 G.C. Passali, M. Rigante, C. Zuppi, G. Paludetti (Italy)

 ePoster Stations

EPOSTER SESSION: OUTCOME ASSESSMENT IN CRS

- HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH
 CHRONIC INFLAMMATORY VERSUS MALIGNANT DISEASE** 1134
 J. Dotlic, L.J. Janosevic (Serbia)
- MIDDLE TURBINATE STABILIZATION AT FESS PROCEDURE
 - OWN EXPERIENCE** 1135
 J. Markowski, P. Wardas, A. Piotrowska-Seweryn (Poland)
- ASSESSMENT OF AN ASSOCIATION BETWEEN ALLERGIC
 RHINITIS AND RISK OF HERPES ZOSTER: A POPULATION-
 BASED CASE CONTROL STUDY** 1136
 Y.J.J. Young, J. Juhn, P. Wollan, B. Lahr, B. Yawn (USA)
- CHRONIC RHINOSINUSITIS AND QUALITY OF LIFE;
 ASSESSING THE CORRELATION BETWEEN RSOM-31 AND
 VAS MEASUREMENTS.** 1137
 D. Dietz de Loos, L. Meer van der, W.J. Fokkens
 (The Netherlands)

SYMPTOMS IN CHRONIC RHINOSINUSITIS WITH AND WITHOUT NASAL POLYPS. 1138

D. Dietz de Loos, C. Hopkins, W.J. Fokkens (The Netherlands)

ePoster Stations

EPOSTER SESSION: BALLOON SINUPLASTY

THE BALLOON SINUS DILATATION METHOD IN TREATMENT OF PATIENTS WITH CHRONIC RHINOSINUSITIS. 1139

A. Kryukov, N. Kunelskaya, A. Ivoylov, M. Artemyev, M. Studyonii, D. Gorin (Russia)

MANAGEMENT OF DRAF III STENOSIS WITH BALLOON DILATATION AND MITOMYCIN-C 1140

I. Konstantinidis, A. Chatziavramidis, J. Constantinidis (Greece)

HTA APPLIED IN THE HOSPITAL USE OF SINUS BALLOON SYSTEM 1141

M. Rigante, M. Pandolfini, G. Passali, C. Furno, L. Leogrande, G. Bastanza, E. Scarano, G. Paludetti (Italy)

FESSKEPSIS 1142

M.A. Penttilä (Finland)

ePoster Stations

EPOSTER SESSION: RHINOSINUSITIS MISCELLANEOUS

CHRONIC ISOLATED SPHENOIDITIS 1143

J. Fejza Bulaj, R. Sinani, A. Kuci (Albania)

ASSOCIATION OF ALLERGIC RHINITIS AND SINUSITIS IN LIBYAN PATIENTS 1144

S. Hawisa, R. Aoun (Libya)

- ABDUCENS NERVE PALSY AND CAVERNOUS SINUS THROMBOSIS: RARE COMPLICATIONS OF ISOLATED SPHENOID SINUS MUCCOCELE** 1145
 S. Husain, R. Abdul Rahman, B.S. Gendeh (Malaysia)
- AN AUDIT OF SKIN PRICK TESTING IN CHRONIC RHINOSINUSITIS** 1146
 A. Millington, C. Philpott (United Kingdom)
- UNILATERAL FRONTAL FUNGAL RHINOSINUSITIS** 1147
 R.C. Monsanto, R.S. Orem, F.T.M. Lorenzetti (Brazil)
- PREVALENCE OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS AMONG THE POPULATION OF THE URBAN AREA** 1148
 E.V. Nosulua, I.A. Kim, B. Peric (Russia)
- CURRENT PRACTICES IN PERIOPERATIVE MANAGEMENT OF FESS PATIENTS IN SINGAPORE** 1149
 C.Q. Phua, J. Goh, D. Loke (Singapore)
- RARE FUNGAL INVASIVE DISEASE: PALATAL AND NASAL CLADOSPORIUM BONE DESTRUCTIVE INFECTION** 1150
 H. Rodrigues, S. Tavares, S. Alves, M. Caixa, M. Santos, J. Mendes, L. Antunes (Portugal)
- UNILATERAL CHRONIC RHINOSINUSITIS: A 20-YEAR-OLD IATROGENIC RHINOLITH** 1151
 L. Samarà Piñol, Y. Escamilla Carpintero, A. Cardesin Revilla, J.J. Díaz Argüello, J.M. Sáiz Arnáiz, A. Martínez Arias, R. Bargués Cardelús, M. Campos Motamayor, A. Aguilà Artal, R. Rosell Ferrer (Spain)
- A CASE OF NASAL TUBERCULOSIS ASSOCIATED WITH BILATERAL OTITIS MEDIA TUBERCULOSIS** 1152
 T. Shimano, K. Kawamoto, M. Asako, S. Hamada, K. Tomoda (Japan)

A CASE OF SKULL BASE ABSCESS AFTER RADIOTHERAPY 1153

Y. Suzuki, N. Ohta, A. Ishida (Japan)

TREATMENT OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS (CRSWNP): REVIEW AND GUIDANCE FOR CLINICIANS
1154

G. Piskunov (Russia)

ePoster Stations

EPOSTER SESSION: TISSUE ENGINEERING

HUMAN ESTHESIONEUROBLASTOMA: IN VITRO CULTURE FROM PRIMITIVE LESIONS AND SPHEROID FORMATION 1155

A.M. Saibene, S. Pece, G.C. Pipolo, T. Tanos, A. Rubio, M. Bignami, P. Castelnuovo, G. Felisati (Italy)

ePoster Stations

EPOSTER SESSION: MANAGEMENT OF SEVERE EPISTAXIS

RECURRENT EPISTAXIS DUE TO LOW-FLOW CAROTID-CAVERNOUS FISTULA 1156

A. Giotakis, F. Kral, M. Freund, H. Riechelmann (Austria)

A STEPPED APPROACH TO THE MANAGEMENT OF IDIOPATHIC EPISTAXIS IN ADULT 1157

H. Basak, C. Günel, Y. Basal, A. Eryilmaz (Turkey)

EMERGENCY MANAGEMENT OF STROKE AFTER SELECTIVE ARTERIAL EMBOLISATION FOR EPISTAXIS - A MULTIDISCIPLINARY EVIDENCE BASED PATHWAY 1158

V. Varadarajan, L. Warner, A. Punnusamy, H. Somwalker, J. De Carpentier (United Kingdom)

ePoster Stations

EPOSTER SESSION: NASAL SURGERY, TECHNIQUES

**ENDOSCOPIC RESECTION OF A NASAL SEPTUM
CHONDROSARCOMA: CASE REPORT** 1159

M. Caixa, H. Rodrigues, S. Alves, S. Martins, L. Antunes
(Portugal)

**OPEN VERSUS ENDOSCOPIC APPROACH IN PARANASAL
SINUS MUCOCELE** 1160

O.D. Palade, V. Baldea, M.C. Baldea, B.M. Cobzeanu,
M.D. Cobzeanu (Romania)

FRONTAL SINUS OSTEOMAS MANAGEMENT 1161

C. Doros, N. Balica, H. Stefanescu, M. Poenaru, M. Dobre,
E. Boia (Romania)

**JUVENILE NASOPHARYNGEAL ANGIOFIBROMA-
THERAPEUTIC MANAGEMENT** 1162

C. Doros, N. Balica, M. Dobre, M. Poenaru, G. Iovanescu
(Romania)

SINONASAL PARAGANGLIOMA: CASE REPORT 1163

M. Glavan, B. Lanisnik, B. Cizmarevic (Slovenia)

RARE METASTATIC TUMORS IN MAXILLARY SINUS 1164

R. Grigore, C.R. Popescu, B. Popescu, D. Mirea,
S.V.G. Bertesteanu (Romania)

**FOLLOW UP OF PATIENTS WITH SINONASAL
MALIGNANCIES AND THE IMPACT ON QUALITY OF LIFE** 1165

R. Grigore, C.R. Popescu, B. Popescu, E. Boghiu,
S.V.G. Bertesteanu (Romania)

POSTERIOR NASAL NEURECTOMY: A POSTGANGLIONIC ALTERNATIVE TO PREGANGLIONIC VIDIAN NEURECTOMY 1166

T. Kanaya, K. Kawano, S. Kashiwagi, H. Nagafuji, A. Hara,
T. Kikawada (Japan)

MUCOCELE IN FRONTAL SINUS: HOW I DO IT 1167

A. Punagi (Indonesia)

SINONASAL INVERTED PAPILOMA: A RETROSPECTIVE REVIEW OF 46 CASES 1168

S. Blioskas, D. Rachovitsas, S. Dova, K. Rova, F. Lako,
K. Markou (AHEPA University Hospital)

INVERTED PAPILOMA OF THE NOSE: A MANAGEMENT PLAN 1169

M. Dobre, M. Poenaru, N. Balica, C. Doros (Romania)

ePoster Stations

EPOSTER SESSION: SMELL & TASTE AND TRIGEMINAL FUNCTION

ISOLATED OLFACTORY DISORDERS AS FIBROUS DYSPLASIA DEBUT 1170

L. Samarà, X. Galindo, P. Bellera (Spain)

ePoster Stations

EPOSTER SESSION: SNORING AND OSAS

REDUCTION OF NASAL RESISTANCE BY THE TITANIUM BREATHE-IMPLANT MIGHT REDUCE SNORING AND MIGHT INCREASE ACCEPTANCE OF CPAP-MASKS 1171

D.F. A Wengen (Switzerland)

THE TIP-LIFT NASAL DRESSING 1172

P. Bell, G. McKee (United Kingdom)

- MANAGEMENT OF THE SEVERE OBSTRUCTIVE SLEEP APNEA (OSAS)- CASE REPORT** 1173
A. Grubor, D. Rancic, M. Strbac, S. Grubor (Serbia)
- MANAGEMENT OF NASAL CONGESTION WITH POSTERIOR NASAL NEURECTOMY IN PATIENTS WITH VASOMOTOR RHINITIS AND MILD OSA** 1174
M. Lekatompessy, R. Wardani (Indonesia)
- TREATMENT APPROACH IN CASES OF SNORING AND OSA WITH LIGHT AIRWAY RESISTANCE** 1175
M. Milkov, P. Nedev, D. Vicheva, T.C. Tonchev, L. Matev (Bulgaria)
- OBSTRUCTIVE SLEEP APNEA SYNDROME AND ITS CORRELATIONS WITH NASAL PATHOLOGY** 1176
A. Neagos, A. Cirticioiu, I. Csiszer, D. Duca (Romania)
- RELATION BETWEEN NASAL PATENCY AND SLEEP DISORDERED BRAETHING** 1177
K. Vogt, K. Peksis, L. Sperla, T. Caulins (Latvia)
- INTERLEUKIN-10 -1082 G>A AND -592 A>C POLYMORPHISMS IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME** 1178
S. Ozdas, T. Ozdas, M. Acar, S.S. Erbek, S. Köseoglu, G. Göktürk, A. Izbirak (Turkey)
- SURGICAL OUTCOME OF COBLATION MIDLINE GLOSSECTOMY IN MULTILEVEL SURGERY FOR OBSTRUCTIVE SLEEP APNOEA** 1179
L. Huang, P. Mok (Singapore)
- NASAL SURGERY IN SLEEP-DISORDERED BREATHING** 1180
M. Naraghi (Iran)

EPOSTER SESSION: RHINOPLASTY

SPREADER GRAFTS FOR BEAUTY AND BREATHE-IMPLANT FOR FUNCTION: WHEN TO USE BOTH 1181

D.F. A Wengen (Switzerland)

USEFULLNESS OF THE INFERIOR TURBINATE AS A RHINOPLASTY GRAFT MATERIAL: A PILOT STUDY 1182

B.H. Ahn, D.E. Kim, M.S. Choi (Korea)

A SINGLE INCISION FOR HARVESTING CONCHAL CARTILAGE AND TEMPORAL FASCIA IN DCF GRAFTS 1183

S. Vasani, R. Anmolsingh, N. Foden, C. East (United Kingdom)

OPEN APPROACH EXTRACORPOREAL SEPTORHINOPLASTY FOR SEVERE SEPTAL DEVIATION WITH EXTERNAL NASAL DEFORMITY -A SERIES OF 55 PATIENTS. 1184

S. Islam (India)

RHINOPLASTY-EXTERNAL VS INTERNAL APPROACH A COMPARATIVE ANALYSIS OF 100 PATIENTS 1185

S. Islam (India)

CORRECTION OF DEVIATED NOSE 1186

F. Jakimovska (Macedonia)

ANALYSIS OF LATERAL PROFILE VIEWS USING THE PICTURE ARCHIVING AND COMMUNICATIONS SYSTEM 1187

J. Lee (Korea)

FUNCTIONAL RHINOPLASTY: IMPROVING FORM & FUNCTION IN PRIMARY AND SECONDARY SURGERY 1188

M. Naraghi (Iran)

**SEPTORHINOPLASTY IN DEVIATED & CROOKED NOSES:
DIFFERENT TECHNIQUES AND POINTS FOR SUCCESS** 1189

M. Naraghi (Iran)

**OUTCOMES OF IRRADIATED ALLOGRAFT AND
XENOGRAFTS IN SEPTO-RHINOPLASTY** 1190

A. Lieder, I. Iqbal, T.G. Leontsinis (United Kingdom)

ePoster Stations

EPOSTER SESSION: TIPSURGERY

**OUR EXPERIENCE OF BENIGN NERVE SHEATH TUMOURS
OF THE NASAL TIP** 1191

P. Bijoor, S. Khwaja, T. Woolford (United Kingdom)

ePoster Stations

**EPOSTER SESSION: SEPTAL AND TURBINATE SURGERY INCLUDING SEPTAL
PERFORATIONS**

THE MIRZA CURVED TURBINECTOMY SCISSORS 1192

S. Carr, S. Mirza (United Kingdom)

**CAN WE PREDICT NASAL BLOCKAGE SURGERY
OUTCOMES BASED ON THE SUBJECTIVE AND OBJECTIVE
MEASURES?** 1193

R. Chmielewski, E. Zgnilec, K. Kasperek-Walewska,
P. Zielinska, R. Stablewski, A. Chmielik, B. Olczak-Kwicien
(Poland)

**UNUSUAL CASE OF SEPTAL PERFORATION IN A YOUNG
PATIENT** 1194

R. Grigore, C.R. Popescu, B. Popescu, A. Nicolaescu, D. Mirea,
S.V.G. Bertesteanu (Romania)

EVALUATION OF A SPECIFIC AND GENERIC PATIENT REPORTED OUTCOME MEASURE IN PATIENTS UNDERGOING SEPTAL SURGERY: A PROSPECTIVE STUDY. 1195

N. Killick, R. Advani, D. Bondin, V. Malik, S. Izzat (United Kingdom)

COMPARISON OF FUNCTIONAL AND MORPHOMETRIC OUTCOMES BETWEEN 3 SEPTOPLASTY TECHNIQUES: COTTLE VS EXTRACORPOREAL VS STRUT-GRAFT 1196

A. Lechot, L. De Gabory, B. Bacot (France)

COMPLICATIONS IN SEPTOPLASTY 1197

B. Marinkovic, S.A.S.A. Zivaljevic (Serbia)

PROPHYLACTIC USE OF ANTIBIOTICS IN RHINOSURGERY 1198

B. Peric, I.A. Kim, E.V. Nosulya (Russia)

A CASE REPORT OF CHONDROMYXOID FIBROMA IN A PERFORATED SEPTUM AND LITERATURE REVIEW 1199

K. Wong, S.A. Chan, D. Skinner (United Kingdom)

EFFICACY OF INFERIOR TURBINOPLASTY WITH THE USE OF CO2 LASER, RADIOFREQUENCY, AND ELECTROCAUTERY 1200

A. Kaprana, E. Prokopakis, E. Koudounarakis, G. Velegrakis (Greece)

AN AUDIT OF INVESTIGATION AND DIAGNOSIS OF NASAL SEPTAL PERFORATION LEADING TO THE DEVELOPMENT OF A MANAGEMENT PATHWAY 1201

S.G. Derbyshire, B. Attlmayr, A.C. Swift (United Kingdom)

ePoster Stations

EPOSTER SESSION: FACIAL SURGERY BEYOND THE NOSE

FRONTO-ETHMOIDAL MUCOCELE WITH INTRACRANIAL AND INTRAORBITAL EXTENSION AS A CAUSE OF PAINLESS FACIAL SWELLING: A CASE REPORT 1202

A.G.J. Binnie, M.S. Atfeh, H.S. Khalil (United Kingdom)

ENDOSCOPIC REMOVAL OF A HUGE KERATOCYSTIC ODONTOGENIC TUMOR IN MAXILLARY SINUS 1203

J.H. Jung, Y.I. Chun, H.J. Roh, K.S. Cho (Korea)

INDICATIONS FOR NECK DISSECTION IN NASAL CAVITY AND PARANASAL SINUSES MALIGNANT NEOPLASIA 1204

B. Popescu, S.V.G. Bertesteanu, R. Grigore, A. Nicolaescu, C.R. Popescu (Romania)

ePoster Stations

EPOSTER SESSION: PREOPERATIVE ASSESSMENT OF RHINOPLASTY PATIENTS AND SELECTION OF PATIENTS FOR SURGERY

THE USE OF A ROMANIAN LANGUAGE VERSION OF THE COSMETIC PROCEDURES SCREENING QUESTIONNAIRE AS A SCREENING TOOL FOR BODY DISMORPHIC DISORDERS AMONG PATIENTS SEEKING RHINOPLASTY 1205

I. Anghel, A.G. Anghel, M. Dumitru, A.O. Anghel, C. Sarafoleanu (Romania)

EVALUATION OF AIRWAY HYPERRESPONSIVENESS IN CHRONIC RHINOSINUSITIS IN SOUTHERN CHINA: DIAGNOSTIC VALUES OF SINUS CT AND SERUM EOSINOPHIL COUNT 1206

F. Chen, X. Luo, R. Xu, J. Deng, K. Zuo, H. Li, J. Shi (China)

**THE DEVELOPMENT OF A NASAL PHYSIOLOGY
DIAGNOSTIC SERVICE AND THE SUBSEQUENT EFFECT ON
SURGICAL INTERVENTION IN NASAL SEPTAL DEVIATION** 1207

S.G. Derbyshire, T. Kay, J. Wong, B. Attlmayr, A.C. Swift
(United Kingdom)

ePoster Stations

EPOSTER SESSION: FACIAL PLASTIC SURGERY MISCELLANEOUS

**C-ARM ASSISTED REDUCTION VIA GILLIES APPROACH OF
ZYGOMATIC TRIPOD FRACTURE : TWO CASES REPORT** 1208

K.I.M. Bo Young, K.I.M. Do hyun, L.E.E. Tae Hoon (Korea)

PERIORBITAL NECROTIZING FASCIIT 1209

C. Günel, A. Toka, H.S. Basak (Turkey)

**FACIAL PARALYSIS SECONDARY TO INFECTIVE
OTOLOGICAL CAUSES REQUIRING IN-HOSPITAL
MANAGEMENT** 1210

S. Keh, M. Subhani, M. Gallanagh, M. Shakeel (United
Kingdom)

**BASIC CELL CARCINOMA OF NASAL VESTIBULE -
RECONSTRUCTION WITH FREE SKIN GRAFT** 1211

A. Manganaris, S. Tzellas, T. Amvrosidou, P. Giaramazidis,
I. Karasmanis (Greece)

ePoster Stations

EPOSTER SESSION: FACIAL PAIN

**A RANDOMIZED CONTROLLED TRIAL COMPARING
THE EFFICACY OF LOW-DOSE AMITRIPTYLINE,
AMITRIPTYLINE WITH PINDOLOL AND SURROGATE
PLACEBO IN THE TREATMENT OF CHRONIC TENSION-
TYPE FACIAL PAIN** 1212

A.M. Agius, N.S. Jones, R. Muscat (Malta)

- SERIAL BLOOD SEROTONIN LEVELS IN A RANDOMIZED CONTROLLED TRIAL COMPARING THE EFFICACY OF LOW-DOSE AMITRIPTYLINE, AMITRIPTYLINE WITH PINDOLOL AND PLACEBO IN CHRONIC TENSION-TYPE FACIAL PAIN** 1213
 A.M. Agius, R. Muscat, N.S. Jones (Malta)
- A SINISTER CAUSE OF FACIAL PAIN: RHINO-ORBITO-CEREBRAL MUCORMYCOSIS** 1214
 S. Babu, J. Bedford (United Kingdom)
- OTALGIA CAUSED BY INFLAMMATORY ASBESTOS PLUG IN THE EUSTACHIAN TUBE REGION** 1215
 D. Di Maria, F. Giangregorio, G. Ferrara, P. Goglia, G. Principe, G. Correria (Italy)
- ECTOPIC TOOTH IN THE NASAL CAVITY: A CASE REPORT** 1216
 V. Henriques, R. Teles, A. Sousa, R. Estevão, J. Rodrigues, F. Silva, A. Fernandes, F. Fernandes (Portugal)
- SPONTANEOUS FRACTURE OF THE MAXILLARY SINUS AFTER BLOWING A NOSE** 1217
 S.C. Lim, D.H. Lee (Korea)
- FACIAL PAIN/HEADACHE IN PATIENTS WITH NASAL POLYPOSIS BEFORE AND AFTER SURGERY** 1218
 D.T. Nguyen, P.L. Nguyen-Thi, F. Arous, H. Eluecque, M. Félix-Ravelo, R. Jankowski (France)
- MUCOSAL MAXILLARY CYSTS: ARE THEY SYMPTOMATIC?** 1219
 P. Schalek, Z. Hornácková (Czech Republic)

EPOSTER SESSION: RHINITIS MISCELLANEOUS

ALLERGIC COMORBIDITY IN A PATIENT WITH SKIN AND RESPIRATORY PROBLEMS - CASE REPORT 1220

S. Grubor, A. Grubor (Serbia)

THE DIFFERENTIAL DIAGNOSTICS OF HYPERTROPHIC AND VASOMOTOR RHINITIS 1221

S. Reshetnikov, O. Reshetnikova, V. Reshetnikov (Russia)

COMPARISON ANALYSIS OF HEREDITY ASPECT ON ALLERGIC RHINITIS 1222

S.I. KIM, S.J. Kim, N.N. Longchuphon, S.S. Shin, K.H. Lee, S.W. Kim, J.S. Cho (Korea)

EPOSTER SESSION: TREATMENT OF ALLERGIC RHINITIS

OFFICE BASED NASAL SURGERY FOR NASAL OBSTRUCTION; TERTIARY CENTRE EXPERIENCE 1223

F. Abulfateh, H. AL-Reefy, S. AL-Khalifa (Bahrain)

SKIN PRICK TEST, A WORTHWHILE INVESTIGATION? 1224

R. Costello, K. Saw (United Kingdom)

NARIVENT NASAL SPRAY VERSUS NASAL CORTICOSTEROIDS: EFFICACY EVALUATION IN THE SYMPTOMATIC TREATMENT OF ALLERGIC RHINITIS IN CHILDREN 1225

V. Damiani, N. Mansi, G. D'Agostino, D. Gregori (Italy)

THE ATTEMPT OF NASAL TOPICAL ANTI-CHOLINERGIC SPRAY IN PATIENTS WITH ALLERGIC RHINITIS 1226

M. Ohki, M. Okamoto, K. Ohashi, T. Okamoto, H. Takano (Japan)

ALLERGIC RHINITIS AND THE INFLUENCE OF ENVIRONMENTAL FACTORS 1227

D. Vicheva (Bulgaria)

TREATMENT OF ALLERGIC RHINITIS USING COBLATOR-ASSISTED PARTIAL TURBINOPLASTY 1228

D. Lim, S.H. Kang, B.H. Kim, M.S. Rhu (Korea)

ePoster Stations

EPOSTER SESSION: LOCAL ALLERGIC RHINITIS

EVALUATION OF NASAL OBSTRUCTION WITH RHINOMANOMETRY AFTER NASAL PROVOCATION IN ALLERGIC RHINITIS 1229

M. Poenaru, A. Toma, C. Sarau, C. Doros (Romania)

ePoster Stations

EPOSTER SESSION: PEDIATRIC RHINOLOGY

ANTROCHOANAL POLYP WITH STROMAL ATYPIA: PAEDIATRIC CASE REPORT AND REVIEW 1230

C. Durao, I. Moura, J.P. Leandro, F. Freire (Portugal)

THE PATTERN OF IGE SENSITIZATION IN CHILDREN WITH ADENOID HYPERTROPHY 1231

J.H. Shin, K.J. Cho, B.C. Jun, D.H. Lee, B.J. Yu (Korea)

10:24 **RISK FACTORS FOR PEDIATRIC SNORING: COMPARISON BETWEEN SNORING AND NON-SNORING CHILDREN** 1232

S. Hong, H. Jung, J. Cho (Korea)

EPOSTER SESSION: NASAL SURGERY IN CHILDREN

CLOSED REPOSITION OF NASAL SEPTUM (C.R.D.N.S.) 1233

M. Adnan (Saudi Arabia)

SEPTORHINOPLASTY IN CHILDREN WITH NASAL SEPTUM DEFORMATIONS 1234

O. Khorov, G. Shamrilo, G. Khorov (Belarus)

RHINOSEPTOPLASTY AND GROWTH OF SEPTUM IN CHILDREN: JUSTIFIED OR NOT 1235

G. Kopacheva Barsova (Macedonia)

MANAGEMENT OF CHOANAL ATRESIA WITH MENINGOCELE 1236

F. Perkasa (Indonesia)

CHOANAL ATRESIA AN ENDOSCOPIC APPROACH - CASE REPORT 1237

P. Rocha Pereira, M. Canas Marques, T. Carvalho, J. Deus, A.R. Santos, M. Simão, O. Dias (Portugal)

INFERIOR TURBINATE CHORISTOMA: A CASE REPORT 1238

Y. Tang, J. An, C. Zhao (China)

OUR EXPERIENCE IN MINIMAL INVASIVE ENDOSCOPIC APPROACH OF THE ANTERIOR SKULL BASE BENIGN TUMORS IN CHILDREN 1239

B. Mocanu, C. Mocanu, S. Stoica, I. Boagiu, D. Grigorescu, R. Merchea (Romania)

ePoster Stations

EPOSTER SESSION: RHINOSINUSITIS IN CHILDREN

DIAGNOSIS OF ACUTE BACTERIAL SINUSITIS IN CHILDREN 1240

J. Fejza Bulaj (Albania)

MANAGEMENT OF PEADIATRIC RHINOSINUITIS 1241

D. Vicheva (Bulgaria)

HAEMOPHILUS INFLUENZAE IMMUNITY IN NON-VACCINATED SPLENECTOMIZED BETA-THALASSEMIA CHILDREN 1242

A. Sotoodeh Jahromi (Iran)

HAEMOPHILUS INFLUENZA IMMUNITY IN NON-VACCINATED CHILDREN, SOUTH OF IRAN 1243

S. Sobhanian, A. Sotoodeh Jahromi (Iran)

ePoster Stations

EPOSTER SESSION: UPPER AIRWAY INFLAMMATION IN CHILDREN

RECURRENT INFECTIOUS MONONUCLEOSIS SYNDROME IN A CHILD WITH PREVIOUS TONSILLECTOMY 1244

R.Q. Mehdi, M.S. Atfeh, H.S. Khalil (United Kingdom)

ePoster Stations

EPOSTER SESSION: NASAL OBSTRUCTION IN CHILDREN (INCLUDING NEWBORN)

A CASE OF CONGENITAL HEMINASAL HYPOPLASIA WITH AN INTRANASAL CYST: AN EXTREMELY RARE OCCURRENCE 1245

J. Lee (Korea)

**LOBULAR CAPILLARY HAEMANGIOMA OF THE INFERIOR
TURBINATE: A RARE CAUSE OF PAEDIATRIC NASAL
OBSTRUCTION** 1246

F. Mariño Sánchez, O. Haag, M. Lopez-Chacón, P. Wienberg,
S. Cardelús, A. Díaz, M.A. Clavería, J. Lacima, J. Rodriguez-
Jorge (Spain)

**BILATERAL CONGENITAL CHOANAL ATRESIA IN EIGHT
YEAR OLD CHILD** 1247

H. Oliveira, M. Nakanishi, P. Rafael Neto (Brazil)

**TRANSNASAL ENDOSCOPIC REPAIR OF CONGENITAL
BILATERAL CHOANAL ATRESIA: ONE STEP SURGERY
REPAIR WITHOUT STENTING.** 1248

S. Vlamincx, A. Willaert (Belgium)

ePoster Stations

EPOSTER SESSION: ORBIT AND LACRIMAL SYSTEM

**CONGENITAL DACRYOCYSTOCELE: CASE REPORT AND
LITERATURE REVIEW** 1249

C. Duarte, L. Dores, M. Marques, M. Alveirinho Simão, O. Dias
(Portugal)

SILENT SINUS SYNDROME; A CASE PRESENTATION 1250

S. Johari, J. Lee (Singapore)

**STRUCTURAL PEDICLED MUCOCHONDRAL-OSTEAL
NASOSEPTAL FLAP: A NOVEL METHOD FOR ORBITAL
FLOOR RECONSTRUCTION AFTER SINONASAL AND
SKULL BASE TUMOR RESECTION** 1251

E. Kalyoussef, R.F. Schmidt, J.K. Liu, J. Eloy (USA)

**ENDONASAL ENDOSCOPIC
DACRYOCYSTORHINOSTOMY: SIMPLIFIED STEPS** 1252

M. Naraghi (Iran)

- CLINICAL USEFULNESS OF ENDOSCOPIC INTRANASAL DACRYOCYSTORHINOSTOMY** 1253
 O. Tonuzi, O. Tonuzi (Albania)
- THE EFFECT OF DACRYOCYSTORHINOSTOMY AND SEPTOPLASTY COMBINATION SURGERY FOR LACRIMAL OBSTRUCTION WITH SEPTAL DEVIATION** 1254
 O. Tonuzi, O. Tonuzi (Albania)
- TUBERCULOSIS OF THE LACRIMAL SAC: A CASE REPORT** 1255
 M. Trindade Soares, R. Santos, A. Ribeiro da Silva, G. Evaristo, P. Henriques, L. Oliveira, P. Montalvão, M. Magalhães (Portugal)
- PRIMARY ORBITAL TUMORS: HISTO-CLINICAL STUDY IN MATERIAL OF ENT DEPARTMENT OF MEDICAL UNIVERSITY OF SILESIA.** 1256
 J. Markowski, E. Jagosz-Kandziora, J. Paluch, J. Pajak, W. Likus, E. Mrukwa-Kominek (Poland)
- ENDOSCOPIC SALVAGE TREATMENT FOR VISION LOST CAUSED BY SINONASAL FIBRO-OSSEOUS LESIONS** 1257
 J. Deng, F. Chen, Y. Lai, J. Shi (China)
- ORBITAL COMPARTMENT: EFFECTS OF EMERGENT CANTHOTOMY AND CANTHOLYSIS** 1258
 F. Haubner, H. Jäggle, S. Schleder, T. Kühnel, H.G. Gassner (Germany)
- ENDONASAL TRANSETHMOIDAL ORBITAL DECOMPRESSION IN ENDOCRINE OPHTALMOPATHY** 1259
 P.A. Kochetkov, D.M. Savvateeva (Russia)
- REVISION DACRYOCYSTORHINOSTOMY** 1260
 F. Rodrigues, V. Soares, R.U.I. Tavares, M. Rocha, S. Sousa, J. Santos (Portugal)

- REVISION DACRYOCYSTORHINOSTOMY** 1261
F. Rodrigues, V. Soares, R. Tavares, M. Rocha, S. Sousa,
J. Santos (Portugal)
- EXPANDED ENDONASAL ENDOSCOPIC ORBITAL
DECOMPRESSION: TEN YEARS OF EXPERIENCE** 1262
M. Naraghi (Iran)
- DELAYED SILENT SINUS SYNDROME AND
ENOPHTHALMOS FOLLOWING NASAL SURGEY** 1263
M. Naraghi (Iran)
- ENDOSCOPIC MANAGEMENT OF SUPERIOR-MEDIAL
ORBITAL DERMOID CYST** 1264
M. Naraghi, M. Borojerd, N. Hajarolasvadi (Iran)
- SEVERE DEEP ORBITAL PAIN INDUCED BY MAXILLARY
PNEUMOCELE** 1265
M. Naraghi, S. Mortazavi (Iran)
- ENDOSCOPIC MANAGEMENT OF ORBITAL ABSCESS** 1266
M. Naraghi, M. Borojerd (Iran)

ePoster Stations

EPOSTER SESSION: SKULL BASE SURGERY MISCELLANEOUS

- COMPUTER AIDED SINUS SURGERY IN PARANASAL
SINUS PATHOLOGIES WITH SKULL BASE AND/ OR
ORBITAL EROSION** 1267
M. Al-Qudah (Jordan)
- SPHENOIDAL GLOMANGIOPERICYTOMA** 1268
A.S. Araujo da Costa, T. Rivera Schmitz, C. Chiesa Estomba,
D. Alonso Parraga, J.M. Melendez Garcia (Spain)
- AGGRESSIVE IGG4 DISEASE WITH MAXILLARY AND
SPHENOID-ORBITAL AFFECTATION.** 1269
M.P. Cárdenas Escalante, M.D. Martinez Novoa, X. Ustrell
Roig, E. Figuerola Massana (Spain)

- CHONDROSARCOMA OF POSTERIOR NASAL SEPTUM** 1270
 I. Gavrilă, V. Petrescu, D. Saftă, L. Mitran, R. Stanculescu,
 R. Grigore, S.V.G. Bertesteanu, D. Mirea (Romania)
- INTRACRANIAL MENINGIOMA PRESENTING
 AS A PARAPHARYNGEAL TUMOUR - A UNIQUE
 EXTRACRANIAL PRESENTATION** 1271
 A. Shankar, S. Mohindra, S.K. Gupta, N. Gupta (India)
- GIANT CRANIONASAL POLYPS** 1272
 M. Xie, Z. Deng, L. Wan (China)
- ASIAN EXPERIENCE OF CENTRAL SKULL BASE
 OSTEOMYELITIS** 1273
 S.J. Mun, S.N. Hong, J.C. Ahn, D.H. Han, T.B. Won, C.S. Rhee
 (Korea)
- AGGRESSIVE IGG4 DISEASE WITH MAXILLARY AND
 SPHENOID-ORBITAL AFFECTATION.** 1274
 M.P. Cárdenas Escalante, M.D. Martínez Novoa, X. Ustrell
 Roig, E. Figuerola Massana (Spain)
- TARGETED SPECT SCINTIGRAPHY OF HEAD BONES
 - FACTOR OF SIGNIFICANCE FOR A DECISION ON
 OSTEOMA SURGERY** 1275
 N. Stevandic, A. Aleksic, D. Vranjes (Bosnia and Herzegovina)
- ENDOSCOPIC SINGLE-NOSTRIL TRANSSPHENOIDAL
 APPROACH OF THE HYPOPHYSEAL TUMORS** 1276
 B. Mocanu, S. Stoica, C. Mocanu, I. Boagiu, D. Grigorescu,
 R. Merchea (Romania)
- A RARE CASE OF A SECONDARY NASAL MENINGIOMA** 1277
 D. Rachovitsas, S. Dova, S. Blioskas, K. Argyriou, N. Foroglou,
 K. Markou (Greece)

ePoster Stations

EPOSTER SESSION: CSF-LEAK AND MANAGEMENT OF ANTERIOR SKULL BASE DEFECTS

UNUSUAL PRESENTATION OF AN ASYMPTOMATIC PSEUDOMENINGOCELE WITHIN THE SPHENOID SINUS 1278

K. McNamara, R. Exley, S. Khwaja, R.K. Bhalla (United Kingdom)

ENDOSCOPIC MODIFIED LOTHROP PROCEDURE FOR THE REPAIR OF FRONTAL SINUS PNEUMOCEPHALUS. CASE PRESENTATION. 1279

Y. Pilavakis, N. Mathad, A. Rokade (United Kingdom)

IMMUNOCOMPETENT PATIENT WITH CEREBROSPINAL FLUID LEAKAGE ASSOCIATED WITH A FUNGAL BALL 1280

S. Vlaminck, T. Vauterin, J. Casselman (Belgium)

MANAGEMENT OF IATROGENIC CSF LEAK AFTER ENDOSCOPIC SINUS SURGERY - OUR EXPERIENCE 1281

B. Mocanu, C. Mocanu, S. Stoica, I. Boagiu, D. Grigorescu, R. Merchea (Romania)

ePoster Stations

EPOSTER SESSION: ENDOSCOPIC SURGERY OF SKULL BASE TUMOURS

METASTATIC MELANOMA OF SPHENOID SINUS 1282

T. Carvalho, M. Canas Marques, P. Pereira, S. Agostinho, A.R. Santos, M. Simão, O. Dias (Portugal)

ENDOSCOPIC SURGERY OF POSTERIOR SINUSES: THE EXPERIENCE OF ENT DEPARTMENT CLUJ- NAPOCA, RO 1283

M. Cosgarea (Romania)

- A RARE OCCURANCE OF OPTIC CHIASM PROLAPSE** 1284
 S. Husain, B.S. Gendeh (Malaysia)
- ENDOSCOPIC ORBITAL DECOMPRESSION OF SPHENOID WING MENINGIOMA** 1285
 J. Syed, R. Jayaram, M. Manisali, J. Uddin, A. Toma (United Kingdom)
- ENDONASAL ENDOSCOPIC MANAGEMENT OF A GIANT FRONTAL SINUS AND SUPRAORBITAL CHOLESTEATOMA EXTENDING FAR BACK TO THE MIDDLE FOSSA AND TEMPORAL MUSCLE** 1286
 S. Mulazimoglu, H. Basak, Z.C. Tezcaner, S. Beton, B.C. Meco, C. Meco (Turkey)

 ePoster Stations

EPOSTER SESSION: RHINOLOGY MISCELLANEOUS

- 18 YEARS OLD PATIENT WITH STAGE IV RHINOPHARYNGEAL CARCINOMA - CASE REPORT** 1287
 N. Balica, M. Poenaru, C. Doros, S. Lupescu, M. Dobre, E. Boia, H. Stefanescu (Romania)
- PNEUMATIZATION OF THE INFERIOR TURBINATE VS PNEUMATIZATION OF THE MAXILLARY SINUS - DIAGNOSTIC AND SURGICAL IMPLICATIONS** 1288
 J. Deus, M. Pereira, M. Marques, M. Simão, O. Dias (Portugal)
- EFFICACY OF LONG TERM ALLERGEN IMMUNOTHERAPY IN PATIENTS WITH ALLERGIC RHINITIS** 1289
 C. Yang, S. Kim, N. Longchuphon, S. Shin, K. Lee, S. Kim, J. Cho (Korea)
- AMELOBLASTOMA OF MAXILLARY SINUS: A CASE REPORT** 1290
 C. Di Lieto, I. Tasca, G. Ceroni, F. Sorace (Italy)

- SINONASAL EXOPHYTIC PAPILLOMA: A CLINICAL CASE AND REVIEW OF SIX CONSECUTIVE CASES** 1291
R. Estêvão, S. Caselhos, R. Teles, A. Sousa, V. Henriques, J. Rodrigues, F. Fernandes (Portugal)
- A CLINICAL CASE OF RESPIRATORY EPITHELIAL ADENOMATOID HAMARTOMA** 1292
R. Estêvão, S. Caselhos, J. Rodrigues, R. Teles, A. Sousa, V. Henriques, F. Fernandes (Portugal)
- CREATING A VIRTUAL PATIENT COLLABORATIVE NETWORK FOR RHINOLOGY** 1293
R. Rupert, G. Barrett, H. Khalil, M. Khatawa (United Kingdom)
- ENDOSCOPIC TREATMENT OF OFLACTORY NEUROBLASTOMA- PRESENTATION OF A CASE** 1294
M. Giopanou, A. Marinou, I. Grigoropoulos, E. Zacharioudaki, Z. Pappas (Greece)
- EVALUATION OF ASPIRIN HYPERSENSITIVITY IN CRS PATIENTS** 1295
S.I. KIM, S.J. Kim, N.N. Longchuphon, S.Y. Shin, K.H. Lee, S.W. Kim, J.S. Cho (Korea)
- INFLAMMATORY PSEUDOTUMOR OF THE MAXILLARY SINUS: A CASE REPORT** 1296
A. Ishibashi, T. Komatsuzaki, Y. Kyo, S. Watanabe, Y. Hinohira, H. Suzuki (Japan)
- CHOLESTEROL GRANULOMA OF THE MAXILLAR SINUS: A CASE REPORT** 1297
J. Ivaska, E. Lesinskas (Lithuania)
- FUNGAL RHINOSINUSITIS WITH AN ATYPICAL PRESENTATION** 1298
R.C. Monsanto, R.S. Orem, F.R. Silva, F.T.M. Lorenzetti (Brazil)

- INVERTED PAPILLOMA WITH EXOPHYTIC AND ENDOPHYTIC GROWTH PATTERN** 1299
 I.M. Moura, C. Durao, S.D. Mota, M. Cardoso, J.P. Leandro, F. Freire (Portugal)
- EXTRAMEDULLARY PLASMOCYTOMA OF NASAL CAVITY: A RARE ENTITY** 1300
 M. Poenaru, C. Doros, N. Balica (Romania)
- MIDLINE MALIGNANT GRANULOMA - NASAL NONHODGKIN LYMPHOMA WITH T CELLS - RARE CASE** 1301
 M. Poenaru, N. Balica, H. Stefanescu, M. Dobre, C. Sarau, C. Doros (Romania)
- HODGKIN'S LYMPHOMA OF THE NASOPHARYNX** 1302
 A. Poullos, G. Barrett, H. Khalil (United Kingdom)
- PREDICTIVE VALUE OF RADIOLOGICAL OSTEITIS FOR IDENTIFYING ATTACHMENT OF SINONASAL INVERTED PAPILLOMA** 1303
 D. Chin (Singapore)
- NASAL GLIAL HETEROTOPIA PRESENTING AS SPHENOCOANAL POLYP** 1304
 P. Surda, J. Hobson (United Kingdom)
- MAXILLARY SINUS LYMPHOMA - CASE REPORT** 1305
 S. Tavares, H. Rodrigues, S. Alves, V. Proença, M. Santos, J. Mendes, L. Antunes (Portugal)
- NASAL MYOEPIITHELIOMA: A CASE REPORT AND LITERATURE REVIEW** 1306
 R. Teles, A. Sousa, V. Henriques, J. Rodrigues, E. Estevão, F. Moreira da Silva, J. Rodrigues, F. Fernandes (Portugal)

- NASAL GLOMANGIOPERICYTOMA PRESENTING WITH OSTEOPOROSIS** 1307
S. Thanaviratnanich (Thailand)
- NASAL INTRAOSSEOUS HEMANGIOMA: A CASE REPORT** 1308
J. Vaz de Castro, C. André, L. Antunes (Portugal)
- SMALL CELL NEUROENDOCRINE CARCINOMAS OF THE PARANASAL SINUSES AND NASAL CAVITY: AN EXTREMELY RARE LOCATION FOR A KNOWN TYPE OF NEOPLASM** 1309
I. Villarreal Patiño, B. Arellano Rodriguez, E. Tejerina, C. Lopez-Cortijo (Spain)
- INTRANASAL PRESENTATION OF CONDYLOMA ACUMINATA - A CASE REPORT** 1310
T.C. Wang, K.W. Huang (Taiwan)
- PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL ROLE OF NASAL SEPTUM** 1311
G. Piskunov (Russia)
- ASSESSMENT OF NASAL POLYPOSIS IN PATIENTS WITH CYSTIC FIBROSIS - ASSOCIATION OF CLINICAL SYMPTOMS AND ENDOSCOPIC FINDINGS** 1312
A. Skouras, P. Giaramazidis, T. Mantis, S. Tzellas, I. Karasmanis, C. Grigoriadis, A. Manganaris (Greece)
- RHINOSCLEROMA PRESENTING WITH HOARSENESS: A CASE REPORT** 1313
A. Melendez, V. Hernandez, L. Korytkowski (Panama)
- ENDOSCOPIC SINONASAL SURGERY UNDER NAVIGATION SYSTEM** 1314
Z. Ozergin Coskun, E. Dursun, O. Celebi Erdivanli, A. Ozgur, S. Terzi, M. Demirci (Turkey)

- MANAGEMENT OF INVERTED PAPILLOMA IN 2014: AN EVIDENCE BASED REVIEW.** 1315
 B. Attlmayr, S. Derbyshire, A.C. Swift (United Kingdom)
- AIRWAY MANAGEMENT IN RHINOLOGIC SURGERIES** 1316
 M. Naraghi (Iran)
- EVALUATION OF SMELL IN THE LARYNGECTOMEE** 1317
 H. Rodrigues, S. Alves, S. Tavares, J. Vaz de Castro, M. Santos, P. Correia, J. Brito Mendes, L. Antunes (Portugal)
- ARTERIOVENOUS FISTULA OF THE NOSE** 1318
 M. Naraghi, M. Boroojerdi (Iran)
- INVERTED PAPILLOMA OF NASAL CAVITY AND PARANASAL SINUSES AND MIDDLE EAR IN THE DATA OF ENT DEPARTMENT OF SILESIAN MEDICAL UNIVERSITY: HISTO- CLINICAL ANALYSIS.** 1319
 J. Markowski, J. Paluch, P. Wardas, W. Likus (Poland)
- IMPACT OF UPPER AIRWAY ON LOWER AIRWAY** 1320
 A. Aleksic, D. Vranjes, N. Stevandic, S. Spremo, D. Travar (Bosnia and Herzegovina)
- NASAL ALLERGY IN OTITIS MEDIA WITH EFFUSION IN CHILDREN** 1321
 D. Vranjes, A. Aleksic, S. Spremo, D. Travar, N. Stevandic (Bosnia and Herzegovina)
- ASSOCIATION BETWEEN SLEEP DISORDERED BREATHING AND LOWER AIRWAY DISEASE IN PCD** 1322
 E. Cantone, V. Di rubbo, L. Di giorgio, L.L. Di micco, S. Montella, M. Esposito, M. Carotenuto, F. Santamaria, M. Iengo (Nap)

- CO2 MODULATES THE CENTRAL NEURAL PROCESSING OF SWEET PERCEPTION: AN FMRI STUDY** 1323
 E. Cantone, I. Ferranti, A. Prinster, V. Verlezza, G. Sarnelli, R. Cuomo, F. Di salle, M. Iengo (Naple)
- LASER ASSISTED OSTEOPLASTIC FRONTAL SINUSOTOMY** 1324
 S. Yeshenka, I. Karol (Belarus)
- CASE REPORT: ORBITAL AND INTRACRANIAL COMPLICATIONS OF ACUTE RHINOSINUSITIS** 1325
 V. Limantaite, E. Lesinskas (Lithuania)
- LONG-TERM RESULTS OF TREATMENT OF POLYPOUS RHINOSINUSITIS** 1326
 V. Vishniakov (Russia)
- RETRO-ORBITAL PAIN AS UNIQUE SYMPTOM OF ONODI CELL MUCOPYOCELE** 1327
 F.R. Fiorini, G. Meccariello, G. Mannelli, A. Deganello (Italy)
- OSTEOMA AND NASAL POLYPOSIS: AN UNUSUAL ASSOCIATION.** 1328
 H. Chahed, A. Mediouni, Merdassi A.(2)*, J. Marrakchi, R. Bachraoui, R. Zainine, M. Ben Amor, N. Beltaief, G. Besbes
- CEREBROSPINAL RHINORRHEA: HOW TO MANAGE?** 1329
 H. Chahed, R. Bachraoui, A. Merdassi, A. Mediouni, J. Marrakchi, M. Ben Amor, R. Zainine, N. Beltaief, G. Besbes (Tunisia)
- SEPTAL PERFORATION: ETIOLOGIES AND SURGICAL MANAGEMENT** 1330
 H. Chahed, J. Marrakchi, A. Merdassi, A. Mediouni, R. Bachraoui, R. Zainine, M. Ben Amor, N. Beltaief, G. Besbes (Tunisia)

- COMPLICATIONS OF ENDOSCOPIC ENDONASAL SURGERY: MANAGEMENT AND PREVENTION** 1331
- H. Chahed, J. Marrakchi, A. Mardassi, W. Abid, A. Mediouni, R. Bachraoui, S. Tabebi, S. Sahtout, R. Zainine, M. Ben Amor, N. Beltaief, G. Besbes, G. Besbes (Tunisia)
- ENDONASAL ENDOSCOPIC DACRYOCYSTORHINOSTOMY: CAUSES OF SURGICAL FAILURE** 1332
- H. Chahed, R. Zainine, A. Mardassi, J. Marrakchi, R. Bachraoui, A. Mediouni, M. Ben Amor, N. Beltaief, G. Besbes (Tunisia)
- EARLY EFFECTS OF ENDOSCOPIC SINUS SURGERY (ESS) AND POSTOPERATIVE CONSERVATIVE TREATMENT IN PATIENTS WITH CHRONIC RHINOSINUSITIS WITH AND WITHOUT POLYPS INFLUENCED BY BACTERIAL INFECTION** 1333
- P. Strek, K. Hydzik-Sobocinska, B. Bobrzynska, P. Hartwich, R. Nieckarz, A. Wrobel (Poland)
- CHOANAL ATRESIA : SURGICAL APPROACHES AND THERAPEUTIC RESULTS** 1334
- H. Chahed, R. Zainine, A. Mardassi, A. Mediouni, J. Marrakchi, R. Bachraoui, M. Ben Amor, N. Beltaief, G. Besbes (Tunisia)
- SPHENOID SINUS TUMOR PATHOLOGY** 1335
- H. Chahed, J. Marrakchi, A. Mardassi, R. Bachraoui, A. Mediouni, M. Ben Amor, R. Zainine, N. Beltaief, G. Besbes (Tunisia)

SurgTech.net - Free to the end-user surgical education

M. Barnes¹, B. Ram¹, J. Bretschneider¹

¹ SurgTech Ltd, Scotland

Abstract: ERS-0350

Session: Simulation and training

Time: 24-06-14, 10:15

Location: Hall J

Chair person: S. Carney

Presenting author: M. Barnes

Objectives

The modern trainee still acquires their surgical skills through time in operating theatres and surgical teaching courses. New technologies are just beginning to supplement this with multimedia educational resources.

In 2012, Martyn founded SurgTech Ltd. a not-for-profit organisation with the expressed purpose to further surgical education. We are now working towards a multimedia resource for surgeons - a forum to learn from or contribute to educational materials, and to engage with others globally. Accessible on desktops, tablets, and smartphones, SurgTech's immediate focus is Rhinology, and we will be releasing our first works soon - an electronic multimedia atlas of contemporary surgical technique in Rhinology.

Surgtech is the product of doctors with a special interest in education and skills in digital content creation.

We would like to showcase our materials and demonstrate some exciting technologies we will be including in our publications - free for anyone to use, edit, reproduce, or share with due attribution. We are recruiting interested members, contributors, section leads, and sponsors to further our community aims.

Uvulopalatopharyngoplasty outcome assessment with watchpat®

M. Shin¹, M.S. Shin¹

¹ Otolaryngology, Sun General hospital, Daejeon, Korea

Abstract: ERS-0357

Session: OSAS

Location: Hall H

Time: 25-06-14, 14:40

Chair person: N. de Vries

Presenting author: M. Shin

Objectives

Several studies on assessment of uvulopalatopharyngoplasty (UPPP) outcome using polysomnography (PSG), flexible endoscopic airway analysis, and Epworth sleepiness scale (ESS) have been reported. PSG is generally accepted as the most accurate method for assessing the outcome of UPPP. PSG, however, is expensive, cumbersome, and requires patients an overnight stay at sleep centers. As a result, investigations in using automatic ambulatory monitoring devices such as WatchPAT® to assess results of various obstructive sleep apnea (OSA) treatments have grown recently. The aim of this study is to evaluate WatchPAT® as a tool to assess outcomes of UPPP procedures.

Methods

25 consecutive patients who underwent UPPP were enrolled. Mean age of the patients was 38.0±10.0 years and mean BMI value was 28.9±4.2 kg/m². ESS scores, apnea-hypopnea index (AHI) values, respiratory disturbance index (RDI) values, and lowest O₂ saturation data before and after surgery were compared and analyzed.

Results

ESS scores, AHI, RDI, and lowest O₂ saturation values, according to WatchPAT® results, have significantly improved after UPPP (Table1). Also, a close correlation between ESS scores and lowest O₂ saturation values before and after operative procedures was shown ($r = -0.63$, $p = 0.001$).

Conclusion

WatchPAT® is a valuable tool for accurate and cost-effective assessment of UPPP outcome.

Variables	Pre-operation (n=25)	Post-operation (n=25)	P value
BMI	28.95±4.20	28.03±3.73	0.375
ESS score	13.92±3.62	5.00±2.61	0.004
Watch PAT® test			
AHI	37.15±19.91	13.82±12.84	0.000
RDI	41.06±19.13	18.47±12.44	0.000
Lowest O ₂ saturation (%)	77.92±8.50	85.48±6.67	0.013
Heart rate (bpm)	106.56±12.32	101.08±18.12	0.067

Upper airway obstruction & the development of malocclusion of the teeth

E. AlKofide¹

¹ Department of Orthodontics, King Saud University College of Dentistry, Riyadh, Saudi Arabia

Abstract: ERS-0358

Session: Pediatric rhinology

Session Time: 25-06-14, 09:30

Location: Hall H

Chair person: P. Stjarne

Presenting author: E. AlKofide

Objectives

The aim of this presentation is to familiarize the various medical specialties with the challenges the orthodontist is confronted with when treating children with upper airway obstruction.

Methods

The affects of airway obstruction on growth will be shown, in addition, various methods for treatment will be displayed such as the use of the hyrax appliance which widens the maxilla and nasal fossa, thus restoring normal nasal airflow.

Results

Breathing difficulties due to airway obstruction in children is a problem that not only the medical profession faces but also the dentist, particularly the orthodontist. It is well known that most patients seek orthodontic treatment in the teenage years. By that time, the detrimental effects of prolonged oral breathing on the facial skeleton may be observed. The earlier this pattern develops, the greater the change it has on growth and development. The end result being an altered posture of the head and neck, changes in the maxilla and mandible thus the term long face or adenoid face, and the development of malocclusion.

Conclusion

Since orthodontic consultations are recommended at the age of 7, the orthodontist has the advantage of examining the child and detecting if a breathing problem exists early on. They can monitor development and treat undesirable growth patterns with extra-oral or intra-oral appliances. It is crucial that treatment of these patients involve a multi-disciplinary approach. The coordination and early intervention of the otolaryngologist, allergist, or pediatrician, together with the orthodontist, will give the child a better outcome in terms of breathing, facial appearance, tooth and functional relations.

Complications in septoplasty

B. Marinkovic¹, S.A.S.A. Zivaljevic¹

¹ ENT Clinic, Clinical Center Nis, Nis, Serbia

Abstract: ERS-0359

Objectives

The most frequent complications of septoplasty are deformities, infections, and perforations. The effects of each of these complications, however, can be very different.

Methods

Dislocations and deformities of the septum may result not only in an impaired airway but also in visible deformities of the entire nasal base and dorsum. Infections may lead not only to septum abscess but also to endocranial complications such as meningitis or septicemia with endocarditis. Permanent perforations of the nasal septum can result in significant symptoms if they are located in the anterior part of the nose.

Results

Surgical closure is the treatment of choice, with a high success rate if the patients are selected properly.

Conclusion

Besides these three major types of complications there are many others, from smell disturbances to blindness. Causes, prevention and correction of selected complications are presented in our work.

Noninvasive measurement of nasal no and fractional exhaled no in healthy people and patients with allergic rhinitis

H. Wang¹, S. You¹, J. Zhang¹, L. Ji¹, Y. Bai¹

¹ Otorhinolaryngology, Chinese PLA General Hospital, Beijing, China

Abstract: ERS-0360

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:28

Chair person: C. Bachert

Presenting author: H. Wang

Objectives

To measure the nasal nitric oxide (NNO) and fractional exhaled nitric oxide (FENO) in healthy Chinese people and patients with allergic rhinitis (AR), and to discuss the clinical significance of the results

Methods

Ninety-six healthy volunteers and 51 patients with moderate-severe persistent AR, but without asthma, were enrolled. NNO and FENO concentrations were measured noninvasively by use of NIOX MINO (Aerocrine AB, Solna, Sweden).

Results

The concentration of NNO in healthy people was 245.0ppb (189.8,331.3) [skewed distribution was showed as the median (25th percentile,75th percentile).The followings are same as here].The concentration of FENO was 14.0ppb (10.0,18.0).The concentration of NNO in patients with AR was 296.5 ± 159.6 ppb (normal distribution was showed as mean \pm standard deviation).The concentration of FENO was 21.0ppb (16.0,40.5).The concentration of NNO in the AR patients was higher than that in the healthy persons, but the difference did not reach statistical significance ($p=0.177$). On the other hand, FENO concentrations were significantly increased in patients compared with concentrations in healthy persons ($p=0.000$).

Conclusion

FENO concentrations of patients with moderate-severe persistent AR are increased significantly even though the patients do not have typical symptoms of asthma. This finding suggests that AR patients should be treated actively in order to help prevent asthma from developing in them.

Stentless endoscopic transnasal repair of bilateral choanal atresia starting with resection of vomer

M. El-Ahl¹, M. El-Anwar¹

¹ Otorhinolaryngology department, Faculty of medicine zagazig university, Zagazig, Egypt

Abstract: ERS-0361

Session: Pediatric rhinology

Session Time: 25-06-14, 09:48

Location: Hall H

Chair person: P. Stjarne

Presenting author: M. El-Ahl

Objectives

To assess the results of a transnasal endoscopic repair of congenital choanal atresia beginning by resection of the posterior portion of the vomer and ending by no stent.

Methods

Seven patients with bilateral congenital choanal atresia aged ranging from 3 to 15 days were operated upon between June 2009 and September 2011. This transnasal endoscopic approach allowed resection of the posterior portion of the vomer first then the atretic plates and part of the medial pterygoid plate if needed leaving no stent. Postoperative control included office fiberoptic nasal endoscopy.

Results

Adequate functional nasal breathing was maintained in all patients during follow up of 11 to 23 months. Apart from one case that complicated by palatal defect, no any other complications were detected.

Conclusion

The described technique was proved to be very effective, allowing fast recovery, and one step surgery with early discharge from hospital using neither stents nor nasal packing. Good patency with no reduction in functional quality was also observed.

External versus trans-nasal endoscopic management of nasolacrimal obstruction

B. Abdel Hak¹, A.D.E.L. Abdelbaki¹, A. Desoky², M. Farag²

¹ ENT, Minia University, Minia, Egypt

² Ophthalmology, Minia University, Minia, Egypt

Abstract: ERS-0362

Session: Orbit lacrimal system

Session Time: 26-06-14 11:15

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: B. Abdel Hak

Objectives

Dacryocystorhinostomy (DCR) has been the standard procedure for acquired nasolacrimal duct obstruction. Lacrimal sac can be approached either by external (Ex-DCR) or endoscopic (EN-DCR).

Methods

This study included Sixty patients with distal lacrimal passage obstruction underwent DCR, forty patients with primary transnasal EnDCR (35 females and 5 males) and twenty patients (14 females and 6 males) with ExDCR from the period of January 2011 till January 2013 they were followed up at 3 and 6 months for surgical outcome.

Results

This study included 60 patients. The patients were divided randomly into two groups (40 underwent EnDCR which subdivided in to two sub groups 20 under went endoscopic silicone tube , 20 underwent endoscopic otologic t-tube) and the other 20 underwent external DCR . It was observed that the age of the patients ranged from 18 to 65 years with a mean age of 36.61 years, 56.7% of them were in the 3rd and 4th decades of life. There were 11 males and 49 females in the study.

The success rate defined as absence of epiphora in external DCR was 80% at 3months and the same at 6 months and in transnasal endoscopic DCR was 87.5% as 3 months and 85% at 6 months.

Conclusion

External and endoscopic DCR are effective surgical approaches for nasolacrimal duct obstruction with comparable succes rate but endoscopic DCR with silicone tube in our study is more superior than external and endoscopic otologic t-tube.

Outcome of septoplasty with and without packing

P. Shah Wali¹, P. Zainullah Kakar¹, W.A.L.I. Shah¹

¹ ENT, BMCH Quetta, Quetta, Pakistan

Abstract: ERS-0363

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 12:00

Chair person: S. Carrie

Presenting author: S. Savovic

Objectives

The objective of my study was to compare the outcome of septoplasty with and without nasal packing in patients having deviated nasal septum.

Methods

Sample Size

One hundred and eighty patients were included in this study in both groups and 90 patients in each group.

Sampling Technique

Non-probability purposive sampling.

Results

The age range was 12 to 45 years. The average age was 24.28 ± 7.17 years in group A and 23.72 ± 6.89 in group B. The male patients were 56 (62.22%) in group A and 34 (37.78%) patients were female. Fifty five (61.11%) patients were male in group B and 35 (38.89%) patients were female B. Male to female ratio was 1.64:1 in group A and 1.57:1 in group B. In the comparison of septal hematoma after removal of splint at 7th postoperative day, there were 11 (12.22%) patients in group A and only 3 (3.3%) patients in group B. Group B showed better results without nasal packing of septoplasty which is statistically significant ($P = 0.008$).

Conclusion

It is concluded that the frequency of bleeding after septoplasty without nasal packing is very low and nasal packing should be reserved only for those who bleed more during surgery or land with reactionary bleeding or develop septal hematoma. It is better not to use nasal packs in patients with cardiologic and vascular diseases. If packs are going to be used, close follow-up of the patients is needed and dosage adjustments in patient's medications may be required.

Lipopolysaccharide induces VEGF expression via TLR4/AKT pathway in nasal polyps

H. Lee¹, I.H. Park¹, J.S. Cho¹

¹ Department of ENT Korea University, Korea University Guro Hospital, Seoul, Korea

Abstract: ERS-0365

Session: CRS Basic 3

Session Time: 24-06-14, 16:00

Location: Hall E

Chair person: S. Vlamincx

Presenting author: H. Lee

Objectives

Nasal polyposis is characterized by tissue remodeling and edematous nasal mucosa. Vascular endothelial growth factor (VEGF) plays a significant role in the regulation of remodeling in nasal polyps. This study aimed to evaluate whether lipopolysaccharide (LPS), an inducer of TLR4, stimulates VEGF expression and to determine the mechanism underlying VEGF production in nasal polyps.

Methods

Nasal polyp-derived fibroblasts (NPFDs) were isolated from 10 patients with nasal polyps and exposed to LPS. LPS from *Rhodobacter sphaeroides* (LRS) was used to inhibit the expression levels of TLR4, MyD88 and VEGF. Messenger RNA (mRNA) expression levels of TLRs, MyD88 and VEGF were determined by gene expression microarray and semi-quantitative reverse transcription-PCR. Protein expression levels of TLR4 and VEGF were analysed using western blot, immunofluorescence staining and enzyme-linked immunosorbent assay (ELISA). Activation of MAPKs (ERK, p38, and JNK) and Akt was examined using western blot analysis. The expression level of VEGF was measured by ELISA and western blot analysis in ex vivo nasal polyp organ culture.

Results

The protein expression level of VEGF was increased in nasal polyp tissues compared with inferior turbinate tissues. LRS inhibited the mRNA and protein expression of TLR4, MyD88 and VEGF in LPS-stimulated NPFDs. LPS-activated MAPKs and Akt signals, whereas MAPK inhibitors did not inhibit VEGF expression, and only Akt inhibitor blocked VEGF production. LRS reduced the production of VEGF in LPS-stimulated ex vivo organ culture.

Conclusion

These results suggest that LPS stimulates the production of VEGF through the TLR4-Akt signaling pathway in nasal polyps.

Diagnostic dilemma of fungal sinusitis

J. Jawad¹, G. Zgheib¹

¹ ENT, Dr Soliman Fakeeh Hospital, Jeddah, Saudi Arabia

Abstract: ERS-0366

Objectives

Fungal sinusitis requires a great deal of interest. Knowing the fungal flora, its prevalence in patients with chronic disease allow a better understanding, correct diagnosis, treatment & prognosis.

Methods

Retrospective study patients with chronic sinusitis that been referred to otolaryngology surgeon for endoscopic sinus surgery for 3 years. Dr .Soliman Fakeeh Hospital .Jeddah.KSA. 50 out of 300 immunocompetent patients, age from 11 till 43 years old, 35 male and 15 female. Evaluation of clinical examination nasal endoscopy , myco and bacterio cultures, ct scan and histology results.

Results

Fungal rhinosinusitis cause of chronic rhinosinusitis in 17 % of patients with chronic disease. Fungal cultures positive in 60 % of specimens with predominance of 63.3% *Aspergillus fumigatus*, 20 % *Aspergillus flavis*, 3.33 % *Aspergillus niger* and 13,3 % *Candida albicans*. 40 % of patients with fungal rhinosinusitis showed no fungal growth. Associated bacterial infections in 16 patients out of 50 with growth of *Staphylococcus aureus* in 43,75 % , *Staphylococcus haemolyticus* in 25 % , *Pseudomonas aeruginosa* in 18.75 % , & *Klebsiella pneumonia* in 12.5 % . 28 % no bacterial growth. Mixed bacterial & fungal infections in 30 % : *staph. aureus & aspergillus fumigatus* 33,33 % , *Staph.aureus & aspergillus flavis* 22,22% , *Pseudomonas aeruginosa & aspergillus fumigatus* 22,22% , *Klebsiella pneumonia & candida albicans* 11,22 % and finally *Staph.haemolyticus & candida albicans* 11,22%. Histo findings: fungal rhinosinusitis 54 % , allergic rhinosinusitis 22 % , non specific inflammation 6 % and mixed reaction 18 %.

Conclusion

The allergic fungal sinusitis represents an IMMUNOLOGIC rather than INFECTIOUS disease. The maximum diagnosis will be available by combining traditional culture , histopathology & radiology.

Do bacteria contribute to the formation of nasal polyps in patients with chronic rhinosinusitis patients with chronic rhinosinusitis

T. Biggs¹, S. Hayes¹, H. Lamont¹, P. Harries¹, S. Pender², R. Salib¹

¹ Otorhinolaryngology and Head and Neck Surgery, San Raffaele Scientific Institute, Milan, Italy

² Allergy and Immunology, San Raffaele Scientific Institute, Milan, Italy

Abstract: ERS-0367

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:30

Location: Hall J

Chair person: C. Hopkins

Presenting author: T. Biggs

Objectives

There is mounting evidence that intracellular bacteria could be involved in the pathogenesis of nasal polyps. This study aimed to provide further evidence of any inflammatory and remodelling processes, stimulated in response to surface and intracellular bacteria, potentially participating in the formation of nasal polyps. T helper 17 (Th17) cells, contribute to cellular immunity with a robust antimicrobial inflammatory response. In addition matrix metalloproteinase (MMP) 7 through the activation of defensin 5, contribute by acting as anti-bacterial peptides.

Methods

Cytokines associated with the Th17 pathway (IL23r) were measured via RT-qPCR together with MMP 7, defensin 5, MMP9 and TNF α . Mucosal and/or polyp samples were obtained from 14 patients; chronic rhinosinusitis with (CRSwNP) and without (CRSsNP) nasal polyps, and controls.

Results

Th17 cytokines (IL-23R) were increased in polyp tissue compared to controls, together with MMP 7, defensin 5, MMP9 and TNF α . In addition levels of all measured cytokines were increased in polyp tissue compared to both CRSwNP non-polypoidal mucosa and CRSsNP mucosa.

Conclusion

Intracellular bacteria have been found to be associated with nasal polyps. This study has revealed up regulation of the Th17 pathway together with MMP 7, defensin 5, MMP9 and TNF α in nasal polyp tissue compared to controls. Furthermore the bacterial related inflammatory response of CRSwNP patients is increased when compared to CRSsNP. These results provide further evidence of the cellular and humoral response to bacteria, potentially contributing to nasal polyp formation following the mucosal invasion of bacteria, or surface bacteria through the secretion of enterotoxins.

YouTube™ as a source of information on rhinosinusitis - the good, the bad, and the ugly

T. Biggs¹, J. Bird¹, P. Harries¹, R. Salib¹

¹ ENT, University Hospital Southampton, Southampton, United Kingdom

Abstract: ERS-0368

Session: CRS Basic 2

Session Time: 24-06-14, 15:00

Location: Hall G

Chair person: R. Moesges

Presenting author: T. Biggs

Objectives

YouTube is an internet-based repository of user generated content. The aim of the study was to determine whether YouTube represented a valid and reliable patient information resource for the lay person on the topic of rhinosinusitis.

Methods

The first 100 YouTube videos found using the search term 'sinusitis' were included. Videos were graded on their ability to inform the lay person on the subject of rhinosinusitis.

Results

45% of videos were deemed to provide some useful information, 55% contained little to no useful facts with 27% of these containing potentially misleading or even dangerous information. Videos uploaded by medical professionals and health information websites contained more useful information than those uploaded by independent users.

Conclusion

YouTube appears to be an unreliable resource for accurate and up to date medical information relating to rhinosinusitis. However, it may provide some useful information if patients and doctors are better educated on the location and availability of quality online content, take a more active role in uploading reputable videos and highlight dangerous videos for removal by YouTube.

Novel insights into the origin of nasal polyps

S. Hayes¹, D. Johnston², R. Howlin³, J. Webb³, S. Clarke⁴, P. Stoodley⁵, P. Harries⁶, S. Faust⁷,
L. Hall-Stoodley⁷, R. Salib⁶

¹Otorhinolaryngology, University Hospital Southampton, Southampton, United Kingdom

²Biomedical Imaging Unit, University Hospital Southampton, Southampton, United Kingdom

³Centre for Biological Sciences, University of Southampton, Southampton, United Kingdom

⁴Public Health England, University of Southampton, Southampton, United Kingdom

⁵National Centre for Advanced Tribology, University of Southampton, Southampton, United Kingdom

⁶Otorhinolaryngology, University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom

⁷Wellcome Trust Clinical Research Facility, University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom

Abstract: ERS-0369

Session: CRS Basic 2

Session Time: 24-06-14, 14:55

Location: Hall G

Chair person: R. Moesges

Presenting author: S. Hayes

Objectives

Chronic rhinosinusitis with or without nasal polyps is one of the commonest conditions encountered in medicine and has a profound socio-economic impact with a cost to the US economy of nearly \$6 billion per year. Recent evidence implicates nasal mucosal bacterial biofilms as possible mediators of the chronic rhinosinusitis inflammatory process. However, it is not known whether bacterial biofilms play a role in nasal polyp formation, a condition which affects up to 4% of the United States population. We have, therefore, conducted a study to investigate the hypothesis that bacterial biofilms are an aetiological agent in nasal polyps.

Methods

A prospective study was conducted on 9 chronic rhinosinusitis patients undergoing endoscopic sinus surgery for nasal polyps and 5 control patients undergoing trans-sphenoidal pituitary surgery. Sinonasal mucosa and polyps were collected and assessed for bacterial biofilms using fluorescence in situ hybridisation, confocal microscopy, and scanning electron microscopy.

Results

In all 9 polyp samples, sub-epithelial intracellular biofilms were identified occupying the cytoplasm of host cells.

Conclusion

This novel finding provides insight into the potential role of bacterial biofilms in the pathogenesis of nasal polyps, challenges previous thinking that chronic rhinosinusitis biofilms are surface-related and may explain why chronic rhinosinusitis is such a difficult condition to treat.

Antibiotics in the treatment of chronic rhinosinusitis without nasal polyposis: a questionnaire study of consultant microbiologists

R. Williams¹, C. Saxby¹, L. Jones¹, S. Hickey¹, C. Potter¹

¹ ENT, Torbay Hospital, Torquay, United Kingdom

Abstract: ERS-0370

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:25

Location: Hall J

Chair person: C. Hopkins

Presenting author: R. Williams

Objectives

Chronic rhinosinusitis common and debilitating condition. EPOS 2012 advocates the use of long-term low-dose macrolides as part of 'maximal medical therapy'. The current evidence base for this recommendation is limited and with a single microbiologist listed on the authorship of EPOS 2012, we sought to add depth to this by surveying the views of on-call consultant microbiologists.

Methods

A telephone questionnaire survey was conducted of on-call consultant microbiologist at all 31 UK principle university teaching hospitals.

Results

84% response rate was achieved. 73% of respondents did not advocate the use of antibiotics and 77% of did not advocate the use of long-term low-dose macrolides in the treatment of chronic rhinosinusitis without nasal polyposis. 73% had concerns regarding resistance, 58% regarding side effect profile, although 19% acknowledged openly that they were unaware of the evidence surrounding the use of macrolides in the treatment of chronic rhinosinusitis without nasal polyposis.

Conclusion

This study reveals a widespread scepticism amongst on-call consultant microbiologists regarding the appropriateness of such regimens, with specific concerns regarding antibiotic resistance and side-effect profile. Also of note was the limited knowledge of the evidence of this area within the microbiology community, suggesting the need for greater education and awareness to gain a true consensus of opinion.

Osteitis is associated with p-glycoprotein overexpression in patients with chronic sinusitis without nasal polyps

C. Günel¹, R. Feldman², B. Bleier³

¹ Department of Otorhinolaryngology-Head and Neck, Adnan Menderes University Medical School, Aydin, Turkey

² Department of Otolaryngology and Laryngology, Massachusetts Eye and Ear Infirmary Harvard Medical School., Boston, USA

³ Department of Otolaryngology-Head and Neck, Massachusetts Eye and Ear Infirmary Harvard Medical School., Boston, USA

Abstract: ERS-0371

Session: CRS Basic 2

Session Time: 24-06-14, 14:20

Location: Hall G

Chair person: R. Moesges

Presenting author: C. Günel

Objectives

P-glycoprotein (P-gp) is a membrane-bound efflux pump that is upregulated in eosinophilic chronic rhinosinusitis and participates in epithelial cytokine secretion. Osteitis is associated with eosinophilic inflammation. The purpose of this paper is determine whether P-gp overexpression and increased osteitis scores are associated in patients with chronic rhinosinusitis (CRS).

Methods

P-gp expression was calculated using quantitative fluorescent immunohistochemistry to generate an epithelial to background staining ratio. Patients were stratified into low and high P-gp expression groups. Osteitis was scored radiologically using the Kennedy Osteitis (KOS) and Global Osteitis Scores (GOS). Serum eosinophilia was assessed. KOS and GOS were compared. Osteitis scores and serum eosinophil concentrations between P-gp expression groups were compared.

Results

Among the 38 patients, 7(18.42%) had high P-gp expression (mean \pm SD, 4.86 ± 1.33) while 31(81.57%) had low expression ratios (1.93 ± 0.45). No patients in the high P-gp expression group had undergone prior surgery. Median serum eosinophil values were significantly greater in the high vs. low P-gp expression group (6.98 ± 2.17 vs 2.36 ± 1.38 , $p < 0.001$). GOS and KOS values were significantly greater in the high vs low P-gp expression group (15.86 ± 4.91 vs 6.29 ± 1.25 and 4.55 ± 4.33 vs 2.23 ± 1.71 , $p < 0.001$). KOS and GOS values were significantly correlated ($r = 0.835$, $p < 0.001$).

Conclusion

Increased osteitis burden as measured by either the KOS or GOS is associated with increased P-gp membranous expression in CRS. Radiographic quantification of osteitis may therefore be used to identify patients with P-gp overexpression thereby providing a novel potential therapeutic target.

Effect of probiotic combination on the blood serum in patient with moderate to severe allergic rhinitis

A. Sardjana¹, D. Soetoko², W. Wiratno¹

¹ ENT, Islamic University of Sultan Agung, Semarang, Indonesia

² Biology, Islamic University of Sultan Agung, Semarang, Indonesia

Abstract: ERS-0372

Session: Rhinitis clinical

Session Time: 25-06-14, 15:10

Location: Hall E

Chair person: A. Swift

Presenting author: A. Sardjana

Objectives

Allergic rhinitis is a nasal inflammatory reaction due to imbalance between T-helper type (Th) 1/Th2 leading to polarized immune response and delayed maturation of Th1 and related cytokines such as interferon-gamma (IFN- γ). Some of the allergic rhinitis therapies have been shown to be ineffective and cause side effects. Thus, a new therapy is needed. This study aimed at evaluating the effect of the administration of probiotic combination on IFN- γ /IL-4 ratio in patients with allergic rhinitis.

Methods

In this study using randomized pre-posttest with control group design, 40 patients with moderate to severe allergic rhinitis were divided into two groups to receive the probiotic combination (*L. acidophilus* and *L. casei*) or placebo. The enzyme-linked immunosorbent assay (ELISA) was used to measure the level of IFN- γ and IL-4. The data were analyzed using Pair T test with CI of 95%.

Results

For the treated group, the level of IFN- γ was found to elevate significantly ($p < 0.05$) while the level of IL-4 decreased significantly ($p < 0.05$). There was a significant difference in the IFN- γ /IL-4 ratio between treated and placebo group ($p < 0.05$).

Conclusion

The administration of probiotic elevates the ratio of IFN- γ /IL-4 in patient with moderate to severe allergic rhinitis.

Prevalence of chronic rhinosinusitis with nasal polyps among the population of the urban area

E. V. Nosulua¹, I.A. Kim¹, B. Peric¹

¹ Otorhinolaryngology, Russian medical academy of postgraduate education, Moscow, Russia

Abstract: ERS-0373

Objectives

TA high growth of studies considering chronic rhinosinusitis with nasal polyps (CRSwNP) is evident over the last years, however, epidemiology studies differ in significant fluctuations and incoherent data obtained by different authors. Abovementioned facts impede estimation of the real rates and tendencies of morbidity of CRSwNP.

Methods

4462 patient were examined, both men and women mainly in age groups 30-39 and 40-49 (74,6%), diagnostic workup included diligent history and complaints analysis, endoscopy of the ear, nose and throat.

Results

Chronic rhinosinusitis with nasal polyps was diagnosed in 1,2%. Among examined patients prevalence was implicated in the age groups 50-59 and 40-49 (74,6%). Quantity of examined men and women in age group 30-39 was 2,7 times bigger than patients in age group above 60 years old. There were no reports of morbidity in age group 20-29. Sex allocation was the same in age groups 30-39 and 40-49. However, in age group above 50 years the prevalence was reported higher among men patients. Approximately every 7th (13,6%) patient had a previous surgical treatment of nasal polyposis.

Conclusion

Prevalence of CRSwNP in examined population was comparable with the reports of prevalence of CRSwNP in other regions of Russian Federation.

FESS imaging - the role of MDCT

J. Plascak¹, K. Makaruha², L. Kavur¹, V. Vidjak¹

¹ Diagnostic and Interventional Radiology, Clinical Hospital "Merkur", Zagreb, Croatia

² Otorhinolaryngology and Head and Neck Surgery, Clinical Hospital "Merkur", Zagreb, Croatia

Abstract: ERS-0374

Session: Imaging

Session Time: 25-06-14, 11:25

Location: Hall G

Chair person: N. Freling

Presenting author: J. Plascak

Objectives

The purpose of this paper is to show how a systematic approach to evaluation of paranasal sinuses in all 3 planes with MDCT gives the surgeon precise preoperative anatomical road maps for planning the surgical procedure. It also highlights clinically relevant anatomic variants which affect the operative technique, as well as the pathology encountered inside the sinuses.

Methods

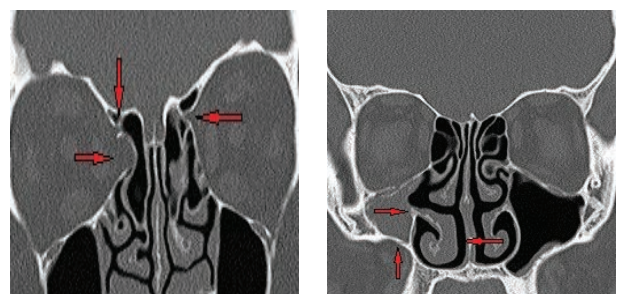
93 patients planned for FESS were analyzed on 64-slice MDCT and from the raw data axial, coronal and sagittal 1-mm thick contiguous images were created with bone and soft tissue algorithms. No contrast was used except in case of neoplastic lesions and vascular pathology.

Results

Among selected patients, the most common pathology encountered were nasal polyps (82%) and retention cysts (10%) whereas neoplastic lesions were found in 0,03% of patients. From anatomical variations, the most common was septal deviation with spine (56%), then concha bullosa (34%) and protrusion of the Vidian canal into sphenoid sinuses (25%).

Conclusion

Computed tomography plays an essential role in preoperative assessment of the paranasal sinuses. Patient preparation prior to examination is of outmost importance. Examination should be performed only after acute sinusitis episodes have been treated. Combination of pre-FESS CT imaging and nasal endoscopy enables the best treatment plan and operative technique for the patient. It affects the surgical approach and warns the surgeon about important anatomic variations he will encounter during the procedure which consequently lowers the intra/post operative complications that may develop.



Preservation of the frontal beak in the modified endoscopic Lothrop procedure

S. Nishiike¹, T. Kishikawa¹, M. Nakamura¹, Y. Tomiyama¹, T. Shikina², C. Masumura², H. Inohara²

¹ Department of Otorhinolaryngology - Head and Neck Surgery, Osaka Rosai Hospital, Sakai, Japan

² Department of Otorhinolaryngology - Head and Neck Surgery, Osaka University Graduate School of Medicine, Suita, Japan

Abstract: ERS-0375

Session: CRS surgical techniques

Session Time: 26-06-14 09:40

Location: Hall H

Chair person: V. Lund

Presenting author: S. Nishiike

Objectives

The modified endoscopic Lothrop procedure (MELP) has gradually become widespread to treat intractable frontal diseases. To avoid the stenosis of the newly made frontal ostium, it is recommended to create the largest possible opening at the time of MELP. Especially the complete removal of the frontal beak protruding from the anterior frontal bone is endorsed. To perform this, the powered drill is usually used, but it removes the mucosa overlying the bone. Alternatively frontal sinus punches are used to preserve the mucosa, or the mucosal graft is put to cover the exposed bone. We, however, would like to advocate preserving the frontal beak in the case of the thin-beak that does not occupy the frontal ostium.

Methods

We examined a series of 28 cases with 29 surgeries of MELP in Osaka Rosai Hospital and Osaka University Hospital.

Results

We found that most part of the beak was preserved during the surgery in the thin-beak cases of 7 patients with 7 surgeries (1 males and 6 females, 24% of 29 surgeries). In all the cases, the frontal ostium was well open and the postoperative course was well.

Conclusion

This technique can be used only in the thin-beak cases, but this may reduce surgical time and intraoperative bleeding. It exposes the minimum part of the frontal bone, so that scar formation after the surgery would be avoidable.

A RCT comparing the efficacy of low-dose amitriptyline, amitriptyline with pindolol and surrogate placebo in the treatment of chronic tension-type facial pain

A.M. Agius¹, N.S. Jones², R. Muscat³

¹ Otolaryngology, University of Malta, Ibragg, Malta

² Otolaryngology, University of Nottingham UK, Nottingham, United Kingdom

³ Physiology and Biochemistry, University of Malta, Msida, Malta

Abstract: ERS-0376

Objectives

Patients often present to otolaryngologists with persistent facial pain, presumed to be of sinus origin despite normal nasal endoscopy and sinus CT. The underlying cause has been increasingly recognized as a neurological clinical entity known as mid-facial segmental tension-type pain.

To determine whether low-dose amitriptyline is effective in reducing pain scores compared to placebo in patients with chronic, tension-type mid-facial segmental pain. To determine whether the addition of pindolol, a beta blocker with serotonin receptor blocking properties hastens the onset of action or improves the efficacy of amitriptyline.

To determine whether amitriptyline or amitriptyline with pindolol significantly reduces analgesic consumption with over 50% reduction in analgesic dose in such patients.

Methods

62 patients were randomized to three treatment groups (a) amitriptyline 10mg daily (b) amitriptyline 10mg daily with pindolol 5mg twice daily and (c) loratadine 10mg daily and recorded daily pain scores using a facial pain diary over eight weeks.

Results

At 8 weeks, pain frequency and intensity were significantly reduced in patients treated with amitriptyline compared to placebo ($p=0.0005$ and 0.039 respectively, t test for unequal variances) or amitriptyline with pindolol compared to placebo ($p=4.35 \times 10^{-5}$ and $p=0.023$ respectively, t test for unequal variances).

Conclusion

Both treatments were significantly more effective than placebo. Patients having the combination therapy showed significantly reduced analgesic intake compared to those having amitriptyline only ($p=0.009$, chi squared test).

Serial blood serotonin levels in a RCT comparing the efficacy of low-dose amitriptyline, amitriptyline with pindolol and placebo in chronic tension-type facial pain

A.M. Agius¹, R. Muscat², N.S. Jones³

¹ Otolaryngology, University of Malta, Ibragg, Malta

² Physiology and Biochemistry, University of Malta, Msida, Malta

³ Otolaryngology, University of Nottingham UK, Nottingham, United Kingdom

Abstract: ERS-0377

Objectives

Patients often present to otolaryngologists with chronic facial pain, presumed to be of sinus origin despite normal nasal endoscopy and sinus CT. This pain has increasingly been recognized as being of neurological origin with one of the commonest underlying causes being mid-facial segmental tension-type pain. In tension-type pain, descending serotonergic projections are thought to modulate nociception. Intra-platelet serotonin is an accepted model that reflects intra-neuronal serotonin levels.

The purpose of this study was to determine whether low-dose amitriptyline changes whole blood serotonin compared to placebo in patients with chronic, tension-type mid-facial segmental pain. It also sought to determine whether the addition of pindolol, a beta blocker with serotonin receptor blocking properties further alters blood serotonin.

Methods

62 patients were randomized to three treatment groups (a) amitriptyline 10mg daily (b) amitriptyline 10mg daily with pindolol 5mg twice daily and (c) loratadine 10mg daily. Whole blood serotonin was taken before and after 8 weeks of treatment.

Results

There was a significant drop in blood serotonin in the amitriptyline with pindolol group ($p=0.019$, paired two tailed, two sample t test for means) while a non-significant drop was seen in the amitriptyline group, with no change in serotonin in the placebo group. The reductions in blood serotonin broadly reflected treatment efficacy in reducing pain scores in these three groups.

Conclusion

This study provides evidence that the serotonergic neuronal system is involved in the modulation of chronic facial tension-type pain.

Objective assessment of the effects of long-duration wearing of N95 respirators and surgical facemasks on upper airway functions

J. Zhu¹, D. Wang², S. Lee³, H. Lee¹

¹ Mechanical Engineering, National University of Singapore, Singapore, Singapore

² Otolaryngology, National University of Singapore, Singapore, Singapore

³ Surgery, National University of Singapore, Singapore, Singapore

Abstract: ERS-0378

Session: Rhinitis basic

Session Time: 25-6-2014, 14:55

Location: Hall G

Chair person: Baile Landis

Presenting author: H. Lee

Objectives

Traditional pharmaceutical nasal sprays or drops require preservatives to prevent microbial contamination. However, the use of preservatives in nasal formulations remains controversial. Although benzalkonium chloride is by far the most used preservative in aqueous nasal formulations, several studies have revealed damages to human nasal epithelium and exacerbation of rhinitis medicamentosa with benzalkonium chloride. In the present study, we examined the impact of pretreatment with benzalkonium chloride on cultured human nasal epithelial cells.

Methods

Clinical trial on 63 healthcare workers of National University Hospital Singapore were carried out in 2013. Each of the volunteers wore both N95 respirator and N95 surgical facemask for 3 hours on two different days. Smell identification test score, nasal resistance and minimum cross sectional area of the nasal airways were measured before and after the wearing of N95 respirator and surgical mask. During the period of mask wearing, relative airflow rates were recorded, and a survey was done to collect the subjective report for level of comfort.

Results

No significant change of smell test score and minimum cross sectional area in the nasal cavity were found after removal of both types of masks. Wearing both N95 respirator and N95 surgical facemask increased nasal resistance by approximately 25% after removal of the masks. The recovering routines of nasal resistances, after removal of masks, were different between N95 respirator and surgical facemask. With N95 respirator, more air was breathed into the upper airways, while the comfort level is lower during the 3-hour mask wearing period compared to that of surgical facemask.

Conclusion

Wearing both types of masks did not significantly change the nasal patency and functions.

EFFECTS OF NASAL DEFORMITY DUE TO CLEFT LIP REPAIR AND ENSUING RHINOPLASTY ON NASAL AIRFLOW PATTERNS: A CFD STUDY

J. ZHU¹, L. GAN¹, S. LEE², H. LEE¹

¹ MECHANICAL ENGINEERING, NATIONAL UNIVERSITY OF SINGAPORE, SINGAPORE, SINGAPORE

² DIVISION OF PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY, NATIONAL UNIVERSITY HOSPITAL, SINGAPORE, SINGAPORE

Abstract: ERS-0379

Objectives

Without exception, repair of cleft lip must be followed by successive correction of nasal deformity. In this study, we evaluated the long-term effects of early-stage cleft lip repair and Rhinoplasty on nasal airflow patterns.

Methods

A 21 years old female subject, who received cleft lip repair at an early stage was recruited. The nasal cavity was not touched until recently and corrected through rhinoplasty due to severe deformity. Three dimensional models for both pre- and post-operational conditions were reconstructed for steady-state CFD simulations.

Results

The air space in the nasal vestibule was found to be smaller in post-operative model possibly due to the swelling of the nasal wall, since the CT scans were taken immediately after the surgery. The cross sectional areas along the nasal airway were also smaller. Before the surgery, the airspace beside the turbinates were separated into several compartments due to the development of nasal deformity after repair of cleft lips. The surgery resulted in more well connected air space. The Rhinoplasty reduced the pressure drop, at 15 L/min inspiration, from 80.40 Pa to 63.32 Pa. The velocity of airflow also appears to be more even through the airway, though with higher magnitude. The streamlines, in the left superior region and right anterior-inferior region, were absent in the pre-operative condition and have been improved after the surgery.

Conclusion

Nasal deformity after early stage repair of cleft lip induced severe nasal deformity causing abnormal airflow patterns. The ensuing Rhinoplasty has corrected the airflow to a more natural condition.

Influence of positive airway pressure on nasal ventilation

J. Vent¹, C.H.R. Götz¹, J. Maurer¹, K. Vogt², K. Hörmann¹

¹ Otorhinolaryngology Head and Neck Surgery, University of Heidelberg Medical Center at Mannheim, Mannheim, Germany

² Otorhinolaryngology Head and Neck Surgery, University of Riga, Riga, Latvia

Abstract: ERS-0380

Session: OSAS

Location: Hall H

Time: 25-06-14 15:20

Chair person: N. de Vries

Presenting author: J. Vent

Objectives

Obstructive sleep apnea (OSA) patients who receive positive airway pressure (PAP) therapy often report of improved nasal breathing, if no bony septal deviation are present. Other patients report of PAP-intolerance due to nasal obstruction. It was hypothesized that PAP can improve nasal ventilation by reducing the size of the nasal turbinates.

Methods

We could show that PAP can improve nasal breathing. Patients with anatomic deformities of the septum did not improve.

Results

A: 31 patients were included. Median percentage of supine sleep time decreased from 49.9% [20.4 – 77.3%] to 0.0% [range: 0.0 - 48.7%] ($p < 0.001$). The median apnea-hypopnea index decreased from 16.4 [6.6 – 29.9] to 5.2 [0.5 – 46.5] ($p < 0.001$). 15 Patients developed an overall apnea-hypopnea index below five when using the SPT. B: 145 Patients were included. SPT use and SPT data could not be retrieved in 39 patients. In the remaining 106 patients SPT compliance was 64.4%. ESS (11 to 7), PSQI (7 to 6) and FOSQ (91 to 103) values showed a significant change compared to baseline.

Conclusion

Patients not improving nasal ventilation by PAP-therapy can benefit from septoplasty, if bony septal deformities are the underlying cause, and thus improve PAP-tolerance and compliance.

No evidence for long-term low-dose erythromycin after sinus surgery for chronic rhinosinusitis

B. Haxel¹, M. Clemens¹, N. Karaiskaki¹, U. Dippold¹, L. Utters¹, W. Mann¹

¹ Department of Otolaryngology Head and Neck Surgery, University Medical Center of the Johannes Gutenberg University Mainz, Mainz, Germany

Abstract: ERS-0381

Session: Management of CRS

Session Time: 24-06-14, 16:00

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: B. Haxel

Objectives

The efficacy of macrolides in chronic rhinosinusitis (CRS) is still under controversy. To date, only two double blind, placebo-controlled studies have been published with differing results. None of these studies investigated the possible benefit of macrolides in the post-operative period.

Methods

We conducted an investigator initiated, double blind, randomized placebo-controlled clinical trial using 250mg erythromycin over a period of 3 months beginning the administration of either erythromycin or placebo two weeks after the surgical intervention for CRS. The concentrations of eosinophilic cationic protein (ECP) and myeloperoxidase (MPO) in nasal secretion were chosen as the primary endpoints. Additionally, as secondary endpoints, changes in the SNOT-20 score, olfaction, saccharin transit time, nasal endoscopy score and self-rating of nasal health using a visual analogue scale were evaluated.

Results

67 patients were screened and 58 patients were randomized to the study groups. 48 patients completed the study. Concerning the primary endpoints, no differences were found between the erythromycin and the placebo group. Of the secondary endpoints only the nasal endoscopy score showed a statistically significant improvement in the erythromycin group. In a subgroup analysis patients without polyps seemed to benefit more from a macrolide therapy.

Conclusion

There were no obvious changes in the nasal secretion marker ECP and MPO after long-term low-dose erythromycin treatment compared to placebo in patients after sinus surgery for CRS. Only the clinical parameter of endoscopy score showed significant differences. Therefore a general recommendation for this medical treatment after surgery for CRS cannot be given.

Chronic rhinosinusitis is more prevalent in patients with gastro-esophageal reflux disease

I. Bohnhorst¹, S. Jawad¹, B. Lange¹, J. Kjeldsen², J.M. Hansen², A.D. Kjeldsen¹

¹ Department of Otorhinolaryngology, Odense University Hospital, Odense, Denmark

² Department of Medical Gastroenterology, Odense University Hospital, Odense, Denmark

Abstract: ERS-0382

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:18

Location: Hall J

Chair person: P. Lekakis

Presenting author: S. Jawad

Objectives

The purpose of this study was to investigate the prevalence of chronic rhinosinusitis (CRS) among patients with gastro esophageal reflux disease (GERD) compared to the prevalence of CRS in the background population, and to examine differences in sino-nasal related quality of life.

Methods

In this prospective case control study 102 patients with GERD and 366 persons from the background population were examined for CRS using EPOS criteria. Sino-nasal related quality of life was assessed using the Sino Nasal Outcome Test 22 (SNOT-22).

Results

The prevalence of CRS among GERD patients was 21.6 % (95% CI: 13.6-29.6%), significantly higher compared to the CRS prevalence of 8.5 % (95% CI: 6.8-10.2%) in the background population. GERD patients with CRS had an average SNOT-22 score of 44.7, while CRS patients from the background population scored on average 28.1. GERD increased the mean SNOT-22 score in CRS patients by 16.6 (CI 95%: 8.3-24.9) unadjusted, and 20.3 (CI 95%: 12.8-27.7) when adjusting for covariates.

Conclusion

The results bring further evidence of an association between GERD and CRS, and suggest that GERD may play a role in the development of CRS. The sino-nasal related quality of life is decreased in CRS patients suffering from GERD.

Analysis of medical therapy and surgical treatment in children with chronic sinusitis

Z. Xu¹, C.H.A.O. Chen¹

¹ Department of Otolaryngology-Head and Neck Surgery, Pediatric hospital of Fudan University, Shanghai, China

Abstract: ERS-0383

Session: Pediatric rhinology

Session Time: 25-06-14, 10:15

Location: Hall H

Chair person: P. Stjarne

Presenting author: Z. Xu

Objectives

To compare the outcomes of the medical therapy and the surgical treatment in children with chronic sinusitis.

Methods

From 2005 to 2010, 90 cases that failed to respond to medical therapy for chronic sinusitis are divided into 3 groups based on different pathology. Group I was chronic sinusitis alone, group II was chronic sinusitis with Adenoid hypertrophy, and group III was chronic sinusitis with nasal polyps. In group I 18 cases were kept on treating by topic medicine, whereas 18 cases were treated by FESS surgical treatment. In group II, 18 cases were kept on treating by medicine and 16 cases were treated by FESS. In group III, 4 cases were kept on treating by medicine and 18 cases had surgical intervention. Outcomes is evaluated at least 6 months postoperatively, and analyzed using Fisher exact method.

Results

The different treatment approaches had the different results in group I, II and III. The group I had improvement in 50% of its subjects under medical treatment, and FESS was needed for improvement in 66.6%, $P < 0.05$. In group II the adenoidectomy/FESS group had improvement in 91.1% of its subjects, and children with medical treatment had lower rates in 23.5% of improvement. In group III, 4 patients with medical treatment showed the 0% of improvement, whereas Children who had adenoidectomy/FESS showed the greatest rate of improvement in 83.3%.

Conclusion

Surgery is recommended for children with chronic sinusitis combining adenoid hypertrophy or nasal polyps. Chronic sinusitis alone is recommended for children with medical therapy.

Inflammatory mediator levels in nasal secretions and severity of nasal polyposis – is there a relationship?

A. Peric¹, D. Vojvodic², V. Radulovic³, N. Baletic¹

¹ Department of Otorhinolaryngology, Military Medical Academy, Belgrade, Serbia

² Institute for Medical Research, Military Medical Academy, Belgrade, Serbia

³ Department of Pneumology, Municipal Institute for Lung Diseases and Tuberculosis, Belgrade, Serbia

Abstract: ERS-0384

Session: United airways

Session Time: 25-06-14, 16:33

Location: Hall E

Chair person: E. Wright

Presenting author: P. Howarth

Objectives

The aim of this study was to compare the cytokine levels in nasal fluid in subjects with nasal polyposis (NP) and co-morbid asthma and NP patients without asthma and to correlate these levels with clinical parameters of severity of disease.

Methods

Forty NP patients (20 asthmatic and 20 non-asthmatic) were enrolled. Nasal secretion samples were collected from nasal cavities of all 40 subjects. The levels of Th1 cytokines IL-2, IL-12 and IFN- γ , Th2 cytokines IL-4, IL-5, IL-6, and IL-10, chemokine IL-8, and proinflammatory cytokines IL-1 β , TNF- α and TNF- β were measured using flow-cytometric method. Each of the 40 patients was staged clinically according to nasal symptom score, endoscopic score, and Lund-Mackay computed tomography (CT) score.

Results

The concentrations of Th2 cytokines IL-5, IL-6 and IL-10 were significantly higher ($p < 0.01$, $p < 0.01$, $p < 0.05$) in patients with NP and asthma compared with non-asthmatic NP patients. Positive correlations were observed between concentration of IL-2 in nasal secretions and nasal symptom score, endoscopic score, and Lund-Mackay score only in NP patients without asthma. We also found positive correlation between CT score and the levels of IL-8, IL-4, and IL-1 β in non-asthmatic patients. Finally, our results showed a positive correlation between IL-5 levels in nasal fluid and endoscopic score only in asthmatic patients.

Conclusion

NP in asthmatic patients have different immunological patterns compared to those without asthma. The concentrations of cytokines measured in nasal fluid were not sensitive enough to be universal criteria to determine the severity of all forms of NP.

Eosinophilic chronic rhinosinusitis caused by fungal *Schizophyllum commune* infection; a case report

D. Gacesa¹

¹ Otorinolaryngology, ENT hospital "Dr Zutic", Belgrade, Serbia

Abstract: ERS-0385

Session: Fungal sinusitis

Session Time: 24-06-14, 09:55

Location: Hall G

Chair person: R. Kamel

Presenting author: D. Gacesa

Objectives

Eosinophilic fungal rhinosinusitis should be suspected in individuals with intractable chronic rhinosinusitis (CRS), allergy and recurrent nasal polyps.

Methods

We present a rare case of eosinophilic fungal rhinosinusitis with nasal polyps in a 32-year-old woman caused by basidiomycete fungus *Schizophyllum commune*.

Results

Diagnosis was done by endoscopic nasal examination, computed tomography (CT) of paranasal sinuses, the histopathological examination of polyps, the presence of eosinophiles and fungal hyphae in nasal mucosa and by the detection of *Schizophyllum commune* by culture. The patient was successfully treated by combination of surgical and oral itraconazole and topical corticosteroid therapy.

Conclusion

Our report showed that CRS can sometimes be associated with fungal *Schizophyllum commune* infection. Surgical treatment alone is not successful and it should be combined with antifungal and topical corticosteroid therapy.

Nasoseptal flap for skull base reconstruction using cone beam computed tomography: a cadaveric study

E. ten Dam¹, R.H. Schepers², W.J. van der Meer³, P.O. Gerrits⁴, A.G.W. Korsten-Meijer¹, R.A. Feijen¹

¹ Otorhinolaryngology/Head and Neck Surgery, University Medical Center Groningen (UMCG), Groningen, Netherlands

² Oral- and Maxillofacial Surgery, University Medical Center Groningen (UMCG), Groningen, Netherlands

³ Orthodontics, University Medical Center Groningen (UMCG), Groningen, Netherlands

⁴ Neuroscience Section Anatomy, University Medical Center Groningen (UMCG), Groningen, Netherlands

Abstract: ERS-0387

Session: CSF leak and skull base

Session Time: 24-06-14, 11:51

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: E. ten Dam

Objectives

Endoscopic endonasal skull base surgery is rapidly developing, offering new possibilities for reconstruction of large defects. The method of choice for reconstruction is the nasoseptal flap (NSF). However, the NSF is limited in its size for covering the anterior border of anterior skull base defects. Hypothesized is that cone beam computed tomography is suitable for measuring NSF size. Thereby offering new possibilities in pre-operative planning of skull base reconstructions.

Methods

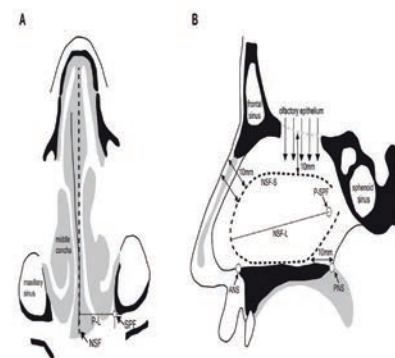
In an anatomical study, 3D NSF reconstructions were made using CBCT. The NSF surface (NSF-S), pedicle length (P-L) and NSF length (NSF-L) of these reconstructions were calculated and compared with anatomical dissections (Figure 1). The possibilities for closing anterior skull base defects were evaluated.

Results

Mean NSF surface was $20.0 \pm 1.9 \text{ cm}^2$. Average left and right pedicle lengths were $12.8 \pm 1.8 \text{ mm}$ and $12.3 \pm 1.7 \text{ mm}$ respectively. Mean NSF length was $65.4 \pm 4.0 \text{ mm}$. Comparison between 3D reconstructions and anatomical dissections revealed very strong positive correlations ($r > 0.70$). The NSF length was adequate to reach the anterior skull base, covering the area of the anterior sphenoid sinus wall into / beyond the recessus frontalis.

Conclusion

CBCT is a valuable technique for calculating NSF dimensions. The NSF has possibilities to reach the whole anterior skull base. In anticipating on defects of the posterior ethmoid sinus or sellar region, preoperative CBCT analyses can be helpful in planning a smaller NSF. Thereby sparing the anterior septal mucosa, which can benefit the postoperative morbidity. More studies are needed to study the applicability of preoperative planning of a smaller NSF in routine clinical settings.



A case of nasal tuberculosis associated with bilateral otitis media tuberculosis

T. Shimano¹, K. Kawamoto¹, M. Asako¹, S. Hamada¹, K. Tomoda¹

¹ Department of Otolaryngology-Head and Neck Surgery, Kansai Medical University, Osaka, Japan

Abstract: ERS-0388

Objectives

Some cases of tuberculosis (TB) involve the otolaryngological regions, but few cases of nasal TB combined with otitis media associated TB have been reported. We had a case involving a 25-year-old woman who was diagnosed with primary nasal TB and secondary bilateral otitis media associated TB.

Methods

A 25-year-old woman felt right nasal obstruction and her symptoms subsequently expanded to include bilateral nasal obstruction and bilateral hearing loss. At the initial visit to our hospital, the mucosae of the bilateral inferior turbinates were swollen, and the mucosa around the posterior end of the nasal cavity displayed edematous growth. As otitis media effusion were observed, myringotomy was performed. We confirmed pooling of effusion and otorrhea. To improve the nasal obstruction, we scheduled nasal surgery.

Results

During surgery, we observed that the mucosa at the posterior end of the nasal septum had disappeared and that part of the vomer had been exposed and begun to necrose. A histological examination showed epithelioid granuloma with surrounding lymphocytic infiltration and Langhans giant cells with necrotic foci. Tuberculous tests were also positive from the nasal secretion, left and right otorrhea, respectively. The patient was treated with a combination of antituberculous drugs for 6 months and remained TB-free at 1 year after the treatment.

Conclusion

Nasal TB often locates at the anterior nasal septum or inferior nasal turbinate. However, when that locates at the posterior part of the nasal septum, we have to consider possible spread of TB to the middle ear.

Antinuclear antibodies in patients with chronic sinusitis

Y. Ota¹, I. Yoshihiro¹, S. Inokuma², M. Suzuki¹

¹ Otorhinolaryngology, Toho University Sakura Medical Center, Chiba, Japan

² Allergy and Rheumatology, Japanese Red Cross Medical Center, Tokyo, Japan

Abstract: ERS-0389

Session: Prognostic factors in CRS

Session Time: 24-06-14, 15:21

Location: Hall J

Chair person: P. Lekakis

Presenting author: Y. Ota

Objectives

We studied the difference in the prevalence of antinuclear antibodies (ANA) between the sera of patients with eosinophilic chronic sinusitis accompanied by asthma (ECS with asthma) and them with infectious chronic sinusitis not accompanied by asthma (ICS without asthma).

Methods

We checked the serum ANA, total immunoglobulin E (IgE), blood eosinophils, of the 16 ECS patients with asthma and the 13 ICS patients without asthma who attended the Toho University Sakura Medical Center Otorhinolaryngology Department between June 2013 and November 2013.

Results

The average circulating total IgE in the 16 ECS patients with asthma was 319 μ l/ml, while the same parameter in the 13 ICS patients without asthma was 157 μ l/ml, not showing a significant difference. In addition, the blood eosinophil count in the 16 ECS patients with asthma was 11.8% of total white blood cell, while that in the 13 ICS patients without asthma was 3.4% of total white blood cell, revealing a significant difference. The results of ANA in the 16 ECS patients with asthma were 5 negative and 11 positive, whereas those in the 13 ICS patients without asthma were 11 negative and 2 positive ($P < 0.01$; Chi square test).

Conclusion

The incidence of positive ANA was found to be significantly higher in the 16 ECS patients with asthma than in the 13 ICS patients without asthma. This data suggests that ANA is related with ECS with asthma.

First experience with a postoperative customised nose-former (Nasella[®]) in rhinoplasty

M. Soyka¹, M. Heller¹, N. Honegger¹, D. Vital¹, D. Holzmann¹, T.H. Roth¹

¹ ENT Department, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-0390

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:00

Chair person: K. Patel

Presenting author: M. Soyka

Objectives

Performing a functional or aesthetic rhinoplasty with osteotomies usually achieves excellent intraoperative results. There are several postoperative drawbacks in rhinoplasty through the unwanted formation of a secondary bony misalignment, a callus or the pull of the soft tissue and skin. Especially in bony crooked nose deformities deterioration of the initial result is not uncommon.

Methods

We designed a prospective controlled randomized trial at the University Hospital of Zurich to see whether we can reduce these unwanted effects.

A customized nasal former (Nasella[®]) has been designed in order to preserve the initial postoperative results until the bony nose is stabilised in its desired position. As a first step an intraoperative nasal imprint was done and a former was created using common dental brace materials.

Results

The patient wore the former for 8 weeks during the postoperative course for up to 3x30 minutes per day. Regular visits and documentations were scheduled to observe effects on measurements in standardised photographs. A control group of patients undergoing rhinoplasty without the use of a postoperative former was followed in an analogous manner.

Conclusion

In this study we present the potentially promising benefits of a postoperative application of an individualised nasal former (Nasella[®]) analysing subjective and objective outcome parameters. Furthermore safety and tolerability of a regular application were investigated.

How to identify risks and best treatments in epistaxis or the underestimation of epistaxis

M. Soyka¹, D. Vital¹, D. Holzmann¹

¹ ENT Department, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-0391

Session: Epistaxis

Session Time: 23-06-14, 12:00

Location: Hall E

Chair person: A. Swift

Presenting author: M. Soyka

Objectives

Epistaxis is an extremely common ENT emergency with different aetiologies and an abundance of treatment options. Many misbeliefs, eminent evidence and a lack of scientific knowledge dominate the management of this disease despite its high occurrence.

Methods

Two prospective and 4 retrospective cohort studies were created in order to clarify the importance of different risk factors and to identify patients at increased risk during their bleeding episode and its treatment. Furthermore different aspects of the efficacy, tolerability and cost-efficiency were closely investigated in a large study population.

Results

Medication, alcohol abuse and long lasting hypertension could be identified as true risk situations with a link to the severity of bleeding, whereas the actual blood pressure seems to be rather a myth than a risk. Significant anaemia may be identified in patients with epistaxis that meet the criteria of THReAT (Trauma, Hematologic disorder, Rear location). The optimal work-up, treatment of anterior and posterior bleeds are to be discussed, as recurrences, discomfort and costs are highly variable between therapies.

Conclusion

Epistaxis is common but also commonly underestimated. Our results help to identify patients at risk, decreasing recurrences and providing more efficient and tolerable treatments. In general, electrocoagulation seems the therapy of choice in anterior bleeds, while recalcitrant posterior epistaxis should be managed surgically whenever feasible.

The protective roles of antioxidants in eosinophilic chronic rhinosinusitis with nasal polyps

K. Ikeda¹, N. Ono¹, T. Kusunoki¹

¹ Otorhinolaryngology, Juntendo University Faculty of Medicine, Tokyo, Japan

Abstract: ERS-0392

Session: CRS miscellaneous

Session Time: 25-06-14, 14:10

Location: Hall J

Chair person: G. Adriaensen

Presenting author: K. Ikeda

Objectives

Eosinophils generate large amounts of oxidant species. The eosinophil-dominant type of chronic rhinosinusitis with nasal polyps (CRSwNP) is related to more extension disease and a decreased likelihood of surgical success. On the other hand, several antioxidant systems have been developed in the upper airway. Here we showed the protective role of heme oxygenase-1 (HO-1) and superoxide dismutase (SOD) in eosinophilic CRSwNP.

Methods

The patients with CRSwNP were divided into eosinophilic and non-eosinophilic groups. The immunohistochemical analysis for HO-1 was performed. The expression of three isoforms of SOD were examined by enzyme activity assay, immunohistochemistry, and quantitative real-time RT-PCR sampled by laser capture microdissection.

Results

We found that the expression of HO-1 in epithelial layers of CRS without eosinophilic infiltration was significantly enhanced as compared with that of CRS with eosinophilic infiltration. Reversely, the number of macrophages with HO-1 positive reactions was significantly greater in CRS with eosinophilic infiltration compared with CRS without eosinophilic infiltration. The SOD activity of the eosinophilic and non-eosinophilic groups was significantly reduced compared to that of the control groups. Immunoactivity and mRNA of SOD in the eosinophilic group was significantly decreased compared with that in the non-eosinophilic and control groups. The degree of epithelial damage and the disease severity were inversely correlated with the CuZnSOD and MnSOD immunoreactivity.

Conclusion

The reduction of antioxidant enzymes such as OH-1 and SOD are suggested to be related to the eosinophil recruitment and epithelia damage of CRSwNP.

Characterization of CCL3 in nasal polyps of chronic rhinosinusitis and in nasal epithelium

S. Tanaka¹, T. Hirota², K. Hatsushika¹, K. Tomita³, S. Fujieda³, J. Ishitoya⁴, K. Masuyama¹, M. Tamari²

¹ Otorhinolaryngology, Yamanashi University, Chuo, Japan

² Laboratory for Respiratory and Allergic Diseases Center for Integrative Medical Sciences, Riken, Yokohama, Japan

³ Otorhinolaryngology, Fukui University, Matsuoka, Japan

⁴ Otorhinolaryngology, Yokohama City University Medical Center, Yokohama, Japan

Abstract: ERS-0393

Session: CRS basic 1

Session Time: 23-06-14, 10.15

Location: Hall G

Chair person: H. Saleh

Presenting author: S. Tanaka

Objectives

Chemokine (C-C motif) ligand 3 (CCL3) is an inflammatory chemokine produced at the airway by viral infection. Respiratory viral infection is the major cause of acute exacerbations of chronic airway diseases, such as asthma, chronic obstructive pulmonary disease (COPD) and chronic rhinosinusitis (CRS). Roles of CCL3 in sinonasal inflammatory diseases and nasal epithelial cells have not been fully explored. To characterize roles of CCL3 in nasal polyps of chronic rhinosinusitis, eosinophils and human nasal epithelial cells.

Methods

We examined CCL3 mRNA expression levels in nasal polyps of CRS and their correlation with peripheral blood eosinophilia. We next confirm chemotactic activity of eosinophils toward CCL3. We identified CCL3 expression in poly(I:C) stimulated human nasal epithelial cells (HNEpC), and assessed effects of corticosteroids and a long-acting b2-agonist (LABA) (salmeterol) on the induction of CCL3.

Results

Expression levels of CCL3 in nasal polyps positively correlated with peripheral blood eosinophilia ($r = 0.65$, $P = 0.0028$). GM-CSF primed eosinophils gained responsiveness to CCL3 through upregulation of CCR1 expression. We identified functional ADRB2 expression on HNEpC and found that CCL3 mRNA and protein expression were markedly induced in poly(I:C) stimulated HNEpC. The CCL3 induction was synergistically suppressed by a corticosteroid and salmeterol.

Conclusion

CCL3 may play a role in eosinophil infiltration in chronic rhinosinusitis with nasal polyps (CRSwNP). Exhalation of combination therapy with inhaled corticosteroids and LABA through the nose might contribute to reduce CCL3 induction and lessen the burden of exacerbations of chronic inflammatory diseases of respiratory tract.

An evaluation of post-operative packing in nasal septal surgery: is it necessary?

D. Debevc¹, I. Zekovic², B. Cizmarevic¹, B. Lanisnik¹, M. Palfy³, M. Zargi⁴

¹ Department of Otorhinolaryngology and Maxillofacial surgery, University Clinical Centre Maribor, Maribor, Slovenia

² ENT Department, Mid Staffordshire NHS Foundation, Stafford, United Kingdom

³ Department of scientific research, University Clinical Centre Maribor, Maribor, Slovenia

⁴ Department of Otorhinolaryngology and Cervicofacial surgery, University Medical Centre Ljubljana, Ljubljana, Slovenia

Abstract: ERS-0394

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 09:48

Chair person: N. Keles

Presenting author: D. Debevc

Objectives

In our study, we compared the two most commonly used nasal tamponades and transeptal quilting suture in patients with septoplasty.

Methods

Our study was randomized and prospective. 101 patients met eligibility criteria. (Group 1 - patients with transeptal quilting suture, group 2 - fingerstall tamponade, group 3 – merocel).

Postoperatively we assessed pain, pressure in the nasal cavity, insomnia and patients' general well - being with VAS. We also recorded the amount of painkillers used by the patients. We assessed the level of nasal congestion and the amount of crusting in the nose. We monitored elevated body temperature and took blood samples to determine CRP and white cell count value. Patients determined the day when they first perceived odors and could breathe through their nose again most of the day. We also monitored patients for early and late complications. A pre – and postoperative assessment was made using SNOT – 22.

Results

Patients in group 1 had lower combined score for pain, pressure in the nasal cavity, insomnia and their general well – being for the first two days. The lowest consumption of analgesics was in group 1. The time period for recovery of odor sensing and satisfactory nasal breathing was shorter in group 1. Nasal congestion was comparable within groups. Patients in group 1 had significantly less crusting.

Conclusion

We noticed that transeptal suturing causes less complaints and in some aspects a faster recovery.

Fungal maxillary sinusitis: clinical, therapeutic and evolutive features: 28 cases report

A. Mardassi¹, N. Mathlouthi¹, S. Nefzaoui¹, K. Cheikh¹, S. Mezri¹, C. Zgolli¹, G. Chebbi¹,
R. Ben M'hamed¹, K. Akkari¹, S. Benzarti¹

¹ Military Hospital Tunis Tunisia, ENT Department, Tunis, Tunisia

Abstract: ERS-0396

Session: Fungal sinusitis

Session Time: 24-06-14, 09:30

Location: Hall E

Chair person: R. Kamel

Presenting author: A. Mardassi

Objectives

Fungal sinusitis are divided into invasive or noninvasive forms according to the presence or absence of local and regional spreading. The aim of this work is to present the clinical, therapeutic and evolutive features of this disease.

Methods

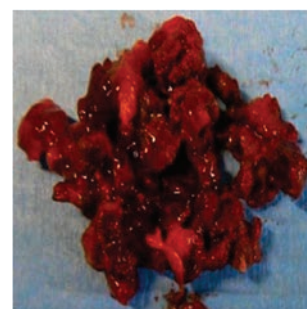
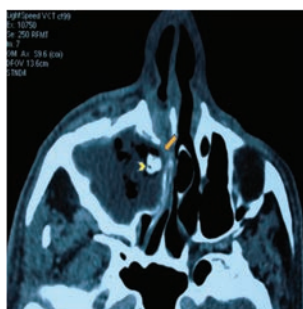
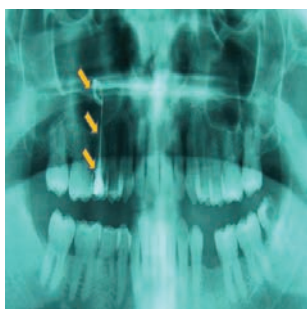
Our retrospective study included 28 patients followed for a fungal maxillary sinusitis over a period of 16 years (1997 to 2012) at the ENT department of the military hospital of Tunis.

Results

The average age of our patients was 45 with 1,8 sex-ratio. Our study included 27 noninvasive fungal sinusitis and only one case of invasive form. Clinical symptoms were dominated by chronic rhinorrhea (85,71%) and nasal obstruction (67,85%). The diagnosis was confirmed through mycological or histological exams. For the noninvasive forms, a past history of dental care was found in 89,28% of the cases. The radiological features of fungal sinusitis were based on facial CT-scan and have found 3 main aspects: bony lysis of the medial wall (18%), calcic opacity (64%) and variable images of fulfilling of the sinus cavities. Surgery was indicated in all the cases to confirm the fungal nature of the sinusitis and eliminate a suppurated sinusitis or a tumoral process. Seventy-five per cent of our patients benefited from an endoscopic approach. For the aspergilloma of the maxillary sinus, surgery was sufficient without an associated anti-fungal medical therapy. The evolution was good for all the cases of maxillary aspergilloma.

Conclusion

The maxillary sinus aspergilloma is the most frequent form of fungal sinusitis. It's caused by dental affections can be prevented by taking precautions during endodontic obturation.



Fungal maxillary sinusitis: clinical, therapeutic and evolutive features: 28 cases report

A. Mardassi¹, N. Mathlouthi¹, H. Dimassi¹, S. Kdous¹, S. Mezri¹, C. Zgolli¹, G. Chebbi¹, R. Ben M'hamed¹, K. Akkari¹, S. Benzarti¹

¹ Military Hospital Tunis Tunisia, ENT Department, Tunis, Tunisia

Abstract: ERS-0397

Session: Rare diseases in the nose and sinuses

Session Time: 25-06-14, 17:00

Location: Hall J

Chair person: R. Kamel

Presenting author: A. Mardassi

Objectives

Tuberculosis remains a real public health problem in Tunisia. Extra-pulmonary localizations account for 20 to 30% of tuberculosis disease. We explain in this presentation the diagnostic difficulties and the therapeutic management of this rare disease.

Methods

We present a retrospective study about 3 cases of nasosinusal tuberculosis, an unusual and rare localization of the disease, followed and treated at the ENT department of the military hospital of Tunis, Tunisia.

Results

The study included a man and 2 women old respectively of 30, 65 and 36 years. The main symptoms were dominated by nasal obstruction, posterior throwing and dental pain. CT-scan showed a filling of the nasosinusal cavity with different degrees of bony lysis. In all the cases, tuberculosis was confirmed histologically after an endoscopic middle meatotomy. Investigations looking for tuberculosis elsewhere were always negative. Treatment was based on anti-tuberculosis drugs during 9 to 12 months. The evolution was favourable in all the cases.

Conclusion

Nasosinusal tuberculosis is a rare chronic infection associating often variable levels of bony lysis. Histological exams remain the best way to confirm it. Therapy is based on anti-tuberculosis drugs. Medical investigations must usually search other localizations of the disease.

Staphylococcus enterotoxin a induces MUC5B expression via TLR2, ERK1/2 and P38 MAPK in human airway epithelial cells

Y.D. Kim¹, Y.S. Choi¹, C.H. Bae¹, S.Y. Song¹

¹ Otorhinolaryngology-Head and Neck surgery, College of Medicine Yeungnam University, Daegu, Korea

Abstract: ERS-0398

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 09:48

Location: Hall J

Chair person: A. Lane

Presenting author: Y.D. Kim

Objectives

Staphylococcus aureus enterotoxins are known to induce an inflammatory response of the airways, increase sensitization to inhaled allergens, and decrease T-cell sensitivity to steroids. However, the effects of *Staphylococcus enterotoxin A* (SEA) on mucin secretion of airway epithelial cells have not yet been reported. Therefore, in this study, the effect and brief signaling pathway of SEA on MUC5B expression were investigated in human airway epithelial cells.

Methods

In the mucin-producing human NCI-H292 airway epithelial cells and the primary cultures of normal nasal epithelial cells, the effect and signaling pathway of SEA on MUC5B expression were investigated using reverse transcriptase-polymerase chain reaction (RT-PCR), real-time PCR, enzyme immunoassay, and immunoblot analysis with several specific inhibitors and small interfering RNA (siRNA).

Results

SEA increased MUC5B mRNA and protein expression. Toll-like receptor 2 (TLR2) mRNA expression was significantly increased after treatment with SEA. Knockdown of TLR2 by siRNA significantly blocked SEA-induced MUC5B mRNA expression. SEA significantly activated phosphorylation of extracellular signal-regulated kinase 1/2 (ERK1/2) and p38 mitogen-activated protein kinase (MAPK). U0126 (ERK1/2 MAPK inhibitor) and SB203580 (p38 MAPK inhibitor) significantly inhibited SEA-induced MUC5B mRNA expression. In addition, knockdown of ERK1/2 and p38 MAPK by siRNA significantly blocked SEA-induced MUC5B mRNA expression. Furthermore, the phosphorylation of ERK1/2 and p38 MAPK was significantly blocked by knockdown of TLR2 by siRNA.

Conclusion

These results show for the first time that SEA induces MUC5B expression via TLR2, ERK1/2 and p38 MAPK signaling pathway in human airway epithelial cells.

Dipotassium glicirizinate and mannitol nasal spray (narivent) in rhinosinusal pathologies in adults: a single centre before-after study on short and long-term efficacy

V. Damiani¹, C. Viti¹, M. Simone¹, I. Sinopoli¹, A. Camaioni¹

¹ ENT Department, San Giovanni Addolorata Hospital, Rome, Italy

Abstract: ERS-0399

Objectives

Emerging evidences showed that extracellular HMGB1 (High Mobility Group Box1) protein is strongly involved in the formation and maintenance of vicious inflammatory cycles that lead to the development of acute and chronic rhinosinusal pathologies. High levels of HMGB1 had been already demonstrated in nasal secretions of patients affected by rhinosinusitis, allergic rhinitis, turbinate hypertrophy and nasal polyps. Glicerretic acid, an HMGB1 scavenger, resulted able, in 'in vitro' studies, to inhibit extracellular flogistic activities of HMGB1. The aim of this study is to evaluate efficacy and tolerability of dipotassium glicirizinate and mannitol nasal spray in acute and chronic inflammatory rhinosinusal pathologies.

Methods

36 patients with acute and 56 with chronic inflammatory rhinosinusal pathologies were enrolled. Rhinosinusal symptoms (nasal congestion, Rhinorrea, headache, post-nasal drip) were evaluated, before and after treatment, on a 0-3 severity scale. Patients were asked to self-evalutate their nasal obstruction, before and after treatment, on a 0-10 VAS scale. Turbinate hypertrophy pre- and post-therapy were also analyzed. Treatment consisted in 2 puffs/nostril of narivent spray administered 2 times/day for 7 days or 30 days.

Results

All symptoms and objective scores significantly improved after therapy in both acute ($p < 0.001$) and chronic group ($p < 0.001$). No serious adverse effects were recorded.

Conclusion

Narivent resulted efficacious and safe in treating nasal symptoms over a 7- or a 30-day period. A new interesting topical treatment for both acute and chronic inflammatory rhinosinusal pathologies had been found.

Narivent nasal spray versus nasal corticosteroids: efficacy evaluation in the symptomatic treatment of allergic rhinitis in children

V. Damiani¹, N. Mansi², G. D'Agostino², D. Gregori³

¹ ENT Department, San Giovanni Addolorata Hospital, Rome, Italy

² ENT Department, A.O.R.N. Santobono Pausilipon, Naples, Italy

³ Unit of Biostatistics Epidemiology and Public Health Department of Cardiac Thoracic and Vascular Sciences, University of Padova, Padova, Italy

Abstract: ERS-0400

Objectives

Allergic rhinitis (AR) is a common disorder that affects people of all ages, peaking in childhood and in the teenage years. A variety of pharmacological options exist to manage AR in children, but the most of them remain controversial because of side effects related to standard therapies. Objective of this study is to evaluate efficacy and safety of Narivent spray versus topical corticosteroids in the symptomatic management of allergic rhinitis in children.

Methods

A single-centre, two-arm parallel-group, randomized study was conducted in an Italian otolaryngology department. 40 children with a diagnosis of allergic rhinitis were randomly assigned to two treatment groups: in one group (n = 20) patients received 1 puff of Narivent into each nostril twice daily for 30 days; in the control group (n = 20) patients received 1 puff of topical intranasal corticosteroid (mometasone furoate) into each nostril once a day for 30 days.

In both treatment arms, severity of major symptoms related to AR, including nasal congestion, rhinorrhea, sneezing and nasal itching, was assessed subjectively on a 0 – 100 mm visual analogue scale. Changes in subjective severity measures were compared using Wilcoxon's signed rank test.

Results

Nasal congestion, rhinorrhea and sneezing improved significantly after 30 days of treatment with Narivent. Similarly, in topical steroids group severity of all subjective symptoms decreased significantly.

Conclusion

Narivent resulted efficacious in treating nasal congestion and other major symptoms in children with AR over a 30-day period, showing comparable results to intranasal corticosteroids therapy but with a better safety profile.

Mucosal maxillary cysts: are they symptomatic?

P. Schalek¹, Z. Hornácková¹

¹ ENT dept., Charles University in Prague Third Faculty of Medicine, Prague 10, Czech Republic

Abstract: ERS-0401

Objectives

Mucosal maxillary cysts (MMCs) are usually asymptomatic and are often diagnosed as an incidental finding. Aim of this study is to assess clinical significance of MMCs and the long-term effect of surgical treatment on the symptoms initially addressed to MMCs.

Methods

A retrospective analysis of 64 patients who had undergone surgery for MMC using a questionnaire focused mainly on the effect surgery had on symptoms. Mean time of follow-up was 79 months. Patients were also divided and compared according to the presence of rhinitic symptoms and surgical approach (infra- vs. supratubinal antrostomy).

Results

Twenty six patients (63.4%) reported complete disappearance of symptoms, 8 (19.5%) reported improvement, 4 (9.7%) reported no change in symptoms following surgery and 3 (7.3%) reported that symptoms reappeared. Significantly ($p = 0.0365$) better results were achieved in patients without preexisting rhinitic symptoms.

Conclusion

This study supports the opinion that in some cases, MMCs are involved in the development of sinonasal symptoms. Surgical treatment leads, in most patients, to disappearance or improvement of symptoms and the effect is better in patients without rhinitic symptoms.

Ultrasonographic evaluation of long-term results of nasal tip defatting in rhinoplasty cases

S. Nemati¹, R. Banan¹, A. Alizadeh², E. Kazemnejad Leili³, H. Kerdari⁴

¹ Department of Otorhinolaryngology, Guilan Uni. of Medical Sci., Rasht, Iran

² Department of Radiology, Guilan Uni. of Medical Sci., Rasht, Iran

³ Department of Nursing and Midwifery, Guilan Uni. of Medical Sci., Rasht, Iran

⁴ Department of Otorhinolaryngology Resident, Guilan Uni. of Medical Sci., Rasht, Iran

Abstract: ERS-0402

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:10

Chair person: K. Patel

Presenting author: S. Nemati

Objectives

Nasal skin thickness has an important role in aesthetic results of rhinoplasty. The aim of this study was to evaluate the long term results of tip and supratip skin defatting technique in rhinoplasty subjects using ultrasonography.

Methods

Among 111 rhinoplasty cases referred to a university hospital between February 2010 and September 2011, after physical examination and measuring the nasal tip and supratip skin thickness by ultrasonography, a total of 55 patients with thick and moderate skin were randomly allocated for rhinoplasty using one of the following methods: rhinoplasty with (case group) and without (control group) defatting tip and supratip skin. Ultrasonographic evaluation of the skins was repeated 1 and 12 months after surgery, and the data were analyzed by Wilcoxon and repeated measure tests using SPSS 17 software.

Results

Twenty-eight of 55 candidates (10 men, 45 women; mean age, 25.1 ± 7.6 years) underwent skin defatting during rhinoplasty; the other 27 patients did not undergo this procedure. Forty-four patients completed the study. Thickness of tip and supratip skin was not statistically different before surgery and during follow-up evaluations in defatting and nondefatting technique groups ($P = .7$).

Conclusion

Defatting techniques have no effect on reducing tip and supratip skin thickness after rhinoplasty in moderate to thick skins.

Efficiency of ESS in Danish CRS patients, evaluated for surgery, according to the EPOS criteria

G. Joergensen¹, H. Lind¹, B. Lange¹, F. Svendstrup¹, A. Kjeldsen¹

¹ ENT department, Odense University Hospital, Odense, Denmark

Abstract: ERS-0403

Session: Management of CRS

Session Time: 26-06-14 12:15

Location: Hall J

Chair person: TBC

Presenting author: G. Joergensen

Objectives

Previous studies have evaluated the efficiency of endoscopic sinus surgery (ESS) in patients with chronic rhinosinusitis (CRS) with and without nasal polyps (NP). However, the modalities for diagnosing CRS and evaluating CRS patients objectively and subjectively have developed in the past few years. In this study patients were evaluated for CRS using the European position paper on rhinosinusitis and nasal polyps (EPOS) criteria from 2012. The aim of this study was to evaluate the efficiency of ESS in a cohort of Danish CRS patients using the recent objective and subjective measures based on European guidelines.

Methods

A prospective cohort study. Patients diagnosed with CRS with and without NP, based on the EPOS criteria underwent ESS at a local ENT department between June, 2012 and September, 2013. All patients were examined before surgery with sino-nasal outcome test 22 (SNOT-22), Lund-Kennedy-endoscopy-score, Lund-Mackay-CT-score and olfactory-test. Follow up was performed 1 and 6 months postoperatively where SNOT-22, Lund-Kennedy and olfactory-test were repeated.

Results

A total of 94 patients, diagnosed with CRS, underwent ESS including pre- and postoperative examination. Results will be presented at ERS 2014.

Conclusion

In CRS patients with and without NP, diagnosed according to EPOS criteria, ESS was performed. Results will be discussed at the presentation.

Comparing the complication rate between microdebrider assisted inferior turbinoplasty and submucous resection

C.Y. Chan¹, S.T. Toh¹

¹ Otolaryngology, Singapore General Hospital, Singapore, Singapore

Abstract: ERS-0404

Session: Complications in rhinology

Session Time: 25-06-14, 11:45

Location: Hall J

Chair person: N. Otori

Presenting author: C.Y. Chan

Objectives

Inferior turbinate hypertrophy is a common cause of nasal obstruction in many patients. Many different methods of inferior turbinate reduction have been described to enhance nasal airway patency. The most common of these is submucous resection. The powered microdebrider is a useful tool for endoscopic sinus surgery. First described in 1998, its use has extended to that of inferior turbinate reduction surgery. Studies have proven its long-term efficacy and safety, but few have compared its complication rate to submucous resection.

Methods

A retrospective data analysis was performed on 100 patients who underwent inferior turbinoplasty (with or without septoplasty) from the period of January 2011 to August 2013. Patients undergoing multi level surgery were excluded. The complication rates between the submucous resection group and the microdebrider group were compared and analysed.

Results

There were 79 patients in the microdebrider assisted turbinate surgery (MATS) group and 21 in the submucous resection (SMR) group. 2 of 21 patients in the SMR group and 4 of 79 patients in the MATS group had minor complications. The difference was not statistically significant ($p > 0.05$). There were no major complications. There was also no significant difference in operative time between the two groups.

Conclusion

The powered microdebrider is a useful tool for inferior turbinate reduction surgery. It has a similar complication rate and operation duration when compared with submucous resection.

Resveratrol prevents development of eosinophilic rhinosinusitis with nasal polyps in a mouse model

S.W. Kim¹, D.Y. Chang¹, R. Khalmuratova¹, S.Y. Jeon¹, D.W. Kim², Y.G. Min³

¹ Department of Otorhinolaryngology, Gyeongsang National University Hospital, Jinju, Korea

² Department of Otorhinolaryngology, Seoul National University, Seoul, Korea

³ Department of Otolaryngology-Head and Neck Surgery, National Medical Center, Seoul, Korea

Abstract: ERS-0405

Session: CRS basic 1

Session Time: 23-06-14, 10.06

Location: Hall G

Chair person: H. Saleh

Presenting author: S. W. Kim

Objectives

Since the recent establishment of a murine model of eosinophilic chronic rhinosinusitis with nasal polyps (CRSwNP), both the development of new drugs for treatment or prevention of eosinophilic CRSwNP and elucidation of their pathogenesis have been feasible. We investigated the therapeutic effects of resveratrol on CRSwNP and its mechanism of action using a murine model.

Methods

After induction of eosinophilic CRSwNP, the therapeutic effects of resveratrol were tested and compared with those of triamcinolone acetonide. Histopathologic changes were evaluated using hematoxylin and eosin for overall inflammation, Sirius red for eosinophils, and Masson's trichrome stain for collagen. The expression levels of the interleukin (IL)-4, IL-5, prostaglandin D synthase, and leukotriene C4 synthase genes were assessed by quantitative real-time PCR. Cyclooxygenase-2 and 5-lipoxygenase levels were evaluated by immunohistochemical staining and Western blot analysis.

Results

The degree of eosinophilic infiltration and subepithelial fibrosis were significantly decreased by administration of high-dose resveratrol, the potency of which was similar to that of triamcinolone acetonide. The expression levels of the IL-4, IL-5, prostaglandin D synthase, and leukotriene C4 synthase genes were significantly decreased by administration of low- or high-dose resveratrol. The production of 5-lipoxygenase was strongly inhibited by high-dose resveratrol.

Conclusion

Resveratrol may be useful for the prevention of eosinophilic CRSwNP. A key mechanism of its action is believed to be its anti-inflammatory effect, particularly on eosinophils, by inhibiting the lipoxygenase pathway.

Gender differences in taste threshold

M. Ye¹, S. Shin¹, J. Lee¹

¹ Department of otolaryngology, Catholic University of Daegu hospital, Daegu, Korea

Abstract: ERS-0406

Session: Olfaction

Location: Hall G

Time: 25-06-14, 14:30

Chair person: Baile Landis

Presenting author: M. Ye

Objectives

The aim of the study was to compare the gustatory function between men and age-matched women in Korean subjects.

Methods

Healthy non-smoking volunteers without smell and taste disorders were investigated. Thirty nine men and 39 age-matched women were evaluated for gustatory function. Whole mouth taste test was performed with successive solutions of sucrose, sodium chloride, citric acid, and quinine hydrochloride. The electrical taste thresholds were measured using an electrogustometer for the 4 different sites in the oral cavity, i.e., both sides of anterior and posterior tongue.

Results

Female subjects had lower mean values of detection and recognition thresholds for all the 4 tastes than male subjects, although these results did not reach statistical significance except for the detection threshold for salt and the recognition threshold for quinine. In electrogustometry, thresholds were significantly higher for men in the posterior tongue of glossopharyngeal nerve area than women.

Conclusion

Men had higher taste threshold than age-matched women. For additional information on the effects of gender and aging on taste thresholds, further studies including a large number of well-controlled subjects are essential.

Avoiding routine nasal packing following septorhinoplasty does not compromise patient outcomes as measured using the Glasgow benefit inventory

N. Sethi¹, R. Simpson¹, S. Prowse¹, S. Sood¹, D. Strachan¹

¹ Bradford Royal Infirmary, Bradford Teaching Hospitals NHS Trust, Bradford, United Kingdom

Abstract: ERS-0407

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 10:15

Location: Hall G

Chair person: C. Wever

Presenting author: N. Sehti

Objectives

The postoperative management of rhinoplasty/septorhinoplasty (RSR) patients remains debated with respect to the use of nasal packs. There is great variation in practice amongst surgeons with some viewing packing as necessary to achieve optimal outcomes and others strongly against the use of packs. We aimed to evaluate if avoiding routine postoperative nasal packing in RSR leads to increased complications postoperatively and if it has an effect on patient-reported outcomes.

Methods

All septorhinoplasty and rhinoplasty operations performed between January 2005 and November 2009 were identified. These patient case notes were then reviewed to obtain patient demographics, operation details (including details of whether the patient was packed or not at the time of surgery) and any post-operative complications. The Glasgow Benefit Inventory (GBI) was then administered via telephone to measure patient-reported outcomes.

Results

In total 167 patients were identified for 11 of whom the case notes were unavailable. Of the 156 patients remaining, 126 completed the GBI questionnaire (who had undergone 132 operations). This study demonstrates no significant difference in patient reported outcomes (GBI scores) with or without the use of nasal packing.

Conclusion

This study suggests that routine nasal packing can be avoided in the majority of patients. This can be done with confidence that the patient outcome is not being compromised.

Rapid maxillary expansion in children with obstructive sleep apnea (OSA): meta-analysis

A.J. Machado Júnior¹, E. Zancanella¹, A.N. Crespo¹

¹ OrI, unicamp, campinas, Brazil

Abstract: ERS-0408

Session: OSAS

Location: Hall H

Time: 25-06-14 14:05

Chair person: N. de Vries

Presenting author: A.J. Machado Júnior

Objectives

To perform a meta-analysis of maxillary expansion in OSA in children.

Methods

Citations to potentially relevant published trials were located by searching PubMed, Embase, Scopus and Medline. Inclusion criteria were (1) randomized controlled trials, case-control trials, or cohort studies with controls; (2) studies in nonsyndromic children 0 to 12 years of age (3) polysomnography with apnea-hypopnea index (AHI) before and after treatment; and (4) maxillary expansion treatment. Treatment effects were combined by meta-analysis with the random-effects method.

Results

The total sample of these articles was 116 children with a mean age of 6.7 years. Of the six items assessed four underwent two periods of follow-up. Mean AHI in the first follow-up was -4958 ($p < 0.0001$) and second follow-up was -1801 ($p < 0.0001$).

Conclusion

Meta-analysis of six international papers, we concluded that maxillary expansion in children with OSA is an effective method in the treatment of this syndrome being supplementary maintained in the medium term. Further studies are needed to assess whether this effectiveness remains in adulthood.

Open approach extracorporeal septorhinoplasty for severe septal deviation with external nasal deformity - a series of 55 patients

S. Islam¹

¹ ENT, Govt Health Service Kashmir, Srinagar, India

Abstract: ERS-0409

Objectives

Description of technique of extracorporeal Septoplasty with Rhinoplasty (ECSR) for severe septal deviation with external nasal deformity by external approach.

Methods

Retrospective chart review of 55 patients undergoing ECSR by external approach in two year. The main outcome measures used were complication rates, patient's determination of functional and aesthetic outcomes using NOSE (Nasal Obstruction Symptom Score) and ROE (Rhinoplasty Outcome Evaluation Score) respectively.

Results

- Nasal obstruction (97%), followed by PND (60%) were the most common symptoms patients presented with. Headache (40%) and Snoring (25%) complaints were also major complaints.
- The commonest septal deviation was C-shaped cephalocaudal (48%), followed by S-shaped cephalocaudal (21%), C-shaped AP (16%), S-shaped AP (12%) and sharp septal deviation/angulation in 3 % cases.
- Most common region involving DNS was area 1+2+3 (48%) followed by area 2+4+5 (28%) and 1+2+3+4 (21%).
- Preoperatively mean NOSE score was 67.60 ± 5.26 with a postoperative mean NOSE score of 13.70 ± 3.08 . ($p < 0.05$)
- Most common external deformities were crooked nose, humps, broad dorsum. Preoperatively mean ROE score was 7.36 ± 3.30 with a postoperative mean ROE score of 18.03 ± 3.13 ($p < 0.05$).



Conclusion

When compared with literature available, the symptomatic profile of these patients was similar except for the higher percentage of PND, headache and snoring. ECSR by external approach is the procedure of choice in cases of END with severe septal deviation as evidenced by the marked change ($p < 0.05$) in NOSE and ROE scores. Endonasal approach when combined with the delivery approach gives results comparable to the open approach.

RHINOPLASTY-EXTERNAL VS INTERNAL APPROACH A COMPARATIVE ANALYSIS OF 100 PATIENTS

S. ISLAM¹,

¹ENT, GOVT HEALTH SERVICE KASHMIR, SRINAGAR, INDIA

Abstract: ERS-0410

Objectives

A comparative analysis of Rhinoplasty-open vs. endonasal approach. Prospective study.

Methods

100 patients in two groups A and B were operated and followed for a period from 1 to 2 years. Group A patients were operated using open and Group B patients using closed approach. The choice of approach depended upon the severity of septal deviation and the extent of external nasal deformity. The major outcome measure used were subjective evaluation of functional and aesthetic results using NOSE and ROE (Rhinoplasty outcome evaluation) score.

Results

Of the 100 patients, 65 were operated by open and 35 by endonasal approach.

Preoperatively average NOSE score in Group A was 69.40 ± 13.98 with postoperative average score of 6.00 ± 6.55 ($p < 0.05$)

Preoperatively average NOSE score in Group B was 67.60 ± 12.26 with postoperative average score of 14.70 ± 8.04 ($p < 0.05$)

The difference in the NOSE scores in two groups was statistically significant highlighting the fact that extracorporeal septoplasty is more effective in relieving nasal obstruction.

The outcome of Rhinoplasty was judged by ROE scores which was 7.35 ± 3.30 in Group A and 18.03 ± 3.13 in Group B. ($p < 0.05$).

Group A had better ROE scores than Group B which justifies the statement that 'Open approach is better than closed approach in Rhinoplasty'.

Conclusion

Open approach gives better functional results than closed approach.

Open approach gives better aesthetic results than closed approach.

Extracorporeal septorhinoplasty is the standard procedure for severe septal deviation with external nasal deformity.

Endonasal approach when combined with the delivery approach gives results comparable to the open approach.

FOLLOW UP OF PATIENTS WITH SINONASAL MALIGNANCIES AND THE IMPACT ON QUALITY OF LIFE

R. GRIGORE¹, C.R. POPESCU¹, B. POPESCU¹, E. BOGHIU¹, S.V.G. BERTESTEANU¹

¹ ENT HEAD&NECK SURGERY, COLTEA CLINICAL HOSPITAL, BUCHAREST, ROMANIA

Abstract: ERS-0411

Objectives

It is difficult to have a gold standard on post-therapeutic management of sinonasal malignancies because of the multitude of tumour entities, variability of size and involvement. Surgical treatment followed by radiotherapy is consensual.

Methods

Authors studied 36 patients with sinonasal malignancies who were treated with classic surgery followed by conventional radiotherapy. Follow up of the patients is focused on detecting recurrences, secondary tumors, and complications after therapy. Clinical exam is the most important and is based on endoscopy and neck management. It was important measuring thyroid function for the patients who undergone neck irradiation. MRI was also performed. Pathology specimens were examined for HPV presence, the expression of P16 protein.

Results

the mean follow up of the patients was 52 months, survival rate was 68%. We discovered hypotiroia in 35% of cases and this was a problem for the patients; we propose TSH measuring every 6 months for neck irradiated patients. Ultrasound of the neck can be performed every 3-4 months and is important also for carotid artery occlusion. HPV presence can be a positive predictive factor if P16 protein is expressed.

Conclusion

Follow up protocol should be all life and individualized according to type of tumor and staging. The quality of life is a major factor in appreciation of the results of the therapy; knowing the disease and the therapeutic plan, post-therapy implication are factors with impact on QOL. A multicentre database is important for achieving of the gold standard in follow up of sinonasal malignancies.

Comparing endoscopic sinus surgery with traditional approach in cases of maxillary sinus inverted papilloma

T. Tsuda¹, M. Hayama¹, K. Yoshinami¹, T. Kawashima¹, T. Shikina²

¹ Otorhinolaryngology, Yao Municipal Hospital, Yao-City, Japan

² Otorhinolaryngology-Head and Neck Surgery, Osaka University Graduate School of Medicine, Suita-City, Japan

Abstract: ERS-0412

Session: CRS surgical techniques

Session Time: 26-06-14 10:05

Location: Hall H

Chair person: V. Lund

Presenting author: T. Tsuda

Objectives

A lot of new endoscopic surgical technique for treating maxillary sinus inverted papilloma are reported in late years. For example, endoscopic modified medial maxillectomy (EMMM) is a safe and effective surgical technique to obtain straight access to the maxillary sinus. Endoscopic medial maxillectomy (EMM) resects lateral nasal wall including inferior turbinate and nasolacrimal duct whereas EMMM enables to preserve them. Therefore, most of the patients underwent EMMM recover without sequelae such as epiphora or empty nose syndrome. It's considered that Endoscopic sinus surgery (ESS) is better than traditional approach (Caldwell-Luc procedure and open medial maxillectomy) in terms of invasiveness, but there is few literature comparing them for postoperative complication.

Methods

We clinically examined 12 patients with maxillary sinus inverted papilloma surgically treated at Yao municipal hospital between 2005 and 2013. The medical records were reviewed retrospectively.

Results

The most common symptom was nasal obstruction preoperatively. According to the classification of Krouse, 9 cases were classified into T2, and 3 into T3. Three cases underwent ESS, 4 cases underwent EMMM, and 5 cases underwent traditional approach. There were no recurrences for a mean follow-up of 41.4 months. There is no postoperative sequela in cases treated endoscopically. In contrast, 3 of 5 cases treated with traditional approach had postoperative sequelae such as numbness or pain of the cheek.

Conclusion

In the management of maxillary sinus inverted papilloma, we suppose that ESS (including EMMM) has advantages in postoperative complication as compared with traditional approach.

Down-regulation of EMP1 in nasal epithelium from nasal polyps and inverted papilloma

L. Shi¹, C.W. Li², X.M. Yu¹, P. Jin¹, Z.B. Lin³, T.Y. Li³, L. Zhao¹, D.Y. Wang²

¹ Department of Otolaryngology, Qilu Hospital of Shandong University, Jinan, China

² Department of Otolaryngology, National University of Singapore, Singapore, Singapore

³ Department of Otolaryngology, The First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China

Abstract: ERS-0413

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 12:09

Location: Hall H

Chair person: P. Gevaert

Presenting author: L. Shi

Objectives

Epithelial membrane protein1(EMP1)is found to regulate epithelial cell proliferation and differentiation,and its down-regulation is reported in various squamous cell carcinomas.The aim of this study was to investigate EMP1 protein and mRNA expression in the nasal mucosa of patients with nasal polyps and nasal inverted papilloma .

Methods

Nasal biopsies were obtained from patients with NP(n=55) ,IP(n=40)and inferior turbinate mucosa of healthy subject(n=30).Quantitative PCR and immunohistochemistry were performed to determine the expression levels of EMP1 in these tissue specimens.

Results

Eosinophilic and neutrophilic infiltration were common in samples from patients with NP(76% and 60%respectively)compared with those from control subjects.Epithelial hyperplasia was present in 97%and squamous metaplasia was present in 61%.Epithelial hyperplasia was found in all IP tissues with severe metaplasia (30%),moderate metaplasia (46%)and mild metaplasia(24%).The EMP1mRNA expression was significantly lower in tissues from NP patients and in patients with IP when compared to controls. The EMP1 protein levels were also significantly lower in NPand in IPsamples. EMP1 was stained in nasal epithelium and was co-localized with both basal and differentiated epithelial cells. Their immunoreactivity was significantly greater in controls than NP patients, especially in those with severe hyperplastic or metaplastic epithelium. Positive correlations between EMP1 and other epithelial cell related gene mRNAs were observed.

Conclusion

EMP1 could be a specific biomarker for aberrant epithelial remodeling and metaplasia in chronic inflammatory upper airway mucosa(e.g.NPs andIPs).Though this pathological change is not found in nasal stem/progenitor cells,the extrinsic mechanisms causing these pathogenic changes could be an important area of research to understand airway epithelial remodeling in various airway diseases.

Domiciliary floseal prevents hospital admission for epistaxis in patients with hereditary haemorrhagic telangiectasia

L. Warner¹, V. Varadarajan², J. Halliday³, K. James⁴, J. De Carpentier⁴

¹ Otolaryngology head and neck surgery, Royal Blackburn Hospital East Lancashire Hospitals NHS Trust, Blackburn, United Kingdom

² Otolaryngology, Salford Royal NHS Foundation trust, Manchester, United Kingdom

³ Neurosurgery, Royal Preston Hospital, Preston, United Kingdom

⁴ Otolaryngology head and neck surgery, Royal Preston Hospital, Preston, United Kingdom

Abstract: ERS-0414

Session: Epistaxis

Session Time: 26-06-14 10:06

Location: Hall J

Chair person: T. Van Zele

Presenting author: L. Warner

Objectives

Patients with hereditary haemorrhagic telangiectasia regularly suffer significant epistaxis requiring hospital admission for nasal packing and undergo frequent operative or interventional procedures. FloSeal (Baxter Healthcare Corporation, Hayward, CA) is a novel haemostatic agent originally described as a surgical haemostat, however recently studied for its use in epistaxis. Herein we describe the use of FloSeal in a domiciliary setting for epistaxis in patients with HHT thereby preventing hospital admission.

Methods

Four patients with HHT were provided with a domiciliary supply of FloSeal. Patients were instructed to apply the haemostatic agent during epistaxis that would previously have necessitated hospital admission. Patients and relatives were educated on the preparation and administration of FloSeal prior to use and were reviewed regularly in outpatient clinics during the study period to report the efficacy of haemostasis, any adverse effects and general acceptability of the domiciliary regime.

Results

Hospital admission was successfully avoided in four patients with domiciliary FloSeal during the study period of up to twelve months. Patients reported control of even major epistaxis within seconds, the FloSeal remained in the nasal cavity for up to 12 hours with no pain or discomfort but a mild sensation of facial pressure and nasal obstruction was reported. No adverse effects occurred after FloSeal administration and there were no cases of aspiration of FloSeal.

Conclusion

This novel domiciliary regime for controlling epistaxis in HHT gives our patients confidence in managing their condition at home, avoids hospital admission and procedures and improves patients' quality of life.

Signal transduction of the inflammatory process in chronic rhinosinusitis with nasal polyps

R. Linke¹, R. Pries¹, M. Koennecke¹, K. Bruchhage¹, M. Gebhard², R. Boescke¹, B. Wollenberg¹

¹ Department of Oto-Rhino-Laryngology and Facial Plastic Surgery, University of Luebeck, Luebeck, Germany

² Department of Pathology, University of Luebeck, Luebeck, Germany

Abstract: ERS-0415

Session: CRS basic 1

Session Time: 23-06-14, 09.57

Location: Hall G

Chair person: H. Saleh

Presenting author: R. Linke

Objectives

Although our knowledge of the etiology and pathogenesis of chronic rhinosinusitis with nasal polyps (CRSwNP) continues to grow, many questions are still unsolved. The underlying mechanisms of cell signalling contributing to the ongoing inflammation and proliferation in CRSwNP are especially poorly understood.

Methods

We examined tissue samples of nasal polyps and the inferior turbinate of patients with CRSwNP, and the inferior turbinate of subjects without chronic sinusitis (healthy mucosa). Expression levels of various phosphokinases and their activated or inactivated forms (phosphorylated) were analysed using DNA microarray, protein array, western hybridisation, and immunohistochemistry.

Results

We found an increased activation and alternated localisation of native and phosphorylated STAT3 and STAT5b in nasal polyps compared to the inferior turbinate of patients both with CRSwNP and healthy mucosa. We observed an activation of the MEK1/2-ERK1/2 pathway in nasal polyps. Interestingly, we did not see the same activation pattern in the different tiers of the MEK1/2-ERK1/2 signalling cascade. We detected an increased expression of GSK-3 in both the nasal polyps and the inferior turbinate of patients with CRSwNP compared to healthy mucosa. Additionally, we observed a highly significant increase in the phosphorylation rate of GSK-3 in the tissue of nasal polyps compared to the turbinates of patients with CRSwNP.

Conclusion

We show a network of different signalling pathways which give a view inside the pathogenesis of this recurrent, benign and highly proliferative disease. Our results provide a possible explanation for the different behaviour of the mucosa of the middle meatus and the inferior turbinate.

The interaction between sinus- and lung infections in patients with primary ciliary dyskinesia

M. Alanin¹, H.K. Johansen², N. Hoiby², M. Skov³, T. Pressler³, K. Aanaes¹, K.G. Nielsen³, C. v. Buchwald¹

¹ Department of Otolaryngology - Head and Neck Surgery and Audiology, Rigshospitalet Copenhagen University Hospital, Copenhagen, Denmark

² Department of Clinical Microbiology, Rigshospitalet Copenhagen University Hospital, Copenhagen, Denmark

³ Department of Pediatrics and Adolescent Medicine, Rigshospitalet Copenhagen University Hospital, Copenhagen, Denmark

Abstract: ERS-0416

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 16:33

Chair person: R. Kamel

Presenting author: M. Alanin

Objectives

The mucociliary clearance is dysfunctional in patients with cystic fibrosis (CF) and primary ciliary dyskinesia (PCD) resulting in recurrent airway infections. Chronic lung infections with *Pseudomonas aeruginosa* (Pa) are the main reason for the increased morbidity and mortality in CF patients. The sinuses function as a bacterial reservoir for pulmonary infections and we have demonstrated beneficial effects of sinus surgery in CF patients. Comparable, Pa frequently colonize the lungs in PCD patients. The aim of this study was to clarify the interaction between sinus- and lung infections and report the initial experience with sinus surgery in PCD patients.

Methods

Results from sinus cultures obtained during sinus surgery and the lung infection status in eight PCD patients from January 2008 through October 2013 were reviewed. Further, we related lung- and sinus bacteriology with measured specific serum precipitating antibodies.

Results

Eight patients with a median age of 19.5 years had sinus surgery. Before sinus surgery seven of eight patients (88%) were intermittently lung colonized with Pa. In four patients (57%) the sinuses were colonized with Pa and five of eight patients (63%) showed similarity between sinus and lung pathogens. Decreased level of precipitating antibodies was observed in four of five patients postoperatively.

Conclusion

Bacterial sinusitis was observed in 63% of PCD patients undergoing sinus surgery. Sinus- and lung pathogens were identical in all cases. As in CF patients the sinuses should be considered as a bacterial reservoir in PCD patients. The observed decrease in antibodies may indicate a beneficial effect of sinus surgery.

SINONASAL PARAGANGLIOMA: CASE REPORT

M. GLAVAN¹, B. LANISNIK¹, B. CIZMAREVIC¹

¹ ENT AND MAXILLOFACIAL SURGERY, UNIVERSITY CLINICAL CENTRE MARIBOR, MARIBOR, SLOVENIA

Abstract: ERS-0417

Objectives

Sinonasal paragangliomas are very rare tumors in the sinonasal tract. Only about 30 cases were reported in English literature.

Methods

Case report

Results

A 48 year old male presented with left sided haemorrhage and a tumor was discovered in the nasal cavity. A biopsy showed paraganglioma. The MR and CT showed a highly vascular mass filling the left nasal cavity and left maxillary sinus. Angiography was performed and highly vascular tumor filling from the internal maxillary artery was found. Endoscope assisted removal of the tumor was performed transnasally and transantral route. No complication occurred, blood loss was minimal.

Conclusion

Paragangliomas are rare, but highly vascular tumors, usually benign. Surgical removal is the treatment of choice. Tumors can be removed with transnasal endoscopic resection and in case of involvement around anterior wall of maxillary sinus with combined transnasal and transantral approach.

How reliable are sino-nasal cell lines for studying the pathophysiology of chronic rhino sinusitis?

S. Ball¹, M. Suwara¹, L. Borthwick¹, A. Fisher¹, D. Mann¹, J. Wilson²

¹ Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, United Kingdom

² Department of Otolaryngology, Freeman Hospital, Newcastle upon Tyne, United Kingdom

Abstract: ERS-0418

Session: CRS Basic 3

Session Time: 24-06-14, 16:35

Location: Hall E

Chair person: S. Vlamincx

Presenting author: S. Ball

Objectives

Well-characterised, immortalised cell-lines represent very useful scientific tools to study the pathophysiology of human disease. Chronic rhinosinusitis (CRS) is a very common condition, though the number of cell-lines for CRS is limited. Similarly, data showing how closely they resemble primary cells is scarce. We aimed to identify commercially available sinonasal cell-lines and compare these to patient-derived primary nasal epithelial cells (PNECs).

Methods

Searches for available human cell-lines were performed using the American Type Culture Collection (ATCC) and European Collection of Cell Cultures (ECACC). Identified cells were cultured and characterized with tinctorial & immunohistochemical staining, western blotting, qRT-PCR and ELISA to assess their response to common, disease-relevant inflammatory stimuli. Carefully phenotyped CRS patients and healthy controls were recruited with informed consent. PNEC brushings were harvested, cultured and compared to the available cell-lines.

Results

Searches identified only one relevant CRS sino-nasal cell-line, RPMI 2650. Cultured PNECs showed strong expression of epithelial markers such as cytokeratin-17 & E-Cadherin, whilst being negative for mesenchymal markers e.g. fibronectin & vimentin. However, RPMI 2650 cells show an atypical mixed epithelial/fibroblastic phenotype. When stimulated by pro-inflammatory ligands including TNF- α , LPS and Poly I:C, PNECs responded in a dose-dependent manner, whereas RPMI 2650 cells showed limited response.

Conclusion

The number and availability of cell-lines to study the pathophysiology of CRS greatly under-represents the disease burden. Additionally, the one commercially available cell-line appears to have a different phenotype and behaviour to primary patient-derived cells. The development of further, reproducible cell-lines would be of great benefit to assist our understanding of this common condition.

Swab-guided transnasal culture retrieval device for bacteriological assessment of acute maxillary sinusitis

O. Gluck¹, Y. Slovik¹, K. Rizenberg², I. Placht³, M. Puterman¹

¹ Otolaryngology head and neck surgery, Soroka university medical center, Beer sheva, Israel

² Infectious disease unit, Soroka university medical center, Beer sheva, Israel

³ Research and statistics unit, Soroka university medical center, Beer sheva, Israel

Abstract: ERS-0419

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:25

Location: Hall J

Chair person: C. Hopkins

Presenting author: O. Gluck

Objectives

Traditional bacterial pathogens assessments in acute bacterial rhinosinusitis (ABRS) patients relies on cultures obtained from antral taps (ATs), which are considered the gold standard method. While general nasal cultures are poorly correlated with ATs cultures, maxillary antrum endoscopic sampling is associated with 85% concordance with ATs cultures. However, those techniques are limited by discomfort, technical difficulties and require designed equipment. We studied the efficacy of swab-guided transnasal culture retrieval device (STCRD), a novel technique for obtaining an uncontaminated culture from the maxillary sinus ostium, without using a rigid endoscope.

Methods

32 ABRS adult patients who were referred to the emergency room due to antibiotic treatment failure were included. From each patient, 3 cultures were obtained: from the nasal cavity, AT and the middle meatus using STCRD. Bacteriological data were compared for type, prevalence, and antibiotic sensitivity and resistance studies.

Results

Of the 96 samples collected, 10/32 general nasal samples (control), 15/32 AT samples and 12/32 STCRD samples were culture positive, with *H.influenzae*, and *S. pneumoniae* being the most commonly cultured bacteria. In comparison with AT cultures, STCRD sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and overall accuracy (OA) were 67%, 88%, 83%, 75%, 78%, respectively. When comparing STCRD culture results to control cultures, the sensitivity, specificity, PPV, NPV and OA were 50%, 38 %, 71%, 20% and 47% respectively ($p=0.02$). OA of STCRD samples was significantly higher than control samples ($p=0.014$).

Conclusion

STCRD is a simple office-based method, and non-inferior to endoscopic nasal culturing.

Periostin may play a protective role in the development of eosinophilic chronic rhinosinusitis with nasal polyps in a mouse model

S. Jeon¹, S.W. Kim¹, D.Y. Chang¹, Y.H. Joo¹, D.W. Kim²

¹ Otorhinolaryngology, Gyeongsang National University Hospital, Jinju, Korea

² Otorhinolaryngology, Seoul National University, Seoul, Korea

Abstract: ERS-0420

Session: CRS Basic 2

Session Time: 24-06-14, 14:35

Location: Hall G

Chair person: R. Moesges

Presenting author: S. Jeon

Objectives

Several genes have been reported to be up-regulated in human nasal polyps in previous genetic analyses. Among these genes, periostin is known to be over-expressed in nasal polyps obtained from aspirin-sensitive patients. Using periostin-null mice, in this study, the role of periostin was investigated in a murine model of eosinophilic rhinosinusitis with nasal polyps.

Methods

Eosinophilic rhinosinusitis was induced in both periostin-null and wild-type mice according to previously established protocols. In brief, ovalbumin (OVA) was used for sensitization and prolonged intranasal stimulation. *Staphylococcus aureus* enterotoxin B was applied intranasally to develop polyp-like lesions. To examine the inflammation and mucosal lesions, hematoxylin and eosin, Sirius red, and Giemsa staining were performed.

Results

There was no definite difference in the maximal mucosal thickness between periostin-null and wild-type mice. In contrast, some parameters of inflammation, including the number of polyp-like lesions and mast cells, were aggravated in the periostin-null mice compared to wild type. Eosinophilic infiltration was aggravated in the OVA-stimulated periostin-null mice, compared to OVA-stimulated wild-type mice, whereas there was no apparent difference between wild-type and periostin-null mice challenged with additional *Staphylococcus aureus* enterotoxin B.

Conclusion

The loss of periostin appears to enhance polyp-like lesion formation and mast cell infiltration in a mouse model of eosinophilic rhinosinusitis with nasal polyps.

A stepped approach to the management of idiopathic epistaxis in adults

H. Basak¹, C. Günel¹, Y. Basal¹, A. Eryilmaz¹

¹ Department of Otorinolaryngology, Adnan Menderes University Medical School, Aydin, Turkey

Abstract: ERS-0421

Objectives

It is clear that the clinical guidelines available for the common conditions like nose bleeding are useful in both daily practice and medical education. However, such guidelines have not yet been using in our country. In this paper, we present two cases of epistaxis and suggest a stepped approach to the management of idiopathic epistaxis in adults in order to make contribution of setting an algorithm and/or guideline.

Methods

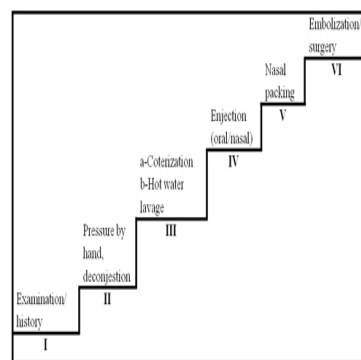
The anterior and posterior nasal packing had been applied to both cases for days before they were referred to our hospital. One of the cases was treated with endoscopic cauterization and the other with hot water irrigation (48-50 C0), without the application of nasal packing. In the one-year follow-up, no recurrent epistaxis was seen in both cases.

Results

There is no guideline or algorithm established for the management of patient with epistaxis in our country. In the management of epistaxis anterior and posterior nasal packing is mostly applied when bleeding does not stop with simple measures such as direct pressure on the lower part of the nose, local decongestant application and/or the cauterization of Little area.

Conclusion

We consider that the applications such as cauterization or injection should be tried before nasal packing if the site of bleeding can be identified or hot water irrigation in posterior epistaxis with no clearly identified bleeding site.



Quality of life and associated factors in persons with chronic rhinosinusitis in the general population

B. Lange¹, R. Holst², T. Thilsing³, J. Baelum³, A. Kjeldsen¹

¹ Odense University Hospital / University of Southern Denmark, Department of Otorhinolaryngology, Odense, Denmark

² University of Southern Denmark, Department of Biostatistics, Odense, Denmark

³ Odense University Hospital, Department of Occupational and Environmental Medicine, Odense, Denmark

Abstract: ERS-0422

Session: Management of CRS

Session Time: 26-06-14 12:30

Location: Hall J

Chair person: TBC

Presenting author: B. Lange

Objectives

The European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS) describes methods to perform population-based and clinical studies on Chronic Rhinosinusitis (CRS) in a standardized way and it also describes how to clinical investigate CRS. The aim of this cross sectional study was to evaluate Quality of life and objective findings in persons with CRS recruited from the general population.

Methods

As part of a trans-European study selected respondents to a survey questionnaire were invited for a clinical visit. Subjective symptoms and rhinoscopy were used for the clinical diagnosis of CRS and persons with and without CRS were compared. A total of 366 persons participated at the clinical visit and of these 91 were diagnosed with CRS, 271 without CRS, and 4 persons were excluded. Severity of symptoms and disease-specific Quality of life were measured using the Sino Nasal Outcome Test 22 and generic Quality of life was measured using the EQ-5D.

Results

The prevalence of CRS was 9% and the prevalence of polyps was 4%. Persons with CRS had significantly reduced disease-specific Quality of life ($p=0.00$) and generic Quality of life ($p=0.04$ and 0.01) compared to persons with out CRS. Having CRS was correlated to age, allergic rhinitis, and septum deviation, and olfactory function was reduced in persons with CRS.

Conclusion

This study gives insight into health related Quality of life and objective findings in persons with CRS recruited from the general population and diagnosed according to the clinical EPOS criteria.

A proposed classification for apical cystic lesion involving maxillary sinus

J.S. Jang¹, S.K. Chung¹, J.R. Hong², H.J. Dhong¹, H.Y. Kim¹

¹ Department of ORL-HNS, Sungkyunkwan University School of medicine Samsung Medical Center, Seoul, Korea

² Department of Oral and maxillofacial surgery, Sungkyunkwan University School of medicine Samsung Medical Center, Seoul, Korea

Abstract: ERS-0423

Session: Skull base surgery 4

Session Time: 26-06-14 11:35

Location: Hall G

Chair person: E. Wright

Presenting author: M.S. Jang

Objectives

Apical cystic lesion (ACL) is familiar to otolaryngologist because large portion of odontogenic maxillary sinusitis are originated from it. Clinically, ACL show various sizes, shapes and extensions to the maxillary sinus (MS). However, there has been no staging system of ACL involving MS until now. The aim of study was to classify ACLs according to the extent and affected MS status.

Methods

A total of 66 CT images with ACL were retrospectively reviewed. ACL were categorized according to following criteria: 1) extent of RC: localized (L) and bulging (B) type according to the MS invasion of RC bony cyst wall; 2) degree of sinus inflammation: intact (0), mucosal swelling only (1) and sinusitis without (2a) or with (2b) connection between cyst and sinus. Additionally, the degree of bulging into the MS was measured to estimate the growing pattern of ACL.

Results

According to the proposed classification, ACLs showed following distribution: L0 (3 cases); L1 (12); L2a (10); L2b (15); B0 (4); B1 (7); B2a (10); B2b (5). Mean degree of extension into the maxillary sinus was 15 ± 14.3 mm. Interestingly, the extension of ACL had a trend to be less than 7mm or larger than 11mm: 14 cases, < 7mm; 11 cases, > 11mm.

Conclusion

All ACL can be categorized by our classification and this system would be helpful to establish a treating guideline and to evaluate the classification-specific prognosis.

Orbital infections: five-year case series, literature review, and guideline development

M. Atfeh¹, H. Khalil¹

¹ ENT Department, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

Abstract: ERS-0424

Session: Orbit lacrimal system

Session Time: 26-06-14 11:30

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: M. Atfeh

Objectives

1. To review the management of patients with peri orbital /orbital infections in a tertiary centre over a 5 year period and in comparison with the published literature
2. To develop a multi-disciplinary evidence-based guideline for management of peri orbital/ orbital infections.

Methods

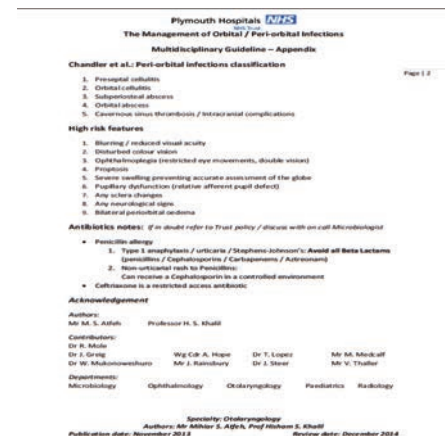
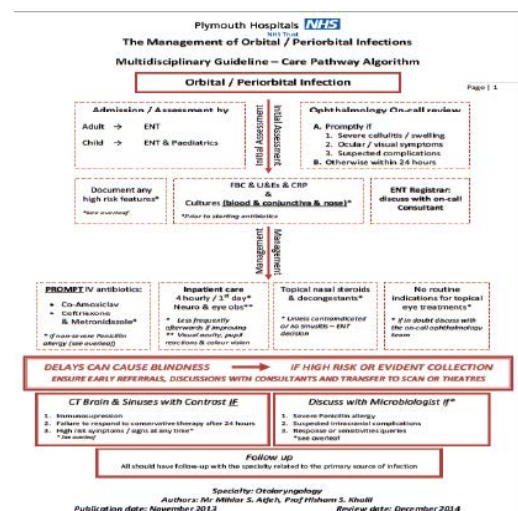
1. A retrospective case notes review was carried out in the tertiary centre, on admitted patients with orbital / periorbital infections over five years
2. A literature review was carried out in June 2013 using a multistep search on Embase, Medline and Cochrane database
3. A guideline on the management of orbital / periorbital infections was drafted, and then underwent a detailed multidisciplinary review process prior to final approval.

Results

1. The results of the retrospective series correlate with those found in recent literature
2. A new multidisciplinary guideline is finalised and approved for practice locally

Conclusion

1. Orbital / Periorbital infections represent a spectrum of sepsis with potentially significant morbidity and mortality
2. Early recognition, systematic assessment and aggressive treatment of the condition are essential
3. We present the multidisciplinary guideline developed
4. A recommendation to audit future practice according to the new guideline



Nasal valve surgery for nasal obstruction: a systematic review

M. Atfeh¹, P. Cheang¹, H. Khalil¹

¹ ENT Department, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

Abstract: ERS-0425

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:05

Chair person: K. Patel

Presenting author: M. Atfeh

Objectives

1. To describe the anatomy and pathophysiology of the nasal valve area
2. To illustrate the surgical methods used in the literature to address nasal valve obstruction

Methods

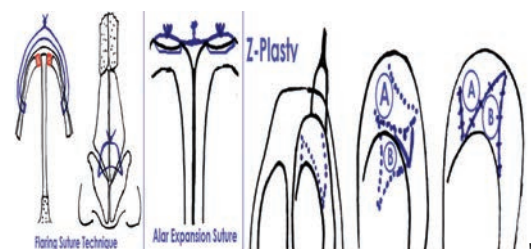
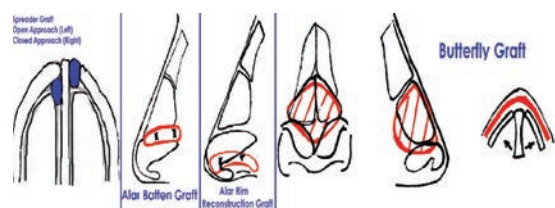
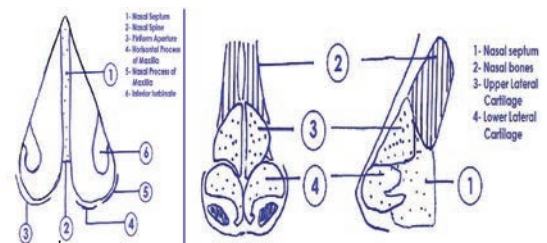
1. A multistep literature search was performed
2. Titles and abstracts were screened independently, as per set inclusions and exclusions
3. Final explanatory illustrations were created

Results

1. 38 articles
2. Nine illustrations created
3. Cartilage auto-grafts methods: 5 methods explained
4. Suturing Methods: 6 methods explained
5. Excision / Transposition methods: 3 methods explained
6. Injections / Implants methods: 2 methods explained

Conclusion

1. Valve insufficiency is a common and multidimensional cause of nasal obstruction
2. Thorough preoperative assessment is essential, all along a detailed patient's counselling pre / postoperatively
3. Many surgical techniques are devised to correct this problem functionally and cosmetically
4. While most described techniques only solve one problem, it is possible that techniques combinations may be necessary



The impact of endoscopic sinus surgery on healthcare use in patients with respiratory co-morbidities – analysis of 9,105 patients over 5 years

M. Benninger¹, C. Holy²

¹ The Cleveland clinic, The Head and Neck Institute, Cleveland, USA

² Acclarent, Acclarent, Menlo Park CA, USA

Abstract: ERS-0426

Session: United airways

Session Time: 25-06-14, 16:15

Location: Hall E

Chair person: P. Howarth

Presenting author: M. Benninger

Objectives

Medical guidelines recommend endoscopic sinus surgery (ESS) for well selected patients with chronic rhinosinusitis (CRS) refractory to medical management. However, the impact of surgery on CRS-related healthcare needs has never been evaluated. The Objective of this study was to analyze post-operative impact of ESS on healthcare utilization in patients with CRS, with and without respiratory comorbidities.

Methods

Retrospective analysis of MarketScan Commercial claims database. Patients with ESS (CPT 31254-31288) in 2008, and > 5 years continuous medical and drug plan enrollment were included (n=9,105). In and outpatient medical history including CRS-related prescriptions were analyzed.

Results

9,105 patients were included as following: No Comorbidity (N=4,780), Asthma Only (N=1,167), Polyps and Asthma (N=721), Samter's Triad (N=91) and additional subgroups with combinations of co-morbidities. Before and after surgery, patients incurred continuous yearly costs ranging from \$296.4 (95%CI: \$263.1-\$329.8 - No Co-morbidity group) to \$2,189 (95%CI: 1,449.2-\$2,930.1 - Samter's Triad group). Surgery was preceded by ≥ 6 months of increased healthcare utilization. Following surgery, the rate of decline in healthcare use was similar for all groups and reached baseline within 3 months. Adverse events were reported in 388 patients (2.94% hemorrhage, 0.14% CSF leak, 0.58% orbital complications) and 572 (6.28%) patients had revision surgery. The relative risk ratio for revision surgery was greatest for subjects with a prior ESS before their index 2008 ESS procedure.

Conclusion

Patients with CRS incur continuous costs and healthcare needs. All patients, regardless of co-morbidity, experienced significant decline in healthcare needs following sinus surgery.

Allergic comorbidity in a patient with skin and respiratory problems - case report

S. Grubor¹, A. Grubor²

¹ Dermatovenereology, Clinical Hospital Zemun, Belgrade, Serbia

² ENT dept, Clinical Hospital Zemun, Belgrade, Serbia

Abstract: ERS-0427

Objectives

Allergic rhinitis is very often introduction to bronchial asthma. Skin contact allergic reactions are one of the first manifestations of atopic march. Almost 80% patients suffering from asthma also have allergic rhinitis, and 30-40% rhinitis patients become asthmatic after a period of several years.

Methods

A female patient 55 years of age, clinically examined by dermatologist because of skin changes in hands and feet as multiple papulae and bullae, with yellowish fluid content, and severe itching, coughing with nasal blockage. Several bacteriological smears from skin blisters has been taken, and blood test for IgE level. In previous history polynodal goitre has been revealed. Patient has been examined by ENT specialist, and livid and erythematous mucosa and whitish discharge noted. Spirometry has been conducted, and skin allergic test (Prick) scheduled.

Results

Serum Ig E has been elevated (238IU/ml); Metacholin broncho-provocative test has been positive. Skin prick tests for inhalatory allergens has revealed hypersensitive reactions to house dust mites. By common test kit for allergic contact dermatitis hypersensitivity to nickel(II)sulfate has been found. Contact allergic dermatitis, allergic rhinitis and asthma has been diagnosed.

Conclusion

It is important to search for possible associated diseases of the skin or respiratory system. Those are chronic diseases, so the patients have to be prepared for long lasting treatments, if it is necessary. The optimal patient-doctor relation is required.

Outcomes of endonasal endoscopic dacryocystorhinostomy after maxillectomy in patients with paranasal sinus and skull base tumors

S. Abu-Ghanem¹, D.M. Fliss¹, R. Ben-Cnaan², I. Leibovitch², G. Horowitz¹, A. Abergel¹

¹ The Department of Otolaryngology Head and Neck Surgery and Maxillofacial Surgery, Tel Aviv Sourasky Medical Center Sackler School of Medicine Tel-Aviv University, Tel-Aviv, Israel

² The Department of Ophthalmology, Tel Aviv Sourasky Medical Center Sackler School of Medicine Tel-Aviv University, Tel-Aviv, Israel

Abstract: ERS-0428

Session: Orbit lacrimal system

Session Time: 26-06-14 11:20

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: S. Abu-Ghanem

Objectives

Maxillectomy followed by radiotherapy and/or chemotherapy can result in lacrimal blockage and the need for subsequent dacryocystorhinostomy (DCR). Endonasal endoscopic DCR, as opposed to external DCR, allows better accuracy and leaves no scar. To date no report was published regarding the results of endoscopic DCR in these patients.

Methods

The current study presents a retrospective review of all patients with paranasal and skull base tumors who developed nasolacrimal duct blockage after ablative maxillectomy with or without radiotherapy and/or chemotherapy and underwent endonasal endoscopic DCR between January 2006 and October 2012 in a tertiary reference medical center.

Results

Ten patients underwent 11 subsequent endonasal endoscopic DCR during the study period. There were 6 men and 4 women with a median age of 55 years (range, 19-81 years); four suffered from benign tumors and six had malignant tumors. All underwent maxillectomy. Six received high-dose radiotherapy. Time interval between primary ablative surgery and endonasal endoscopic DCR was 18 months (range, 7-118 months). Silicone stents were removed after median period of 11 weeks (range, 1-57 weeks). Nine out of ten patients experienced symptomatic improvement following one endonasal endoscopic DCR. One patient had recurrent epiphora and underwent a successful endonasal endoscopic revision DCR.

Conclusion

Endonasal endoscopic DCR in patients with paranasal and skull base tumors, who previously underwent maxillectomy, is generally successful and not associated with a high rate of complications or failure. Moreover, our findings may suggest that silicone stents can be removed shortly after the operation with high success rate.

Successful combined maxillary sinus floor elevation and endoscopic sinus surgery: a preliminary study

S. Abu-Ghanem¹, G. Horowitz¹, S. Balaban¹, V. Reiser¹, S. Kleinman¹, D.M. Fliss¹, I. Koren¹

¹ The Department of Otolaryngology Head and Neck Surgery and Maxillofacial Surgery, Tel Aviv Sourasky Medical Center Sackler School of Medicine Tel-Aviv University, Tel-Aviv, Israel

Abstract: ERS-0429

Session: CRS miscellaneous

Session Time: 25-06-14, 14:35

Location: Hall J

Chair person: G. Adriaensen

Presenting author: S. Abu-Ghanem

Objectives

The aim of the current study was to report our experience in the field of combined otolaryngologist surgeon and a maxillofacial surgeon surgery for maxillary sinus floor elevation (SFE).

Methods

Clinical records of all patients that underwent maxillary SFE in conjunction with endonasal endoscopic treatment for sinonasal pathologies between 2011-2013 were retrospectively reviewed. Data regarding pre-operative assessment, treatment and post operative care was retrieved.

Results

Over two years period, 14 combined ESS-sinus elevation procedures were performed using either autograft, xenograft, or allograft material. There were 6 men and 8 women, whose median age was 55 years (range, 45-78 years). All patients had a sinonasal-related pathology that was first suggested by the referring physician and was later confirmed clinically and radiographically prior the surgery by our combined team. Nine patients underwent unilateral SFE and 5 patients underwent bilateral SFE. Four patients underwent concurrent submucosal resection for deviated septum, four patients underwent bilateral maxillary antrostomy, 10 patients underwent unilateral maxillary antrostomy, and six patients underwent maxillary cyst resection. 11/14 of patients were under active infection during the time of surgery. No intraoperative complication were recorded. All patients underwent successful sinus floor elevation. Two patients were treated for sinusitis following surgery and needed longer antibiotic treatment. One patient reported infra-orbital hypoesthesia.

Conclusion

We first report the promising outcomes of the one team-one stage procedure for SFE performed by a combined team of otolaryngologist and maxillofacial surgeons, and particularly in those presenting with infection of the sinuses at the time of surgery.

Anti-allergic effect of bee venom in an allergic rhinitis mouse model

S. Shin¹, Kim. Yee-Hyuk¹, Ye Mi-Kyung¹, Shin Sun-Mi¹, Kim Yu-Ri¹

¹ Otorhinolaryngology, Daegu Catholic University Medical center, Daegu, Korea

Abstract: ERS-0430

Session: Rhinitis basic

Session Time: 24-06-14, 11:25

Location: Hall G

Chair person: TBC

Presenting author: S. Shin

Objectives

Bee venom (BV) has been known as anti-inflammatory agents in Oriental medicine and widely used to treat inflammatory diseases with immune modulating function. The purpose of this study is to investigate the anti-allergic effect of BV, which is used in the treatment of various inflammatory diseases in traditional medicine. We evaluated the anti-allergic effect of BV in a mouse model.

Methods

BV was obtained from the National Institute of Agricultural Science and Technology of Korea. Female BALB/C mice were sensitized by intraperitoneal injection of ovalbumin (OVA). BV was administrated nasally prior to intranasal instillation of OVA. Allergic behavior, serum OVA-specific IgE, interleukin (IL)-4, IL-10, and interferon (INF)- γ level in nasal lavage fluid were measured. Hematoxylin-eosin stain and periodic acid-Schiff stain were performed for evaluation of histological change.

Results

BV significantly decreased serum OVA specific IgE antibody level at 0.5 and 5 ng/ml. In nasal lavage fluid, IL-4 production was significantly inhibited by BV at 0.05, 0.5, and 5 ng/ml. However, IL-10 and INF- γ did not differ significantly among the AR group, control group, and BV treated group. The degree of inflammatory cell infiltrations showed a decrease in nasal mucosa at 5 ng/ml of BV. When OVA sensitized mouse were treated with BV, mucin producing cells were significant decrease at 0.5, 5, and 10 ng/ml.

Conclusion

These results suggest that BV effectively reduce allergic inflammation in a mouse model of allergic rhinitis and can suggest as a useful therapeutic strategy to treat allergic rhinitis through their properties as anti-inflammatory agents.

A case of skull base abscess after radiotherapy

Y. Suzuki¹, N. Ohta², A. Ishida²

¹ Otorhinolaryngology, Yamagata City Hospital SAISEIKAN, Yamagata, Japan

² Otorhinolaryngology, Yamagata University Faculty of Medicine, Yamagata, Japan

Abstract: ERS-0431

Objectives

Osteonecrosis is one of complication with radiotherapy as late radiation damage, and is difficult to treat. We report a case of skull base abscess related with radiotherapy. In this case, we successfully treated the patient with endoscopic surgery.

Methods

Case presentation: A 65 year-old man was treated with 60 Gy of radiation therapy to the right maxillary carcinoma (T3N0M0) ten years ago. The recurrence of carcinoma was observed nine years ago, and right total maxillectomy and 44 Gy of radiation therapy were performed. A skull base abscess occurred three years ago without recurrence. Incisional drainage was performed by neurosurgeons and otorhinolaryngologists in previous hospital, however frequent relapse was observed despite of these procedures.

Results

He was referred to our hospital for curative treatment. Although hyperbaric oxygenation was performed for two weeks, deterioration of the skull base abscess was observed. Endoscopic transnasal drainage and sequestrum removal was underwent for curative purpose without CSF leakage and infection to avoid. Three months after surgery, there were no problems and he became an outpatient.

Conclusion

The post operative course was satisfactory and the patient is well with no evidence of relapse after the surgical treatment. If the endoscopic transnasal drainage and sequestrum removal had not been performed, the case may have become fatal because of meningitis, abscess enlargement, and so forth. Through over-dose radiation therapy, he has a high risk of medullitis or abscess relapsing. We need to perform close follow up in the future.

Role of eosinophils in tissue remodeling of chronic rhinosinusitis

T. Shimizu¹, K. Takezawa¹, T. Ogawa¹, I. Tojima¹, H. Kouzaki¹, S. Shimizu¹

¹ Otorhinolaryngology, Shiga University of Medical Science, Otsu, Japan

Abstract: ERS-0432

Session: CRS basic 1

Session Time: 23-06-14, 09.48

Location: Hall G

Chair person: H. Saleh

Presenting author: T. Shimizu

Objectives

Eosinophil-associated chronic rhinosinusitis is characterized by predominant eosinophil infiltration, multiple bilateral polyposis, and sticky, glue-like rhinorrhea. To elucidate the role of eosinophils in tissue remodeling of chronic rhinosinusitis, eosinophil-epithelial interactions were examined by the co-culture of airway epithelial cell line NCI-H292 with the eosinophilic cell line EoL-1 or with human blood eosinophils.

Methods

The co-culture-induced production of MUC5AC mucin, platelet-derived growth factor-AB (PDGF-AB), vascular endothelial growth factor (VEGF), transforming growth factor- β 1 (TGF- β 1), and interleukin-8 (IL-8) were evaluated by enzyme-linked immunosorbent assay (ELISA) and reverse transcription-polymerase chain reaction (RT-PCR).

Results

Eosinophil-epithelial interactions significantly stimulated the secretion of MUC5AC, PDGF-AB, VEGF, TGF- β 1, and IL-8 in culture supernatants. The epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor AG1478 inhibited the co-culture-induced secretion of MUC5AC, PDGF-AB, VEGF, and IL-8. Neutralizing antibodies directed against TGF- α or amphiregulin and pan-metalloprotease inhibitor GM6001 inhibited the co-culture-induced secretion of MUC5AC and amphiregulin from the co-cultured NCI-H292 cells. Co-culture of NCI-H292 cells with peripheral blood eosinophils also significantly stimulated MUC5AC production.

Conclusion

These results indicate that eosinophil-epithelial interactions stimulate tissue remodeling such as nasal polyp formation and goblet cell metaplasia, induced by MUC5AC mucin, PDGF-AB, and VEGF, probably mediated by ADAM (a disintegrin and metalloprotease)-dependent EGFR transactivation via amphiregulin and TGF- α released from the epithelial cells.

Obstructive sleep apnea syndrome and its correlations with nasal pathology

A. Neagos¹, A. Cirticioiu², I. Csiszer², D. Duca³

¹ ENT Department, University of Medicine and Pharmacy Tirgu Mures, Tirgu Mures, Romania

² ENT Department, Emergency Count Hospital Tirgu Mures, Tirgu Mures, Romania

³ ENT Department, Privat Medical Center GALENUS Tirgu Mures, Tirgu Mures, Romania

Abstract: ERS-0434

Objectives

Obstructive sleep apnea syndrome is a sleep respiratory disorder common encountered in medical practice, characterized by collapse or partial to total obstruction of the upper airway. Upper airway obstruction may occur in the nose or in the oro and hypopharynx.

Methods

The whole activity documentation in order to create a database useful in preparing this own presentations is based on conducting investigations: nasal endoscopy, flexible pharyngoscopy, rhinomanometry, and selective sleep endoscopy.

Results

The increased Nasal resistance resulting through increased oropharyngeal negative pressure during the inspiration, and therefore can contribute to the collapse of the upper airway. The correlation between the otolaryngological changes founded after ENT examination with nasal endoscopy and correlated with Apnea-Hypopnea Index(AHI), show that the values inferior concha hypertrophy ($p = 0.58$), nasal obstruction ($p = 0.98$), long and / or wide uvula ($p = 0.48$), thickened mucosal folds ($p = 0.41$) were not expected to be a risk factor for OSAS, there is no statistical significance. There is a statistically significant difference between nasal allergy, tongue base size and AHI index, $p < 0.06$, respectively $p < 0.05$.

Conclusion

Endoscopic investigations are used to evaluate the upper airway changes, especially the nasal and pharyngeal pathology, they having value only in correlation with polysomnography and the examination of the nasal function.

Effect of oral steroids on smell reduction or loss in patients with chronic rhinosinusitis with nasal polyps

E. Proimos¹, F. Seferlis¹, Z. Memtsas¹, T. Chimona¹, C. Padadakis¹

¹ ENT Dept, Chania General Hospital, Chania, Greece

Abstract: ERS-0435

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:45

Chair person: Philippe Rombaux

Presenting author: Z. Memtsas

Objectives

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a common and significant health problem characterized by insistent symptoms that affect patient's quality of life. Smell reduction or loss is the most troublesome symptom and the one, patients wish more to restore. There is no consensus on the most appropriate medical approach that will ensure long term results.

Methods

Thirty-six patients with CRSwNP (polyps Grade II-III) were finally involved in our prospective randomized study. Patient's baseline assessment included medical history, Sinonasal Outcome Test-22 (SNOT-22) and VAS questionnaire, and endoscopic appearance score (EAS) record. Sense of smell was evaluated subjectively with Sniff'n Stick. After randomization, one arm underwent medical polypectomy (oral steroids) with intranasal steroids (INCS) and nasal douching, and the other received only intranasal steroids plus nasal douching. Both arms were reevaluated at 2 and 12 weeks from baseline assessment.

Results

Patients included in medical polypectomy arm were most improved. In statistical analysis performed with paired t-test, statistical significance level was $p < 0.05$. In medical polypectomy group all parameters of subjective patient's evaluation were significantly improved either from baseline assessment or in correlation with INCS group.

Conclusion

In patients with CRSwNP and reduction or loss of smell, medical treatment with oral plus intranasal steroids and nasal douching for twelve weeks seems to be the most effective treatment with long term results regarding smell restoration.

Extraesophageal reflux is often present in patients with chronic rhinosinusitis and simultaneous bronchial asthma

K. Zelenik¹, P. Matousek¹, M. Formanek¹, P. Kominek¹

¹ Department of Otolaryngology, University hospital Ostrava, Ostrava, Czech Republic

Abstract: ERS-0436

Session: CRS miscellaneous

Session Time: 25-06-14, 14:20

Location: Hall J

Chair person: G. Adriaensen

Presenting author: K. Zelenik

Objectives

Purpose of the study is to examine the severity of extraesophageal reflux (EER) in patient with various degrees of chronic rhinosinusitis (CR).

Methods

Patients with CR were divided into three groups. Group 1 consisted of patients with CR without nasal polyps or bronchial asthma (BA); group 2 consisted of patients with nasal polyps without BA; group 3 consisted of patients with nasal polyps and BA. The age, sex, BMI and Reflux symptom index (RSI) was assessed. The severity of EER (RYAN score in upright and supine position) was evaluated using Restech system.

Results

Altogether 28 patients (9 in group 1, 8 in group 2 and 11 in group 3) were recruited for the study from January to December 2013. There was no difference in age, sex and BMI between groups. RSI was significantly higher in group 3 in comparison with group 1 and 2 ($p=0.005$). The severity of EER in upright position was significantly higher in group 3 in comparison with group 1 ($p=0.0162$). There was no difference between group 3 and group 2 and between group 2 and group 1. There was no difference in EER in supine position between groups.

Conclusion

Our first results show the possible role of EER in pathogenesis of more serious types of CR, especially with simultaneous BA. In case our hypothesis is confirmed in larger study group, antireflux therapy should be considered as a treatment of these patients. Study is supported by Grant IGA NT13500-4/2012.

Lipoxin A4 suppresses interleukin-1 β -induced MUC5b gene expression in human airway epithelial cells

J. Kim¹, Y. Chung¹, K. Lee¹, H. Jung¹, Y. Kim¹

¹ Department of Otorhinolaryngology Head & Neck Surgery, Konkuk University Hospital, Seoul, Korea

Abstract: ERS-0437

Session: CRS Basic 3

Session Time: 24-06-14, 17:00

Location: Hall E

Chair person: S. Vlaminck

Presenting author: J. Kim

Objectives

The aim of this study was to investigate whether Lipoxin A4 receptor (ALX) was present in nasal mucosa and Lipoxin A4 suppresses interleukin (IL)-1 β -induced MUC5B gene expression in human airway epithelial cells and, if so, to determine which mitogen-activated protein kinases (MAPKs) are related to MUC5B gene suppression.

Methods

ALX mRNA level was measured using reverse transcription-polymerase chain reaction (PCR) (nested RT-PCR). And we also investigated the localization of ALX in human nasal mucosa. MUC5B mRNA and protein levels were measured using reverse transcription-polymerase chain reaction (PCR) and western blot analysis in cultured BEAS-2 human airway epithelial cells and nasal mucosa tissue.

Results

In nasal mucosa, ALX mRNA was expressed and its level of expressions were different from tissues and ALX was located in ciliated cell in nasal mucosa. IL-1 β increased the mRNA and protein level of MUC5B in BEAS-2 cells. IL-1 β -induced expressions of MUC5B mRNA and protein were significantly suppressed in cells pretreated with 10⁻⁷M of Lipoxin A4. And in NHNE(normal human nasal epithelium) cells, Lipoxin A4 also suppressed Interleukin-1 β -induced MUC5B gene expression.

Conclusion

Lipoxin A4 suppresses IL-1 β -induced MUC5B gene expression in human airway epithelial cells. Therefore, Lipoxin A4 may be considered as a possible anti-hyper secretory agent for inflammatory airway diseases.

Lateral rectus palsy secondary to isolated sphenoid fungal sinusitis: unusual presentation

R. Singh¹, G. Amrutha¹, R. Balakrishnan¹

¹ ENT HNS, Kasturba Medical College, Manipal, India

Abstract: ERS-0438

Session: Fungal sinusitis

Session Time: 24-06-14, 10:15

Location: Hall G

Chair person: R. Kamel

Presenting author: R. Singh

Objectives

Isolated sphenoiditis is an uncommon disease, usually occurs in association with disease of other sinuses. Because of the subtle signs and non-specific symptoms the diagnosis is often delayed till patient lands in complications. We report three cases of isolated fungal sinusitis of sphenoid sinus presenting with lateral rectus palsy and discuss its management and treatment outcomes.

Methods

This is a report of three cases who presented with complaints of diplopia of sudden onset secondary to lateral rectus palsy with no specific complaints pertaining to the nose and paranasal sinuses. Computer tomography scan of the paranasal sinuses showed ipsilateral isolated sphenoid sinusitis. All of them underwent endoscopic sphenoidotomy. Histopathology of the sphenoid tissue was reported as aspergillus fungal sinusitis.

Results

Diplopia and eye movements recovered following endoscopic sphenoidotomy in the immediate postoperative period. On follow up for 1 year cases were symptom free with no recurrence.

Conclusion

Isolated sphenoiditis is a diagnostic challenge with vague symptoms initially; rapidly progressing to intracranial and orbital complications with late ENT intervention. Sphenoid sinusitis should be considered as a differential diagnosis in patients with lateral rectus palsy. Endoscopic sphenoidotomy is the main stay of the treatment however the use of antifungals is limited to only cases of invasive fungal sinusitis.

Low dose (100mg) aspirin desensitization provides a therapeutic option in individuals with aspirin exacerbated respiratory disease

K. Fruth¹, B. Pogorzelski¹, I. Schmidtman², D. Schaefer³, W.J. Mann⁴, J. Gosepath¹

¹ Department of Otorhinolaryngology Head and Neck Surgery, HSK Dr. Horst Schmidt Kliniken GmbH, Wiesbaden, Germany

² Institute of Biostatistic Epidemiology and Informatics (IMBEI), University Medical Center of the Johannes Gutenberg University Mainz, Mainz, Germany

³ Medical Clinic III, Friedrich-Alexander-University, Erlangen-Nuremberg, Germany

⁴ Department of Otorhinolaryngology Head and Neck Surgery, University Medical Center of the Johannes Gutenberg University Mainz, Mainz, Germany

Abstract: ERS-0439

Session: Management of CRS

Session Time: 24-06-14, 16:36

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: K. Fruth

Objectives

Aspirin exacerbated respiratory disease (AERD) is frequently characterized by nasal polyposis, refractory to steroid treatment, and sinus surgery. To restore the derailed arachidonic acid metabolism and to control chronic rhinosinusitis (CRS)-related symptoms, aspirin desensitization is the only causative therapeutic option so far. The best suitable maintenance dose of aspirin to prevent nasal polyp recurrence on the one hand and to prevent patients from severe aspirin related side effects on the other hand, is still an unresolved issue. The present double-blind placebo-controlled trial investigated the efficacy of an aspirin desensitization protocol with 100mg aspirin daily.

Methods

70 individuals with AERD were randomly allocated to a low dose aspirin desensitization or to a placebo protocol. After 36 months, nasal polyp relapse, patients' quality of life, CRS-related symptoms, and aspirin-related side effects were investigated.

Results

The quality of life improved ($p=0.0324$) and CRS-related symptoms were reduced, significantly, ($p<0.0001$) in the therapy group. Furthermore, only 28% of the individuals of the therapy group suffered from nasal polyp relapse compared with 62% of the placebo group. No severe aspirin-related side effects were observed.

Conclusion

Low dose aspirin desensitization has a positive impact on nasal polyp relapse after sinus surgery. Besides steroid application and sinus surgery, aspirin desensitization with a maintenance dose of 100mg daily can be regarded as an additional safe and valuable therapeutic option to reduce CRS-related clinical symptoms and to improve the quality of life of individuals with AERD.

Investigation of blood serum periostin levels in patients with chronic sinusitis

A. Ishida¹, N. Ota¹, Y. Suzuki¹, S. Kakehata¹

¹ Otorhinolaryngology Head And Neck Surgery, Yamagata University Graduate School of Medical Science, Yamagata, Japan

Abstract: ERS-0440

Session: CRS Basic 2

Session Time: 24-06-14, 14:15

Location: Hall G

Chair person: R. Moesges

Presenting author: A. Ishida

Objectives

Several factors contribute to pathologies such as excessive mucus production and mucosal edema, leading to nasal discharge and obstruction in chronic sinusitis. Periostin is a modulator of fibrosis and collagen deposition, and is known to play a vital role in myocardial repair after myocardial infarction. We previously reported the possibility that excessive expression of periostin in the nasal mucosa is related to polyp formation. In this study, we measured the periostin levels in the blood serum of chronic sinusitis patients and investigated the correlation between the periostin levels and severity of chronic sinusitis.

Methods

We measured the periostin levels in the blood serum of 60 chronic sinusitis patients by using enzyme-linked immunosorbent assay (ELISA). Sixty-six healthy people were used as the control group. We assessed subjective symptoms (nasal discharge, nasal obstruction, and olfactory obstruction) presence of combined allergic rhinitis, peripheral blood eosinophil numbers, and peripheral blood eosinophil cationic protein (ECP), performed intranasal examinations (presence of polyps) and computed tomography (CT), and correlated the results with the blood serum periostin levels.

Results

We found that the periostin levels in the blood serum of chronic sinusitis patients were significantly higher than that in the blood serum of the healthy controls. Among the chronic sinusitis patients, those with multiple intranasal polyps or olfactory obstructions showed significantly high periostin levels. Moreover, we showed that blood serum periostin levels are correlated with peripheral blood eosinophil numbers and ECP.

Conclusion

We believe that blood serum periostin level can be used as a biomarker for disease activity and severity in patients with chronic sinusitis.

Clinical review of 57 cases of paranasal sinus mycetoma

H. Akazawa¹, T. Shikina², C. Masumura², S. Nishiike³, H. Inohara²

¹ Otorhinolaryngology-Head and Neck Surgery, Higashiosaka City General Hospital, Higashiosaka Osaka, Japan

² Otorhinolaryngology-Head and Neck Surgery, Osaka University, Suita Osaka, Japan

³ Otorhinolaryngology-Head and Neck Surgery, Osaka Rosai Hospital, Sakai Osaka, Japan

Abstract: ERS-0441

Session: Fungal sinusitis

Location: Hall E

Time: 26-06-14 11:42

Chair person: S. Reinartz

Presenting author: H. Akazawa

Objectives

The study aims to elucidate the clinical features of paranasal sinus mycetoma.

Methods

We reviewed 57 patients (15males and 42 females) with paranasal sinus mycetoma treated at Osaka University Hospital between February 1998 and July 2013. Patient ages ranged from 28 to 94 years. Nineteen cases had hypertension and 11 cases had diabetes.

Results

The most common complaint was cheek pain and no symptom (incidentally diagnosed by image findings). Affected sinus was maxillary sinus in 41 cases, maxillary sinus and ethmoid sinus in 6 cases, ethmoid sinus alone in 2 cases, and sphenoid sinus in 10 cases. By computed tomography, calcification were found in 47 cases. ESS was performed in all cases. All cases were diagnosed as paranasal sinus mycosis by pathological examinations, while fungus was detected in 11 cultures. Aspergillus were detected in all of those cultures. Post operative follow up period ranged from 2 to 62 months. Recurrent diseases were detected in 9 cases by computed tomography or endoscopy, and 7 cases recurred within 4 months.

Conclusion

Most of recurrent cases were found within 4 months. Computed tomography at 4 months after surgery may be useful for detecting recurrent disease when paranasal sinus cannot be examined by endoscopy.

Predictive value of radiological osteitis for identifying attachment of sinonasal inverted papilloma

D. Chin¹

¹ Otolaryngology Head & Neck Surgery, Changi General Hospital, Singapore, Singapore

Abstract: ERS-0442

Session: Skull base surgery 4

Session Time: 26-06-14 12:10

Location: Hall G

Chair person: E. Wright

Presenting author: D. Chin

Objectives

Complete resection of sinonasal inverted papilloma(IP) is important in preventing tumour recurrence. Literature suggests up to 95% predictive value for osteitic reaction as an indicator of IP attachment. This study aims to prospectively assess its predictive value for site of tumour attachment.

Methods

Patients with biopsy-proven IP were evaluated for presence and location of osteitic reaction on fine-cut(1mm) CT of the paranasal sinuses. During subsequent endoscopic resection, wide access and progressive resection of tumour was used to determine site of tumour attachment and extent of sinus involvement. Tumour-negative frozen section of lateral margins of tumour base and removal/drilling of tumour base was performed to ensure complete resection. For patients with osteitic reaction, the predicted site of tumour attachment was compared with intra-operative findings.

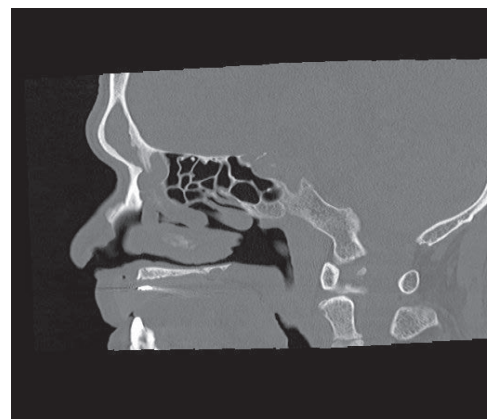
Results

9 patients(mean age 56.9+/-8.86; males 8) were studied. Osteitic reaction suggestive of IP attachment was present in 6(66.7%). Site of attachment was predicted to be within the maxillary sinus(n=5) and posterior frontal table(n=1)(Figure 1).

For 2 patients without osteitis, the origin was predicted as posterior ethmoid(n=1) and nasolacrimal duct/inferior meatus(n=1). Tumour origin could not be predicted in 1 patient. Cannady staging was T3(n=8) and T4(n=1). Osteitic reaction correctly-predicted site of attachment in 100% when present. For patients with predicted origin at nasolacrimal duct and posterior ethmoid, intra-operative findings were corroborative.

Conclusion

Radiological osteitic, when present, reaction reliably predicts sinonasal IP attachment, facilitating accurate pre-operative planning and pre-operative counselling. When absent, a combination of radiological and endoscopic findings is usually helpful in predicting attachment.



Endoscopic outcome and patients satisfaction of biodegradable vs traditional nasal packing after functional endoscopic sinus surgery

P. Burduk¹, M. Wierzchowska², W. Kazmierczak², B. Grzeskowiak³

¹ Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

² Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

³ Otolaryngology and Laryngological Oncology, Antoni Jurasz University Hospital, Bydgoszcz, Poland

Abstract: ERS-0443

Session: Management of CRS

Session Time: 26-06-14 12:05

Location: Hall J

Chair person: TBC

Presenting author: P. Burduk

Objectives

The aim of the study was to compare biodegradable synthetic polyurethane foam (NasoPore) and traditional packing composed of gauze with ointment in functional endoscopic sinus surgery (FESS) with regard to postoperative bleeding, wound healing and patients satisfaction.

Methods

A prospective, double-blind randomized trial of 50 adults (22 women and 28 men) with chronic rhinosinusitis undergoing bilateral FESS were enrolled. The patients were randomized and blinded to receive NasoPore on one side and gauze packing on the other. Patients completed a questionnaire during their postoperative visits at 2, 10 and 30 days after surgery. The presence of synechia, infection was noted with the endoscopy on both sides at 10 and 30 days after surgery.

Results

There was no significant differences between the Lund-Mackay scores in both sides preoperatively. There was also no difference between both sides regard to bleeding. We have found synechia in three cases in NasoPore group and one inflammation in traditional packing group. The significant differences better for NasoPore group with regard to patients pain, pressure and blockage were observed especially at 10 and 30 days after surgery ($p < 0.01$).

Conclusion

The biodegradable nasal pack is associated with significantly better patients satisfaction compared with traditional non-absorbable packing. The risk of bleeding is comparable, but fast absorption of NasoPore pack could predispose to synechia formation.

Endonasal endoscopic dacryocystorhinostomy: good results, failures and patients satisfaction

P. Burduk¹, M. Daroszewski², M. Seredyka-Burduk³, M. Wierzchowska¹,
A. Koszewska-Kolodziejczak⁴

¹ Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

² Human Anatomy Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

³ Ophthalmology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

⁴ Ophthalmology, Antoni Jurasz University Hospital, Bydgoszcz, Poland

Abstract: ERS-0444

Session: Orbit lacrimal system

Session Time: 26-06-14 11:35

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: P. Burbuk

Objectives

Dacryocystorhinostomy (DCR) is most common procedures performed for chronic dacryocystitis. The endoscopic approach is safe, very satisfying surgery both for patients and surgeons.

Methods

A prospective study of 59 cases of endoscopic DCR surgery were performed between 2004 and 2013 at the Department of Otolaryngology and Laryngological Oncology CM of the Nicolaus Copernicus University in Torun, Poland. Fifty one primary DCR were done and 8 revision due to the nasolacrimal duct obstruction after the primary surgery. All the cases were operated with surgical support of the ophthalmologist. Postoperative patients satisfaction and the occurrence of symptoms were documented.

Results

The follow-up interval ranged from 10 to 25 months (mean 18 months). The main reason of primary acquired nasolacrimal duct obstruction were: chronic dacryocystitis in 50 cases (84,75%), trauma 6 cases (10,17%) and other 3 cases (5,08%). The success rate was 86,5%. In 8 cases (13,5%) the restenosis occurred due to: rhinostomy scarring (3 cases), granulations at rhinostomy (3 cases), papilloma recurrence and common canaliculus obstruction in one case. Silicone intubation was used in 49 primary procedures and in 7 in reoperation cases. An average time for the tubes removal was 9 months (range from 2 weeks to 18 months).

Conclusion

The end endoscopic dacryocystorhinostomy is procedure with high success rates. It is well accepted by patients as there is no cosmetic consequences. The intubation with silicone tubes should be performed due to traumatic dacryocystitis and in times of revision surgery.

C-arm assisted reduction via Gillies approach of zygomatic tripod fracture: two cases report

Kim Bo Young¹, Kim Do hyun¹, Lee Tae Hoon¹

¹ Department of Otolaryngology-Head and Neck Surgery, Maryknoll Medical Center, Busan, Korea

Abstract: ERS-0446

Objectives

Many surgical approaches for reduction of zygomatic fractures have been reported, which include Gilles approach, transnasal approach, transoral approach, subciliary approach, lateral canthal approach, eyebrow approach and transconjunctival approach, etc. To compare semi-closed reduction with open reduction for the zygomatic tripod fracture is the main objective.

Methods

Patients aged 63 and 70 years who had the zygomatic tripod fracture were included in this study. The authors performed semi-closed reduction for the tripod fracture under intraoperative assessment using C-arm in two cases.

Results

We found that two cases which had semi-closed reduction for the tripod fracture using C-arm were short operative time, minimal incision, cost-effectiveness, and fine reduction.

Conclusion

In case of zygomatic tripod fracture, reduction was performed frequently by open reduction and internal fixation. However open reduction has significant drawbacks such as facial scar, facial nerve injury and blindness. So compared with open reduction, semi-closed reduction for the tripod fracture is considered much more valuable than open reduction.

Analysis of age-related sleep questionnaires; are sleep questionnaires valid in all adult age group as screening tools of obstructive sleep apnea syndrome?

L.E.E. Tae Hoon¹, K. Do Hyun², K.I.M. Bo Young²

¹ Department of Otolaryngology-Head and Neck Surgery, Ulsan University Hospital University of Ulsan College of Medicine Ulsan Korea, Ulsan, Korea

² Department of Otolaryngology-Head and Neck Surgery, Maryknoll medical center Busan Korea, Busan, Korea

Abstract: ERS-0447

Session: OSAS

Location: Hall H

Time: 25-06-14 14:05

Chair person: N. de Vries

Presenting author: L.E.E. Tae Hoon

Objectives

Several questionnaires including Epworth Sleepiness Scale (ESS), Berlin Questionnaire, STOP questionnaire were developed for the purpose of the screening of OSAS. However, there may be differences in reliability of sleep questionnaires with age distribution due to the prevalence of OSAS and hypertension or social activity. So the authors evaluated the validity of sleep questionnaires in all adult age group as screening tests of OSAS.

Methods

Patients aged 20 years or older who had sleep disturbance were included in this study. Patients were divided into five groups depending on the ages. Patient completed Berlin, ESS, STOP questionnaire prior to PSG. Information such as height, weight, gender, age, history of hypertension, past medical history was collected.

Results

All patients were 330, which men were 281 and women were 49. When analyzed by age group, sensitivity and specificity of Berlin questionnaire in twenty and thirty were favorable. Sensitivity of STOP was superior at all age distribution and specificity of thirty was favorable. The sensitivity of ESS was totally low in all ages. In the analysis of correlation by the age group, BQ and STOP were statistically significant in thirty but ESS was not significant in all age group.

Conclusion

The screening tests for sleep apnea had differences on sensitivity and specificity by distribution of ages. It is supposed because of the physical change and the change of the living environment including job, society action, and etc. For the increasing accuracy, survey must consider ages and social activity and so on.

Analysis of the age-related changes of the Asian facial skeleton

J. Bae¹, L.E.E. Seung-sin¹, B.Y.U.N. Sung Wan¹

¹ School of Medicine, Ewha Womans University, Seoul, Korea

Abstract: ERS-0448

Session: Rhinoplasty and facial plastic surgery

Session Time: 23-06-14, 14:40

Location: Hall E

Chair person: K. Patel

Presenting author: J. Bae

Objectives

Asian face is markedly different from that of Caucasians in many unique attributes, including skin tone, texture, elasticity, skin thickness, subcutaneous fat content, and skeletal nature. Up until now, there has been no study explaining the aging midfacial skeletal aging process in Asians. The purposes of this study are analyzing midfacial skeletal changes in the aging Asian face utilizing accurate measurement methods, exploring ethnic differences between aging Caucasian and Asian skeletal facial structures, and showing aging differences between Asian and Caucasian faces could also be attributable to differences in skeletal change.

Methods

Data was collected in a retrospective manner from previously acquired CT scans. The study group consisted of 223 Koreans (108 males and 115 females) that were divided into 2 groups based on sex and then subdivided into three categories based on age. Four angular measurements of the midface were taken with PACS software and calculated with 3D vector mathematics.

Results

The female subjects showed all four midface angular measurements studied to be statistically significantly decreased with increasing age. The male subjects showed the glabellar and maxillary angles to be statistically significantly decreased with age, but not the orbital and pyriform angles. The female group showed more prominent changes than male group, especially when comparing the young and middle-aged groups.

Conclusion

These results suggest that the Asian midfacial skeleton appears to remodel throughout adulthood. These changes are more prominent in women, and the changing rates and patterns show some difference between Asians and Caucasians.

Rare benign pleomorphic adenoma of the nasal septum and FESS

P. Burduk¹, M. Bodnar², M. Wierzchowska¹, W. Kazmierczak¹, A. Marszalek²

¹ Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

² Department of Clinical Pathomorphology, Collegium Medicum Nicolaus Copernicus University, Bydgoszcz, Poland

Abstract: ERS-0449

Session: Skull Base Surgery 2

Session Time: 24-06-14, 15:00

Location: Hall H

Chair person: P. Nicolai

Presenting author: P. Burduk

Objectives

Pleomorphic adenoma is one of the most common benign tumor of the major salivary glands. It also can occur in the minor salivary glands, which exist in nasal cavity. Intranasal pleomorphic adenoma usually originates from glands of mucosa of nasal septum.

Methods

The retrospective examination of three patients diagnosed and treated at the Department of Otolaryngology and Laryngological Oncology CM UMK was performed. There were two women and one man. Age ranged from 15 to 46 years old. All the patients presented with nasal obstruction and occasional epistaxis at least for 6 months.

Results

We have performed endoscopic surgery to remove the tumors. In all cases we've dissected the septal perichondrium to achieve free margins of the tumor. The microscopic examination revealed the epithelial and myoepithelial component with tubular structures composed of two cell layers ducts, solid area found in loose myxochondroid area. Additionally, the immunohistochemical staining was performed using primary mouse monoclonal antibodies against: Cytokeratin, Ki-67, and Vimentin. Patients' postoperative course were uneventful and no complications were encountered. No recurrence was present during patients' postoperative visits.

Conclusion

Nasal benign pleomorphic adenoma is a rare tumor which should be taken into consideration in nasal cavity during surgery. Proper histological diagnosis could be confirmed by additional histological studies. Endoscopic endonasal surgery is reserved for small size tumors.

Tear pump function in patients with septal deviation and turbinate hypertrophy

I. Lazarevich¹

¹ ENT, Presedential Medical Center, Moscow, Russia

Abstract: ERS-0996

Session: CRS Basic 3

Session Time: 24-06-14, 16:15

Location: Hall E

Chair person: S. Vlaminck

Presenting author: I. Lazarevich

Objectives

The purpose is to study the condition and active physiological function of the lacrimal flow in patients with deviated septum and nasal hypertrophy and evaluate effect of rhinoseptoplasty on tear duct function.

Methods

Patients with septal deviation and turbinate hypertrophy with no epiphora were included to the study. We used colored dye nasolacrimal test to evaluate nasolacrimal function before septoplasty and turbinate correction and on 5th day and than 1 month after surgical treatment.

Results

A total of 60 patients (42 men and 18 women) were required for the study. In 33,3% lacrimal outflow system we observed complete obstruction and in 15% cases partial dysfunction of lacrimal outflow. 1 month after septoplasty we observed improvement: in most of the cases lacrimal outflow were corrected (96,6%). Only in 4 nasolacrimal ducts with dysfunction we did not observed changes after surgery. We did not find correlation between duration of nasal obstruction and degree of the obstruction of the nasolacrimal duct. There is no correlation between side of nasal deviation and degree of nasolacrimal duct dysfunction.

Conclusion

A high incidence of nasolacrimal obstruction/dysfunction was found in patients with septal deviations, turbinate hypertrophy and no lacrimal symptoms. Septal deviations and turbinate hypertrophy may play a role of predisposing factor in nasolacrimal obstruction. Surgical correction of intranasal structures may prevent progressing symptomatic conditions.

Assessment of the benefits of septal surgery by means of acoustic rhinometry, anterior active rhinomanometry, visual analogical scale and a questionnaire

J. Montserrat Gili¹, J.R. Gras Cabrerizo¹, K. Kolańczak¹, M. Lopez Vilas¹, J. Garcia Lorenzo¹, A. Pujol Olmo¹

¹ ENT, Hospital De La Santa Creu I Sant Pau, Barcelona, Spain

Abstract: ERS-0452

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 09:39

Chair person: N. Keles

Presenting author: J. Montserrat Gili

Objectives

To assess the benefits of septal surgery

Methods

Prospective study of one hundred forty-one patients that underwent septal surgery. Subjective evaluation (visual analogical scale (VAS), questionnaire), acoustic rhinometry (AR), and anterior active rhinomanometry (AARMM) were performed before and 6 months after surgery.

Uni and bilateral measurements of nasal flow in the gradient pressure of 150 Pa and the minimum cross-sectional area (MCA) were chosen as objective measures.

Results

Mean preoperative bilateral VAS was 5,98 (SD:1,38) and postoperative VAS was 1,84 (SD: 1,46). On the postoperative control 60,1% patients were asymptomatic.

According to AARNM bilateral preoperative mean nasal flow was 636,8 cm³/s (SD: 213,5). Postoperative values rose to 788,1 cm³/s (SD: 230,7). Mean preoperative unilateral nasal flow (narrow side) was 212,2 cm³/s (SD: 118,9), postoperative was 378,2 cm³/s (SD: 133,5). Mean preoperative unilateral nasal flow (wide side) was 424,5 cm³/s (SD: 148,5), postoperative was 409,8 cm³/s (SD: 144,0). According to AR mean bilateral preoperative MCA was 0,71 (SD: 0,20), postoperative was 0,86 (SD: 0,28). Mean preoperative nasal MCA (narrow side) was 0,21 (SD: 0,10), postoperative was 0,39 (SD: 0,20). Mean preoperative nasal MCA (wide side) was 0,49 (SD: 0,15), postoperative was 0,47 (SD: 0,15).

Conclusion

Slight median increases were noted in the bilateral objective postoperative assessment. The beneficial effects on the narrow side were associated with a minimal impairment on the wide side..Septal surgery improve subjective postoperative assessment.

Nasal glial heterotopia presenting as sphenochanal polyp

P. Surda¹, J. Hobson¹

¹ ENT department, Warrington Hospital, Warrington, United Kingdom

Abstract: ERS-0453

Objectives

Heterotopic glial tissue isolated to sphenoid sinus presenting as antrochoanal polyp is rare. So far, literature has revealed only few cases. Nasal Glial Heterotopias (NGH) are congenital tumors of the midline frontonasal space arising from a normal neuroectodermal tissue entrapped during the closure of the anterior neuropore. Complete surgical excision is the treatment of choice, which is curative. Incidence of perioperative CSF leak is 66 %.

Methods

We report the case of 55-year-old woman initially presenting with left sided sphenochanal polyp. Histology confirmed glial nature of the mass.

Results

The histology of this polyp was confirmed following immuno-staining as containing heterotopic glial tissue. Postoperative CT scan revealed a defect in the inferomedial aspect of the left temporal fossa communicating with the left sphenoid sinus and positive beta-2 transferrin test. Subsequently, we referred patient for further CSF leak management.

Conclusion

NGH should be the top differential diagnosis if CT/MR imaging reveals a transsphenoidal mass with fibrous stalk. If the diagnosis of NGH is confirmed and there was no evident perioperative CSF leak, nasal endoscopy of sphenoid sinus should be performed during the follow-up. If CSF leak is not clearly present, we can measure beta-trace and beta-2 transferrin present in nasal fluid/blood. If CSF leak is not clear, intrathecal fluorescein is very helpful.

Ultrasonographic examination of nasal and paranasal sinuses pathology, an exotic imaging technique

M. Dumitru¹, I. Anghel¹, A. Costache², A.G. Anghel¹, C. Sarafoleanu³

¹ Coltea Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

² Ultrasound Teaching Center, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

³ Saint Mary Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Abstract: ERS-0454

Session: Imaging

Session Time: 25-06-14, 11:40

Location: Hall G

Chair person: N. Freling

Presenting author: M. Dumitru

Objectives

Ultrasonography is a rather neglected imaging tool by the ENT specialists mainly due to the access to CT and MRI. But facing a growing number of patients with nasal and paranasal sinuses pathology and an increasing pressure on resources along with an urge to cost efficiency, the ENT specialist could turn to ultrasonography for a solution to this deadlock. We present different uses of ultrasonographic examinations in the management of nasal and paranasal sinuses pathology in order to grow the awareness of the scientific community regarding this diagnostic tool.

Methods

We present a series of cases with nasal or paranasal sinuses pathology that benefited from ultrasonography. We describe the ultrasonographic technique adapted to these anatomical landmarks and explain key concepts such as posterior wall echoes.

Results

Ultrasonography can identify inflammatory changes such as sinusitis, cysts and mucoceles lying against the anterior sinus wall. Also benign lesions such as mycetomas and adenomas, and malignant tumors with osteodestructive and infiltrative growth are visible with ultrasonographic examination. Furthermore we illustrate traumatic lesions such as nasal bone fractures and fractures of the anterior wall of the maxillary sinus.

Conclusion

If available and performed by an experienced ENT specialist ultrasonography will bring additional screening details in order to better manage the patients with pathology of the nose and paranasal sinuses. Without the risk of irradiating the patient ultrasonography permits real-time serial examinations of the case.

Endoscopic surgery of rare benign vascular tumors of the nasal cavity

P. Burduk¹, M. Wierzchowska¹, M. Bodnar², B. Grzeskowiak³

¹ Otolaryngology and Laryngological Oncology, Collegium Medicum Nicolaus Copernicus University Antoni Jurasz University Hospital, Bydgoszcz, Poland

² Department of Clinical Pathomorphology, Collegium Medicum Nicolaus Copernicus University, Bydgoszcz, Poland

³ Otolaryngology and Laryngological Oncology, Antoni Jurasz University Hospital, Bydgoszcz, Poland

Abstract: ERS-0455

Session: Skull base surgery 3

Session Time: 26-06-14 10:30

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: P. Burduk

Objectives

Vascular benign tumors of the nasal cavity are very rare. They are characterized by a histological diversity. The objective of the work is to study anatomical and clinical characteristics and therapeutic outcome.

Methods

We performed a retrospective study of five patients (one woman and four men), diagnosed with vascular tumors of the nose and paranasal sinuses. The patients presented with nasal obstruction on one side and occasional epistaxis in four cases. The patients were treated endoscopically between 2010 and 2013 at the Department of Otolaryngology and Laryngological Oncology CM UMK. All patients underwent endonasal endoscopic surgery. CT was performed in all cases. Preoperative angiography with embolization was performed in four cases.

Results

All tumors were benign, with a predominance of the juvenile angiofibroma (3 cases), followed by angioleiomyoma (1 case) and epithelioid haemangioma (1 case). Additionally, the immunohistochemical staining was performed. The follow-up of this series varied from 12 to 36 months (mean, 14 months); only one recurrence was observed in the juvenile angiofibroma group encountered 12 months postoperatively. This recurrence was again treated endoscopically.

Conclusion

Endoscopic treatment is an effective approach for the removal of selected cases of benign vascular tumors of the nasal cavity. Preoperative angiography and embolization are required if the bleeding was observed in initial diagnosis.

Our experience in the external nasal valve surgery

D. Zabolotnyj¹, D. Zinchenko¹, D. Zabolotna¹, V. Gaiduk¹, N. Peleshenko¹

¹ Department of ENT Inflammatory Diseases, Institute of Otolaryngology named after Prof. O.S. Kolomyichenko, Kiev, Ukraine

Abstract: ERS-0456

Session: Septal Surgery and Turbinate Reduction

Session Time: 26-06-14 12:15

Location: Hall F

Chair person: S. Carrie

Presenting author: D. Zabolotnyj

Objectives

The external nasal valve (ENV) is described as the region bounded laterally by the nasal alar and medially by the septum and columella. The aim of this study was to evaluate results of ENV surgery.

Methods

We investigated the ENV pathology of 162 patients: 95 persons with caudal septal deflection (the first group), 42 patients with nasal alar collapse (the second group); 25 patients with combined above mentioned pathology of ENV (the third group).

In the first group we use our own technique: after total resection of a curved caudal part of quadrangular cartilage we shaped a rectangle with rounded edges and a size of 2 x 3 x 10-14 mm. Through the incision of mucosa in the upper bridle we formed a tunnel between the medial crura of the lower lateral cartilage, where we inserted implant. The crushed remains of septal cartilage we inserted between mucoperichondrium layers.

In the second group we performed alar «reinforcement». Two convex arc-shaped fragment sizes 1x 1.5 x 9 mm formed from harvested septal cartilage were inserted in subcutaneous pockets in the nostrils with the subsequent fixation with one seam.

In the third group were used both methods simultaneously.

Results

We assessed the efficacy of ENV correction in one month after surgery. The patients in all groups demonstrated the significant improvement of the nasal breathing and statistically significant increase in cross-sectional area of the ENV.

Conclusion

The proposed method of the ENV correction of is a highly effective, safe and cost effective way to improve nasal breathing.

Comparison of long-term efficacy between intratubinal and extratubinal microdebrider-assisted inferior turbinoplasty in patients with perennial allergic rhinitis

J. Lee¹, J. Byun¹, J. Shin², B. Baek³

¹Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University College of Medicine, Bucheon, Korea

²Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University College of Medicine, Seoul, Korea

³Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University College of Medicine, Cheonan, Korea

Abstract: ERS-0457

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:15

Chair person: S. Carrie

Presenting author: J. Lee

Objectives

Microdebrider-assisted inferior turbinoplasty (MAIT) has become a popular method for relieving symptoms of allergic rhinitis and can be performed intratubinally or extratubinally. The objective of this study was to evaluate and compare the long-term efficacy of these two methods.

Methods

Sixty patients diagnosed with perennial allergic rhinitis were selected. Thirty patients were treated with intratubinal MAIT (Group 1) and 30 were treated with extratubinal MAIT (Group 2). Postoperative changes in nasal obstruction, rhinorrhea, sneezing, nasal itching, and postnasal drip were evaluated 3, 6, and 12 months postoperatively. The cross-sectional area of the second notch and nasal cavity volume were compared at 12 months. The operation time, duration of crust formation, and postoperative bleeding were also compared.

Results

All symptoms improved significantly in both groups at 3, 6, and 12 months. However, when improvement of rhinorrhea, sneezing, and nasal itching was compared, improvement was statistically significant in Group 2 at 12 months. Acoustic rhinometry demonstrated a significant increase in the cross-sectional area of the second notch and nasal cavity volume in both groups, which did not differ significantly between the two groups at 12 months. The operation time and duration of crust formation were longer in Groups 1 and 2, respectively. The incidence of postoperative bleeding was higher in Group 2.

Conclusion

Although both methods showed significant improvement, extratubinal MAIT seemed more effective for long-term relief of allergic symptoms. However, the advantages and disadvantages of each method should be considered before choosing the surgical technique.

A review of the management of nasal polyposis in a tertiary otorhinolaryngology centre

P. Bell¹, N. Wooles¹, R. Adair¹

¹ Otorhinolaryngology, RVH, Belfast, United Kingdom

Abstract: ERS-0458

Session: Epidemiology

Session Time: 25-06-14, 09:48

Location: Hall J

Chair person: R. Harvey

Presenting author: P. Bell

Objectives

Mucocele in the paranasal sinus is an accumulation of mucoid secretion and desquamated epithelium within the sinus with distension of its wall. Patients with huge frontal and/or ethmoidal sinus mucoceles often have orbital symptoms such as visual disturbance, proptosis, diplopia and so on. The purpose of this study was to evaluate the efficacy of the endoscopic marsupialization for the huge frontal and/or ethmoidal sinus mucoceles with orbital symptoms.

Methods

Using a computer aided system data was collected for the period 2012-13 for all Endoscopic Nasal Surgeries (ENS) for nasal polyposis. In addition data for 2000 ENS was also obtained to determine an incidence rate of inverted papilloma over the last 15 years.

Results

In our review of practice specimens where sent for pathological analysis in 48% of patients. Nasal polyposis was bilateral in 88% of cases. Of those that where sent from unilateral cases 60% revealed a pathological diagnosis of either transitional cell carcinoma or squamous metaplasia. Of those that where sent from bilateral cases 100% revealed simple nasal polyposis. No polyps where sent for microbiological investigation or typing. In addition an incidence rate of 0.3% was obtained for inverted papilloma detection in patients undergoing ENS in our centre over the last 15 years.

Conclusion

In our centre there is a very low incidence of inverted papilloma in patients undergoing ENS. There is limited evidence for the cost benefits of sending specimens on all cases of nasal polyposis. We would recommend that histological specimens are sent only in high risk patients i.e. unilateral or those with evidence of boney erosion on CT.

Nasal root surgery: a review of eight cases of a novel surgical technique

P. Bell¹, G. McKee¹

¹ Otorhinolaryngology, RVH, Belfast, United Kingdom

Abstract: ERS-0459

Session: Septal Surgery and Turbinate Reduction

Session Time: 26-06-14 12:10

Location: Hall F

Chair person: S. Carrie

Presenting author: P. Bell

Objectives

Nasal obstruction is a common complaint and is increasingly common in patients who are unable to undergo surgical correction for various reasons. We describe a novel local anesthetic surgical technique to improve nasal airflow in patients unwilling or unsuitable for surgical correction under general anesthesia. This involves surgical removal of tissue at the root of the nose leading to elevation of the nasal tip and a subsequent improvement in laminar nasal airflow.

Methods

We reviewed all patients undergoing nasal root surgery in our practice. Eight patients were identified between 2006 and 2013. Using a computer aided system data was collected for the period. Four patients were selected for the procedure under local anesthesia due to age, two because of high BMI and two with large septal perforations who did not wish to have reconstructive surgery of the septum.

Results

Seven out of the eight patients operated on had a significant improvement in their nasal blockage symptoms with one only obtaining minimal improvement. One patient who obtained significant improvement in their symptoms after their first surgery required revision surgery after 3 years with a successful result subsequently. All eight patients achieved an acceptable cosmetic result with one developing a superficial post operative skin infection which settled with oral antibiotics.

Conclusion

Nasal root surgery is a quick and potentially acceptable alternative for patients unable or unwilling to undergo septal reconstructive surgery for improvement in nasal blockage.

Septoplasty: a review of the pathophysiology of septal deviation

P. Bell¹, G. McKee¹

¹ Otorhinolaryngology, RVH, Belfast, United Kingdom

Abstract: ERS-0460

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:35

Chair person: S. Carrie

Presenting author: P. Bell

Objectives

Septoplasty has long been performed for the correction of a septal deviation. The mechanism leading to a septal deviation is usually secondary to injury however the pathophysiology is poorly described. Simple observation during septoplasty surgery revealed thickened tissue is often present on the concave aspect of the deflection after lifting a mucoperichondrial flap. We suspect that this thickened tissue anchors and distorts the septum leading to nasal obstruction.

Methods

Ten patients undergoing septal surgery for correction of a complex septal deviation were selected. None of the patients selected had undergone any previous nasal surgery. During surgery a selection of specimens were obtained of the thickened tissue noted and sent for detailed pathological examination.

Results

Histological examination of the tissue specimens returned showing coarse, extensively hyalinised, fibrovascular connective tissue consistent with simple scar tissue. All ten patients obtained acceptable results to date with no complications noted.

Conclusion

Scar tissue is frequently found on the concave aspect of a septal deviation and between fracture lines in the cartilage. We propose that during injury micro-haematomas occur which subsequently organizes forming a dense scar band. This causes contraction and bending of the cartilaginous septum. In order to correct a deviated septum and maintain a longterm midline alignment this tissue must be fully excised.

The tip-lift nasal dressing

P. Bell¹, G. McKee¹

¹ Otorhinolaryngology, RVH, Belfast, United Kingdom

Abstract: ERS-0461

Objectives

Nasal dilator strips (NDS) are used to ease the burden of breathing. The nasal strips are used as a mechanical means of reducing nasal airflow resistance. There are a selection of nasal dilator strips on the market at present which are thought to work by dilating the nasal airway or by stiffening the nasal wall and thereby preventing collapse at higher airflows. There are a selection of patients however for which there is no significant nasal valve collapse and these strips not only fail to improve but can worsen their symptoms. The authors have developed a new nasal dressing to address this.

Methods

The Tip-Lift dressing was trialled on a selection of patients with significant nasal blockage requiring surgery. Patients completed a modified NOSE questionnaire pre and post application of the nasal dressing.

Results

Ninety per cent of patients improved with the nasal dressing with a 65% improvement in overall symptoms in one patient. Snoring improved by 44%, ease of breathing by 40% and nasal congestion by 22% overall. Improvements in the patients sense of smell and overall health were minimally affected. Ninety per cent of patients found the dressing to be cosmetically acceptable for short term use.

Conclusion

The Tip-Lift Nasal Dressing is a cheap and easy to apply nasal dressing which has been shown to improve snoring, nasal blockage and ease of breathing in patients with significant nasal blockage.

The relationship between admission serum urea levels and clinical outcome in patients with epistaxis

S. Fishpool¹, K. Foley², S. Bull³, H. Whittet³

¹ ENT, University Hospital of Wales, Cardiff, United Kingdom

² Radiology, University Hospital of Wales, Cardiff, United Kingdom

³ ENT, Abertawe Bro Morgannwg University Health Board, Swansea, United Kingdom

Abstract: ERS-0462

Session: Epistaxis

Session Time: 26-06-14 09:39

Location: Hall J

Chair person: T. Van Zele

Presenting author: S. Fishpool

Objectives

To establish whether, for the patient presenting with epistaxis, there is a correlation between the serum urea taken on initial attendance at the A&E department and clinical outcome.

Methods

A review of all the patients attending a single Teaching Hospital A&E department between 1st January 2010 and 1st February 2011 with a diagnosis of epistaxis. They were analysed for their admission serum urea and creatinine levels and then grouped according to clinical outcome.

Results

278 patients (145 males, 133 females) were identified. 82 of these required hospital admission. 11 required blood transfusion and 5 required surgical arrest of the haemorrhage. None died. The serum urea and creatinine was checked in 119 of the 278 patients identified. The mean serum urea was significantly higher in those admitted for further management of their epistaxis compared to those who were discharged from A&E (9.35 v 6.74, $p=0.003$). There was no significant difference in mean serum urea between those who were transfused or not, or between those who went to theatre or did not.

Conclusion

A raised serum urea does correlate with a more severe clinical outcome in epistaxis (i.e. hospital admission).

The attempt of nasal topical anti-cholinergic spray in patients with allergic rhinitis

M. Ohki¹, M. Okamoto², K. Ohashi², T. Okamoto², H. Takano³

¹ Dept.of Otorhinolaryngology, Kitasato University Medical Center, Saitama, Japan

² Dept.of Otorhinolaryngology, Kitasato University School of Medicine, Kanagawa, Japan

³ Therapeutic System Research Center, Doshisha University, Kyoto, Japan

Abstract: ERS-0463

Objectives

Topical steroid therapy is popular in treatment for allergic rhinitis. However, some patients complain severe rhinorrhea or sneezing. In these cases, anti-histamine is usually prescribed in spite of impaired performance. On the other hand the topical anti cholinergic spray has been good for decrease the sneezing or rhinorrhea. At present, these anti cholinergic medicines are not permitted to use in Japan because chlorofluorocarbon was included in these spray. Recently, soft mist type spray including hydrofluoroalkane was invented for the treatment of COPD. This device is made of one shot type and has a possibility to use in nasal cavity. Then, we tried to use this anti cholinergic spray in patients with allergic rhinitis and discuss the usefulness of this device.

Methods

The patients with perennial allergic patients were recruited in this study. The patients were ordered to inhale tiotropium spray 1 push in each nostril twice a day. The pillow type nose piece, using for CPAP therapy in patients with sleep apnea is fitted to this device. The nasal symptom and the quantity of nasal discharge were compared between before and after treatment.

Results

The results showed that nasal discharge was statistically decreased with topical therapy.

Conclusion

In conclusion, the new device of anti-cholinergic spray is useful for allergic patients complaining of sneezing or rhinorrhea.

Nasal hemorrhage and imaging

Y. Kase¹, A. Kamijo¹, K. Sugizaki¹

¹ Otolaryngology, Saitama Medical University, Saitama, Japan

Abstract: ERS-0464

Session: Imaging

Session Time: 25-06-14, 11:45

Location: Hall G

Chair person: N. Freling

Presenting author: Y. Kase

Objectives

Some lesions in naso- paranasal area, characteristic findings are shown on imaging. Careful evaluation of image often leads proper diagnosis. In this study several case with nasal hemorage are shown, which imaging study was evaluated how contributed to make correct diagnosis.

Methods

CT, MRI, or conventional angiography from 8 cases with nasal hemorage were shown and evaluated. From these characteristic findings usefulness of imaging was discussed.

Results

1. Malignant melanoma: Heavy metals like melanin is contained. These nature influence findings of MRI, that is, T1W:moderate high intensity, T2W:low intensity. 2. "Hematoma": Recurrent hemorage and organization of hematoma produce specific findings, that is, notwithstanding extensive bone destruction. But paranasal mucosa is well conserved. 3. Fungus infection: Like melanoma, this lesion also include heavy metals and sinusitis is often accompanied. High density area is included in CT, and both T1W and T2W show low intensity area. 4. Angiofibroma: Generally this tumor is highly vascular, and flow void in lesions is characteristic. But in large tumor, several feeding vessels including internal carotid artery supply the tumor, so we should pay special attention on preoperative embolization. 5. Idiopathic nasal hemorage: Intensity on MRI is variously changeable depending on the state of Hb. 6. Papilloma: Benign expansive nature and accompanied sinusitis are characteristic. Nasal hemorage is a sign indicating malignant change. 7: Squamous cell carcinoma: Maxillary anterior wall destruction and nasal hemorage are the important set of sign for this tumor.

Conclusion

With careful interpretation on imaging for nasal hemorrhage, characteristic findings of lesions must lead to the proper diagnosis.

ANALYSIS OF LATERAL PROFILE VIEWS USING THE PICTURE ARCHIVING AND COMMUNICATIONS SYSTEM

J. LEE¹,

¹ OTOLARYNGOLOGY, WONKWANG UNIVERSITY HOSPITAL, IKSAN, KOREA

Abstract: ERS-0465

Objectives

The picture archiving and communications system (PACS) is a computer network system that is dedicated to support digital radiography. This programme allows conversion of digital radiographs into images that can be centrally stored within an electronic database. The author describe a technique that a lateral profile view for the new dorsal line of rhinoplasty can be analysed using PACS.

Methods

At the time photographic images are obtained using a digital camera, two important factors should be taken into consideration. One is that the head must be exactly horizontal in the lateral view; the other is that a paper ruler should be used for accurate calibration on PACS. Photographic imaging of the lateral view should be captured on PACS. The lateral profile view is analysed by using the calibration system of PACS.

Results

A paper ruler in the lateral view is used for the calibration. For example, after you measure 10 mm on the paper ruler by using linear measuring tool, you enter 10 mm into a blank box ("Input real length") of the calibration tool. After finishing the calibration, you select the linear measuring tool again. Thus, you can automatically measure the planned dorsal profile using the digital ruler, and also the amount of augmentation or reduction depending on your surgical planning using the caliper.

Conclusion

PACS allows rapid electronic linear and caliper measuring tools. When making a preoperative real estimation of the planned dorsal profile, these tools may be used in measuring a real estimate of augmentation or reduction for rhinoplasty.

A case of congenital heminasal hypoplasia with an intranasal cyst: an extremely rare occurrence

J. Lee¹

¹ Otolaryngology, Wonkwang University Hospital, Iksan, Korea

Abstract: ERS-0466

Objectives

Embryological development of the nose occurs between the third and eighth week after fertilization. Congenital heminasal hypoplasia is an extremely rare defect of embryogenesis. Nasal hypoplasias encompass various conditions such as underdeveloped nasal bone and cartilaginous skeleton, lack of tip projection, and subtotal nostril atresia. A congenital dacryocystocele usually presents as an enlarged, blue, cystic, lacrimal sac at birth. The lacrimal drainage system is obstructed both proximally at the level of the common canaliculus and distally at the level of the valve of Hasner. In the present report, the author presents an extremely rare a case of congenital heminasal hypoplasia with an associated dacryocystocele.

Results

In the present report, the author presents an extremely rare a case of congenital heminasal hypoplasia with an associated dacryocystocele.

A case of fungal ball in the sphenothmoidal recess

J. Lee¹

¹ Otorhinolaryngology, Wonkwang University Hospital, Iksan, Korea

Abstract: ERS-0467

Objectives

Fungal sinusitis can be either invasive or non-invasive. A sinonasal fungal ball, which normally occurs in immunocompetent and nonatopic subjects, is the most frequently occurring non-invasive fungal sinusitis. It usually involves only one sinus, normally the maxillary sinus, followed by the sphenoid, ethmoid, and frontal sinuses.

Results

Herein, we report a case of a fungal ball in the sphenothmoidal recess, which is an unusual occurrence site. To the best of our knowledge, such a case has not been reported in literature.

Mesenchymal stem cells modulate allergic airway inflammation by inducing regulatory T cells

K. Cho¹, M. Park², H. Park¹, H. Park³, S. Hong¹, H. Yu², H. Roh⁴

¹ Department of Otorhinolaryngology, Pusan National University Hospital, Busan, Korea

² Department of Parasitology, Pusan National University School of Medicine, Yangsan, Korea

³ Department of Internal Medicine, Pusan National University Hospital, Busan, Korea

⁴ Department of Otorhinolaryngology, Pusan National University School of Medicine, Yangsan, Korea

Abstract: ERS-0468

Session: Rhinitis Basic

Session Time: 23-06-14, 11:51

Location: Hall J

Chair person: L. Kalogjera

Presenting author: K. Cho

Objectives

The purpose of this study was to investigate whether regulatory T-cells (Treg cells) induction is a potential mechanism of immunomodulatory effects of MSCs in allergic airway disease and how these induced Treg cells orchestrate allergic inflammation.

Methods

C57BL/6 mice were sensitized to OVA by intraperitoneal injection. To evaluate the effect of MSCs on allergic airway disease, adipose tissue-derived MSCs (ASCs) were isolated and injected intravenously before OVA challenge. We evaluated the nasal symptoms, nasal and lung histology, airway hyperresponsiveness (AHR), the proportion of eosinophils in bronchoalveolar lavage fluid (BALF), serum total and OVA-specific antibody, cytokine profile of BALF and lung draining lymph nodes (LLN), gene expression of IDO and TGF- β in lung tissue, and T cell population of LLN.

Results

ASCs significantly reduced allergic nasal symptoms and inhibited eosinophilic inflammation in the nasal mucosa and lung. AHR, total immune cell and eosinophils in the BALF, and mucus production were significantly reduced after ASCs administration. ASCs significantly decreased the serum total and allergen-specific IgE and IgG1 level. ASCs significantly inhibited Th2 cytokines (IL-4, IL-5, and IL-13) and enhanced Th1 cytokine (IFN- γ) and regulatory cytokines (IL-10 and TGF- β) in the BALF and LLN. In addition, gene expression levels of IDO and TGF- β in lung tissue were significantly increased after ASCs administration. Interestingly, this up-regulation was accompanied by increased Treg cells populations.

Conclusion

MSCs can inhibit allergic airway inflammation by inducing Treg cells in the LLN. Accumulated Treg cells might be involved in the down-regulation of Th2 cytokines and up-regulation of Th1 cytokines production.

Patient's experience of antral irrigation in acute symptoms of rhinosinusitis

P. Virkkula¹, K. Blomgren¹, M. Ylitalo¹, M. Hytönen¹

¹ ENT Hospital, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-0469

Session: Acute Rhinosinusitis

Time: 25-06-14, 15:05

Location: Hall J

Chair person: G. Adriaensen

Presenting author: P. Virkkula

Objectives

Many doctors have considered antral irrigation too unpleasant, even too painful to be used as a diagnostic and/or treatment tool in rhinosinusitis. However, the experience of the patient of this procedure has been very seldom evaluated.

The aim of this study was to evaluate patients' experience of discomfort and pain during antral irrigation. They also compared antral irrigation to other common medical procedures. Additionally, we asked the patients to assess their facial sensation before and soon after the procedure.

Methods

Patients and doctors completed independently their questionnaires and patients' answers were sealed until the end of data collection. Physicians with wide range of professional experience treated 121 patients in a university clinic, a private hospital and at a communal health center.

Results

Patients experienced pain in antral irrigation as mild (mean and median VAS<3). Patient's experience of pain during antral irrigation was closely comparable to pain in dental calculus scaling. Doctor's evaluation of pain did not differ from patient's own assessment. Professional experience did not effect on patient's experience of pain. Pain assessed before antral irrigation decreased quickly after the procedure ($p<0.001$).

Conclusion

Pain during antral irrigation is usually mild. The procedure seems to relieve facial pain quickly. However, this study evaluated only patient experience of the procedure. The role of antral irrigation in treatment of rhinosinusitis will need further investigation.

Impact of sinus surgery on pseudomonal airway colonization, bronchiolitis obliterans syndrome and survival in cystic fibrosis lung transplant recipients

D. Vital¹, M. Hofer², C. Benden², A. Boehler², M.B. Soyka¹, D. Holzmann¹

¹ ORL Head & Neck Surgery, University Hospital Zurich, Zurich, Switzerland

² Pulmonary Medicine, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-0470

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 09:39

Location: Hall J

Chair person: A. Lane

Presenting author: D. Vital

Objectives

Chronic rhinosinusitis is hypothesized to play a major role in lung transplant recipients with end-stage cystic fibrosis (CF) lung disease. Pseudomonal airway colonization (PAC) is common in CF and paranasal sinuses are considered to accumulate a significant bacterial load, potentially leading to lung allograft infection with ensuing complications such as bronchiolitis obliterans syndrome (BOS). We therefore investigated the influence of post-transplant sinus surgery and daily nasal douching on PAC after lung transplantation and the influence of PAC on survival and BOS.

Methods

CF patients transplanted at our centre between November 1992 and December 2009 were included. Clinical and microbiological data before and after lung transplantation were analysed. Survival and BOS were compared for patients with and without PAC.

Results

Fifty-six percent of the patients with pretransplant PAC had persistent PAC after lung transplantation. Upper and lower airway PAC are related. Patients without PAC after transplantation showed a significantly better survival rate. BOS was less frequent with a later onset.

Conclusion

Sinus surgery and daily nasal douching were able to reduce PAC in lung transplant recipients with CF. Absence of PAC after transplantation had a positive impact on survival and the development of BOS.

Nasal polyposis in lung transplant recipients with cystic fibrosis: prevalence, risk factors and implications on outcome

D. Vital¹, M. Hofer², A. Boehler², M.B. Soyka¹, D. Holzmann¹

¹ ORL Head & Neck Surgery, University Hospital Zurich, Zurich, Switzerland

² Pulmonary Medicine, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-0471

Session: United airways

Session Time: 25-06-14, 16:42

Location: Hall E

Chair person: P. Howarth

Presenting author: D. Vital

Objectives

Chronic rhinosinusitis with nasal polyposis (NP) is common in cystic fibrosis (CF). There are many unanswered questions regarding the prevalence of NP in CF lung transplant recipients such as its risk factors and implications for the outcome after lung transplantation (LTx).

Methods

CF patients with LTx and posttransplant sinus surgery between November 1992 and December 2009 were included and regularly investigated with nasal endoscopy and microbiological analysis of sinus aspirations. NP status was determined at time of sinus surgery and during follow-up. The relationship of NP to patient's characteristics, pseudomonas colonisation of the sinuses and the lungs, corticosteroid use, mutation of the CFTR gene, survival and incidence of bronchiolitis obliterans syndrome (BOS) was studied.

Results

NP were found in 19% of the patients at time of transplantation and the prevalence increases thereafter up to 48%. At time of transplantation, none of the factors analysed was related to NP status. For posttransplantation NP, multivariate analysis demonstrated that chronic infection with *Pseudomonas aeruginosa* was the only significant risk factor for the development of NP. The posttransplant survival times and the incidence of BOS did not significantly differ between patients with or without NP.

Conclusion

CF-related NP occurs in a relevant fraction of patients at LTx and increases thereafter. A specific effect on post-transplant outcome could not be confirmed. Chronic sinonasal infection with *Pseudomonas aeruginosa* seems to be the only significant risk factor for NP after LTx.

Using the UV laser-induced spectrofluorimetry for diagnosing allergic rhinitis

M. Khorolskaia¹, V. Salmin², S. Vakhruchev¹, A. Salmina³, D. Skomoroha²

¹ ENT-disease, Krasnoyarsk State Medical University prof. V.F. Voyno-Yasenetsky Health Ministry Russian Federation, Krasnoyarsk, Russia

² Medical and Biological Physics, Krasnoyarsk State Medical University prof. V.F. Voyno-Yasenetsky Health Ministry Russian Federation, Krasnoyarsk, Russia

³ Biological Chemistry, Krasnoyarsk State Medical University prof. V.F. Voyno-Yasenetsky Health Ministry Russian Federation, Krasnoyarsk, Russia

Abstract: ERS-0472

Session: Rhinitis clinical

Session Time: 25-06-14, 15:20

Location: Hall E

Chair person: A. Swift

Presenting author: M. Khorolskaia

Objectives

New method of lifetime rapid diagnosis of allergic rhinitis is based on the autofluorescence of endogenous cells (eosinophils, neutrophils and others) and tissues when they are irradiated with ultraviolet light. Objective: Increase the effectiveness of rapid diagnosis of allergic rhinitis using laser -induced spectrofluorimetry.

Methods

In a prospective, controlled, open clinical study examined 26 people with allergic rhinitis (including 12 people with perennial allergic rhinitis and 14 people with seasonal allergic rhinitis), 21 people with non-allergic rhinitis. The control group comprised 21 healthy volunteers. For fluorescence studies used an experimental nasal automated laser spectrofluorimeter with excitation UV 337 nm.

Results

Allergic rhinitis most significant differences were observed in the 440-450 nm region corresponding to a peak luminescence associated with the protein of pyridine nucleotides, and in the 550-560 nm. We used the values of the fluorescence intensity at these wavelengths to calculate the spectral criterion F. In calculating the spectral F-test revealed the following values: in allergic perennial rhinitis $F = 2,275 \pm 0,138$, seasonal allergic rhinitis $F = 1,859 \pm 0,135$, nonallergic rhinitis $F = 1,960 \pm 0,246$, in the control group $F = 1,868 \pm 0,214$.

Conclusion

According to the study of laser spectrofluorimetry in healthy people and people with allergic rhinitis found differences in the fluorescence spectra of normal and pathological nasal mucosa. Laser spectrofluorimetry is a promising method for in vivo rapid diagnosis of allergic rhinitis without staining and biopsy. Further development of this method can be used to monitor the treatment of allergic rhinitis.

Expanded endoscopic endonasal surgery for advanced stage juvenile angiofibromas: a retrospective multi-center study

C. Langdon¹, P. Herman², B. Verillaud², R. Carrau³, D. Prevedello³, P. Nicolai⁴, A. Schreiber⁴, P. Battaglia⁵, M. Bernal-Sprekelsen⁶

¹ Hospital Clínic, Department of Otolaryngology, Barcelona, Spain

² Hôpital Lariboisière, Head and Neck Surgery Department, Paris, France

³ Wexner Medical Center The Ohio State University, Department of Otolaryngology-Head and Neck Surgery, Columbus Ohio, USA

⁴ University of Brescia, Department of Otorhinolaryngology, Brescia, Italy

⁵ University of Insubria, Department of Otorhinolaryngology, Insubria, Italy

⁶ Hospital Clínic, Department of Otorhinolaryngology, Barcelona, Spain

Abstract: ERS-0473

Session: Benign tumours

Session Time: 25-06-14, 11:24

Location: Hall H

Chair person: R. Harvey

Presenting author: C. Langdon

Objectives

Endoscopic resection has become an established surgical option for most juvenile nasopharyngeal angiofibromas (JNA). Surgical management of JNA with intracranial extension remains challenging. This retrospective multicenter study reviews a series of patients with advanced stage JNA treated via endonasal/endoscopic approach.

Methods

The experience of four academic tertiary or quaternary care Otolaryngology-Head and Neck Surgery departments were included. Medical records of all patients operated for juvenile nasopharyngeal angiofibromas staged as Radkowski stage IIIA or IIIB were reviewed. Main outcome measures included intraoperative blood loss, length of hospital stay, complication rate, and rate of persistence or recurrence.

Results

A total of 64 male patients with stages IIIA (71.9%) and IIIB (28.1%) were included. The mean age was 16.2 years and preoperative embolization was performed in 59 patients (92.1%). Mean hospital stay was 5.7 days (range 2-16; SD 3.8) for 38 cases. The mean blood loss in 37 patients for which the data was available was 1441.8 mL (median= 700ml; range 100-11000ml; SD 2320.2). The mean follow-up for 45 out of 64 patients was 37.6 months (range 2-196 months; SD 42.4). Patients with residual disease (n=13 or 20%) are stable as assessed with sequential MRIs. At last follow-up, all patients were alive and those with residual tissue displayed neither symptoms nor imaging signs of regrowth.

Conclusion

This retrospective multicenter study supports the notion that expanded endonasal endoscopic approaches for advanced staged JNA (Radkowski IIIA and IIIB) are a feasible option associated with good long-term control of the disease.

Endoscopic endonasal transpterygoid transmaxillary approach to the infratemporal and upper parapharyngeal tumors: indications and outcomes

M. Turri-Zanoni¹, P. Battaglia¹, I. Dallan¹, S. Gallo¹, E. Sica¹, P. Castelnuovo¹

¹ Dept of Otorhinolaryngology - Head & Neck Surgery, University of Insubria, Varese, Italy

Abstract: ERS-0474

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14, 09:47

Chair person: R. Weber

Presenting author: M. Turri-Zanon

Objectives

The infratemporal fossa (ITF) and upper parapharyngeal spaces (UPS) are challenging areas to manage. The aims of this study are to describe the endoscopic transnasal approach to the ITF and UPS, and to analyze the indications and outcomes of this surgical technique in the management of the tumors localized in this region.

Methods

Retrospective review of patients with benign and malignant tumors arising in or extending to the ITF and UPS, treated from 2002 to 2012 at a single Institute. The tumors were surgically resected using an endoscopic endonasal transpterygoid transmaxillary approach.

Results

Thirty-seven consecutive patients with benign tumors (20 juvenile nasopharyngeal angiofibromas, 2 extracranial trigeminal Schwannomas, 2 meningiomas, one cavernous hemangioma) and non-metastatic malignant tumors (2 adenoid-cystic carcinoma, one mucoepidermoid carcinoma, one squamous-cell carcinoma, one adenocarcinoma, one recurrence of chondrosarcoma, and 6 recurrences of undifferentiated carcinoma of nasopharyngeal type) were treated with curative intent. A gross-total resection was achieved in 35/37 patients. Major complications were observed in one case (intra-operative internal carotid artery blowout). Post-operatively, 8 patients received some form of adjuvant treatment. Mean follow-up was 30 months for malignancies and 60 months for benign tumors. All patients are now alive without recurrences. Stable intracranial persistence of disease was reported in two cases (one meningioma and one adenoid-cystic carcinoma).

Conclusion

The purely endoscopic endonasal technique may provide a minimally-invasive and safe approach to radically resect selected tumors involving the ITF and UPS. Larger case series and longer follow-up are needed to validate the reproducibility and efficacy of this technique.

Rhinitis and chronic rhinosinusitis with or without nasal polyps in adult asthma. comorbidity with asthma in relation to its severity, and aspirin sensitivity (iris-asma study)

J. Castillo¹, V. Plaza², G. Rodrigo³, B. Juliá⁴, C. Picado⁵, J. Mullol⁶

¹ Respiratory Medicine, Hospital Universitario Quirón Dexeus, Barcelona, Spain

² Respiratory Medicine, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain

³ Respiratory Medicine, Hospital de las Fuerzas Armadas, Montevideo, Uruguay

⁴ Departamento Médico, MSD- España, Madrid, Spain

⁵ Respiratory Medicine, Hospital Clínic, Barcelona, Spain

⁶ IDIBAPS & Rhinology. ENT Department, Hospital Clínic, Barcelona, Spain

Abstract: ERS-0475

Session: United airways

Session Time: 25-06-14, 16:24

Location: Hall E

Chair person: P. Howart

Presenting author: J. Castillo

Objectives

To assess the frequency of allergic (AR) and non-allergic (NAR) rhinitis or chronic rhinosinusitis without (CRSsNP) or with (CRSwNP) nasal polyps, and aspirin sensitivity (AIA) in a cohort of asthmatics according to severity.

Methods

Asthmatics (N=492), age $45 \pm (15)$ yo, female 70.5%, recruited according to GINA (17.3% intermittent; 82.7% persistent (24.6% mild, 31.4% moderate, 26.7% severe)) in a prospective study by pneumonologists and ENT specialists. Patients were evaluated according to ARIA and EPOS, and Asthma Control Test (ACT). Aspirin sensitivity by clinical history.

Results

The frequencies were: 14.2% without sinonasal disease, 49.6% rhinitis (37.0% AR; 12.6% NAR) and 36.2% CRS (16.7% CRSsNP; 19.5% CRSwNP). Most AR (78%) and NAR (84%) were associated with intermittent and mild-moderate asthma. While CRSsNP was similarly frequent, CRSwNP was associated with severe asthma (35%), mainly in non-atopic (CRSwNP 44%, OR:3.4, $p < 0.001$). Poor ACT correlated ($r = 0.249$; $p = 0.034$) with high sinus CT score in CRSwNP.

15% (72/473) of asthmatics reported AIA, more in relation with asthma severity (4.2% intermittent, OR:1; 23.6% mild, OR: 4.3; 29.2% moderate, OR: 4.3; and 43.1% severe asthma, OR:7.8, $p < 0.005$), CRSwNP was also associated with AIA (38.9%, OR: 9.05, $p < 0.001$), showing a higher CT score ($p < 0.03$) than aspirin tolerant asthmatics.

Conclusion

1) Almost 9 out of 10 asthma patients have rhinitis or CRS; 2) Mild-moderate asthma is associated with rhinitis; 3) Severe asthma is associated with CRS with nasal polyps, most in non-atopic and AIA patients; 4) High sinus occupancy in nasal polyps was associated with a poor asthma control.

Epithelial-to-mesenchymal transition in chronic rhinosinusitis with nasal polyps

M. Könnecke¹, M. Burmeister¹, R. Pries¹, R. Böske¹, K.L. Bruchhage¹, L. Klimek², B. Wollenberg²

¹ Department of Otorhinolaryngology, University of Luebeck, Luebeck, Germany

² Department of Otorhinolaryngology, Center for Rhinology and Allergology Wiesbaden, Luebeck, Germany

Abstract: ERS-0476

Session: CRS Basic 3

Session Time: 24-06-14, 16:10

Location: Hall E

Chair person: S. Vlaminc

Presenting author: M. Könnecke

Objectives

Chronic rhinosinusitis with nasal polyps (CRSwNP) is considered a subgroup of chronic rhinosinusitis, a chronic inflammatory condition of the nasal and paranasal sinuses and is characterized by grape-like structures in the upper nasal cavity. A typical response to this chronic inflammation is the tissue remodeling, wherein the epithelial-to-mesenchymal transition (EMT) is a critical mechanism. Whether EMT occurs in nasal polyps of CRS patients remained unclear.

Methods

mRNA and protein expression profiles of EMT markers in stimulated human nasal epithelial cells (NEC) from nasal polyps and nasal polyp tissues were examined by microarray analysis, quantitative real-time PCR (qPCR), Western hybridization and immunofluorescence (IF).

Results

Nasal polyps tissue analysis indicated evidence of EMT in nasal polyps. TGF- β 1 and EGF treatment of NEC showed significant increase of EMT related mesenchymal markers (N-cadherin, Snail, Slug, Twist and Goosecoid) and down-regulation of the epithelial marker E-cadherin.

Conclusion

Our results demonstrated that EMT takes place in nasal polyps and human nasal epithelial cells. Therefore, we implicate the epithelial-to-mesenchymal transition in the pathogenesis of nasal polyps.

Prevalence of nasal polyps in northern Portugal - a cadaver endoscopic study

R. Cerejeira¹, R. Veloso-Teles², N. Lousan¹, C.P. Moura³

¹ Department of Otolaryngology, Centro Hospitalar do Tamega e Sousa, Penafiel, Portugal

² Department of Otolaryngology, Centro Hospitalar do Alto Ave, Guimaraes, Portugal

³ Department of Genetics, Faculty of Medicine - University of Porto, Porto, Portugal

Abstract: ERS-0477

Session: Epidemiology

Session Time: 25-06-14, 10:24

Location: Hall J

Chair person: R. Harvey

Presenting author: R. Cerejeira

Objectives

Epidemiologic studies on Chronic Rhinosinusitis with nasal polyps are scarce and mostly based on questionnaires. Data obtained with such approach can be unreliable, thus endoscopy is a prerequisite for an accurate estimate of the prevalence of nasal polyps. The objective of this study was to establish the frequency of nasal polyps in Northern Portugal, using nasal endoscopy in cadavers from a District Hospital.

Methods

The cadaver specimens deposited in the mortuary room of the hospital, every early morning in week days, from December 2012 to August 2013, were submitted to a systematic endoscopic examination of both nasal cavities, using a 25°, 2.7 mm rigid endoscope from R. Wolf®. A review of the medical record of the cadavers was done, to search for cause of death, co-morbidities and past ENT history.

Results

A group of 200 consecutive caucasian cadaver specimens were analyzed, 83 women and 117 men, with a mean age of death of 77.23 ± 12.29 years (range 34-97). The prevalence of nasal polyps was 5.5% (95% confidence interval, 2.34-8.66). No statistically significant association between the studied clinical variables (sex, allergic rhinitis, lower respiratory diseases and smoking) and the presence of nasal polyps was identified.

Conclusion

This study provides the first endoscopic based epidemiologic data on nasal polyps in Portugal, showing a prevalence for old age group in accordance with previous studies in Europe.

Application of bacteriotherapy in human rhinopharynx

M. Santagati¹, M. Scillato¹, V. Damiani², I. La Mantia³, S. Stefani¹

¹ Department of Bio-Medical Science sect. Microbiology, University of Catania, Catania, Italy

² ENT Department, San Giovanni Addolorata Hospital, Rome, Italy

³ ENT Unit, University of Catania, Catania, Italy

Abstract: ERS-0478

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:20

Location: Hall J

Chair person: C. Hopkins

Presenting author: M. Santagati

Objectives

We characterized one strain of *S.salivarius* 24SMB, isolated from healthy children, as a potential oral probiotic due to the following characteristics: i) safety for the host, ii) potent capacity of adhesion to HEp-2 cells and iii) excellent inhibitory activity against *S.pneumonia* and *S.pyogenes* by bacteriocin production.

Aim of the study was to evaluate safety of *S.salivarius* 24SMB and its ability to colonize and persist in the upper respiratory tract when administered as nasal spray formulation.

Methods

The study enrolled 17 patients: the formulation was given for 3 days after azithromycin treatment and the presence of *S. salivarius* 24 SMB was determined after 2/4/ 24 h, and 7 days from nasal spray administration plating nasal swabs for each time onto MSA.

Results

Our results demonstrated: i) the absence of adverse effects for all subjects enrolled, and ii) the capability of *S. salivarius* 24 SMB to persist in rhinopharynx tissue in 50% of subjects after 6 days from the last dose of the formulation (10⁵ CFU/mL). The presence of our strain was determined by molecular identification, antagonism tests to evaluate BLIS production and RAPD-PCR to distinguish *S. salivarius* 24 SMB's genotype from other *S.salivarius* strains. The nasal spray was well tolerated in all patients.

Conclusion

All these characteristics make this strain suitable for use in bacteriotherapy. This strain is currently under clinical evaluation in a randomized double blind trial for the prevention and/or treatment of chronic otitis media in pediatric age patients.

Effect of endoscopic sinus surgery for chronic rhinosinusitis in lung transplant recipients: a single institutional experience

K. Uraguchi¹, S. Kariya¹, M. Okano¹, T. Haruna¹, A. Torigoe¹, Y. Noyama¹, K. Nishizaki¹

¹ Otolaryngology-Head and Neck Surgery, Okayama University Hospital, Okayama, Japan

Abstract: ERS-0479

Session: United airways

Session Time: 25-06-14, 17:00

Location: Hall E

Chair person: P. Howarth

Presenting author: K. Uraguchi

Objectives

Chronic rhinosinusitis is a common upper respiratory tract condition among patients with cystic fibrosis and diffuse panbronchiolitis. Lung transplantation is a therapeutic option for patients with chronic respiratory failure due to interstitial pneumonia, primary pulmonary hypertension, obliterating bronchiolitis, cystic fibrosis, and diffuse panbronchiolitis. Infection after lung transplantation is one of the most important causes of morbidity and mortality in lung transplant recipients. Chronic rhinosinusitis with postnasal drip may be one of the crucial problems impairing outcome after lung transplantation. The frequency of lung transplantation has steadily increased. Careful management of chronic rhinosinusitis is essential and may improve the clinical outcome for immunosuppressed patients. In this study, we examined the role of endoscopic sinus surgery in lung transplantation.

Methods

Between 1998 and 2013, a total of 108 patients (64 cases; living-donor lung transplantation, 44 cases; brain-dead lung transplantation) underwent lung transplantation in our institution.

Results

Among them, 33 patients (13 cases, living-donor lung transplantation; and 20 cases, brain-dead lung transplantation) had chronic rhinosinusitis confirmed by computed tomography. Six of these patients received sinus surgery. Preoperative radiological score (Lund-Mackay computed tomography score) in chronic rhinosinusitis patients with sinus surgery was significantly higher than in chronic rhinosinusitis patients without sinus surgery. After lung transplantation, 84 of 108 transplant patients (84%) are survival, and all transplant patients who underwent sinus surgery are survival.

Conclusion

In conclusion, the treatment for sinus disease has beneficial effects on outcome in the treatment of chronic respiratory failure.

Effects of bepotastine besilate as add-on therapy to intranasal corticosteroid treatment in Japanese cedar/cypress pollinosis

A. Torigoe¹, M. Okano¹, S. Kariya¹, T. Higaki¹, T. Haruna¹, T. Noyama¹, T. Koyama¹, K. Nishizaki¹

¹ Otolaryngology-Head & Neck Surgery, Okayama University Hospital, Okayama, Japan

Abstract: ERS-0480

Session: Rhinitis, Clinical 1

Session Time: 25-06-14, 11:51

Location: Hall E

Chair person: J. Mulloj

Presenting author: M. Khorolskaia

Objectives

Intranasal corticosteroids (INS) are commonly used as one of the first-line treatments in allergic rhinitis. However, incomplete response and poor satisfaction is seen in some patients. In such cases, combined therapy is considered to be chosen. To assess additional benefits of bepotastine besilate, a second-generation antihistamine, in pollinosis patients using INS.

Methods

This was a prospective multicenter clinical trial of Japanese cedar/cypress pollinosis, the most prevalent seasonal allergic rhinitis in Japan. Following 2 weeks treatment with INS only, patients were divided into either good responders or poor responders based on the patients' satisfaction. Good responders continued INS solely, otherwise, poor responders used bepotastine in addition to INS for 2 weeks each. Japanese Rhino-conjunctivitis Quality of Life Questionnaire (JRQLQ) was used to determine subjective symptom and quality of life (QOL) scores.

Results

Fifty three out of 78 patients (67.9%) were well controlled by INS only, and they showed no significant exacerbation of both symptom and QOL scores during the study. On the other hand, the remaining poor responders (32.1%) showed a significant exacerbation of both symptoms and QOL. However, a significant improvement of worsened symptom score was seen in poor responders by the additional treatment with bepotastine. Although the QOL scores were not significantly improved the worsened QOL score by the additional treatment, the score returned to baseline.

Conclusion

Bepotastine besilate add-on treatment to pollinosis patients with incomplete response to INS was effective and could be one of the treatment strategies for allergic rhinitis.

Pulmonary function in chronic rhinosinusitis

S. Kariya¹, M. Okano¹, T. Haruna¹, A. Torigoe¹, K. Uruguchi¹, Y. Noyama¹, K. Nishizaki¹

¹ Otolaryngology-Head and Neck Surgery, Okayama University, Okayama, Japan

Abstract: ERS-0481

Session: United airways

Session Time: 25-06-14, 17:09

Location: Hall E

Chair person: P. Howarth

Presenting author: S. Kariya

Objectives

The relationship between upper and lower airway diseases has been reported. However, the pulmonary function of patients with chronic rhinosinusitis has not been fully examined.

Methods

Pulmonary function was measured in 270 patients with chronic rhinosinusitis and 100 age-matched normal control subjects. No patients with chronic obstructive lung disease were included in this study. The patients with chronic rhinosinusitis were divided into four subgroups based on the presence of asthma and sensitization to common inhaled antigens. The relationships between pulmonary function and clinical parameters, including radiographic severity of chronic rhinosinusitis according to the Lund-MacKay computed tomography staging system, eosinophil count in the peripheral blood, and serum total IgE levels, were assessed.

Results

Of 270 patients with chronic rhinosinusitis, 67 had asthma, and 209 were defined as sensitized to at least one of thirteen inhaled antigens. In pulmonary function testing, the chronic rhinosinusitis patients had affected pulmonary function. The chronic rhinosinusitis patients without asthma showed latent obstructive pulmonary function changes when compared to normal controls. No significant correlations were observed between pulmonary function and any clinical parameters (Lund-MacKay computed tomography staging score, eosinophil count in the peripheral blood, and serum total IgE levels).

Conclusion

Chronic rhinosinusitis patients had significant obstructive lung function changes regardless of the presence of asthma. The patients with chronic rhinosinusitis who had not been clinically diagnosed as having lower respiratory tract diseases might have had sub-clinical lower airway diseases. Therefore, clinicians should be aware of pulmonary function and lower lung diseases in patients with chronic rhinosinusitis.

A pilot study of computerized smell threshold test

R. Jiang¹

¹ Department of Otolaryngology, Taichung Veterans General Hospital, Taichung, Taiwan

Abstract: ERS-0482

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:09

Chair person: Philippe Rombaux

Presenting author: R. Jiang

Objectives

The smell threshold test and smell identification test are widely used to evaluate the olfactory function. Recently, a 40 channel olfactometer (40CHRA) has been developed to perform the smell threshold test and smell identification test under computer control. This study tried to evaluate the validity and test-retest reliability of the 40CHRA to perform the smell threshold test.

Methods

Sixty subjects with normal olfactory function, 60 hyposmic patients and 60 anosmic patients were collected in this study. All participants were tested for smell threshold using the conventional Smell Threshold Testä (STT) as well as the 40CHRA. The order of methods used was randomized between participants. Among them, 30 subjects with normal olfactory function were retested in the same way with at least 1 day between 2 tests. The thresholds were compared between 2 methods and between test and retest sessions.

Results

The mean thresholds were -9.1 for STT and -5.34 for 40CHRA among normal subjects, -3.75 for STT and -3.18 for 40CHRA among hyposmic patients, and -2 for STT and -2 for 40CHRA among anosmic patients. The thresholds were significantly different between normal subjects, hyposmic patients and anosmic patients for both STT and 40CHRA. The threshold correlation was very strong in anosmic patients, was weak ($r=0.313$) in hyposmic patients, and negligible ($r=0.089$) in normal subjects between STT and 40CHRA. The test-retest correlation was strong for 40ORCH ($r=0.671$).

Conclusion

Our findings demonstrate that the computer-controlled olfactometer is a promising tool for a self-administered smell threshold test.

Cultural adaptation of the “sniffin sticks” olfactory test for the Russian-speaking countries

V. Bogdanov¹

¹ ENT, Crimean State Medical University named after S.I. Georgievsky, Simferopol, Ukraine

Abstract: ERS-0483

Session: Olfaction

Session Time: 25-06-14, 14:05

Location: Hall G

Chair person: B. Landis

Presenting author: V. Bogdanov

Objectives

Cultural adaptation of ‘Sniffin’ Sticks’ olfactory test.

Methods

Olfactory function was tested in 150 healthy volunteers using 16 odors of the ‘Sniffin’ Sticks’ identification test in a multiple choice task with 4 choices, as described by manufacturer.

In the first stage the descriptors were translated into Russian. 50 volunteers were tested to determine the identification rate of each odor. When the rate was less than 80%, we changed either the descriptor or other answer choices similar to the testing odor (e.g. ‘grapefruit’ and ‘lemon’).

In the second stage 100 volunteers were tested using the modified list of descriptors.

Results

After the first stage of the adaptation 6 smells (lemon, liquorice, turpentine, apple, cloves, anise) had an identification rate less than 80%. To improve these results we changed 2 descriptors and 16 answer choices. For example, many subjects mentioned, that they were not familiar with the descriptor ‘liquorice’, so we changed it to ‘cough syrup’, which traditionally contains liquorice, and which odor is widely known.

After the second stage of adaptation the identification rate of all the odors exceeded 80%.

We compared our results to the scores of German-speaking group, matched by age and sex (data kindly provided by Prof. T.Hummel, Smell and Taste Clinic, Dresden, Germany). The results were statistically not different ($p>0,05$), which allows to consider the adaptation successful.

Conclusion

After this adaptation ‘Sniffin’ Sticks’ can be used in Russian-speaking countries and the results can be compared internationally. Earlier no other standardized and validated olfactory test was available on these territories.

Prognostic factors in nasal polyposis recurrence after endoscopic sinus surgery

R. Teles¹, R. Cerejeira², V. Henriques¹, A. Sousa¹, R. Rodrigues¹, R. Estevão¹, F. Moreira da Silva¹, F. Fernandes¹

¹Otolaryngology, Centro Hospitalar Alto Ave, Guimarães, Portugal

²Otolaryngology, Centro Hospitalar Tamega e Sousa, Penafiel, Portugal

Abstract: ERS-0484

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:54

Location: Hall J

Chair person: P. Lekakis

Presenting author: R. Teles

Objectives

To evaluate the endoscopic sinus surgery (ESS) efficacy in surgical treatment of chronic rhinosinusitis with nasal polyps (CRSwNP) and to assess the factors associated with polyps recurrence.

Methods

Retrospective study of patients submitted to ESS for CRSwNP in Alto Ave Hospital Center from 2004 to 2013. Patient demographic data, occupational exposure, associated diseases, history of previous nasal surgery, symptoms and ENT examination findings, CT results, medical and surgical treatment information were collected. Statistical analysis was performed using SPSS v.19.

Results

The sample consisted of 85 patients, with a mean age of 47 years; 65% of male gender; 38% had history of asthma; 6% presented with Widal's Triad; 31% had allergic rhinitis; and 25% history of previous ESS. Twenty patients (24%) were smokers or ex-smokers, and 61% had occupational exposure to dusts and chemical inhalants. The mean follow-up was 27 months (range 9-108). Recurrence rate was 31%, but only 7% required surgical reintervention. The multivariate regression analysis identified occupational risk ($p=0,001$) and non-allergic asthma ($p=0,012$) as independent predictive variables in CRSwNP recurrence, unlike the other variables: age, sex, allergic asthma, allergic rhinitis, smoking habits, polyposis grade, Lund-Mackay imagiologic classification and postoperative topical corticoid use.

Conclusion

Endoscopic surgery proved to be an effective treatment in CRSwNP. Occupational exposure and non-allergic asthma were independent predictive factors of recurrence. Avoiding irritant inhalants can be important in the course of the disease, with impact in prognosis and surgical treatment efficacy.

Advantages of glove finger-coated polyvinyl acetate pack in partial inferior turbinate surgery

H. Woo¹

¹ Otolaryngology-Head and Neck Surgery, CHA University Gumi CHA Hospital, Gumi, Korea

Abstract: ERS-0485

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 09:57

Chair person: N. Keles

Presenting author: H. Woo

Objectives

Nasal packing is commonly used to control postoperative bleeding in patients undergoing inferior turbinate surgery. During packing removal, patients usually undergo severe pain and bleeding. The objective of this study was to investigate the efficacy and safety of glove finger-coated polyvinyl acetate (PA) pack on hemostasis, pain levels, and wound healing after partial inferior turbinectomy.

Methods

A prospective, randomized, double-blinded controlled study was conducted on 30 patients undergoing partial bilateral inferior turbinectomy using microdebrider for hypertrophic rhinitis. Fifteen patients (control group) had both nasal cavities packed with PA pack (MeroCel; Medtronic Xomed, Jacksonville, FL) and another 15 subjects (experimental group) had their nasal cavities packed with PA in a glove finger. Pain levels were assessed by patients on a visual analog scale 12 hours after surgery and at the time of packing removal. The amount of bleeding on removal was quantified by weighing it after removal.

Results

Both nasal packs effectively prevented post-operative bleeding. However, bleeding on packing removal was statistically less frequent and less severe with PA pack in a glove finger ($p = 0.004$). In addition, pain was statistically lower with PA pack in a glove finger than with PA pack alone ($p = 0.001$). There was no significant difference in the outcome measure of wound healing.

Conclusion

PA packing in a glove finger is a recommendable method in terms of pain, bleeding on packing removal, compared with PA pack only.

Carcinomas of nasal cavity and paranasal sinuses: a case series study of 51 patients

R. Teles¹, I. Ribeiro², J. Castro Silva³, E. Monteiro³

¹ Otolaryngology, Centro Hospitalar Alto Ave Guimarães, Guimarães, Portugal

² Radiotherapy, Instituto Português de Oncologia, Porto, Portugal

³ Otolaryngology, Instituto Português de Oncologia, Porto, Portugal

Abstract: ERS-0486

Session: Balloon sinuplasty

Time: 24-06-14, 10:24

Location: Hall G

Chair person: A. Leunig

Presenting author: R. Teles

Objectives

To evaluate the epidemiologic characteristics, prognostic factors and treatment outcomes of 51 patients with sinonasal carcinomas.

Methods

Retrospective analysis of patients diagnosed with sinonasal carcinoma, treated at Portuguese Institute of Oncology in Porto from 2008 to 2012.

Results

There were 11 women and 40 men, ranging from 33 to 85 years. Forty cases presented in stage III-IV. Histologies included 28 cases of adenocarcinoma (55%); 13 cases of squamous cell carcinoma (26%); four cases of adenoid-cystic carcinoma (8%), one case of undifferentiated carcinoma (2%), one neuroendocrine carcinoma, one mucoepidermoid carcinoma and one ameloblastic carcinoma. Forty-two patients (82%) were treated with surgery and adjuvant radiotherapy, five with surgery alone and four with surgery combined with adjuvant chemo- and radiotherapy. Treatment failure was mainly due to local recurrence. The 5 year disease-free (DFS), cancer specific (CSS) and overall (OS) survival rates were 34%, 75% and 67%, respectively. AJCC cancer stage ($p=0,001$), skull base invasion ($p<0,001$), pterygopalatine fossa invasion ($p=0,021$), perineural invasion ($p=0,013$) and presence of postsurgical residual tumor ($p<0,001$) were identified as prognostic factors in univariate analysis for DFS. Multivariate Cox regression analysis found skull base invasion ($p<0,001$), histologic tumour type ($p=0,013$) and postsurgical residual tumor ($p=0,003$) as independent prognostic factors affecting DFS. For CSS and OS, univariate and multivariate analysis, identified skull base invasion as a prognostic factor.

Conclusion

Our series confirms the poor prognosis of sinonasal tumors, mainly due to local recurrence. Skull base invasion, histology type and presence of postsurgical residual tumor were identified as independent factors with impact in recurrence rate.

Silent sinus syndrome: a case report

R. Teles¹, R. Cerejeira², A. Sousa¹, V. Henriques¹, R. Estevão¹, J. Rodrigues¹, F. Moreira da Silva¹, F. Fernandes¹

¹ Otolaryngology, Centro Hospitalar Alto Ave, Guimarães, Portugal

² Otolaryngology, Centro Hospitalar Tamega e Sousa, Penafiel, Portugal

Abstract: ERS-0487

Objectives

Silent Sinus Syndrome (SSS) is a rare clinical entity, characterized by spontaneous enophthalmia due to maxillary sinus atelectasis, not related to previous trauma or sinonasal surgery.

Methods

Case report and literature review of pathophysiology, diagnosis and treatment of SSS.

Results

A 31 years-old female was observed in Ophthalmology emergency department for right red eye, blurred vision and ocular foreign body sensation in the previous week. She also complained of right maxillary sinus pressure for one month. A discrete 2 mm enophthalmia was noted, the patient was treated for conjunctivitis and referred to ENT doctor. A computed tomography (TC) was ordered, demonstrating a decrease in the right maxillary sinus volume from inwardly bowing antral walls, downward displacement of the orbital floor and osteomeatal complex obstruction due to lateralized uncinate process. The diagnosis of Silent Sinus Syndrome was established. The treatment consisted in a maxillary endoscopic antrostomy.

Conclusion

SSS arises from ostiomeatal complex obstruction resulting in negative pressure within the maxillary sinus; endoscopic sinus surgery to re-establish maxillary aeration is the treatment of choice.

A new odor memory test using the sniffin'sticks

R. Mueller¹, L. Jobs¹, B. Renner²

¹ Otolaryngology, Centro Hospitalar Alto Ave, Guimarães, Portugal

² Otolaryngology, Centro Hospitalar Tamega e Sousa, Penafiel, Portugal

Abstract: ERS-0488

Session: Olfaction

Session Time: 25-06-14, 14:15

Location: Hall G

Chair person: B. Landis

Presenting author: C. Mueller

Objectives

During the last two decades a new test of olfactory function has been developed and validated in Erlangen. The Sniffin'Sticks test consists of three subtests (i.e., olfactory threshold, odor discrimination and identification). The aim of the present investigation was to extend the Sniffin'Sticks test with an odor memory test.

Methods

Four odorants (banana, peppermint, rose, leather) were selected from the odor identification test and presented in a single-target, four-alternative, forced-choice paradigm, with intervals of 10, 30, and 60 seconds, respectively. In order to reduce verbal memorization the subjects had to count backwards by three. Before assessment of odor memory cognitive tests were performed.

Results

Each correct answer yielded one point resulting in a maximum score of twelve. Actual results and normative data are presented.

Conclusion

Neurodegenerative diseases like M. Parkinson and M. Alzheimer show olfactory dysfunction as early symptoms. The new Odor Memory Test might help to improve diagnosis in patients with diseases affecting the sense of smell.

Nasal myoepithelioma: a case report and literature review

R.Teles¹, A.Sousa¹, V.Henriques¹, J.Rodrigues¹, E.Estevão¹, F.Moreira da Silva¹, J.Rodrigues², F.Fernandes¹

¹ Department of Otolaryngology, Centro Hospitalar Alto Ave, Guimarães, Portugal

² Department of Pathology, Centro Hospitalar Alto Ave, Guimarães, Portugal

Abstract: ERS-0489

Objectives

Myoepithelioma is a rare benign neoplasm of major and minor salivary glands, arising mainly in parotid gland. Case reports of extra-parotid myoepitheliomas are sporadic, with only four cases described in nasal cavity.

Methods

Case report and literature review of nasal myoepitheliomas.

Results

A 52 years-old female was referred to ENT department due to recurrent epistaxis and unilateral nasal obstruction for five months. A pinkish opaque polypoidal mass was observed in the left nasal cavity with ipsilateral nasal valve enlargement. Computed tomography scan revealed an expansive soft tissue mass occupying the inferior part of left nasal cavity, centered in the head of inferior turbinate, without bone erosion, but with left alar and lateral cartilages displacement. The patient was submitted to endoscopic sinus surgery with en-bloc tumor resection with safety margin, including partial inferior turbinectomy. Histopathological examination of the excised specimen revealed spindle cells and a myxoid stroma, with immunohistochemistry positivity for CK5/6, CK14, S-100 protein, p63, vimentin, AE1/AE3 and smooth muscle actin, establishing the diagnosis of myoepithelioma. On 20-month follow-up, the patient is asymptomatic with no signs of recurrence.

Conclusion

Although rare, myoepithelioma is a differential diagnosis to be considered in tumors with clear cell change. Immunohistochemistry has a definite role in the confirmation of the diagnosis. Sinonasal endoscopic surgery might be a therapeutic option in these cases, but the risk of recurrence and malignant transformation potential warrants long-term follow-up.

Orbital abscess caused by fusobacterium after infectious mononucleosis

R. Teles¹, P.T. Bjerre², C. Buchwald³

¹ Department of Otorhinolaryngology, Centro Hospitalar Alto Ave, Guimarães, Portugal

² Department of Ophthalmology, Rigshospitalet, Copenhagen, Denmark

³ Department of Otorhinolaryngology Head & Neck Surgery and Audiology, Rigshospitalet, Copenhagen, Denmark

Abstract: ERS-0490

Objectives

Acute Rhinosinusitis (ARS) complicated with an orbital abscess is a rare emergency. *Fusobacterium necrophorum* has been seldom reported as an orbital abscess infectious pathogen. Predisposition to *Fusobacterium* infection after mononucleosis is under investigation.

Methods

Case report and literature review.

Results

A 16 years-old female was referred to ENT Emergency due to frontal headache for 5 days with development of diplopia and right periorbital inflammatory signs within 6 hours previous to hospital admission. She had been diagnosed with infectious mononucleosis by her GP 10 days before. Purulent rhinorrhea was observed and the ophthalmological exam documented right eye proptosis, loss of red colour vision and raised intraocular pressure. CT scan showed right frontoethmoidal opacification and suspicious subperiosteal abscess. The patient was medicated with antibiotics without clinical improvement. She was submitted to endoscopic sinus surgery (Draf II frontal sinusotomy and anterior ethmoidectomy) and an external approach to drain the suspicious subperiosteal abscess. Intraoperative findings excluded the presence of a subperiosteal abscess but instead found an abscess in the orbital connective tissue. Histopathology demonstrated a necrotic abscess and *Fusobacterium necrophorum* was identified in microbiology cultures of the orbital abscess. Serologic analysis confirmed her recent EBV infection. The patient was discharged 8 days after surgery. After 12 months of follow-up, the patient has no symptoms, aesthetic or vision sequelae.

Conclusion

This case report support the recent published evidence that EBV infection has a role as a risk factor for Lemierre's and Lemierre's like syndromes. Since orbital complication of ARS may develop serious sequelae, prompt medical and surgical treatment is required.

Intrinsic biochemical and functional differences in nasal epithelial cells from patients with nasal polyps

C. Li¹, Y. Li¹, X. Yu², S. Chao¹, Y. Yan¹, L. Shi², D. Wang¹

¹ Otolaryngology, National University of Singapore, Singapore, Singapore

² Otolaryngology, Qilu Hospital Shandong University, Jinan, China

Abstract: ERS-0491

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 12:00

Location: Hall H

Chair person: P. Gevaert

Presenting author: C. Li

Objectives

Epithelial damage followed by aberrant epithelial remodelling is an important pathological evident in nasal polyps (NPs). We aims to determine whether nasal epithelial cells from NP patients are intrinsically different from those obtained from healthy controls by using a human nasal epithelial stem/progenitor cells (hNESPCs) and differentiated nasal epithelial cell models.

Methods

Primary cells were isolated from NP tissues (n=5) and inferior turbinates from healthy control subjects (n=5). hNESPCs were cultured in a submerge culture condition while differentiated cells were maintained in air liquid interface (ALI) model. Cells were subject to morphologic, cellular and molecular assessments.

Results

hNESPCs from NP patients had a reduced growth and proliferation rate at over 4 passage by evaluating colony forming efficiency and doubling time, and a lower percentage of Ki67+ (proliferation marker) cells among p63+ (stem cell marker) cells in the colonies in late passages based on staining results. In the differentiation stage, epithelial cells derived from NP tissues showed more ciliary structure and hyperproduction of mucus in the ALI model as compared to those from controls by staining with β IV-tubulin and MU-C5AC, respectively. 442 genes (401 up-regulated and 41 down-regulated) were significantly differentially expressed in differentiated cells versus hNESPCs from control subjects, while 475 genes (230 up-regulated and 245 down-regulated) differed in expression in cells from NP patients. Microarray analysis is ongoing and more detail will be presented in the congress.

Conclusion

The nasal epithelial cells show intrinsic differences between those obtained from inflammatory and healthy tissues in the absence of inflammation.

A self-administered “taste strips” test for the assessment of gustatory function

A. Wolf¹, L.D. Varga¹, L. Wittibschlager¹, B. Renner², C.A. Mueller¹

¹ Department for Otorhinolaryngology, Medical University of Vienna, Vienna, Austria

² Department of Pharmacology, University Erlangen-Nürnberg, Erlangen, Germany

Abstract: ERS-0492

Session: Olfaction

Session Time: 25-06-14, 14:25

Location: Hall G

Chair person: B. Landis

Presenting author: A. Wolf

Objectives

Chemosensory disorders often lead to decreased quality of life. Olfactory and gustatory disorders should be differentiated by specific tests due to confusion of smell and taste by most of the patients. Quantitative assessment of gustatory function with “taste strips” is an established and validated method. In clinical routine the application of the test is often limited due to lack of time or costs of the personnel administering the test.

The aim of the study was to develop a procedure suitable for self-administration of the “taste strips” test.

Methods

The investigated participants were tested twice in a randomized procedure. On one occasion, the established and validated “taste strips” test was administered by an examiner. On another occasion, subjects administered the “taste strips” themselves after a short introduction.

Results

Results of both test-methods are presented.

Conclusion

The new “taste strips” test procedure significantly reduces the time for examination leading to improved management of patients with chemosensory disorders.

The influence of septoplastics on symptoms of chronic rhinosinusitis in patients with chronic rhinosinusitis and distinctive nasal septum deformity

S. Savovic¹, M. Buljic-Cupic¹, L.J. Jovancevic¹, V. Kljajic¹

¹ ENT, Clinical Centre of Vojvodina, Veternik, Serbia

Abstract: ERS-0493

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:55

Chair person: S. Carrie

Presenting author: S. Savovic

Objectives

The aim of this paper is to examine the influence of septoplastics on symptoms of rhinosinusitis in patients with chronic rhinosinusitis and distinctive nasal septum deformities.

Methods

There were 60 examined patients with chronic rhinosinusitis and nasal septum deformities bigger than 20 degrees. The patients who had another disorder of upper or lower respiratory tract were not included in the study. Their breathing, nasal secretion, the sensation of facial pressure/facial heaviness as well as the olfactory function prior and after septoplastics were assessed on the VAS scale from 0 to 10cm.

Results

An average presurgical nasal breathing value was 5.80, and after the procedure it was 1.85, ($p < 0,001$). Before the procedure, an average nose secretion value was 2.72, and afterwards it was 2.55, ($p > 0,05$). The average presurgical value of facial pressure/facial heaviness was 3.05, and after the septoplastics procedure it was 1.20, ($p < 0,001$). Before the surgery, the average value of the olfactory function was 1.80, and after the procedure it was 1.66, ($p > 0,05$).

Conclusion

In patients with chronic rhinosinusitis and distinctive nasal septum deformities septoplastics significantly improves nasal breathing and diminishes the sensation of facial pressure/heaviness, whereas there is no more significant influence on nasal secretion decrease and olfactory function improvement.

Dose escalation of montelukast in the treatment of nasal polyposis

S.I. Vento¹, O. Tahkokallio¹, M. Seppänen², M. Hytönen¹

¹ Department of Otorhinolaryngology – Head and Neck Surgery, Helsinki University Central Hospital, Helsinki, Finland

² Immunodeficiency Unit Department of Medicine, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-0494

Session: Management of CRS

Session Time: 26-06-14 11:30

Location: Hall J

Chair person: TBC

Presenting author: S.I. Vento

Objectives

To assess whether montelukast used at higher doses than recommended for asthma would ameliorate nasal polyposis.

Methods

We performed an open pilot study, in which nine patients with nasal polyps were first treated with montelukast with rising dose up to 20 mg to 40 mg daily and then descending the dose to 20 mg daily. The follow-up time was eight weeks.

At the follow-up visits anterior rhinoscopy, nasal endoscopy, Sniffin' Sticks odor identification test and acoustic rhinometry (ARM) were performed as objective measurements. For subjective evaluation patients filled disease-specific Sino-Nasal Outcome Test-22 (SNOT-22) –questionnaires. VAS and Peak Nasal Inspiratory Flows (PNIF) were used to assess symptom severity.

Results

There were no statistically significant differences in any objective measurements during the study. Patients reported significant improvement in VAS scores for runny nose, nasal crusts, bloody nasal secretions, asthma symptoms, cough, and eye symptoms. If ASA-intolerance is processed as an independent co-factor montelukast acts differently in ASA-intolerant patients compared to ASA-tolerant patients.

Conclusion

Even higher doses of leukotriene antagonist, montelukast had limited beneficial effects on nasal polyposis. However, placebo-controlled studies with different doses of montelukast against nasal polyposis which control for ASA-intolerance as an independent co-factor are needed.

A sinister cause of facial pain: rhino-orbito-cerebral mucormycosis

S. Babu¹, J. Bedford²

¹ CT1 Surgery, Imperial College Healthcare NHS Trust, London, United Kingdom

² CT1 Medicine, Imperial College Healthcare NHS Trust, London, United Kingdom

Abstract: ERS-0495

Objectives

Mucormycosis is a highly aggressive fungal infection from the order Mucorales. This targets immunocompromised and diabetic individuals often being seen in patients with diabetic ketoacidosis. Rhino-orbito-cerebral (ROC) mucormycosis is the most common presentation (44-49%) and often angioinvasive. We present a case of ROC mucormycosis.

Methods

A 44 year old woman with poorly controlled Type 1 Diabetes Mellitus presented with left sided facial pain. She was given Metronidazole for a suspected dental abscess but re-presented one week later with diabetic ketoacidosis, sepsis and complete paralysis of left cranial nerves II-VII. MRI head diagnosed cavernous sinus thrombosis. CT showed an infective process in the maxilla, nasopharynx, left infratemporal fossa, left stylo-mastoid foramen and the "black turbinate sign". Meropenem and Vancomycin were commenced but did not provide clinical improvement.

Results

6 days after presentation she had functional endoscopic sinus debridement and biopsy which diagnosed mucormycosis. She was admitted to ITU and started on Amphotericin B and Posaconazole. Repeat MRI revealed retrograde progression with brainstem involvement. 2 days after initial surgery she underwent further debridement of necrotic tissue. On day 9 in hospital she became acutely unresponsive. CT head showed acute subarachnoid haemorrhage secondary to a mycotic aneurysm which proved fatal.

Conclusion

Mucormycosis is a rare but serious fungal infection which must be suspected in at risk individuals with facial pain. ROC mucormycosis carries a mortality rate between 30-69% and can cause intracranial haemorrhage. Aggressive surgical debridement, Amphotericin B and Posaconazole are required but despite these measures fatality is common.

Closure of accessory maxillary ostium during endoscopic sinus surgery for CRS

M.A. Penttilä¹

¹ ENT, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal

Abstract: ERS-0496

Session: Management of CRS

Session Time: 26-06-14 11:50

Location: Hall J

Chair person: TBC

Presenting author: M.A. Penttilä

Objectives

An accessory ostium (fontanel perforation) is connected with CRS and is found in 20% of the patients, but only in 0.5% of healthy adults. It may occur with no symptoms, while many patients have various CRS symptoms or even pathological mucus recirculation (two holes syndrome). Accessory ostium alters the air flow pattern in the antrum increasing ventilation remarkably. It can prevent normal nitric oxide accumulation in the antrum and allow colonization with nasal microbes. Surgeons have either enlarged the accessory ostium uniting it with natural ostium or left it alone. The author has tried to find a new method to close the accessory ostium after abdominal fat graft closure succeeded in only minority of patients.

Methods

During 2011-2013 36 accessory ostium closure procedures were done in 25 patients using rotation flap cut from the undersurface of middle turbinate. The anterior end was bent into the denuded accessory ostium while the posterior end was left attached into the turbinate. During control visits the result of perforation closure was evaluated with nasal endoscopy.

Results

Perforations (patients)	Successfull closure	Remained open	Small residual perforation	Not known
Unilateral 14 (14)	10	-	2	2
Bilateral 22(11)	17 (9)	2 (1)	1	2 (1)
Total	27 (19)	2	3	4 (3)

Conclusion

Closure of the accessory ostium is in theory beneficial. It is technically feasible using middle turbinate flap procedure, which offered reliable closure result in 76% of the patients and in 75% of the perforations. The side effects were minimal and transient.

Proper osteotomy including genial tubercle: an anatomical analysis and implications for genioglossus in cadaver

S.W. Kim¹, S.Y. Jung¹, S.Y. Shin¹, K.H. Lee¹, J.S. Cho¹

¹ Department of ORL-HNS, Kyung Hee University, Seoul, Korea

Abstract: ERS-0498

Session: OSAS

Location: Hall H

Time: 25-06-14 15:10

Chair person: N. de Vries

Presenting author: S.W. Kim

Objectives

Genioglossus advancement (GA) is one of popular procedure for the treatment of obstructive sleep apnea (OSA). This procedure is usually performed with mandibular osteotomy and advancement of genial tubercle (GT). The purposes of this study were to determine the exact position of osteotomy site by measuring of the position of the GT, mental foramen (MF) during GA.

Methods

Thirteen randomly selected adult cadavers with intact bony mandibular structures. Five variables were measured, including: 1) width of GT (GTW); 2) height of GT (GTH); 3) distance from inferior border of GT to inferior border of mandible (IGT-IBM); 4) distance from superior border of GT to inferior border of mandible (SGT-IBM); and 5) inter-mental foramen width (IMFW). To evaluate the proper osteotomy in outer table of mandible, upper margin of osteotomy was performed at 2 mm higher than the estimation of inner table.

Results

The measurements of parameters were GTW 6.50 ± 1.44 (3.0-8.0) mm, GTH 6.88 ± 1.45 (5.0-10.0) mm, IGT-IBM 8.46 ± 1.93 (5.0-11.0) mm, SGT-IBM 15.35 ± 2.30 (14.5-20.0) mm and IMFW 52.38 ± 4.75 (43.0-60.0) mm, respectively. Among 13 cadavers, 11 cases showed proper osteotomy when the osteotomy was performed at 2 mm higher than the estimation of inner table. The damaged 2 cases were edentulous cases.

Conclusion

According to our results, proper osteotomy which include genial tubercle may be possible when the osteotomy was more than 2 mm higher than the estimation of inner table in most patients.

Prophylactic treatment with sublingual immunotherapy for allergic rhinitis

Y. Okamoto¹, S. Yonekura¹, D. Sakurai¹, T. Linuma¹

¹ Department of Otorhinolaryngology, Chiba University Graduate School of Medicine, Chiba, Japan

Abstract: ERS-0500

Session: Immunotherapy

Session Time: 24-06-14, 11:24

Location: Hall E

Chair person: G. Hens

Presenting author: Y. Okamoto

Objectives

The subjects, who were sensitized with allergens, did not have any symptoms of allergic rhinitis, as are commonly observed. These subjects are thought to be preparative and have a risk to develop allergic rhinitis. The sublingual immunotherapy (SLIT) is known to be safe and has a potential for preventing development of other allergic diseases, and reducing new allergic sensitization. We examined the efficacy of the SLIT as an early intervention for preventing the development of allergic rhinitis.

Methods

The subjects, who were sensitized with Japanese cedar pollens, had not shown any previous symptoms of cedar pollinosis, were examined. All of their results were negative in the provocation test using cedar pollen extract. They were divided into two groups and received Japanese cedar pollen extracts or placebo sublingually every day from the beginning of December in 2011 to the end of April in 2012, or for the same term from 2012 to 2013. The major goal of the study was to determine the difference of the incidence of cedar pollinosis, certified by the provocation test in May, between active SLIT and placebo groups.

Results

40 received placebo. 15 subjects developed cedar pollinosis in the placebo group (37.5%), compared with 9 subjects in the active SLIT group (17,7%) ($p=0.03$, CHI –test)

Conclusion

The results show the possibility of using SLIT as an early intervention against the development of cedar pollinosis.

The effect of intranasal steroid irrigation on wound healing after endoscopic sinus surgery

P.Y. Chung¹, K. Min¹, Y. Park¹, H. Son¹, J. Mo¹

¹ Department of Otorhinolaryngology-Head and Neck Surgery, Dankook University Hospital, Cheonan, Korea

Abstract: ERS-0501

Session: Management of CRS

Session Time: 24-06-14, 17:03

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: P.Y. Chung

Objectives

The purposes of this study were to evaluate the effects of intranasal steroid irrigation on early wound healing and adrenal axis suppression after endoscopic sinus surgery (ESS).

Methods

A prospective, randomized, double-blind controlled trial was conducted in 70 consecutive patients who underwent ESS. After the operation, Patients were randomly assigned to either intranasal irrigation with 1.5 mg of dexamethasone mixed with 150 mL of saline (dexamethasone group, 35 patients) or with saline only (saline group, 35 patients) three times a day for a 6-week trial period. Subjective symptoms, Sino-Nasal Outcome Test-20 (SNOT-20) and objective endoscopic scores were evaluated at postoperative 1, 2, 4, 8 and 12 week(s). Serum cortisol and ACTH levels were measured before and after a trial period.

Results

Sixty-five subjects completed the study. Irrigation with dexamethasone had no significant additional effect on the improvement of chronic rhinosinusitis-related symptoms. However, SNOT-20 and endoscopic scores were better in the dexamethasone group than in saline group at postoperative 4, 8 and 12 weeks. ACTH and cortisol levels checked at postoperative 6 weeks were not significantly different from those values that were checked before treatment ($p=0.950$ and $p=0.804$, respectively). No evidence of the hypothalamic-pituitary-adrenal (HPA) axis suppression or adverse effect was found.

Conclusion

Short-term use of intranasal steroid irrigation improved the early postoperative wound healing and did not influence the HPA axis. These findings suggest that intranasal steroid irrigation could be a useful method in improving wound healing after ESS.

Anatomical variants of the uncinate process - CT scan imaging study

M.D. Cobzeanu¹, V. Baldea², O.D. Palade¹, F. Mihalcea³, M.C. Baldea⁴, B.M. Cobzeanu¹

¹ E.N.T., UMF "Gr.T.Popa" Iasi, Iasi, Romania

² E.N.T., "N. Titulescu" Ambulatory Service, Buzau, Romania

³ Radiology, CH Hospital St. Esprit, Agen, France

⁴ Oral and Maxillofacial Surgery, UMF "Carol Davila" Bucuresti, Bucuresti, Romania

Abstract: ERS-0502

Session: Imaging

Session Time: 24-06-14, 12:09

Location: Hall F

Chair person: SJ. Zinreich

Presenting author: M.D. Cobzeanu

Objectives

The aim of the study was to determine the prevalence for: 1. Types of angulation of the uncinate process (normal, medialization, verticalization) 2. Pneumatization of the uncinate process (uncinate bulla) 3. Variants of superior insertion of the uncinate process.

Methods

The authors present an anatomico-radiologic, retrospective study on 205 CTs of the facial sinuses, in patients between 18-91 years old, 108 men and 97 women, for a period of two and a half years.

Results

The study allowed to determine the prevalence of normal angulation, verticalization and horizontalization, pneumatization of the uncinate process, the superior insertion with the 3 classical variants (on the lamina papyracea, the skull base, the insertion of the middle turbinate) and the least common ones (ethmoid bulla, pneumatized superior turbinate or 'through multiple joints' - multiple insertions).

Conclusion

One third of the uncinate processes are verticalized (lateralized) or medialized (horizontalized), pneumatization is a rare anatomical variant, and the superior insertion of this structure has many variants (3.41%).

Host responses of in vitro differentiated nasal epithelial cells to gaseous formaldehyde exposure on a microfluidic platform

Y. Yan¹, C. Li¹, W. Wang², Y. Li¹, S. Chao¹, Z. Wang², D. Wang¹

¹ Otolaryngology, National University of Singapore, Singapore, Singapore

² Microfluidics Manufacturing, Singapore Institute of Manufacturing Technology, Singapore, Singapore

Abstract: ERS-0503

Session: Rhinitis clinical

Session Time: 25-06-14, 15:25

Location: Hall E

Chair person: A. Swift

Presenting author: C. Li

Objectives

Formaldehyde (FA) is a well-known airway irritant which has harmful effects on both upper and lower respiratory diseases. In this study, we aim to investigate the cellular and molecular responses of in vitro differentiated human nasal epithelial cells (hNECs) to gaseous FA through a microfluidic setup.

Methods

The HNECs were obtained from inferior turbinates from patients with septal deviation (n=10) and cultured in a modified air liquid interface (ALI) model in a microfluidic chip. The functional hNECs were exposed to gaseous formaldehyde (FA) continuously for 60 minutes at concentrations of 0.5, 1.0, and 3.0 mg/m³. The response of HNECs was assessed in terms of mucociliary function, cytotoxicity, and cytokine expression.

Results

Elevated ciliary beat frequency (CBF) was immediately observed upon the exposure of 1.0 mg/m³ FA (up to 5 folds of baseline CBF). Increased mucin expression (MUC5AC) was found in 1.0 and 3.0 mg/m³ FA groups by real time PCR detection. The cytotoxic effects were evaluated by both decreased metabolic activity and altered transcriptional levels of stressor genes GADD45B and p16INK4A. Furthermore, the typical inflammatory markers interleukin-4 (IL-4) and interferon- γ (IFN- γ) were not expressed, indicating the absence of immune cells in our hNECs model. Meanwhile, IL-6 was significantly increased in 1.0 FA groups.

Conclusion

In conclusion, the system and model developed here revealed the defensive approaches of nasal epithelial cells in terms of both mechanical and gene expression regulation. This will greatly facilitate the studies of the host response of human airways against chemical, biological and environmental stimuli.

Characterization of *Staphylococcus aureus* enterotoxin B-induced IL-10 production by nasal polyp cells in the pathogenesis of chronic rhinosinusitis with nasal polyps

M. Okano¹, T. Fujiwara¹, S. Kariya¹, T. Haruna¹, T. Higaki¹, S. Makihara², Y. Noyama¹, A. Torigoe¹, U. Kensuke¹, N. Kazunori¹

¹ Otolaryngology-Head & Neck Surgery, Okayama University, Okayama, Japan

² Otolaryngology-Head & Neck Surgery, Kagawa Rosai Hospital, Marugame, Japan

Abstract: ERS-0504

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 10:15

Location: Hall J

Chair person: A. Lane

Presenting author: M. Okano

Objectives

IL-10 is an important cytokine in the regulation and resolution of inflammation. Although *Staphylococcus aureus* enterotoxin B (SEB), the major candidate contributing to the pathogenesis of chronic rhinosinusitis with nasal polyps (CRSwNP), can elicit regulatory T cell expansion and IL-10 production, little is known whether and how the interaction between SEB and IL-10 regulates the upper airway inflammation. We sought to determine the characterization of SEB-induced IL-10 by nasal polyp cells in the pathogenesis of CRSwNP in Japanese patients.

Methods

Dispersed nasal polyp cells (DNPCs) and dispersed uncinatate tissue cells (DUTCs) were prepared from patients with CRS with and without nasal polyps, respectively. Cells were incubated with various concentrations of SEB and then the levels of IL-10 and other cytokines in the cell supernatants were determined. The pathophysiological significance of SEB-induced IL-10 production was also determined.

Results

DNPCs dose-dependently produced IL-10 in response to SEB. The production was higher in DNPCs than in DUTCs. The amount of IL-10 was inversely correlated with IL-5, whereas positively correlated with IFN-gamma and IL-17A. SEB-induced IL-10 production negatively correlated with the degree of eosinophil infiltration into nasal polyps and peripheral blood eosinophil count. Furthermore, SEB-induced IL-10 production positively correlated with 1-s forced expiratory volume/forced vital capacity ratio.

Conclusion

These results suggest that impairment to synthesize IL-10 following the exposure to SEB may play a role in the pathogenesis of CRSwNP.

Bilateral interdomal cartilage grafting for nasal lengthening and tip projection via endonasal approach

J.W. Kwon¹, T.H. Kong¹, T.H. Ha¹, Y.H. Park¹, D.J. Park¹

¹ Otolaryngology, Yonsei University Wonju College of Medicine, Wonju, Korea

Abstract: ERS-0506

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:20

Chair person: K. Patel

Presenting author: D.J. Park

Objectives

To report our experience with the bilateral interdomal cartilage grafting for nasal lengthening and tip projection via endonasal approach.

Methods

Retrospective review of all patients undergoing a novel bilateral interdomal cartilage grafting technique for nasal tip surgery and correction of short nose, at a tertiary referral center. Photodocumentation of all patients was obtained preoperatively and postoperatively. Patients were asked to subjectively rate their cosmetic outcomes at follow-up visit.

Results

Fifteen patients underwent the technique via endonasal rhinoplasty. The median duration of follow-up was 24 months. At the last follow-up, cosmesis was rated as excellent in 13 of 15 cases and good in 2 of 15 cases. There were no postoperative complications.

Conclusion

With this technique, a reliable and predictable nasal tip and correction of short nose are obtained with a minimum of graft usage. This technique results in a more pliable nasal tip in the horizontal plane. Wide dissection in the nasal tip area is not needed. This new grafting technique in endonasal rhinoplasty should be considered for tip modification and correction of short nose.

Risk factors for pediatric snoring: comparison between snoring and non-snoring children

S. Hong¹, H. Jung¹, J. Cho¹

¹ Otorhinolaryngology, Kunkuk University Medical Center, Seoul, Korea

Abstract: ERS-0507

Session: Pediatric rhinology

Session Time: 25-06-14, 10:24

Location: Hall H

Chair person: P. Stjarne

Presenting author: S. Hong

Objectives

Snoring is very common among children. However, there is controversy regarding its effect on children. The purpose of this study is to identify risk factors and comorbidities associated with the condition collectively.

Methods

208 children in the first grade from one public elementary school were invited to participate in this study. Parents were surveyed for the each child's snoring status, behavior, gestational age, birth weight and, the parents' snoring and smoking status. Measurements were taken of each child's height, weight, waist and neck circumference, body fat percentage, and blood pressure. X-rays and physical exams were used to record tonsil and adenoid size, and bone age. All children received an allergy skin prick test, intelligence test, and comprehensive blood test. Results were then compared between snoring and non-snoring children.

Results

Among 208 children, 172 were included in the study. Out of 105 boys, 40 were snorers (38%), while out of 67 girls, 15 were snorers (22%). Among boys, diastolic blood pressure was higher among snoring boys than non-snoring ones ($p=0.030$). For girls, body fat percentage was higher among snoring than non-snoring girls (26 vs. 21%, $p=0.039$). Birth weight was higher among snoring girls than non-snoring ones (3.5 vs 3.1kg, $p=0.002$), and parents of snoring girls snored more frequently ($p=0.001$). There were no differences of behavior, cognition, tonsil or adenoid size, and allergy or blood test results between snoring and non-snoring children.

Conclusion

Risk factors for pediatric snoring were gender-specific, and included high diastolic blood pressure, birth weight, body fat percentage, and parental snoring.

A concept of comprehensive bacteriologic diagnostics of sinus mucosa after FESS and preliminary data of 10 patients

B. Olzowy¹, A. Podbielski², T. Schuldt³, K. Köller²

¹ Department of Otorhinolaryngology Head & Neck Surgery, Universitymedicine Rostock, Rostock, Germany

² Institute of Medical Microbiology Virology and Hygiene, Universitymedicine Rostock, Rostock, Germany

³ Department of Otorhinolaryngology Head & Neck Surgery, Universitymedicine Rostock, Rostock, Germany

Abstract: ERS-0508

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:55

Location: Hall J

Chair person: C. Hopkins

Presenting author: B. Olzowy

Objectives

The role of bacteria in chronic rhinosinusitis is complex and still not well understood. The spectrum of bacteria cultured with standard techniques varies widely among different studies. Intracellular bacteria and biofilms can also be detected in/on nasal mucosa. Most studies available only address selected types of bacterial growth and do not provide detailed clinical data (type and severity of CRS, treatment and outcome).

Methods

Detailed clinical data of patients scheduled for FESS was stored in a data base. Swabs were taken from the middle meatus and from the opened sinuses. Tissue samples were taken of three different localizations from one side. A third of each sample was i) cultured after homogenization, ii) incubated with broad spectrum antibiotics, washed and cultured after cell lysis for detection of intracellular bacteria and iii) analyzed for biofilms with scanning electron microscopy.

Results

Preliminary data of 10 patients are presented. All patients showed a polymicrobial flora (middle meatus 3.6 ± 0.9 , intra-op 4.1 ± 1.0 species, n.s.) containing anaerobes. Anaerobes were cultured in larger amounts from the sinuses intraoperatively compared to the swabs from the middle meatus ($p = 0.034$). Compared to swabs, cultures of tissue samples reveal less species ($p = 0.005$) in smaller amounts ($p < 0.001$) with no additional species detected. Two patients had intracellular *P. acnes* and no biofilm was detected.

Conclusion

Middle meatus swabs may underestimate anaerobes. Standard culture of tissue samples did not yield additional information and seem dispensable.

Pathogenic memory T cell that expresses IL-25 receptor is involved in the pathogenesis of eosinophilic chronic rhinosinusitis

T. Iinuma¹, S. Yonekura¹, D. Sakurai¹, Y. Okamoto¹

¹ Otolaryngology, Chiba University Graduate School of Medicine, Chiba, Japan

Abstract: ERS-0509

Session: CRS Basic 3

Session Time: 24-06-14, 16:05

Location: Hall E

Chair person: S. Vlamincx

Presenting author: T. Iinuma

Objectives

The majority of CRSwNP in western country is characterized by eosinophilic inflammation, but recent studies have revealed a type of CRSwNP in East Asia that is not characterized by Th2-skewed inflammation. To investigate the difference of pathogenesis between non eosinophilic chronic rhinosinusitis (NECRS) and eosinophilic chronic rhinosinusitis (ECRS), we analyzed tissue CD4+ T cells in nasal polyps (NPs) by focusing on influence of IL-25.

Methods

NPs were obtained from patients with CRSwNP. CRSwNP was classified as eosinophilic CRS when the number of tissue eosinophils was over 70 per high power field. Pro-allergic cytokines in tissue homogenates were measured by ELISA. We isolated nasal polyp mononuclear cells (NPMCs) from NPs by enzymatic method. Subsequently, tissue CD4+ T cells were sorted and analyzed by real-time PCR and flow cytometry.

Results

The IL-25 level in NPs increased in patients with ECRS and correlated with IL-5 and IL-9 expression levels and the number of tissue eosinophils in NPs. Regardless of the atopic status, high IL-17RB levels were detected in tissue CD4+ T cells from patients with ECRS. IL-17RB mRNA levels expressed by tissue CD4+ T cells significantly correlated with the number of eosinophils in NPs. Elevation of IL-5 and IL-9 production was found in NPMCs from patients with ECRS, but not in those from patients with NECRS, by stimulation with IL-25 under T cell receptor stimulation.

Conclusion

A subpopulation of tissue Th2 and Th9 cells that express increased IL-17RB levels may contribute to the pathogenesis of eosinophilic chronic rhinosinusitis.

Otalgia caused by inflammatory asbestos plug in the eustachian tube region

D. Di Maria¹, F. Giangregorio¹, G. Ferrara², P. Goglia², G. Principe³, G. Correr¹

¹ ENT, "Gaetano Rummo" Hospital, Benevento, Italy

² Pathological Anatomy, "Gaetano Rummo" Hospital, Benevento, Italy

³ Anesthesiology, "Gaetano Rummo" Hospital, Benevento, Italy

Abstract: ERS-0510

Objectives

The authors describe a clinical case of a patient 60 years old who, due to a working occasionally on a tube of asbestos, accidentally inhaled powder. The next day appeared a violent and persistent otalgia radiated to the lateral region of the neck to the left that was not controlled with NSAIDs but only by the application of topical anesthetic at the junction between soft and ipsilateral hard palate.

Methods

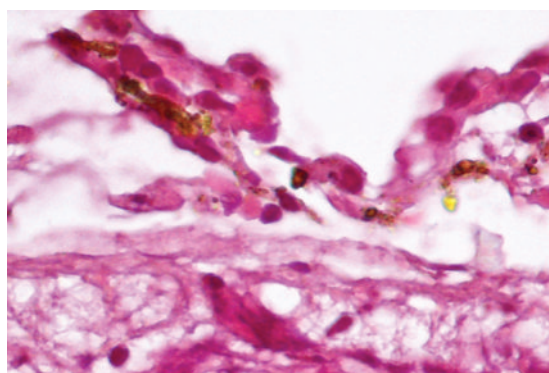
For the persistence of symptoms, he underwent an endoscopic examination of the nasal cavity showed hyperemia and swelling at the level of left torus tubaricu. Subjected to sedation in nasal endoscopy, following an initial biopsy, were noted some particles stuck in the fibrillar left region that were collected and removed. For the persistence of symptoms the patient underwent re-biopsy, using the same procedure, which was used to further remove residual fibers.

Results

Histological examination (iron-staining P1110032) showed the synthetic nature of the fibrillar particles (asbestos). After the surgery, the patient did not experience any symptoms.

Conclusion

There are no similar cases in the literature. It is clearly a somatic pain by direct irritation of the branches of the somatic sensory fibers of the cranial nerves IX (glossopharyngeal). An otalgia radiated to the soft palate in patients who have been in contact with asbestos or working with asbestos should raise the suspicion of the pathogenesis of irritation secondary to the presence of these fibers.



Macrolide antibiotics regulate the expression of 11BETA-HSD1 in human nasal epithelium, contributing to the local glucocorticoid activation in human nasal mucosa

S. Park¹, T. Kim², S. Lee²

¹ Otorhinolaryngology Head and Neck surgery, Hallym University Dongtan Sacred Heart Hospital, Gyeonggi-do, Korea

² Otorhinolaryngology Head and Neck surgery, College of Medicine Korea University, Seoul, Korea

Abstract: ERS-0511

Session: CRS Basic 2

Session Time: 24-06-14, 15:05

Location: Hall G

Chair person: R. Moesges

Presenting author: S. Park

Objectives

Macrolide antibiotics has been known that macrolides exert not only antibacterial activity but also anti-inflammatory and immunoregulatory effects. Endogenous glucocorticoids are powerful modulators of inflammatory responses. The endogenous production of the anti-inflammatory glucocorticoid cortisol is controlled by the expression of the two isoforms of 11b-HSD. Furthermore, CYP11B1 has been suggested as a potential extra-adrenal sources of glucocorticoids. To gain insights into the unclear questions regarding macrolide treatment, this study was designed

1. To evaluate the effect of macrolide antibiotics on the expression levels of 11b-HSD1, 11b- HSD2 and CYP11B1 in nasal epithelium.
2. To investigate whether the conversion ratio of cortisone to cortisol may be affected by the macrolide antibiotics.

Methods

The expression levels of 11b-HSD1, 11b- HSD2 and CYP11B1 in cultured epithelial cells were examined after treatment with antibiotics including macrolide, using real-time PCR and Western blot analysis. Cortisol levels in supernatants of cultured cells with pretreatment of antibiotics including macrolide were measured using ELISA.

Results

On protein and RNA level, macrolide antibiotics increased the expression of 11b-HSD1 and CYP11B1 in cultured nasal epithelial cell. Also, macrolide antibiotics induced the increased production of cortisol from cortisone in cultured nasal epithelial cell.

Conclusion

Macrolide antibiotics induced the expression of 11b-HSD1 and CYP11B1. Also, conversion ratio of cortisone to cortisol was affected by the macrolide antibiotics. In conclusion, macrolide antibiotics is supposed to regulate the expression of 11b-HSD1 and CYP11B1 in human nasal epithelium, contributing to the local glucocorticoid activation in human nasal mucosa.

Treatment outcomes of midfacial segment pain: experience of the liverpool multi-disciplinary facial pain clinic

L. Lazarova¹, H. Tsang², G. Banhegyi³, S. Leong³

¹Otorhinolaryngology department, The Royal Liverpool University Hospital, Liverpool, United Kingdom

² Department of anaesthesia and pain management, The Royal Liverpool University Hospital, Liverpool, United Kingdom

³ Department of Otorhinolaryngology, The Royal Liverpool University Hospital, Liverpool, United Kingdom

Abstract: ERS-0512

Objectives

Many patients believe that their 'sinus headaches' are due to underlying sinusitis, yet as few as 11% of patients with chronic rhinosinusitis report concomitant facial pain. In fact, the most common causes of 'sinus headaches' were atypical facial pain, tension-type headache, migraine and cluster headache. A smaller proportion of patients have facial pain distribution confined to the second division of the trigeminal nerve. This has been described as midfacial segment pain (MSP).

The aim of this study is to review the clinical outcomes of MSP using the Sino-Nasal Outcome Test (SNOT-22).

Methods

A Prospective audit of MSP patients attending a tertiary facial pain clinic. Treatment protocols followed National Institute for Health and Clinical Excellence recommendations for the treatment of neuropathic pain.

Results

The MSP cohort comprised 24 females and 13 males, with a mean age of 48 years. The mean pre-treatment SNOT-22 was 59.6 (median 60, range 28 - 103). The mean SNOT-22 improved significantly ($p < 0.05$) by 20.1 (median 21, range 1 - 60) and at 4-months follow-up, the mean score was 39.5 (median 40, range 13 - 100). The minimally clinically important difference in SNOT-22, which has been shown to be 8.9, was achieved in 70% of the MSP cohort. The largest improvement was observed in the facial/ear symptoms and psychological issue subscales of the SNOT-22.

Conclusion

Although treatment response appears to vary based on the SNOT-22, the majority of patients can expect significant improvement within 6 months of treatment. Further follow-up study is needed to determine the long-term clinical course of these patients.

Efficacy and safety of sublingual immunotherapy in Asian children

H. Lee¹, J. Shin¹, I.L.H.O. Park¹

¹ Department of ENT Korea University, Korea University Guro Hospital, Seoul, Korea

Abstract: ERS-0513

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 15:04

Chair person: C. Bachert

Presenting author: H. Lee

Objectives

Sublingual immunotherapy is currently accepted as a suitable alternative to subcutaneous immunotherapy because of its easy and painless administration and improved safety. Many clinical trials have demonstrated that sublingual immunotherapy is an effective and safe treatment for pollen or mite allergic rhinitis. However, there have been very few studies overall on children with allergic rhinitis who are sensitized to house-dust mites in Asia. The purpose of the present study was to investigate the efficacy and safety of sublingual immunotherapy in children with allergic rhinitis to house-dust mites.

Methods

A total of 112 patients under the age of 15 who had allergic rhinitis to *Dermatophagoides pteronyssinus* and *Dermatophagoides farinae* were included. All patients were treated with sublingual immunotherapy (Staloral®). Symptom scores and quality of life were evaluated by questionnaires until one year after sublingual immunotherapy. The medication score was assessed monthly using a diary medication card and serologic tests were evaluated before and 6 and 12 months after treatment. Adverse effects and compliance were also investigated.

Results

All nasal and non-nasal symptoms and quality of life were significantly improved after treatment. The total medication score was decreased significantly after sublingual immunotherapy. There was no significant change in serologic tests. Some minor adverse effects were reported, however there were no systemic reactions. The drop-out rate was 21%.

Conclusion

Sublingual immunotherapy is a valuable therapy for the treatment of allergic rhinitis in Asian children sensitized to house-dust mites.

CD105 expression in sinonasal polyposis

G. Ottaviano¹, F. Marino², R. Cappellesso², I. Mylonakis¹, N. Favaretto¹, L. Giacomelli²,
A. Staffieri¹, G. Marioni¹

¹ Neurosciences, University of Padova, Padova, Italy

² DIMED, University of Padova, Padova, Italy

Abstract: ERS-0515

Objectives

Tissue angiogenesis is a complex process that involves remodeling of the extracellular matrix and proliferation and migration of endothelial cells. Increased expression of vascular endothelial growth factor and its upregulation by transforming growth factor-beta (TGF- β) can contribute to the edema and increased angiogenesis in sinonasal polyps. (Pawankar, 2003). Endoglin (CD105) is a disulphide-linked, proliferation-associated, hypoxia-inducible homodimeric cell membrane glycoprotein. CD105 is a component of the receptor complex of TGF- β , a pleiotropic cytokine that modulates angiogenesis by regulating various cell functions, including proliferation, differentiation and migration. CD105 expression is up-regulated in actively proliferating endothelial cells. The aim of this study was to firstly investigate CD105 expression in nasal polyps and the potential relationship between CD105 immunoreactivity and the risk of recurrence of nasal polyps in 85 consecutive cases undergone FESS.

Methods

Immunohistochemistry was automatically performed on 4-5 μ m-thick formalin-fixed and paraffin-embedded sections from each sample with the mouse monoclonal primary antibody anti-CD105 (clone SN6h; Dako, Glostrup, Denmark; working dilution 1:10).

Results

When detectable, CD105 showed strong cytoplasmic immunostaining restricted to vascular endothelial cells of small vessels.

Conclusion

Cytoplasmic immunoreaction in vascular endothelial cells of small vessel was determined and its correlation with clinical and prognostic variables investigated.

Burkholderia cepacia complex: an emerging pathogen in chronic rhinosinusitis?

G. Ottaviano¹, C. Staffieri¹, N. Favaretto¹, E. Fasanaro¹, A. Staffieri¹, D. Abate², G. Marioni¹

¹Neurosciences, University of Padova, Padova, Italy

²Department of Histology Microbiology and Medical Biotechnology, University of Padova, Padova, Italy

Abstract: ERS-0516

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 15:05

Location: Hall J

Chair person: C. Hopkins

Presenting author: G. Ottaviano

Objectives

Both polypoid and non-polypoid chronic rhinosinusitis (CRS) microbiology and its influences in the onset, developing, and relapsing of the disease remains unclear. *Burkholderia cepacia* has gone from a single species to being a complex (*Burkholderia cepacia* complex [BCC]) comprising at least 17 closely related species. BCC strains have a remarkable ability to adapt to diverse lifestyles, since they can also behave as opportunistic pathogens towards immunocompromised patients. One of the major problems associated with BCC infection is their intrinsic resistance to most of the clinically available antimicrobials, including aminoglycosides, quinolones, polymyxins, and β -lactams. BCC infections of the head and neck region have been infrequently reported in immunocompetent patients, while their association with cystic fibrosis is quite well-known, and it seems to be related to the different adhesion capacity of these bacteria to the altered respiratory epithelium of these patients.

Methods

-

Results

In the present series of 34 consecutive FESS, BCC was first isolated in 4 cases of CRS without polyposis; another case of BCC isolation in sinonasal polyposis was also reported.

Conclusion

The isolation of BCC in sinonasal polyposis not associated with cystic fibrosis has been previously documented (Marioni et al., 2007; Brescia et al., 2008): on the contrary the first isolation of *Burkholderia cepacia* complex in patients affected by CRS without nasal polyposis was discussed from clinical and microbiological viewpoints in the present study.

Clinical safety of PMR (palatal muscle resection) in which performed osas patients

S. Koo¹, H. Lee¹, Y. Kim¹, Y. Kim¹

¹ Department of Otorhinolaryngology, Busan Saint Mary's Hospital, Busan, Korea

Abstract: ERS-0517

Session: OSAS

Location: Hall H

Time: 25-06-14 15:15

Chair person: N. de Vries

Presenting author: S. Koo

Objectives

Although there are many surgical procedures of palate in OSAS patients, a standard procedure is not established. So, we have designed novel surgical method of palate (PMR: Palatal Muscle Resection). PMR is simple and less painful than other palatal surgery and relative popular in Korea. The purpose of this study was to introduce surgical technique and analyze clinical effect and safety of PMR.

Methods

Patients with mild to moderate OSA were enrolled in this study. Fourteen Patients underwent only PMR between August 2007 and February 2008 and their medical records were reviewed retrospectively. The procedure is performed under general anesthesia. The mucosa, submucosa and partial muscular layer on the lingual surface of soft palate are resected and sutured. Questionnaires based Epworth Sleepiness Scale(ESS) were analyzed before and after PMR surgery to assess surgical results. Visual Analogue Scale was used to evaluate postoperative pain. Eustachian tube function test, voice analysis, and measurement of forced expiration power were done after two months of surgery.

Results

ESS were significantly decreased in two months after PMR surgery. There was little postoperative pain in a week after PMR surgery. There was no significant change of observed vowel sounds except /u/ nor postoperative nasalization in voice after postoperative two months. There was no significant Eustachian tube dysfunction nor change of expiration power in two months after PMR surgery.

Conclusion

PMR is clinically safe and gives satisfaction of subjective outcomes in mild to moderate obstructive sleep apnea patients.

Effectiveness of hydrodebrider in treatment of recurrent CRS and Samter's triad

K. Lazecka¹, I. Gwizdalska¹, P.H. Skarzynski², A. Mickielewicz¹, H. Skarzynski¹

¹ Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Ophthalmic diagnostics and rehabilitation and sensory organs department, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0518

Objectives

Recurrent CRS and aspirin triad are most difficult diseases for treatment in ENT. Repeatedly occurring aggravation of disease are big medical problem for surgeons and cause significant lowering of quality of life for patients. Many research tries to find the pathological background of recurrences. One of the theories is a role of bacterial biofilms. As far as the role of biofilms is now better understand the protocol of treatment is a subject of ongoing debate. One of the New Technologies is Medtronic Hydrodebrider.

Methods

Prospective study of 50 patients with CRS in 2 groups: recurrences with aspirin triad and without Semter's triad surgically treated in International Center of Hearing And Speech , The Institute of Physiology and Pathology of Hearing, Warsaw/Kajetany , Poland in 2010. Each patient during surgery had mucosa sample examined for bacterial biofilms. Patients without biofilms were excluded from this study. During surgery was used Hydrodebrider in the Medtronic Surgery Protocol. In Follow up every patient had complete clinical examination and endoscopic cleaning of surgery site every 2 weeks. After 6 weeks the effectiveness of treatment was based on clinical status of patient and presence of biofilms in second mucosa sample.

Results

The partial results of the study are better cleaning of sinuses after surgery, faster healing of mucosa and better satisfaction of patients in both groups.

Conclusion

Initial results of the study are encouraging but patients need longer follow up to confirm efficiency of this protocol of treatment.

Creating a virtual patient collaborative network for rhinology

R. Rupert¹, G. Barrett¹, H. Khalil¹

¹ ENT Department, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

Abstract: ERS-0519

Session: Simulation and training

Time: 24-06-14, 09:57

Location: Hall J

Chair person: S. Carney

Presenting author: R. Rupert

Objectives

Virtual patients (VP) or interactive case studies have been in use for some time and are growing in popularity among education providers, trainees and students. In providing an engaging and highly interactive tool for learning they allow the student to explore their knowledge in a safe environment where mistakes can be made and actively encouraged (to be learnt from!). They can also be a cost effective way for reaching many trainees, across a wide geographic region without the need for centralised meeting and unnecessary travel.

Methods

In the authors' experience the currently available VP have been created by large companies and distant medical societies/universities. We found these impersonal and not able to address our local requirements. Based at the University of Plymouth we engaged a team of local software engineers to create a package of software to allow anyone to create their own VP based on personal experience. The aim is to create an open, collaborative network of VP to encompass a range of ability and experience, from early medical student to senior surgical trainees and independent practitioners. This can be tailored to reflect and address our regional requirements enhancing the learning outcomes as well as being dynamic enough to respond to the evolution in our student demographic and new software developments.

Results

Conclusion

We present our experience of developing Rhinology VP learning tool software, a pilot VP and its evolution, responding to user feedback. We also wish to share our vision of a regional network of locally authored VP learning tool.

Comparison of pre-operative CT-SCAN and MRI assessment with the intra operative findings on sinonasal inverted papilloma using surgical navigation panel unit

A. Budi¹, R.S. Wardani¹, V. Wulani², A. Djurzan²

¹ Department of Otorhinolaryngology Head and Neck Surgery, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospital, Jakarta, Indonesia

² Department of Radiology, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospital, Jakarta, Indonesia

Abstract: ERS-0520

Session: Skull base surgery 3

Session Time: 26-06-14 10:40

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: A. Budi

Objectives

Preoperative assessment is essential before inverted papilloma surgery to ensure complete resection and prevent recurrence. There are no standard preoperative assessment for inverted papilloma in Indonesia. This study was aim to compare CT-scan and MRI in preoperative assessment with the intra operative findings to determine which is the best preoperative imaging modality for the management of inverted papilloma.

Methods

Preoperative assessment predicted the site of origin, involvement of the paranasal sinus and tumor staging of inverted papilloma in 10 patients with CT-scan and MRI, then subsequently compared with the operation findings by surgical navigation imaging guidance. Navigation panel units was an important tool in guiding operations and ensure the intra operative findings consistent with the imaging.

Results

The results of this study showed that CT-scan predicted the site of origin better than MRI ($p=0.046$), while no significant differences for both modalities in determined the involvement of the paranasal sinuses and tumor staging.

Conclusion

Therefore, we concluded that CT-scan is the best imaging assessment for sinonasal inverted papilloma.

Endoscopic sphenopalatine artery ligation: our experience at a district general hospital in Scotland

R. Crosbie¹, C. McCaffer¹, M. Wickham¹, N. Calder¹

¹ Department of Otolaryngology, Monklands Hospital, Airdrie, United Kingdom

Abstract: ERS-0521

Session: Epistaxis

Session Time: 23-06-14, 12:09

Location: Hall E

Chair person: A. Swift

Presenting author: R. Crosbie

Objectives

Endoscopic sphenopalatine artery ligation (ESPAL) has gained widespread endorsement as a management option in epistaxis. We present our case series from a district general hospital which adds to the small body of literature for this procedure.

Methods

A retrospective analysis of ESPAL performed between February 2007 and November 2013 was carried out with notes from 20 patients reviewed. Patient demographics, duration of hospital stay, operative techniques and treatment outcomes were measured.

Results

Our success rate for ESPAL was 90%; two patients had re-bleeding following their surgery, one required simple first aid measures and the other required revision ESPAL. No patients have been re-admitted with epistaxis following discharge from hospital. The mean age at surgery was 54.9 years (SD 12.2) and the male to female ratio was 1.2:1. The median length of hospital stay was 5 days (range, 1-13 days) and post-operative stay was 2 days (range, 1-11 days). Seventy-five per cent of cases were performed during normal working hours. The most common past medical history was hypertension (10 patients). Interestingly, 80% of our patients were smokers and only 20% were taking prescribed anti-coagulant or anti-platelet medication. We reviewed the admission, induction of anaesthesia and discharge from hospital recordings of blood pressure (BP). There was a mean reduction in systolic BP by 16.1 mmHg during the hospitalisation period.

Conclusion

We have demonstrated that ESPAL is an effective management option for epistaxis with our success rates being comparable to other studies. We found a surprisingly high proportion of our patients were smokers.

Use of sinus surgery navigation systems in treatment of recurrent CRS with or without nasal polyps

K. Lazecka¹, I. Gwizdalska¹, P.H. Skarzynski², A. Mickielewicz¹, H. Skarzynski¹

¹ Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Ophthalmic diagnostics and rehabilitation and sensory organs department, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0522

Objectives

Second surgery of sinuses caused by distorted, neossification, scars after previous surgery and local disease advancement, surgical anatomy are a big challenge for ENT surgeons. Despite excellent knowledge of anatomy it is often hard to remove a disease in total. The biggest problem is bleeding. Use of the navigation system is helpful in surgery. Careful examination of CT scans is necessary.

Methods

Poster presents retrospective study of 188 patients with recurrent sinus disease treated surgically in the World Hearing Center, Kajetany between 2009-2012. Main reason of recurrences is Semter's triad, incomplete previous surgery, genetic disorders, inappropriate pharmacological treatment. Incomplete surgery in frontal recess and posterior ethmoid cells were most common reasons for reoperation.

Results

70% of patients are free from disease after follow up ranging from 4 to 20 months after surgery. 15% of patients have recurrent sinus disease treated medically with good results and good access to sinuses in endoscopic view. 15% needed reoperation - mainly patients with Semter's triad and mucopolysaccharidosis. The main reason for another procedure was nasal polyps formation. It is important to have proper CT scans of patients and to use appropriate protocol for patient registration to navigation system. After fulfillment of this condition one can get good correlation of anatomy with navigation view but have to keep in mind 1 mm shift that sometime is very important.

Conclusion

Sinus surgery navigation system is a valuable tool but the knowledge of the anatomy is crucial as well as careful CT scan examination and good planning of procedure.

Knowledge and attitudes of singapore ent residents on the types of leukocytes in nasal polyposis

C.L. Ng¹, D.Y. Wang²

¹ Otolaryngology-Head and Neck Surgery, National University Health System, Singapore, Singapore

² Otolaryngology-Head and Neck Surgery, National University of Singapore, Singapore, Singapore

Abstract: ERS-0524

Session: Balloon sinuplasty

Time: 24-06-14, 09:48

Location: Hall G

Chair person: A. Leunig

Presenting author: C.L. Ng

Objectives

Nasal polyps are generally considered as eosinophil-predominant mucosal inflammation histologically. Recent research suggests that a significant proportion of Asian polyps are neutrophil-predominant with poorer response to steroids but may respond well to macrolides. We conducted a study to determine the knowledge and attitudes of Singaporean ENT-residents on these research developments.

Methods

We administered a questionnaire-based survey to Singaporean ENT-residents at a national ENT lecture which all residents are required to attend in December 2013.

Results

30 residents (58.8% of all Singaporean ENT-residents) responded. Only 3.3% reported that histopathological reports in their institution routinely state the predominant types of leukocytes in polyps but 66.6% would like the predominant leukocyte type to be routinely reported. 66.6% believed this information can make a difference in clinical management, but only 10% reported that this knowledge had made an actual impact on their clinical management.

60% thought European and American polyps were eosinophil-predominant while 40% were unsure. 26.7% thought Singaporean polyps were eosinophil-predominant (which is correct), while 53.4% were unsure. When asked whether differences exist between responses of neutrophilic- and eosinophilic-polyps to steroids, 50% were unsure; and for macrolides, 83.3% were unsure. On pharmacological management, 93.3% routinely prescribe nasal steroids and 83.3% short-term oral steroids before surgery, but only 13.3% routinely prescribe macrolides.

Conclusion

Singaporean pathologists do not routinely report the leukocytic-infiltrates in nasal polyps. Research findings in this area have not effectively impacted clinical practice. More education is necessary to raise awareness amongst ENT-residents and pathologists on the significance of leukocyte-types in polyps.

Nasal HMGB1 levels and nasal symptoms are affected by glycyrrhizin treatment in patients with allergic rhinitis

L. Cavone¹, C. Cuppari², S. Manti², L. Grasso², T. Arrigo², L. Calamai³, C. Salpietro², A. Chiarugi¹,
V. Damiani⁴

¹ Department of Health Sciences Section of Clinical Pharmacology and Oncology, University of Florence, Florence, Italy

² Department of Pediatric Unit of Genetic and Immunology, University of Messina, Messina, Italy

³ Department of Health Sciences Section of Clinical Pharmacology and Oncology, University of Florence, Florence, Italy

⁴ ENT Department, San Giovanni Addolorata Hospital, Rome, Italy

Abstract: ERS-0525

Session: Pediatric rhinology

Session Time: 24-06-14, 12:30

Location: Hall H

Chair person: JB Watelet

Presenting author: V. Damiani

Objectives

The protein HMGB1, a proinflammatory mediator, is a key player of different acute and chronic immune disorders. Very recent studies show increased levels of the protein in patients affected by asthma. It is unknown, however, whether HMGB1 also plays a role in inflammatory processes of the upper respiratory. In the present study, we evaluated HMGB1 levels in nasal secretions of patients with allergic rhinitis. We also evaluated the impact of glycyrrhizin nasal spray, compared with budesonide nasal spray or saline solution, on HMGB1 levels and nasal symptoms.

Methods

HMGB1 levels were evaluated in nasal fluids of healthy subjects or rhinitis patients (170 patients), before and after 1 week treatment with budesonide nasal spray, glycyrrhizin nasal spray or saline solution. Nasal symptoms before and after treatment were also evaluated.

Results

HMGB1 is significantly increased in nasal fluids of patients with allergic rhinitis, compared to healthy subjects. We found that glycyrrhizin reduced HMGB1 contents in nasal fluids of rhinitis patients to an extent similar to that obtained with nasal budesonide treatment. Nasal symptoms significantly improved in patients treated with glycyrrhizin or budesonide nasal spray, compared to saline.

Conclusion

Data underscore the role of HMGB1 in nasal inflammation and the therapeutic potential of GLT formulations for the treatment of allergic rhinitis.

HMGB1 is increased in nasal fluids of patients with rhinitis and its sequestration by glycyrrhizin reduces eosinophil survival

L. Cavone¹, C. Cuppari², S. Manti³, L. Grasso³, T. Arrigo³, L. Calamai⁴, C. Salpietro³, A. Chiarugi⁴, V. Damiani⁵

¹ Department of Health Sciences Section of Clinical Pharmacology and Oncology, University of Florence, Florence, Italy

² Department of Pediatric Unit of Genetic and Immunology, University of Messina, Messina, Italy

³ Department of Pediatric Unit of Genetic and Immunology, University of Messina, Messina, Italy

⁴ Department of Health Sciences Section of Clinical Pharmacology and Oncology, University of Florence, Florence, Italy

⁵ ENT Department, San Giovanni Addolorata Hospital, Rome, Italy

Abstract: ERS-0526

Session: Rhinitis basic

Session Time: 24-06-14, 12:05

Location: Hall G

Chair person: TBC

Presenting author: L. Cavone

Objectives

Several lines of evidence demonstrate that HMGB1 is actively released extracellularly from immune cells or passively from necrotic ones. Because of the ability of HMGB1 to sustain chronic inflammation, we investigated whether the protein is present in nasal fluids of patients with different forms of rhinitis.

Methods

HMGB1 levels were evaluated in nasal secretions of healthy subjects or rhinitis patients.

Results

We report that HMGB1 is significantly increased in nasal fluids of patients with allergic rhinitis, non-allergic rhinitis with eosinophilic syndrome (NARES), as well as polyps. We also found that among cultured human leukocyte populations, eosinophils release the higher amounts of HMGB1. In keeping with the ability of HMGB1 to sustain eosinophil survival, and with that of glycyrrhizin to inactivate HMGB1, we report that glycyrrhizin selectively killed cultured eosinophils, having minor effects on neutrophils, macrophages and lymphocytes.

Conclusion

Overall, this study furthers our understanding of the effects of HMGB1 on human leukocytes, and corroborates the therapeutic potential of glycyrrhizin to topical treatment of rhinitis.

Silent sinus syndrome in patients with lateralization of infundibulum

M.Z. Dzhafarova¹, D.M. Savvateeva¹, V.M. Svistushkin¹

¹ Otorhinolaryngology, I.M.Sechenov First MSU, Moscow, Russia

Abstract: ERS-0527

Session: CRS miscellaneous

Session Time: 25-06-14, 15:15

Location: Hall J

Chair person: G. Adriaensen

Presenting author: M.Z. Dzhafarova

Objectives

The silent sinus syndrome (SSS) includes a painless involution of the maxillary sinus due to occlusion of infundibulum associated with negative antral pressures and enophthalmos. First of these clinical symptoms were described by William W. Montgomery in 1964. After ten years the term 'silent sinus syndrome' was proposed by Soparkar et al. The treatment of SSS consists of two stages: creating the conditions for aeration of maxillary sinus by FESS and reconstruction of orbital floor with persisting enophthalmos. In most cases, only the first stage is enough to achieve aeration and regression enophthalmos.

Methods

Retro- and prospective analysis of the incidence of SSS patients with lateralization of infundibulum in the period 2012 to 2013 was investigated. 35 patients at the age of 19 to 73 years (mean age-44 years) (21 female, 67%) operated in ENT-clinic of I.M.Sechenov First MSU were included in examination.

Results

14 patients were presented the involution of maxillary sinus. Two of these patients had a bilateral process, five patients – left-sided and seven patients - right-sided SSS. Four patients had secondary SSS due to orbital trauma and FESS. On CT-scans half of the patients were found retractions of bony walls. All patients were performed endoscopic surgery on the maxillary sinuses.

Conclusion

In 35 patients with lateralization of infundibulum SSS were observed in 14 cases. Thus lateralization of infundibulum or whole region of fontanella is a prognostic factor in development of the SSS. All 35 patients achieved a sufficient expansion of natural ostium and complete aeration of sinus.



Pott's puffy tumor: a rare clinical entity

M.T. Türkmen¹, A. Akinci², S. Osman², M.K. Adali¹

¹ Department of Otorhinolaryngology, Trakya University School of Medicine, Edirne, Turkey

² Department of Neurosurgery, Trakya University School Of Medicine, Edirne, Turkey

Abstract: ERS-0528

Objectives

Pott's puffy tumor was firstly defined in 1760. It is characterized by frontal sinusitis accompanied by subperiosteal abscess and osteomyelitis of the frontal bone. With the increasing use of antibiotics incidence of pott's puffy tumor has decreased as other complications of sinusitis. Computed tomography is highly effective in diagnosis. Rapid diagnosis, surgical and medical treatment is required due to heavy mortality and morbidity. We describe the presentation, diagnosis, and treatment of an Pott's puffy tumor with history of trauma and cranial surgery.

Methods

Case: A 46 years old male patient presenting with nasal congestion, post nasal drip and frontal swelling with purulent discharge for twelve days, which was admitted to our side. There was a history of frontal surgery due to traumatic subarachnoid hemorrhage about six years ago.

Results

Treatment and prognosis: The frontal osteomyelitis was identified along with frontoetmoidal sinusitis in radiological scan. Excision of the frontal bone extracranially and frontal sinus obliteration were performed along with endoscopic sinus surgery. Intensive postoperative antibiotherapy was administered due to osteomyelitis. Postoperative second month follow-up continues without complications

Conclusion

Pott's puffy tumor is a rare clinical condition. Despite incidence is further reduced with widespread use of antibiotics, due to the high mortality and morbidity rates it is an serious emergent condition. Our case is separated from other cases in the literature due to the history of trauma and cranial surgery.

-954G/C genetic polymorphism of NOS2 gene in nasal polyposis. A case control study in a population group of Romania

A. Catana¹, A. Maniu², R.A. Popp¹, M. Cosgarea², I.V. Catana²

¹ Department of Molecular Sciences, Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca, CLUJ-NAPOCA, Romania

² ENT Department of UMF Cluj, Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca, CLUJ-NAPOCA, Romania

Abstract: ERS-0529

Session: CRS Basic 3

Session Time: 24-06-14, 16:55

Location: Hall E

Chair person: S. Vlaminc

Presenting author: A. Catana

Objectives

Polymorphisms for genes encoding chemosensitive signalling proteins like NOS2, might contribute to the variability in individual susceptibility to nasal polyposis. NO produced by the inducible NO synthase enzyme NOS2A is generated at high levels in certain types of inflammation, so that the role of NOS2 might be important in nasal polyposis etiopathogeny. This is a cross-sectional, randomized, case control study for the evaluation of the frequency of -954G/C NOS2 polymorphism alleles among patients with nasal polyposis. The study included 92 cases of nasal polyposis diagnosed patients (nasal endoscopy and CT scan examination), and 107 healthy unrelated controls.

Methods

-954G/C NOS2 genotyping was carried out using PCR amplification of relevant gene fragment was followed by restriction enzyme digestion. Detection of the variant alleles was determined through analysis of resulting restriction fragment length polymorphism (RFLP) followed by gel electrophoresis.

Results

Molecular analysis revealed an increased frequency of -954G/CNOS2 variant allele in the study group compared to the control group ($p=0.043$; OR= 1.77; CI=1.02-3.09).

Conclusion

The main finding of our study is that mutant genotype of -954G/C NOS2 is considered to be a risk factor for nasal polyposis development.

Massive frontal mucocele with orbital extension and postoperative orbital abscess

M.T. Türkmen¹, M. Koten¹, Z. Arslan¹, M.K. Adali¹

¹ Department of Otorhinolaryngology, Trakya University School of Medicine, Edirne, Turkey

Abstract: ERS-0530

Objectives

Paranasal sinus mucoceles are benign, expansive and cystic lesions filled with mucus as a result of blockage of sinus ostium. Despite of their benign character, they may cause erosion of adjacent bone structures and orbital, cerebral complications by the effect of mass. We present our case with clinical course and long-term follow up results, because developing orbital abscess after surgery for massive frontal sinus mucocele with bone destruction.

Methods

Case: 62 years old male patient presenting with right eyelid ptosis and headache for seven months. In paranasal sinus computerized tomography, mucocele was found in the right frontal sinus extending to the orbit and eroding to the posterior wall of the frontal sinus. Preoperative visual field and eye movements were evaluated and were within normal limits.

Results

Treatment and prognosis: Open frontal sinus surgery was performed in order to excise mucocele completely. Posterior wall of the frontal sinus was seen open and the dura was found to be intact during surgery, frontal sinus obliteration was performed with adipose tissue taken from Mc Burney triangle. In early postoperative period fluctuation and heat occurs around the eye. The fluctuating point of the upper eyelid was drained. Infection regressed completely with daily drainage and IV antibiotherapy. Orbital abscess regressed completely in twenty days after surgery. There was no recurrence in eight months follow-up.

Conclusion

In this article, a case of mucocele that extended to the orbita and developing postoperative orbital abscess is presented and the method of medical treatment, surgical management is discussed.

Anterior ethmoidal artery septal flap for the management of septal perforation

M.T. Türkmen¹, A. Yildiz¹, A. Tas¹, M.K. Adali¹, M. Koten¹, A.R. Karasalihoglu¹

¹ Department of Otorhinolaryngology, Trakya University School of Medicine, Edirne, Turkey

Abstract: ERS-0531

Objectives

Choanal polyps are usually solitary, benign, soft tissue mass. They are called as etmoidochoanal, sphenochoanal, antrachoanal polyps according to their region of origin. Region from which they originated can be determined with endoscopic examination and appropriate radiological methods. Symptoms vary according to the size and localization. The treatment is endoscopic surgical excision. In this article, a case of gigantic choanal polyp arising from mouth of eustachian tube is presented.

Methods

A thirty-four year old female patient presents with irritably sensation in the throat and snoring for two months. A smooth polypoid mass which is approximately 7x1 cm in size, originated from the eustachian tube on the left side and extending along the left side of the oropharynx was detected in endoscopic examination. In addition, signs of otitis media with effusion are accompanied by "Type B" tympanogram and conductive hearing loss in the left ear.

Results

Treatment and prognosis : The choanal polyp of our patient was excised with endoscopic surgery.

Postoperative pathologic diagnosis was reported as "inflammatory polypoid tissue". In the early stage postoperative complications were not observed. Findings of otitis media with effusion declined in the 9 month follow up.

Conclusion

According to the literature, our patient is the first case of gigantic choanal polyp arising from mouth of eustachian tube in the nasopharyngeal region. Polyp in our case may be called as tubochoanal polyp because the similar cases are referred to the region where they originate.

Abnormal maxillary sinus findings before sinus lift in asymptomatic patients – a new indication for ESS

A. Margulis¹, R.O.E.E. Landesberg¹, R.O.N. Elishar²

¹ ENT, Assuta, Tel-Aviv, Israel

² ENT, Hadassa, Jerusalem, Israel

Abstract: ERS-0532

Session: CRS miscellaneous

Session Time: 25-06-14, 14:50

Location: Hall J

Chair person: G. Adriaensen

Presenting author: A. Margulis

Objectives

The goal of this study was to define the role of ESS in a subgroup of nasally asymptomatic candidates for dental procedures.

Methods

We retrospectively reviewed the files of patients referred by their dentists to Assuta and Hadassah hospitals between 2009-2012 prior to sinus lift or dental implantation. Collected data included age, gender, medical history, dental CT mucosal thickening pattern, post-antibiotic treatment sinus CT results, type of surgery performed and outcome. Asymptomatic patients who underwent ESS were included in the current study.

Results

39 patients without sinonasal disease were operated. All had residual pathology in the maxillary sinus per a sinus CT performed after an antibiotic course, precluding dental procedure. Age was 58 ± 8.7 years, 21 (53%) were males, 18 (47%) were females. Abnormal post-treatment CT findings included: maxillary sinus complete opacification (69%), circumferential opacification (22%), maxillary cyst or a polyp occupying more than 2/3 of the sinus height (11%). Osteoethmoidal complex (OMC) obstruction was observed in 50.1%. ESS included: middle antrostomy (100%), inferior antrostomy (12%), ethmoidectomy or sphenoethmoidectomy (35%). Bilateral surgery was performed in 28%. Minor complications occurred in 9%. In all patients the relevant maxillary sinus completely healed and normalized at 3 months follow-up. Prolonged follow-up at Hadassah revealed that all patients underwent successful sinus lift and dental implantation.

Conclusion

Regardless of symptoms, significant abnormalities found in a pre-operative sinus CT-scan preclude sinus lift and dental implantation. ESS is an effective and safe treatment modality therefore be indicated even in asymptomatic patients.

Endoscopic removal of ectopic teeth in the maxillary sinus: a multicenter experience

A. Margulis¹, R.O.E.E. Landesberg¹, N.I.L.I. Segal², A. Yakirevich³, U.R.I. Peleg⁴, R.O.N. Elishar⁵

¹ ENT, Assuta, Tel-Aviv, Israel

² ENT, soroka, beer sheva, Israel

³ ENT, sheba, tel hashomer, Israel

⁴ ENT, shaarei zedek, jerusalem, Israel

⁵ ENT, hadassha, jerusalem, Israel

Abstract: ERS-0533

Session: CRS surgical techniques

Session Time: 26-06-14 09:50

Location: Hall H

Chair person: V. Lund

Presenting author: A. Margulis

Objectives

An ectopic tooth in the maxillary sinus is a rare entity and is mostly an incidental finding. Symptoms may be nonspecific including pain, numbness and refractory sinus infections. When indicated, definite treatment is tooth extraction, traditionally via a Caldwell-Luc approach. We present six cases treated in different medical centers in Israel.

Methods

Otolaryngologists in Israel were asked to share their experience with the management of ectopic maxillary teeth. Data collected retrospectively included age, gender, symptoms, imaging, indication for removal, surgical approach, complications, and outcome.

Results

Six cases were reported from five tertiary centers. All patients were males, aged 16-60 years. Four patients were operated on due to recurrent maxillary sinusitis, one due to infected dentigerous cyst abating the infraorbital nerve, and in one patient the goal was to improve surgical conditions before a planned sinus lift. Two ectopic teeth were located abating the orbital floor, two were adjacent to the medial maxillary wall, one adjacent to the lateral maxillary wall, and one at the posterior maxillary wall. All teeth were successfully removed. Four were removed by an endoscopic trans-nasal, middle meatal approach; one by endoscopic trans-nasal, inferior meatal approach; and one via a Caldwell-Luc approach. Two patients had minor temporary complication: periorbital emphysema in an endoscopically treated patient and oro-antral fistula in the Caldwell-Luc treated patient. Long term follow-up revealed good clinical outcomes.

Conclusion

When ectopic maxillary sinus tooth extraction is indicated, trans-nasal endoscopic removal is a feasible and a rational option.

Comparison of the efficacy of steroid nasal spray with steroid nasal douching in the management of allergic fungal rhinosinusitis

R. Virk¹, A. Babel¹, A. Gupta¹, S. Bansal¹, S. Malhotra²

¹ Ent, Pgimer, Chandigarh, India

² Pharmacology, Pgimer, Chandigarh, India

Abstract: ERS-0534

Session: Fungal sinusitis

Session Time: 26-06-14 12:09

Location: Hall E

Chair person: S. Reinartz

Presenting author: R. Virk

Objectives

To compare the efficacy of steroid nasal spray with steroid nasal douching in the management of allergic fungal rhinosinusitis post sinus nasal surgery.

Methods

Prospective randomised study of 75 cases of Allergic Rhinosinusitis of either sex presenting in the out patient department of PGIMER, Chandigarh, India.

All patients underwent endoscopic sinus surgery and were divided into two groups:

Group A: Surgery+Oral Steroids+Saline Nasal Douching

Group B: Surgery+Oral Steroids+Steroid Nasal Spray

Group C: Surgery+Oral Steroids+Steroid Nasal Douching

Oral Steroid was used in the dose of 1mg/kg body weight in tapered dosage, Steroid nasal spray used was Budesonide one puff in each nostril once a day and nasal douching was done with a prepared solution of budesonide respules diluted in 20 ml saline.

Results

Nasal endoscopy done at 24 weeks of follow up found that in group A, 9 patients had score 0, 12 patients (59.09%) had grade 1, 1 patient had grade 2 disease and 9 patients were disease free.

In group B, 8 (36.6%) subjects had a Kupferberger score of grade 1, 2 patients had grade 2 and 12 patients were disease free.

In group C, 2 patients had grade 1 disease, 24 patients were disease free.

Conclusion

Steroid Nasal Douching as an adjunct medical therapy showed better results as compared to steroid nasal sprays or saline douching which have been the mainstay of management. Better cavity healing was seen at the end of 24 weeks. It was also found to be beneficial in preventing recurrence in the area of frontal recess and maxillary sinus.

Efficacy of partial endoscopic adenoidectomy

Y. Rusetsky¹, I. Chernyshenko¹, V. Svistushkin¹

¹ Department of the ENT, First Moscow State Medical University, Moscow, Russia

Abstract: ERS-0535

Session: Pediatric rhinology

Session Time: 25-06-14, 10:06

Location: Hall H

Chair person: P. Stjarne

Presenting author: Y. Rusetsky

Objectives

Enlarged adenoid is a common disorder in children resulting in nasopharyngeal obstruction. Recent researches show the importance of pharyngeal tonsil, in this connection some authors suggest saving adenoids, especially in a very young age. The partial adenoidectomy allows solving the problem - restoring nasal breathing while saving pharyngeal tonsil as an important immune organ. The aim was to study long-term results of partial endoscopic adenoidectomy.

Methods

We did a retrospective analysis of the operations protocols and hospital sheets of 2053 children after partial endoscopic adenoidectomy, operated from 2001 to 2010. Then the parents of these children were asked by phone.

Results

Recurrence of the disease, which demanded a revision adenoidectomy, was observed at 21 children, which made 1,02%. The average age of the children who had first adenoidectomy was $3\pm 1,2$ years old, revision surgery - $6\pm 1,8$ years old. Period between two operations was $3\pm 1,9$ years. As a result of interview of the vast majority of respondents rated the result of the intervention as satisfactory and considered the operation carried out in the childhood justified. The most often complication was postoperative bleeding at 47 (2,3%) children. 8 (0,39%) needed posterior tamponade and only 1 (0,05%) - blood components transfusion. From other complications one case had emphysema of mediastinum, whose symptoms were resolved within 2 hours, and one child had subluxation of the first neck-bone. There were no mortal outcomes.

Conclusion

The partial endoscopic adenoidectomy has high long-term clinical efficacy, safety and should be widely used in clinical practice.

Aspects of imaging quality in visualization of paranasal sinuses by cone beam CT (CBCT)

C. Gueldner¹, I. Diogo¹, R. Leppek¹, M. Mandapathil¹, J. Werner¹

¹ Department of ENT head and neck surgery, University of Marburg, Marburg, Germany

² Department of Radiology, University of Marburg, Marburg, Germany

Abstract: ERS-0536

Session: Imaging

Session Time: 24-06-14, 11:15

Location: Hall F

Chair person: S. Zinreich

Presenting author: C. Gueldner

Objectives

CBCT has become more important in imaging of head and neck. Aspects of irradiation are not fully clear and aim of this study.

Methods

Three human cadaveric heads were examined each 70 times with different X-ray-adjustments. Afterwards, the imaging quality was evaluated by a checklist of 16 landmarks and correlated to the emitted dosage. Measurements of dosage at parotid glands and eye lenses were performed for several protocols. The protocol of daily routine was adapted to the results of part 1 and 2. Two groups of each 150 persons were analyzed for differences in imaging quality and emitted dosage. All examinations were performed at an ENT department with the CBCT device of Morita (Accu-I-tomo F17, Morita, Kyoto, Japan).

Results

A typical correlation of imaging quality and applied dosage could be seen (figure 1). Regarding the different heads at the range from 2 to 3 mGy, all anatomic landmarks could be evaluated well. In comparison the previous standard protocol, a reduction of the dosage of 75% at the parotid gland and 90% at the lenses could be realized (figure 2/3). Main reason was the change from 360° rotation to 180°. So, no direct irradiation of the lenses existed anymore. In comparison of 'old' and 'new' protocol, both groups showed same Lund-Mackay-Score and same imaging-score with significant difference of applied dosage (figure 4).

Conclusion

A significant reduction of applied dosage of examination of paranasal sinuses with CBCT is possible in daily routine by discussion of the needed imaging quality (figure 5).

Correlation of score of anatomic parameters of the anterior skull base and the applied dosage

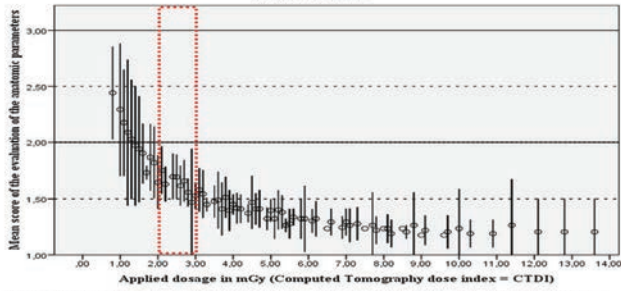


Figure 1: Visualization of the correlation of the mean score of evaluation of the anatomic parameters (1 = excellent, 2 = good, 3 = poor, 4 = not visible) and the applied dosage as CTDI. The red box demonstrates the region of optimization.

Figure 1.

Image 2: Recorded dosage at the parotid gland (mean between right and left). In brackets the reduction in comparison to the maximal possible (360°, 8mA, 90kV) is given. The red box illustrates the point of optimization from part A.

	360°		180°	
	8 mA	4 mA	8 mA	4 mA
90 kV	1,27 mSv	0,72 mSv (43,30 %)	0,65 mSv (48,03 %)	0,33 mSv (74,01 %)
84 kV	1,09 mSv (14,17 %)	0,56 mSv (56,79 %)	0,58 mSv (54,58 %)	0,29 mSv (77,29 %)
76 kV	1,01 mSv (20,71 %)	0,48 mSv (62,44 %)	0,47 mSv (63,28 %)	0,24 mSv (80,80 %)

Figure 2.

Image 3: Recorded dosage at the eye lens (mean between right and left). In brackets the reduction in comparison to the maximal possible (360°, 8mA, 90kV) is given. The red box illustrates the point of optimization from part A.

	360°		180°	
	8 mA	4 mA	8 mA	4 mA
90 kV	15,19 mSv	7,75 mSv (48,98 %)	2,73 mSv (82,03 %)	1,28 mSv (91,57 %)
84 kV	13,62 mSv (10,36 %)	6,53 mSv (57,01 %)	2,39 mSv (84,27 %)	1,19 mSv (92,13 %)
76 kV	11,08 mSv (27,04 %)	5,33 mSv (64,90 %)	1,91 mSv (87,40 %)	0,90 mSv (94,07 %)

Figure 3.

Image 4: Comparison of two groups before and after optimization of the protocol in visualization of the anatomy of the nose and paranasal sinuses by Cone Beam Computed Tomography (CBCT)

	Group 1 (old protocol)	Group 2 (new protocol)
Number of participants	165	150
Mean applied dosage (computed tomography dose index = CTDI)	6,64 mGy	2,87 mGy
Mean image quality of anatomic parameters (1 = excellent, 2 = good, 3 = poor, 4 = not visible)	1,25	1,17
mean Lund-Mackay-Score (Min = 0; Max = 24)	4,96	5,29

Figure 4.

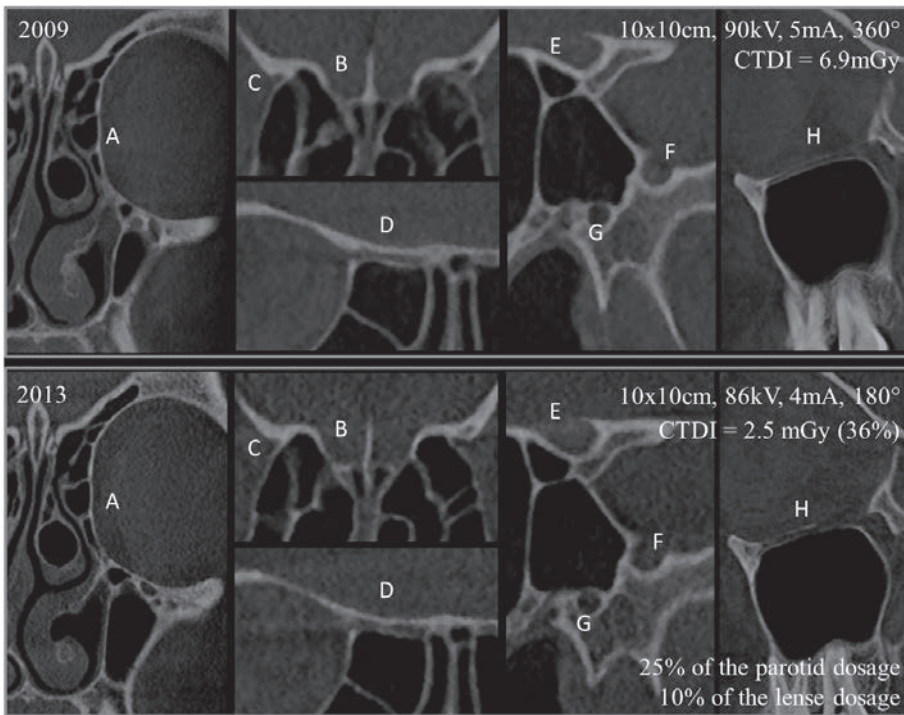


Image 5: Demonstration of the images from one patient before (2009) and after (2013) optimization. Quality of imaging is nearly the same. Evaluation of important structures (A = lamina papyracea; B = olfactory fossa; C = bony canal of anterior ethmoidal artery; D = bony canal of posterior ethmoidal artery; E = bony canal of optical nerve; F = bony canal of maxillary nerve; G = bony canal of vidian nerve; H = bony canal of infraorbital nerve) is still excellent possible.

Figure 5.

Limits of cone beam computed tomography (CBCT) in rhinology

C. Gueldner¹, I. Diogo¹, R. Leppek¹, M. Mandapathil¹, J. Werner¹

¹ Department of ENT head and neck surgery, University of Marburg, Marburg, Germany

² Department of Radiology, University of Marburg, Marburg, Germany

Abstract: ERS-0537

Session: Imaging

Session Time: 24-06-14, 11:33

Location: Hall E

Chair person: K. Patel

Presenting author: S. Zinreich

Objectives

About 10 years ago, CBCT has been introduced into ENT imaging. Especially higher resolution, lower irradiation and lower metal-artefacts are reasons of the spread of the technique. With experience of more than 7000 examinations, this paper focuses on indication and limits of CBCT.

Methods

The data of the past ten years were reviewed for indication at the region of the nose and paranasal sinuses. Problems were documented and will be illustrated. The patient charts were looked for additional imaging, meaning that CBCT was not enough.

Results

Nearly 60% of the images were performed preoperatively before surgery of the paranasal sinuses to visualize anatomy and extend of disease (figure 1). In about 30% diagnostic of trauma was reason for imaging (figure 2). In rare cases, recurrent or persistent headache resulted in an imaging of the paranasal sinuses. So, sometimes a prolonged acute rhinosinusitis of the sphenoid sinus could be seen (figure 3). In general, the long examination time of 7 – 17s is one disadvantage of CBCT. This resulted in 1% of the cases in motion artefacts and the need of a retake or the switch to conventional CT. Another well-known disadvantage is the impossibility of differentiation between different kinds of soft tissues. For example in case of an acute rhinosinusitis, the subperiosteal abscess couldn't be seen (figure 4).

Conclusion

In case of the need of differentiation between soft tissues, MRI or CT with contrast-media should be taken. In case of chronic rhinosinusitis or midfacial trauma, CBCT is an excellent device.

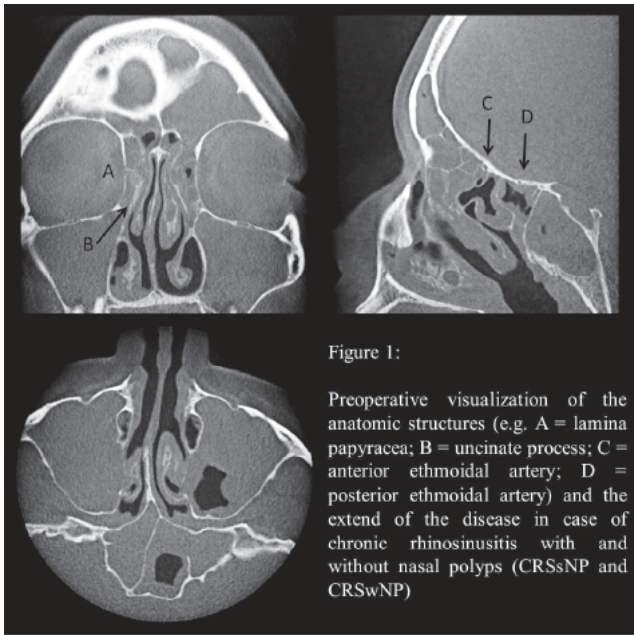


Figure 1.

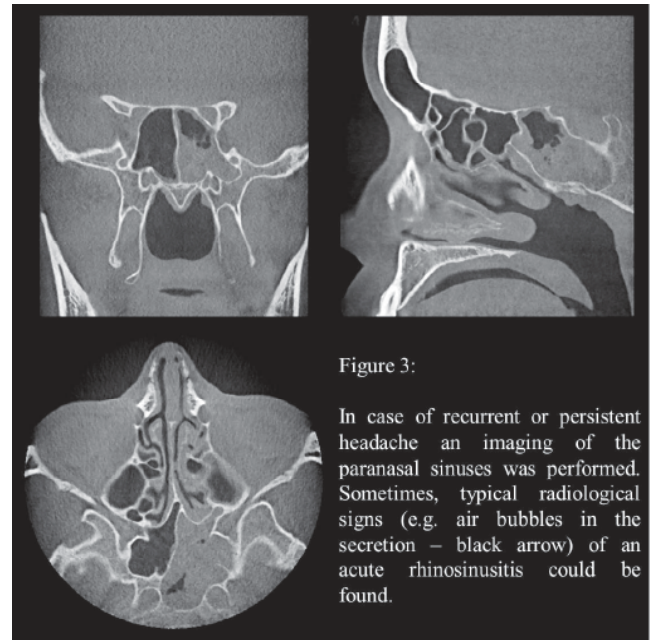


Figure 3.

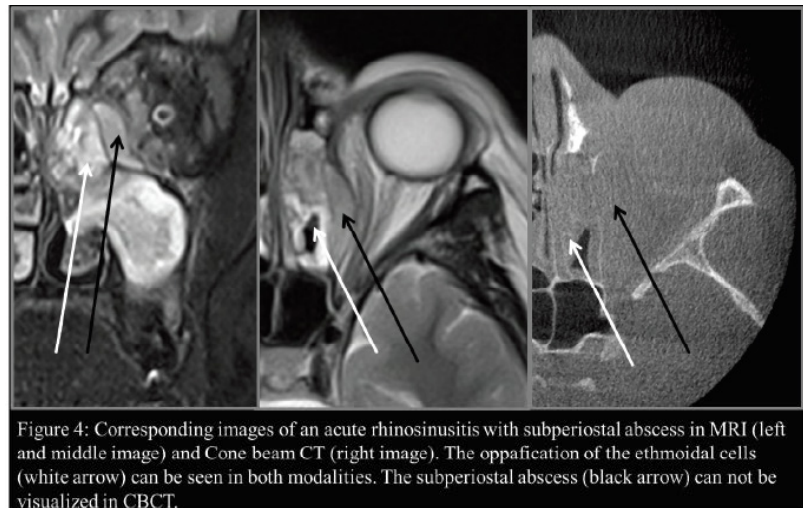


Figure 4.

A change of perspective: from odontogenic sinusitis to sinonasal complications of dental treatment

A.M. Saibene¹, G.C. Pipolo¹, A. Maccari¹, A. Scotti¹, S.M. Portaleone¹, M. Chiapasco², G. Felisati¹

¹Otolaryngology, San Paolo Hospital University of Milan, Milan, Italy

²Oral Surgery, San Paolo Hospital University of Milan, Milan, Italy

Abstract: ERS-0538

Session: Complications in rhinology

Session Time: 25-06-14, 11:40

Location: Hall J

Chair person: N. Otori

Presenting author: A.M. Saibene

Objectives

Odontogenic sinusitis is traditionally considered a maxillary sinus disease most often resulting from dental conditions such as dental abscesses and extensive periodontal disease; teeth extractions and infections caused by intra-antral foreign bodies are only occasionally considered as additional etiologies.

Methods

Having diagnosed and treated over 300 patients suffering from odontogenic sinusitis over the course of 12 years we believe that a time has come for a radical change of perspective on this condition shifting from odontogenic sinusitis to sinonasal complications of dental treatment.

Results

First we chose to abandon the more specific term "sinusitis" since we learned to face frequent non-inflammatory sinonasal conditions such as dislocation of dental implants that require treatment nevertheless.

Secondly we chose to introduce the concept of "complication of dental treatment" for two main reasons. When we take into account sinonasal condition following implantological and preimplantological procedures gone awry, the term odontogenic feels surely limitative, despite the obvious "oral" etiology. Furthermore the omnipresence of dental treatments virtually makes even "classic" odontogenic sinusitis a complication of the very dental treatment, whether improper, late, or definitely lacking.

Frequent extramaxillary involvement, protean etiology and frequent anaerobic infection draw the picture of a more complex disease than we are used to consider, requiring an adequate diagnostic work up and a tailored surgical and medical treatment.

Conclusion

The authors present their experience and share their views on this change of perspective from the well-known concept of odontogenic sinusitis coming to the new concept of sinonasal complications of dental treatment.

Sinonasal complications of dental treatment: validation of a classification and treatment protocol

A.M. Saibene¹, G.C. Pipolo¹, P. Lozza¹, R. Borloni², M. Chiapasco³, V. Bebi¹, F. Messina¹, G. Felisati¹

¹ Otolaryngology, San Paolo Hospital University of Milan, Milan, Italy

² Maxillo-facial Surgery, Istituto Stomatologico Italiano, Milan, Italy

³ Oral Surgery, San Paolo Hospital University of Milan, Milan, Italy

Abstract: ERS-0539

Session: Complications in rhinology

Session Time: 25-06-14, 11:25

Location: Hall J

Chair person: N. Otori

Presenting author: A.M. Saibene

Objectives

Odontogenic sinusitis, a condition once believed to be on the verge of extinction, is becoming more and more prevalent. The relevant number of implantological and preimplantological complications performed on a daily basis by oral surgeons surely play a determinant role in this prevalence increase.

Methods

The authors published in 2013 a comprehensive classification and treatment protocol shifting the perspective from odontogenic sinusitis to sinonasal complications of dental treatment. This change of perspective is not merely a lexical choice: virtually omnipresent prior dental treatments, whether classic, preimplantological or implantological should be considered the prime mover in this kind of conditions.

Results

The classification is composed by three groups (classic dental treatment complications, preimplantological treatment complications and implantological treatment complications) further subdivided in different and univocal classes and provides a treatment protocol for each class.

Conclusion

The authors present a one-year validation of the proposed protocol: we treated 25 patients after publication of the protocol and we encountered no classification issues whatsoever. Furthermore the protocol proved sound also on a clinic basis: the success rate in dental condition treatment neared 100% in our hands in this first year of protocol application.

Validation of a high output culture technique for obtaining neural stem cells from human olfactory mucosa

A.M. Saibene¹, S. Pece², G.C. Pipolo¹, T. Tanos², A. Rubio², A. Maccari¹, A. Scotti¹, G. Felisati¹

¹ Otolaryngology, San Paolo Hospital University of Milan, Milan, Italy

² Molecular Medicine, European Institute of Oncology, Milan, Italy

Abstract: ERS-0540

Session: Olfaction

Location: Hall G

Time: 25-06-14, 14:35

Chair person: Baile Landis

Presenting author: A.M. Saibene

Objectives

The olfactory epithelium is univocally regarded as the only central nervous system neuronal area which can be readily reached through non invasive approaches. Furthermore its neurons possess the unique ability to regenerate throughout the entire span of life, thus rendering small biopsies virtually non influent on the olfactory function.

Most ENT specialists, most notably rhinologists, possess the surgical skills required to perform olfactory epithelium biopsies, both under local and general anesthesia, with common nasal endoscopy tools.

Methods

After brief and careful processing and after brief culturing olfactory epithelium samples can give rise to cell lines and neurospheres. Various authors have already proposed successful culture methods for obtaining neural stem cells from olfactory epithelium.

Results

We have devised and validated on 6 patients a culture protocol which allowed us to obtain cell cultures and neurospheres with a remarkable output. A single biopsy measuring 5-10 mm² yield successful results when culturing the cells both on plastic plates and poly-lysine coated plates. Neurospheres confirmed their stemness properties and were replicable in all cases. Our protocol proved reliable, easily reproducible, contamination-free and cost-effective, not requiring growth factors and relying only on readily available common media.

Conclusion

Characterization studies on the available cell lines will provide more thorough information on genomics and transcriptomics of neural stem cells; on the other hand such readily available neural cells can provide an interesting experimental model and an incredibly flexible tool for experimental studies on CNS pathologies (Parkinson's disease, amyotrophic lateral sclerosis, etc) and diagnostic procedures as well.

Lesions and spheroid formation

A.M. Saibene¹, S. Pece², G.C. Pipolo¹, T. Tanos², A. Rubio², M. Bignami³, P. Castelnovo³, G. Felisati¹

¹ Otolaryngology, San Paolo Hospital University of Milan, Milan, Italy

² Molecular Medicine, European Institute of Oncology, Milan, Italy

³ Otolaryngology, Varese Hospital - Università dell'Insubria, Varese, Italy

Abstract: ERS-0541

Objectives

Esthesioneuroblastoma, also known as olfactory neuroblastoma, is a rare and poorly understood sinonasal malignancy. Most authors believe it originates from basal cells of olfactory mucosa, but its pathogenesis is still debated.

Human esthesioneuroblastoma cells have been already cultured in vitro, providing the basis for some interesting insights on the Sonic Hedgehog signal pathway in the development of the neoplasm. Further research has also shown that olfactory neuroblastoma cells are able to differentiate into odorant-responding cells upon administration of TGF- α in vitro, thus confirming their "olfactory legacy".

Methods

While interesting, these results are weakened by the metastatic origin of the common esthesioneuroblastoma cell line (JFEN) commonly employed by most researchers. Upon employing the same culturing technique we validated for obtaining neural stem cells from olfactory mucosa, we were able to propagate a new cell line from the primitive lesions of a 46-year old patient.

Results

To the authors' knowledge this is the first culture of esthesioneuroblastoma cells from primitive lesions reported in the literature. Interestingly enough the cell line, when cultured on poly-lysine coated plates spontaneously gave rise to spheroids. Such spheroid-forming ability is postulated as one of the features of cancer stem cells, according to the eponymous theory.

Conclusion

These preliminary results will allow us to perform a more thorough genomic and transcriptomic analysis of esthesioneuroblastoma cells, hopefully on a wider number of patients. Last but not least, both spheroids and cell lines could provide a new interesting in vitro model for drug studies, which are definitely hampered by the rarity of this malignancy.

Facial pain/headache in patients with nasal polyposis before and after surgery

D.T. Nguyen¹, P.L. Nguyen-Thi², F. Arous³, H. Eluecque¹, M. Félix-Ravelo¹, R. Jankowski¹

¹ ENT-Head and Neck Surgery, CHU de Nancy, Nancy, France

² Clinical Epidemiology and Evaluation Department, CHU de Nancy, Nancy, France

³ Faculty of medicine, University of Lorraine, Nancy, France

Abstract: ERS-0542

Objectives

To assess facial pain/headache and its impacts on the quality of life before and after endoscopic surgery for nasal polyposis (NP) using a new instrument - the DyNaChron questionnaire.

Methods

One hundred seven patients operated for NP were enrolled in this prospective study. All patients were operated endoscopically on bilateral ethmoidal labyrinths and olfactory clefts. Facial pain/headache and its impacts on QOL were assessed using the DyNaChron questionnaire the day prior to surgery and at 6 weeks after surgery.

Results

Moderate or severe facial pain/headache was reported in half of the patients before surgery and in only about 20% after surgery. There were postoperatively 79.44% of patients with no or very mild pain (vs 47.66% preoperatively) and 20.56% with moderate/severe pain (vs 52.33% preoperatively). The pain was statistically improved after surgery in patients with previous surgery ($p=0.0006$). The scores of all analyzed impacts of pain improved after surgery (effect sizes were 0.6 for facial pain/headache, 0.58 for "moist or runny nose during painful crisis", 0.61 for "affect the mood", 0.58 for "ability to concentrate", 0.51 for "relationship with others", and 0.53 for "affect your everyday life"). Patients with grade 1 polyps seemed to have less benefit of surgery for facial pain/headache than those with more severe NP.

Conclusion

Endoscopic surgery improved facial pain/headache and physical-psychosocial impacts in patients with NP. However, one fifth of patients had residual pain after surgery requiring a neurologic counseling to look for a non-sinonasal cause of their symptom.

Predictors of respiratory epithelial adenomatoid hamartomas of the olfactory clefts in patients with nasal polyposis

D.T. Nguyen¹, P.L. Nguyen-Thi², G. Gauchotte³, F. Arous⁴, J.M. Vignaud³, R. Jankowski¹

¹ ENT-Head and Neck Surgery, CHU de Nancy, Nancy, France

² Clinical Epidemiology and Evaluation Department, CHU de Nancy, Nancy, France

³ Department of Pathology, CHU de Nancy, Nancy, France

⁴ Faculty of medicine, University of Lorraine, Nancy, France

Abstract: ERS-0543

Session: Benign tumours

Session Time: 25-06-14, 11:51

Location: Hall H

Chair person: R. Harvey

Presenting author: D.T. Nguyen

Objectives

Respiratory Epithelial Adenomatoid Hamartomas (REAH) of the olfactory clefts is frequently associated to nasal polyposis (NP) but its etiology is yet unknown.

Aims

To look for predictors of REAH in patients operated for NP in adjusting on confounding factors.

Methods

One hundred six patients with NP, who were operated endoscopically on the ethmoidal labyrinths and olfactory clefts, were enrolled in this prospective study. Patients were partitioned in 2 groups: with and without REAH in the olfactory cleft (REAH-OC) according to operative and pathological reports. Multivariate logistic regression model was used to assess independent factors linking to presence of REAH-OC in patients with NP.

Results

Mean duration of NP disease in patients with REAH-OC was 13.95 ± 10.8 years versus 5.7 ± 5.6 years in patients without REAH-OC ($p < 0.0001$). Seventy four percent of patients with REAH-OC had one or more surgeries for NP in their history in contrast with 49.21% of patients without REAH-OC ($p = 0.009$). Asthma and obstructive septal deviation tended to link with the presence of REAH-OC ($p = 0.051$ and 0.052 , respectively). By multivariate logistic regression analysis, patients with asthma [Odds ratio (OR) 2.5, 95% confidence interval (CI) 1.004-6.29, $p < 0.05$] and patients with duration of NP longer than or equal 10 years (OR 4.0, 95%CI 1.304-12.062, $p = 0.015$) were at increased risk to have REAH-OC.

Conclusion

The development of REAH in patients with NP appears as a specific disease of the mucosa of the OC, induced by long-lasting and/or severe inflammation in the olfactory clefts.

Endoscopic modified lothrop procedure for the repair of frontal sinus pneumocephalus. case presentation

Y. Pilavakis¹, N. Mathad², A. Rokade¹

¹ Otorhinolaryngology, Southampton University Hospital NHS Trust, Southampton, United Kingdom

² Neurosurgery, Southampton University Hospital NHS Trust, Southampton, United Kingdom

Abstract: ERS-0544

Objectives

The endoscopic Lothrop procedure has proved to be an effective transnasal approach for the treatment of frontal sinus disorders. We report the case of a pneumocephalus following shunt revision, which was managed successfully with a modified Lothrop procedure.

Methods

A 46 year-old female patient with a ventriculo-atrial shunt inserted in 1976 developed an extensive pneumocephalus six weeks after replacing it with a ventriculoperitoneal shunt.

A high-resolution computer tomography (CT) scan of the head showed extensive pneumocephalus over both cerebral hemispheres as well as the basal cisterns. A small defect was identified in the postero-superior margin of the left-sided frontal cell with air tracking between the sinus and the anterior cranial fossa.

A Lothrop transnasal approach for the repair of the posterior wall of the left frontal sinus was used. Operatively, a bony defect was identified in the posterior frontal sinus wall above the drainage tract on the left. Abdominal fat was harvested to pack the defect. No intra-operative complications and no CSF leak were reported.

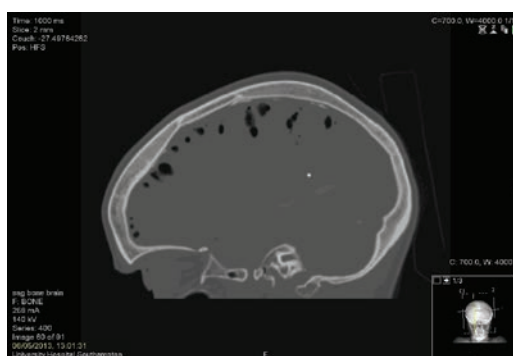
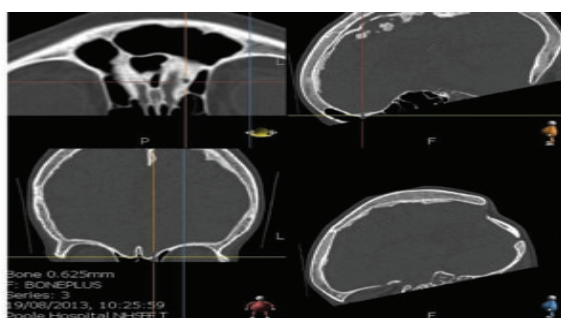
Results

Post-operatively she received antibiotic prophylaxis and was discharged on the third post-operative day with no complications.

At five months' follow-up, she remains asymptomatic. A repeat CT scan of the head showed no evidence of pneumocephalus.

Conclusion

This case represents the first instance, to our knowledge, of a pneumocephalus being managed with a Lothrop procedure. We are thus proposing the use of this procedure for the treatment of an additional disease process along the standard procedure utilisation.



Alteration of uvular/velar consonant “r” after sleep-disorder surgery - a case report

J. Plzak², J. Kastner¹, J. Zabrodsky², J. Klozar²

¹ ENT Private Office, Plastic Surgery Department, ORL Kastner, Perfectclinic, Beroun, Prague, Czech Republic

² ENT Department, Charles University, Prague, Czech Republic

Abstract: ERS-0545

Session: OSAS

Location: Hall H

Time: 25-06-14, 15:05

Chair person: N. de Vries

Presenting author: J. Plzak

Objectives

A modified UPPP (Uvulopalatopharyngoplasty) with or without RFITT (Radiofrequency Induced Thermotherapy) of a tongue base is a wide-spread method of surgical treatment of patients who suffer from lower and middle grade of OSAS (obstructive sleep apnea syndrome). Complications of sleep-disorders surgery are not rare, these are early as well as delayed.

Methods

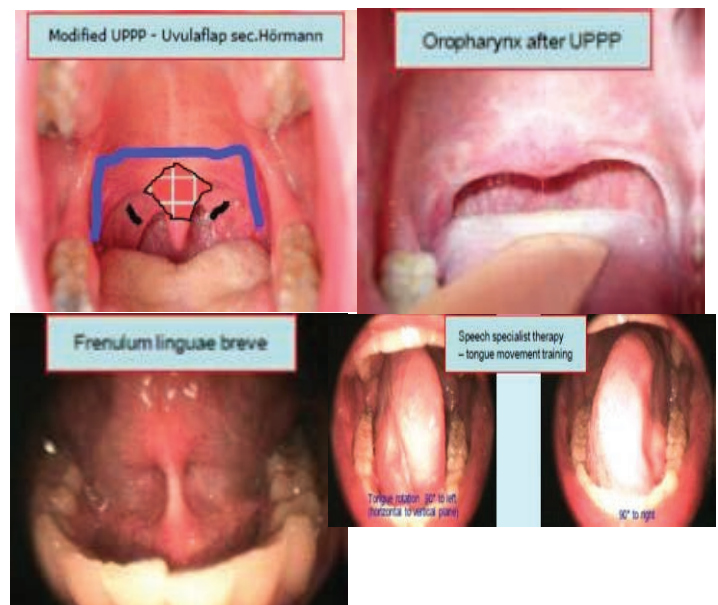
We present a case of a rare complication concerning deterioration of „R’ consonant pronunciation after a modified UPPP and RFITT of the tongue base.

Results

In UPPP or LAUP (Laser assisted uvuloplasty) surgery the soft palate is anatomically changed (Picture 1 and 2). Radiofrequency might modify the shape of a tongue base as well. During the speech, some consonants and vowels are formed by soft palate and tongue base. The back of the tongue approaches the soft palate or the uvula in uvular or velar approximant or fricative consonant ‘R’ (the standard French-like ‘R’) as well. Thus, the pronunciation might be compromised after sleep-disorders surgery. The pronunciation is the more deteriorated, the more the tongue mobility is altered, e.g. in frenulum breve (Picture 3).

Conclusion

We conclude, that informed consent of a snoring/OSAS surgery must include the specific alteration of speech (pronunciation of consonants and vowels) as well. The clinical findings before and after surgery, possible prerequisites of this complication as well as the basics of speech therapy in terms of improvement deteriorated „R’ pronunciation (Picture 4) are shown.



Comparison of 3-dimensional endoscopic sinonasal surgery between single and dual video chips : “insect eye” 3-D endoscope versus “twin lens” 3-D endoscope

C. Kim¹, S. Seong¹, J. Kang¹, J. Lee¹, J. Yoon²

¹ Department of Otorhinolaryngology The Airway Mucus Institute, Yonsei University College of Medicine, Seoul, Korea

² Department of Otorhinolaryngology The Airway Mucus Institute Research Center for Human Natural Defense System, Yonsei University College of Medicine, Seoul, Korea

Abstract: ERS-0546

Session: CRS surgical techniques

Session Time: 26-06-14 09:45

Location: Hall H

Chair person: V. Lund

Presenting author: C. Kim

Objectives

Technical advances of 3-D endoscopic system enable the rhinologist to enhance and perform a wide range of sinonasal and anterior skull base surgery more easily. And although the technical limitations still remain, several articles reported advantages of 3D endoscope, especially facilitated depth perception. This is not only the first pilot study to evaluate the usefulness of newly-developed HD-3D endoscope using dual video chips, but also the first clinical study to compare the pre-existing “insect eye” technology 3-D endoscope using single video chip and the newly-introduced HD-3D endoscope using dual video chips.

Methods

“Insect eye” 3-D technique mimics the compound eye of arthropods using a microscopic array of lenses and single video chip, while twin lens 3-D technique mimics human eyes using 2 lenses and dual video chips. Total 45 sinonasal surgeries were performed from November 2011 to October 2013 at a tertiary medical center (“Insect eye” 3D: 29 cases, twin lens 3D: 16 cases). We assessed the diverse objective and subjective parameters including operation outcomes, depth perception and ability to identify complex anatomic structures.

Results

It is difficult to compare the objective superiority between 2 methods owing to heterogeneous group of patients, but both 3-D methods facilitated depth perception and recognition of the anatomic structures. Both 3-D methods have delicate and subtle differences in visualization, meanwhile, had common several disadvantages.

Conclusion

Continuous technical developments in 3-D endoscope hold much promise for endoscopic sinonasal and skull base surgery. Further experience is warranted to define its role in the endoscopic surgery.

The association between intractable middle ear effusion, nasal polyps and Churg Strauss syndrome

W. Hasan¹, D. Smyth¹, J.E. Fenton²

¹ Otolaryngology Head & Neck Suregry, Waterford Regional Hospital, Waterford, Ireland

² Otolaryngology Head & Neck Suregry, University Hospital Limerick, Limerick, Ireland

Abstract: ERS-0547

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 16:42

Chair person: R. Kamel

Presenting author: W. Hassan

Objectives

Churg – Strauss syndrome is an autoimmune medium and small vessel disease associated with airway allergic hypersensitivity and eosinophilia. It usually manifests in three stages; allergic phase, eosinophilic phase and vasculitic phase.

Eosinophilic otitis media is a newly recognised intractable middle ear disease, characterised by the accumulation of eosinophils in middle ear effusion (MEE) and middle ear mucosa. In our study we explore the link between patients with intractable middle ear effusion, nasal polyps and Churg – Strauss syndrome.

Methods

Ten years retrospective review of all patients who underwent nasal polypectomies and Grommet insertions.

Results

16 patients were identified. The median age at first procedure was 45 years. 75% of patients had at least 4 positive diagnostic criteria. Eosinophilia and asthma were present in 68.75% and 87.5% of patients respectively.

Conclusion

A diagnosis of Churg-Strauss should be considered in all patients with chronic rhinosinusitis with nasal polyps and persistent MEE.

The pattern of IgE sensitization in children with adenoid hypertrophy

J.H. Shin¹, K.J. Cho¹, B.C. Jun¹, D.H. Lee¹, B.J. Yu¹

¹Department of Otolaryngology-Head and Neck Surgery, Uijeongbu St Mary's hospital Catholic University Medical College, Uijeongbu-si Gyeonggi-do, Korea

Abstract: ERS-0548

Objectives

Allergic rhinitis is closely related to adenoid hypertrophy. MAST is an essential diagnostic tool for allergic disease. The goal of this study is to investigate IgE sensitization patterns in children who had allergic rhinitis and adenoid hypertrophy, compared with children who had only allergic rhinitis.

Methods

From 2012 to 2013, patients who had a positive result from MAST and had symptoms of rhinitis were enrolled. The study groups had allergic rhinitis with adenoid hypertrophy. The control group had only allergic rhinitis. We analyzed demographic data, rhinitis symptoms, lateral nasopharynx radiographs and sensitization patterns from the results of MAST.

Results

The sensitizations to perennial allergens were more prominent in the study group. The most prevalent allergen was house dust mite.

Conclusion

Children who had both adenoid hypertrophy and allergic rhinitis had more positivity of sensitization to perennial allergens compared with children who had only allergic rhinitis. These perennial allergens may have role in increasing the development of adenoid hypertrophy.

Evaluation of airway obstruction by adenoid tissue: comparison of measures in the sitting and recumbent

H. Oliveira¹, M. Nakanishi¹, P. Rafael Neto¹

¹ Brasilia University Medical School, Univesity of Brasilia, Brasília, Brazil

Abstract: ERS-0549

Session: Pediatric rhinology

Session Time: 24-06-14, 11:15

Location: Hall H

Chair person: JB Watelet

Presenting author: H. Oliveira

Objectives

Adenoid hypertrophy (AH) is one of the most common diseases in the pediatric population [2] and a common reason for surgical intervention in this age group. The objective of this study is to measure the airway obstruction caused by adenoid hypertrophy in the sitting and recumbent positions in search of hypothesized differences.

Methods

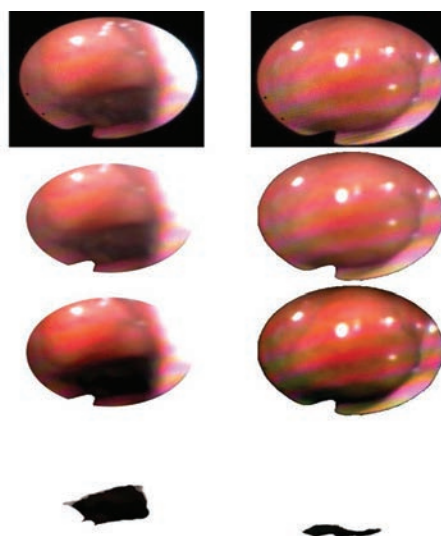
Forty eight children between the ages of 2 and 12 years who sought the department of otorhinolaryngology spontaneously complaining of snoring and/or nasal obstruction. Children could be either male or female and belong to any social or racial group. Patients underwent nasal videoendoscopy sitting and lying performed by the same investigator. An image of the posterior nasopharynx was obtained from each nasal cavity of each patient for both positions. The free area of the nasopharynx was measured and compared in both positions. Image analysis was performed by two researchers other than that who carried out the examination.

Results

The nasopharynx free area obtained with seated patient is, on average, 53% bigger than the free area obtained with the patient lying down (confidence interval: 95%; $p < 0.001$). Thus, adenoidal obstruction is larger when the examination is performed with the patient lying down.

Conclusion

Nasal videoendoscopy to evaluate adenoid hypertrophy with the patient lying down makes testing more reliable, better reproducing the patient's position when sleeping. Such accuracy is essential since it influences the decision for surgical intervention in this important and widespread disease in the pediatric population.



USEFULLNESS OF THE INFERIOR TURBINATE AS A RHINOPLASTY GRAFT MATERIAL : A PILOT STUDY

B.H. AHN¹, D.E. KIM¹, M.S. CHOI²

¹OTORHINOLARYNGOLOGY, KEIMYUNG UNIVERSITY DONGSAN MEDICAL CENTER, DAEGU, KOREA

²PATHOLOGY, KEIMYUNG UNIVERSITY DONGSAN MEDICAL CENTER, DAEGU, KOREA

Abstract: ERS-0550

Objectives

When a patient needs septoplasty, turbinate surgery is often performed at the same time and the removed turbinal tissues are usually discarded. We have focused to the soft tissue of the inferior turbinate as a graft material, and performed a pilot study to remove the potentially harmful submucosal gland and epithelium.

Methods

Twenty patients who need inferior turbinoplasty from May 2013 to December 2013 are included. Resected turbinal tissues are divided into 3 parts as control, superficial part and deep part. A microdebrider was used to shave and assigned superficial part had shaved 3 ~ 4 rounds to remove the superficial mucosa, and deep part had shaved 8 ~10 rounds to remove the deeper submucosal tissue. All the tissues are marked and examined with LM to measure the thickness of each layer and distribution of mucosa, submucosal gland, vessels and periosteum.

Results

Grossly, soft tissues are available 35 X 10 mm average. Submucosal glands and vascular structures are not evenly distributed along the submucosa. The superficial part revealed some scattered submucosal gland but no epithelium was present. The deep part, there was no submucosal gland identified and only soft tissue which contain some vascular structures, periosteum were present when shaved more than 1.09 mm depth.

Conclusion

Inferior turbinate has many advantages as autologous tissues, low cost, and same operation field. Inferior turbinate tissues could be a good candidate for the graft material if shaved properly. We could apply to the small amount of augmentation or camouflage graft material during rhinoplasty procedures.

Virtual-reality simulation for teaching endoscopic sinus surgery

K. Reynolds¹, A. Carney¹, G. Ruthenbeck¹, L. Diment¹, N. Dharmawardana², E. Ooi², C. Woods²

¹ Medical Device Research Institute, Flinders University, Adelaide, Australia

² School of Medicine, Flinders University, Adelaide, Australia

Abstract: ERS-0551

Session: Simulation and training

Time: 24-06-14, 09:30

Location: Hall J

Chair person: S. Carney

Presenting author: K. Reynolds

Objectives

Endoscopic sinus surgery constitutes a significant fraction of an otolaryngologist's operative workload. It can cause major complications for patients with incidence approaching 10% in several series. It is now well-established that surgeons learning new operative procedures in ENT have a distinct learning curve and that proper training can reduce risk to patients whilst surgeons gain experience. The aim of this study was to develop a virtual-reality-based simulator for endoscopic sinus surgery procedures.

Methods

Using advanced computational techniques to model tissue response in real-time, we are able to simulate tissue deformation, cutting and ablation. The user engages with the simulation via two haptics devices providing force feedback, one controlling the endoscope, the other the surgical tool being used.

A sinus model was developed from CT scans, and shading algorithms were implemented into the model to provide visual realism.

Four simulations were developed:

- A nasendoscopy task requiring the user to identify anatomical markers within the main sinuses.
- A tissue removal task requiring the user to remove discoloured tissue from an abstract section of pink 'healthy' tissue.
- Cutting and destruction of tissue using a paediatric backbiter and a microdebrider (as is an uncinectomy).
- Removal of tissue from a middle turbinate using a microdebrider.

Results

A pilot study of the four tasks was performed by 20 participants, five from each of four experience levels; intern, RMO, registrar and consultant. The more experienced surgeons completed each task more quickly and with greater accuracy.

Conclusion

The Flinders simulator is a promising tool for training in endoscopic sinus surgery.



Immune models of postviral olfactory disorders

K. Kondo¹, K. Kanaya¹, K. Suzukawa¹, S. Kikuta¹, T. Sakamoto¹, T. Yamasoba¹

¹The University of Tokyo, Department of Otorhinolaryngology-Head and Neck Surgery, Tokyo, Japan

Abstract: ERS-0552

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:27

Chair person: Philippe Rombaux

Presenting author: K. Kondo

Objectives

We investigated the morphological changes and innate immune responses in the mouse olfactory mucosa induced by intranasal administration of a synthetic double-stranded (ds) RNA, polyinosinic-polycytidylic acid [Poly(I:C)], a molecular mimic of replicating virus.

Methods

Mice received three intranasal administrations of Poly(I:C) (50µg each) every 24 hours. The olfactory mucosae were harvested at various intervals after the first administration (8 hours, 3, 9 and 24 days) and examined regarding the time course and extent of 1) neuroepithelial degeneration and regeneration, 2) infiltration of inflammatory cells, and 3) expression of the molecular signaling via Toll-like receptor 3 (TLR3), the receptor for innate immune response to dsRNA.

Results

The expression of phosphorylated NF-κB and MIP-2, a downstream signal of TLR3, was upregulated at 8 hours. The olfactory neuroepithelium degenerated most severely at 9 days and then regenerated almost completely by 24 days. Regarding the inflammatory cell kinetics, neutrophils predominantly infiltrated the olfactory neuroepithelium at 8 hours and exuded into a nasal cavity at 3 days. Macrophages and T lymphocytes also infiltrated at 8 hours in the lesser magnitude and remained in the olfactory mucosa until 24 days. To examine if neutrophil-derived cytotoxic enzymes are involved in the damage of olfactory neuroepithelium, mice were pretreated with neutrophil elastase inhibitor (Sivelestat) before the administration of Poly(I:C). This pretreatment significantly suppressed the neuroepithelial degeneration of the olfactory mucosa by Poly(I:C).

Conclusion

These findings suggest that innate immune responses via TLR3 and subsequent release of elastase by neutrophils may play an important role in the pathogenesis of postviral olfactory disorder.

Impact of obstructive sleep apnea on pulmonary function

G.H. Yum¹, J.H. Choi¹, J.I. Oh¹, S.H. Lee¹

¹ Otorhinolaryngology-Head and neck surgery, Korea University Ansan Hospital, Ansan-si, Korea

Abstract: ERS-0553

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 17:21

Chair person: M. Ravesloot

Presenting author: G.H. Yum

Objectives

Obstructive sleep apnea is common disease, which has been well known to be accompanied by various medical problems. Recent study revealed that sleep-disordered breathing is associated with pulmonary disease. The purpose of this study is to investigate the pulmonary function in patients with obstructive sleep apnea (OSA).

Methods

222 subjects had been referred to the Sleep Disorder Clinic, Ansan Hospital, Korea University. And by reviewing the medical chart, the pulmonary function test, and the polysomnography of each subject retrospectively, we try to find the relation between the severity of OSA and lung function. All subjects were sorted into four groups according to the severity of OSA (as apnea-hypopnea index, AHI). The authors analyzed the data from pulmonary function test among each group.

Results

There was significant difference only in the FEV1/FVC ratio among the four groups, after adjusting for age, BMI, and smoking history ($P=0.035$). The FEV1/FVC ratio in control group was significantly higher than all of the OSA groups ($P=0.015$).

Conclusion

In this study, we found that subjects with OSA have deteriorated lung function in obstructive pattern compared with that in the control group. Therefore, at the first visit of patient with sleep apnea, we have to consider the possibility of reduced lung function in the process of diagnosis and treatment.

Comparison of skin prick test, mast and immunocap in diagnosing allergic rhinitis

Y. Kim¹, J. Cho¹, W. Kim¹, M. Kim¹

¹ Department of Otorhinolaryngology Head and neck surgery, Yeouido St. Mary's Hospital, Seoul, Korea

Abstract: ERS-0554

Session: Rhinitis clinical

Session Time: 25-06-14, 14:35

Location: Hall E

Chair person: A. Swift

Presenting author: Y. Kim

Objectives

We performed this study to prove the usefulness of MAST and immunoCAP, to help in selecting the appropriate testing allergen with symptoms of patients.

Methods

When one has more than two symptoms of allergic rhinitis, questionnaire for allergic symptoms was taken after informed consent. Serum was taken for MAST and immunoCAP, and skin prick test was performed. Although the cutoff value for immunoCAP is set as 0.35 kU/I(Class) in Korea, it is recommended in Europe to consider positive if antibody level is over 0.1 kU/I(positivity), so we calculated for both value.

Results

38 patients finished all tests as protocol. The sensitivities of the tests compared with SPT were highest in immunoCAP positivity test. The highest efficacy for each allergen was distributed in all tests. Specificity was highest in MAST for all allergens. Correlation coefficients of tests compared to SPT were 0.637 in MAST, 0.646 in immunoCAP class and 0.704 in immunoCAP positivity. All results were statistically significant ($p=0.00$). The correlation between questions about symptoms and the specific IgE testing result showed positive correlation between IgE of Dp, Df on immunoCAP and weather change ($p=0.029$ and 0.05 , respectively). More subjects should be included to earn significant results from this study.

Conclusion

Among allergic screening tests, immunoCAP with cutoff value of 0.1kU/I shows high sensitivity, specificity and efficacy over 70% with SPT, and also good correlation. Although we wanted to know questions about histories and symptoms to predict causative allergens, the results were statistically insignificant.

Stepwise surgical approach to inverted papillomas originating from the maxillary sinus

H. Roh¹, S. Hong², K. Cho²

¹Otorhinolaryngology, Pusan National University Yangsan Hospital, Yangsan-si Gyeongnam, Korea

²Otorhinolaryngology, Pusan National University Hospital, Busan, Korea

Abstract: ERS-0555

Session: Skull base surgery 4

Session Time: 26-06-14, 12:00

Location: Hall G

Chair person: E. Wright

Presenting author: H. Roh

Objectives

The aim of this study is to introduce appropriate surgical approaches for the resection of inverted papillomas (IP) originating from the maxillary sinus (MS) according to origin walls.

Methods

Thirty-two patients who were diagnosed with IP originating from MS and underwent surgery by a single operator between 1999 and 2011 were enrolled. They comprised of 23 men and 9 women with the mean age of 56.5 years. Their mean follow-up was 50.2 months. Demographic data and information about origin sites of IP, surgical approach, follow-up and recurrence were reviewed retrospectively.

Results

In all cases, endoscopic endonasal approach (EEA) was attempted at first and canine fossa puncture (CP), canine fossa opening via Caldwell-Luc approach (CO) and Caldwell-Luc operation (CLO) were added in consecutive order as occasional demands. Seven patients (21.9%) were treated only with EEA and they had IP originating from the superior or posterior wall. Five (15.6%) were treated with EEA plus CP, which was added for removal of IP originating from the lateral wall. Sixteen (50.0%) were treated with EEA plus CO, which was for removal of tumors originating from the medial, anterior or inferior wall. Four patients (12.5%) who had IP of the whole MS wall origin underwent CLO. There was no difference in recurrence rates according to either origin sites or surgical approaches.

Conclusion

Even in the patients with IP limited to MS, surgeons should not always stick to the endoscopic resection only but consider adding external approaches such as CP and CO gradually to remove IP completely.

Physiological parameters of early intervention in cedar pollinosis

D. Sasaki¹, M. Miwa¹, A. Shiozawa¹, N. Ono¹, K. Ikeda¹

¹ Otorhinolaryngology, Juntendo University Faculty of Medicine, Bunkyo-Ku, Japan

Abstract: ERS-0556

Session: Rhinitis clinical

Session Time: 25-06-14, 14:45

Location: Hall E

Chair person: A. Swift

Presenting author: D. Sasaki

Objectives

Early interventional treatment of Japanese cedar pollinosis is thought to be effective, the mechanism of its efficacy is still obscure. To evaluate physiological parameters of allergic rhinitis, we demonstrated several non-invasive physiological examinations (nasal transepithelial water loss; TEWL, potential difference; PD) on patients with Japanese cedar pollinosis before and after early intervention.

Methods

We recruited 43 Japanese patients with Japanese cedar pollinosis aged 28 to 72 years by direct mails from January to February in 2012. We examined symptoms (used JRQLQ) and physiological indexes before and after early intervention of cedar pollinosis.

Results

No difference was seen before and after the early intervention of pollinosis in JRQLQ, amount of nasal discharge and anterior rhinomanometry. Two physiological indexes, on the other hand, changed significantly: The significant decreases in TEWL and the significant increases in PD were seen after early intervention of pollinosis.

Conclusion

These results suggested that these physiological indexes could be effective and objective measurements of early intervention of Japanese cedar pollinosis.

Efficacy of endoscopic sinus surgery-based on multidisciplinary treatment for chronic rhinosinusitis with asthma

N. Ohta¹, Y. Suzuki¹, K. Kurakami¹, T. Furukawa¹, K. Chida¹, K. Futai¹, S. Kakehata¹

¹ Otolaryngology, Yamagata University Graduate School of Medical Science, Yamagata, Japan

Abstract: ERS-0557

Session: United airways

Session Time: 26-06-14 11:42

Location: Hall D

Chair person: I. Terreehorst

Presenting author: N. Ohta

Objectives

To evaluate the efficacy of endoscopic sinus surgery (ESS)-based on multidisciplinary treatment for patients with chronic rhinosinusitis (CRS) asthma.

Methods

The study included 21 CRS patients with asthma who received ESS from September 2006 to March 2011, besides surgery, who also used corticosteroid nasal spray, oral macrolide antibiotics and nasal irrigation perioperatively. Evaluation was performed before ESS, 1 year and 3 years post-ESS. Evaluation index included visual analogue scale (VAS) and endoscopy Lund-Kennedy assessment for CRS, and pulmonary function tests for asthma.

Results

Twenty patients were followed up for 12 months. Twelve (48%) of them were followed up for 36 months. CRS efficacy: VAS of general symptom significantly improved after ESS compared to pre-ESS, after 1 year and 3 year follow up. There was no statistic difference between 1 year and 3 year follow up. Endoscopy Lund-Kennedy score significantly improved in post-ESS after 1 year and 3 year follow up compared to the scores before ESS, and there was no difference between 1 year and 3 year follow up. Asthma efficacy: Pulmonary function showed significant changes 1 year after surgery, there was not statistic difference between 1 year and 3year follow up.

Conclusion

ESS improves CRS with asthma significantly and persistently. Asthma control level, anti-asthma drug dose and pulmonary function remain stable after ESS.

Steroid resistant chronic rhinosinusitis

N. Ohta¹, Y. Suzuki¹, A. Ishida¹, K. Kurakami¹, S. Kakehata¹

¹ Otolaryngology, Yamagata University Graduate School of Medical Science, Yamagata, Japan

Abstract: ERS-0558

Session: Outcomes in CRS

Session Time: 24-06-14, 14:45

Location: Hall E

Chair person: TBC

Presenting author: N. Ohta

Objectives

To clarify the underlying mechanism in resistance to glucocorticoid therapy for chronic rhinosinusitis (CRS), the expression of glucocorticoid receptors (GR), periostin, 11 beta hydroxysteroid dehydrogenase (11 HSD) were investigated.

Methods

We studied 37 tissue samples from 20 patients with CRS, and samples from age-matched controls. Patients were treated with intranasal fluticasone for 8 weeks and biopsies were obtained after treatment. The expressions of GR-alpha, GR-beta, nuclear factor-kB (NF-kB) periostin, and 11HSD in nasal mucosa was studied immunohistochemically.

Results

GR-alpha and NF-kB were expressed to a similar extent in patients and controls, but GR-beta, periostin, and 11 HSD were expressed significantly more in patients with steroid resistant CRS.

Conclusion

Our findings suggest that GR-beta, periostin, and 11 HSD play an important role in resistance to glucocorticoid therapy for CRS, and their expression might be used as an additional parameter indicating steroid resistance in CRS.

Th2 cytokines differentially regulate psoriasin expression in human nasal epithelia

D.Y. Park¹, H.J. Min¹, S.Y. Choi², T. Kim², H.J. Cho¹, C.H. Kim¹, J.H. Yoon³

¹ Department Of Otorhinolaryngology, Yonsei University College of Medicine, Seoul, Korea

² The Airway Mucus Institute, Yonsei University College of Medicine, Seoul, Korea

³ Research Center for Human Natural Defense System, Yonsei University College of Medicine, Seoul, Korea

Abstract: ERS-0559

Session: Rhinitis Basic

Session Time: 23-06-14, 12:09

Location: Hall J

Chair person: L. Kalogjera

Presenting author: J.H. Yoon

Objectives

Psoriasin is known to be expressed in diverse organs, where it exerts anti-microbial activity. We hypothesized that allergy-related T-helper cell type 2 (Th2) cytokines may regulate the expression of psoriasin and aimed to study the influence of Th2 cytokines on the expression of psoriasin in cultured normal human nasal epithelial (NHNE) cells and human nasal tissues.

Methods

We performed real-time polymerase chain reaction and western blot assays using NHNE cells. Immunohistochemical staining and western blot assays were performed with human nasal tissues. Furthermore, we studied the anti-microbial activity of nasal secretions from normal and allergic rhinitis patients.

Results

IL-13 markedly down-regulated psoriasin expression at the gene and protein levels in NHNE cells, and it also decreased the amount of psoriasin protein that was secreted into the extracellular compartment in NHNE cells. The effect of IL-4 was not definite. Results from immunohistochemical staining and western blot assays showed that psoriasin expression was decreased in allergic rhinitis patients compared with control subjects. Nasal secretions of allergic rhinitis patients exhibited decreased anti-microbial activity compared with control subjects.

Conclusion

We found that Th2 cytokines regulated psoriasin expression in NHNE cells, and psoriasin expression was decreased in allergic rhinitis patients compared with control subjects. The decreased expression of psoriasin may be related to the reduction in anti-microbial capacity of nasal secretions under allergic conditions, resulting in an increase in susceptibility to viruses or bacterial infections.

A balloon dilatation technique for the treatment of intramaxillary lesions using a foley catheter in chronic maxillary sinusitis

C. Park¹

¹ Nano Bio Regenerative Medical Institute, Hallym University, Chuncheon-Si Gangwon-Do, Korea

Abstract: ERS-0560

Session: Balloon sinuplasty

Time: 24-06-14, 09:57

Location: Hall G

Chair person: A. Leunig

Presenting author: C. Park

Objectives

In chronic maxillary sinusitis, pathologic mucosas of the anterior and lateral walls of the maxillary sinus are difficult to remove. Trocar insertion to the canine fossa is the most commonly used procedure. In the present work, we report a method involving a balloon dilatation technique for treatment of intramaxillary lesions using a Foley catheter in chronic maxillary sinusitis and the outcomes of this approach.

Methods

Records of 34 patients with intramaxillary sinus lesions who underwent endoscopic sinus surgery were analyzed. After widening the natural ostium, a 10F Foley catheter was inserted through the widening ostium into the maxillary sinus. The intramaxillary lesion was removed by repeated balloon inflation and deflation of the Foley catheter. The patients were followed-up for at least 6 months after the surgery.

Results

There were no significant intraoperative or postoperative complications. We found that the postoperative symptoms and resolution of the lesions in comparison to classic functional endoscopic sinus surgery were not different in authors' experiences.

Conclusion

The balloon dilatation technique using a Foley catheter is a minimally invasive and effective technique that is not associated with major complications in cases of intramaxillary lesions.

Clinical significance of sleep stability in adult with OSA

S.H. Lee¹, J.I. OH¹, H.M. Lee¹, J.H. Choi¹, T.H. Kim¹, I.H. Park¹, S.H. Lee¹

¹ Ansan Hospital, Korea University Medical Center, Ansan, Korea

Abstract: ERS-0561

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:54

Chair person: M. Ravesloot

Presenting author: S.H. Lee

Objectives

The aim of this study is to examine the relationship between the sleep stability and the severity of obstructive sleep apnea (OSA) in adult who underwent a full-night polysomnogram (PSG).

Methods

Two hundred twenty one adults (M = 192, F = 29) aged (42.30 ± 11.28) years old were analyzed by both CPC (CardioPulmonary Coupling) parameters and respiratory parameters from full-night PSG data. We measured the changes in CPC parameters of each OSA group and the relationship between AHI and CPC parameters.

Results

AHI score is negatively correlated with HFC (high frequency coupling, $r = -0.725$, $P < 0.001$), vLFC (very low frequency coupling, $r = -0.475$, $P < 0.001$), but positively correlated with LFC (low frequency coupling, $r = 0.747$, $P < 0.001$), eLFC (elevated low frequency coupling, $r = 0.659$, $P < 0.001$), nb-eLFC (narrow band elevated low frequency coupling, $r = 0.653$, $P < 0.001$), bb-eLFC (broad band elevated low frequency coupling, $r = 0.491$, $P < 0.001$). There were differences in HFC ($P < 0.001$), LFC ($P < 0.001$), vLFC ($P < 0.001$), eLFC ($P < 0.001$), bb-eLFC ($P < 0.001$), nn-eLFC ($P < 0.001$) between the groups according to the severity of the AHI.

Conclusion

We reveal that the CPC parameters which change according to the changes of the AHI are observed in adult with OSA. Further studies will be needed to apply the CPC parameters in clinical field for OSA in adult.

Outcomes of septal surgery with or without turbinate and/or alar batten surgery. An evaluation using the nose scale and global satisfaction survey

A. Poullos¹, M.M. Abo-Khatwa¹, H. Khalil¹

¹ ENT, Derriford Hospital, Plymouth, United Kingdom

Abstract: ERS-0562

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 10:15

Chair person: N. Keles

Presenting author: A. Poullos

Objectives

To measure the outcome of septal surgery in our department and compare it to national and international standards.

Methods

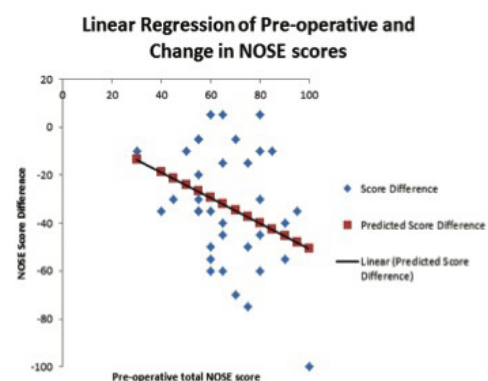
Prospective questionnaire and telephone enquiry. Consecutive patients, who had septal surgery with or without turbinate reduction and/or alar batten surgery, between March and October 2013, were asked to complete the Nasal Obstruction and Symptom Evaluation (NOSE) scale pre- and post-operatively. The total score was multiplied by 5 to give a possible maximum total of 100 for data analysis. Additionally, a global improvement in symptoms was assessed by asking the patients' opinion.

Results

Out of 43 patients, 39(90.7%) answered the global satisfaction survey question and 35(81.4%) completed the NOSE scale postoperatively between 2-9 months (mean 4.17). 31 patients or 79.48% were satisfied by their operation. The mean total pre- and post-operative score was 67 and 33.85 respectively which was highly statistically significant ($p < 0.001$) by Wilcoxon signed-rank test. The reduction in total score correlated with the magnitude of the pre-operative score as assessed by linear regression analysis ($p = 0.051$) but not with the post-operative time range to completion of the questionnaire. Most of the patients who were not satisfied suffered from allergic rhinitis which was not well controlled.

Conclusion

The NOSE scale is reliable, brief and easy to complete. Septal surgery improves patients' nasal symptoms in about 80% in our department. Allergic rhinitis may adversely affect the results of septal surgery and care must be taken to treat it adequately.



The effect of retinoic acid in a mouse model of allergic rhinitis

K. Soo Whan¹

¹ Otolaryngology, The Catholic University of Korea, Seoul, Korea

Abstract: ERS-0563

Session: Rhinitis basic

Session Time: 24-06-14, 11:35

Location: Hall G

Chair person: TBC

Presenting author: K. Soo Whan

Objectives

A potent derivative of vitamin A, all-trans retinoic acid(ATRA) modulates immune responses by affecting the properties of T cells. Previous studies revealed that airway allergic inflammation is negative association with concentration of serum vitamin A. We investigated the influences of ATRA in a mouse model of allergic rhinitis.

Methods

BALB/c mice were divided into control, Der f, ATRA, Steroid groups. BALB/c mice were sensitized with Der f and challenged with intranasally administrated Der f. ATRA group was administrated intraperitoneal injection of 500?ATRA. Allergic symptoms and the number of eosinophils in nasal mucosal tissue was counted. Cytokines(interferon- γ , interleukin-4, IL-17, TGF- β , IL-10), and transcription factors(T-bet, GATA-3, ROR- γ t and Foxp3 mRNA) in nasal mucosal tissue were measured by real-time polymerase chain reaction and western blotting. Serum Der f-specific IgE were measured. Flow cytometry of CD4+25+Foxp3+ T cells in splenic mononuclear cell was analyzed.

Results

BALB/c mice were divided into control, Der f, ATRA, Steroid groups. BALB/c mice were sensitized with Der f and challenged with intranasally administrated Der f. ATRA group was administrated intraperitoneal injection of 500?ATRA. Allergic symptoms and the number of eosinophils in nasal mucosal tissue was counted. Cytokines(interferon- γ , interleukin-4, IL-17, TGF- β , IL-10), and transcription factors(T-bet, GATA-3, ROR- γ t and Foxp3 mRNA) in nasal mucosal tissue were measured by real-time polymerase chain reaction and western blotting. Serum Der f-specific IgE were measured. Flow cytometry of CD4+25+Foxp3+ T cells in splenic mononuclear cell was analyzed.

Conclusion

In our research, ATRA had a significant therapeutic effect in mice with AR, and its mechanisms of action included induction of regulatory T cell, inhibition of Th2 and Th17 response. Through these data, ATRA could be potential therapeutic effects for allergic rhinitis.

Hodgkin's lymphoma of the nasopharynx

A. Poulios¹, G. Barrett², H. Khalil¹

¹ ENT, Derriford Hospital, Plymouth, United Kingdom

² ENT, Royal Cornwall Hospital, Truro, United Kingdom

Abstract: ERS-0564

Objectives

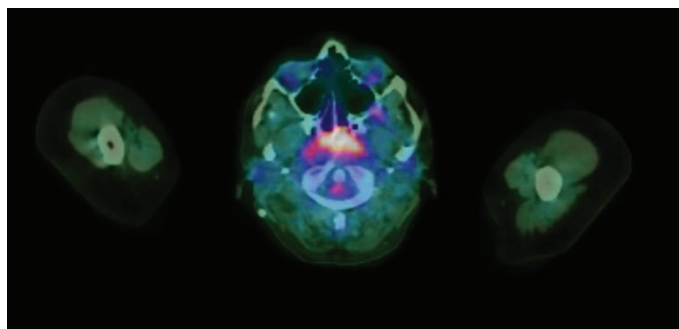
Head and neck extranodal lymphomas are rare. The nasopharynx is the most common site followed by the palatine tonsils and oral cavity. In most of these cases non-Hodgkin lymphoma is the histopathologic type. Hodgkin's lymphoma accounts for only 10-35% and its appearance in the postnasal space is an extremely rare first time presentation.

Methods

We present a 36 year old lady who was referred to the ENT outpatients department with an 18 month history of bilateral nasal obstruction, purulent nasal and postnasal discharge, left sided facial pain and fatigue. She had failed medical treatment with nasal steroids and antibiotics. A CT scan demonstrated polypoidal soft tissue filling the nasopharynx and extending into the oropharynx.

Results

She underwent urgent endoscopic examination of post-nasal space under general anaesthetic with biopsy which showed classical Hodgkin lymphoma of lymphocyte-rich subtype. Immunocytochemistry showed no evidence of EBV or CMV. Whole body PET scanning showed bilateral cervical lymph node involvement with additional FDG uptake in the post nasal space and right tonsillar fossa. The Ann Arbor staging is IIe (B) given the extranodal tissue involved and the presence of systemic symptoms. The patient has commenced 6 cycles of ABVD chemotherapy (doxorubicin, bleomycin, vinblastine and dacarbazine).



Conclusion

Hodgkin's lymphoma very rarely presents in the nasopharyngeal mucosa.

Modified endoscopic Lothrop procedure in treatment of chronic frontal sinusitis

A. Mickielewicz¹, A. Stepień¹, E. Witkowska¹, R. Osmolski¹, P.H. Skarzynski², H. Skarzynski¹

¹ Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Ophthalmic diagnostics and rehabilitation and sensory organs department, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0565

Objectives

Modified endoscopic Lothrop procedure is an effective surgical method of treating different pathologies of frontal sinus resistant to conservative therapy or to treating by less invasive surgical procedures. This technique involves removal of the floor of the frontal sinus extending from orbit to orbit through a superior septum nasal defect.

Methods

Authors present 45 patients cases operated by one surgeon using this method combined with image-guided navigational system, performed in World Hearing Center from June 2010 to December 2013. Indications were chronic sinusitis with or without polyps, mucocele, osteoma, Sjögren's syndrome, inverted papilloma and iatrogenic complications.

Results

Quality of life improved in 97,8% of patients. Efficacy of the treatment understood as lack of restenosis of frontal sinus ostium was 86,7%, two patients needed reoperation and probably four will need it in two years. All patients undergone at least six month follow-up period and more than half of them- two years follow-up. In the first three months after surgery one can predict its effect.

Conclusion

According to authors emphasis should be put on appropriate choice of patients also for the anatomy of the anterior-posterior dimension of the frontal ostium and bone thickness and the operating technique. Modified endoscopic Lothrop procedure, although difficult and requiring big experience, gives great results, and according to authors, should be performed significantly more often, as a method of choice in treating frontal sinus diseases, not expecting for their intensification nor progression.

Suppressive activity of levocetirizine on osteopontin functions on nasal epithelial cells

T. Komatsuzaki¹, I. Suzuki¹, K. Hirano¹, K. Kanai², K. Asano³, H. Suzuki¹

¹ Department of Otorhinolaryngology, Showa University School of Medicine, Tokyo, Japan

² Department of Otorhinolaryngology, Showa University Fujigaoka Hospital, Yokohama, Japan

³ Department of Physiology, Showa University School of Nursing and Rehabilitation Sciences, Yokohama, Japan

Abstract: ERS-0566

Session: Rhinitis basic

Session Time: 24-06-14, 11:20

Location: Hall G

Chair person: TBC

Presenting author: T. Komatsuzaki

Objectives

Osteopontin (OPN), a multifunctional glycoprotein secreted from a wide variety of cells after inflammatory stimulation, is well accepted to contribute to the development of allergic diseases. However, the influence of histamine H1 receptor antagonists (antihistamines) on OPN functions is not well understood. The present study was undertaken to examine the influence of antihistamines on OPN functions in vitro.

Methods

Human nasal epithelial cells (5 x 10⁵ cells) were stimulated with 250 ng/mL OPN in the presence of either desloratadine (DL), fexofenadine (FEX), or levocetirizine (LCT). The levels of OPN, GM-CSF, Eotaxin, and RANTES in 24 h culture supernatants were examined by ELISA. The influence of LCT on mRNA expression and transcription factor activation in cells were also examined by real-time RT-PCR and ELISA, respectively.

Results

The antihistamines examined significantly suppressed the production of GM-CSF, Eotaxin, and RANTES from cells after OPN stimulation. LCT also exhibited the suppression of mRNA expression for chemokines and transcription factor, NF- κ B and AP-1, activation, which were increased by the stimulation of cells with OPN.

Conclusion

The suppressive activity of LCT on OPN functions on nasal epithelial cells may be responsible for the attenuating effect of the agent on allergic diseases.

Translation, cultural adaptation and validation of the sinonasal outcome test (SNOT)-22 to French, for the evaluation of the quality of life among rhinological patients

A.L. Poirrier¹, C. de Dorlodot², P. Eloy², S. Collet², B. Bertrand², S. Tombu¹, P.P. Lefebvre¹

¹ ENT, University Hospital of Liege, Liege, Belgium

² ENT, University Hospital of Dinant-Godinne UCL, Yvoir, Belgium

Abstract: ERS-0567

Session: Outcomes in CRS

Session Time: 24-06-14, 15:03

Location: Hall E

Chair person: TBC

Presenting author: A.L. Poirrier

Objectives

In recent years, there has been an ever-increasing demand for clinicians to demonstrate their efficacy. The 22-item Sino-Nasal Outcome Test (SNOT-22) is a fully validated and easy-to-use outcome measure in rhinology. Our goal was to translate and validate a French version of the SNOT-22 and to test its clinical application in a cohort of 374 French-speaking subjects.

Methods

The SNOT-22 was first translated by 3 independent French native-speakers, then re-converted into English by 3 independent English native-speakers. Translations were compared to each other by 5 experienced rhinologists and alternatives were subjected to a group of 12 patients to select the most appropriate translation of each item. After translation, we conducted a prospective study on 329 patients and 45 healthy volunteers. To evaluate the translated questionnaire, the reproducibility, known group differences, responsiveness to treatment and validity were analysed. Scores were compared to visual analogue scale, nasal obstruction symptoms evaluation (NOSE) score and Lund-Mackay score.

Results

The test-retest reliability coefficient was 0.74, indicating a good reliability when administering the instrument on two different occasions. Our SNOT-22 was able to detect differences between rhinological patients and control subjects ($p < 0.0001$). Our SNOT-22 improved significantly after nose and sinus surgery ($p < 0.0001$), indicating a good responsiveness. There was a relative correlation between SNOT-22 and visual analogue scale and NOSE score, but no correlation with Lund-Mackay score.

Conclusion

The SNOT-22 is a reliable and valid tool to assess quality of life in French-speaking patients and correlates well with known indices of disease severity.

Japanese epidemiological survey of refractory eosinophilic chronic rhinosinusitis (JESREC study)

S. Fujieda¹, T. Tokunaga¹, M. Sakashita¹, Y. Imoto¹, G. JESREC Study group²

¹ Otorhinolaryngology Head & Neck Surgery, University of Fukui, Yoshida-gun, Japan

² Otorhinolaryngology, Japan, Japan, Japan

Abstract: ERS-0568

Session: Management of CRS

Session Time: 26-06-14 12:25

Location: Hall J

Chair person: TBC

Presenting author: S. Fujieda

Objectives

Chronic rhinosinusitis (CRS) is a common disease in Japan. Recently a new subtype of CRS has been increasing in Japan. CRS of this subtype shows less response to standard treatment (endoscopic sinus surgery: ESS and macrolide therapy) and a higher tendency of recurrence. This subtype is classified by as eosinophilic chronic rhinosinusitis (ECRS), because strong eosinophil infiltration is found in nasal polyps.

Methods

We performed retrospective study in twelve universities in Japan. In all, 3241 patients with chronic rhinosinusitis who had an operation of ESS during the 3 years from 2007 were enrolled in this study. We collected clinical data including relapse and prognosis of nasal polyps. Data was analyzed using statistical methods. Infiltrated eosinophils were counted in all pathologic specimens of nasal polyps from all patients.

Results

Kaplan-Meier analysis showed that half of patients had recurrence of nasal polyp at 72 months after ESS. Drug allergy against aspirin (hazard ratio: 3.25, $p=0.001$) and NSAID (2.20, $p=0.039$), and bronchial asthma (1.43, $p=0.004$) are very important comorbidities of ECRS. Ethmoid cells-dominate shadow in CT (2.06, $p<0.001$) and more than 10 % of eosinophils in peripheral blood (1.52, $P=0.032$) are also risk factor to recurrence of nasal polyp. CRS patients with nasal polyp containing with more than 70 eosinophils/HPF were significantly easier recurrence and poorer prognosis than under 70 eosinophils/HPF.

Conclusion

Finally we diagnosed ECRS by 4 clinical factors (both side, nasal polyp, ethmoid cells-dominate shadow in CT and % of eosinophils in blood).

Noncompliant frontal sinus- all or nothing and on time-history of ten patients who finally had undergone modified endoscopic Lothrop procedure

A. Mickielewicz¹, I. Gwizdalska¹, A. Stepień¹, E. Witkowska¹, R. Osmolski¹, P.H. Skarzynski², H. Skarzynski¹

¹ Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Ophthalmic diagnostics and rehabilitation and sensory organs department, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0569

Objectives

This study is an example of use of an inappropriate surgical procedure, too late instituted surgical management or not enough invasive surgical procedure which finally led to noncompliant frontal sinus.

Methods

Ten patients with long rhinological history were eventually operated by one surgeon using modified endoscopic Lothrop procedure (MELP) in World Hearing Center from 2010 to 2013 year. Image-guided navigational system was used during each surgery. Patients' previous medical history were examined and a decision to perform MELP was made.

Results

Follow-up period lasted from 10 months to 42 months according to patient. Quality of life and efficacy thought as lack of restenosis of frontal ostium were assessed after performing this type of surgery.

Conclusion

Authors suggest, that it is crucial to well adjust surgical management to the patient in order to avoid situation in which noncompliant frontal sinus will develop and proper management would be impossible or extremely hard to perform.

Management of paediatric rhinosinuitis

D. Vicheva¹

¹ Department of Otorhinolaryngology, Medical University, Plovdiv, Bulgaria

Abstract: ERS-0570

Objectives

Paediatric rhinosinuitis is a significant health problem which seems to mirror the increasing frequency of allergic rhinitis in childhood.

Conclusion

The management of rhinosinuitis depends on a number of variables related to the duration and severity of symptoms in the individual patient. Because a choice of conservative and pharmacologic interventions is available, the otorhinolaryngologist and physician can find it difficult to develop a logical approach to treatment.

Mucoceles of the frontal sinus treated with conventional endoscopic sinus surgery (Draf type IIa)

K. Nomura¹, Y. Honkura¹, D. Ozawa¹, M. Sugawara², K. Arakawa², Y. Katori²

¹ Tohoku University, Department of Otolaryngology-Head and Neck Surgery, Sendai, Japan

² Tohoku Kosai Hospital, Department of Otolaryngology-Head and Neck Surgery, Sendai, Japan

Abstract: ERS-0571

Session: CRS surgical techniques

Session Time: 26-06-14 10:00

Location: Hall H

Chair person: V. Lund

Presenting author: K. Nomura

Objectives

Surgery of the frontal sinus is one of the most technically demanding procedures. Mucoceles of the frontal sinus are rare but the operation of them is especially difficult, since the natural drainage pathway of the frontal sinus is completely closed. Also, the surgeon needs to open the frontal sinus widely to prevent re-stenosis. Recently, new techniques, such as modified Lothrop (Draf type III) procedure and axillary flap procedure have developed and becoming widely used. These techniques are useful but more invasive than conventional endoscopic sinus surgery (Draf type IIa). We perform conventional endoscopic sinus surgery (ESS) without agger nasi resection (Draf type IIa) for frontal sinus mucoceles. Here, we present case series and outcomes.

Methods

Twelve patients with frontal mucoceles were treated with conventional ESS between October 2011 and July 2013. Patients' age, sex, blood eosinophil count, history of operation, coexistence of acute infection were noted. For the condition of the frontal sinus, anterior-posterior distance and width of frontal recess, bone thickness of frontal recess, bone absorption due to continuous pressure by mucocele and anatomy of frontal recess was noted.

Results

All operations were done without navigation system. The postoperative course in all 12 patients was uneventful. All symptoms gradually receded. No relapse was observed in any patient during a follow-up period. Only one frontal sinus closed during follow up.

Conclusion

Conventional ESS is still useful for selected patients.

Inflammatory pseudotumor of the maxillary sinus - a case report

A. Ishibashi¹, T. Komatsuzaki¹, Y. Kyo¹, S. Watanabe¹, Y. Hinohira¹, H. Suzaki¹

¹ Department of Otorhinolaryngology, Showa University School of Medicine, Tokyo, Japan

Abstract: ERS-0572

Objectives

Inflammatory pseudotumor is a benign disease characterized by unregulated growth of inflammatory cells pathologically, although it is a space-occupying lesion that destroys the structure in which it arises clinically. Inflammatory pseudotumor has been reported to occur in many organs, including lung and orbit, but it is uncommon to occur in the nasal cavity and sinuses. And it is often difficult to distinguish from malignant tumor and mycosis with image studies.

Methods

We experienced a case of inflammatory pseudotumor originated from the maxillary sinus.

Results

The patient was 53-year-old female who had a check-up at a local hospital with uncomfortable feeling of her left cheek. The initial diagnosis was the left maxillary tumor and tumor resection was performed. There was no malignancy in the resected specimen. Subsequently, she was referred to Showa University Hospital because of its recurrence. Although biopsy was performed three times, there were no malignancies so that we diagnosed inflammatory pseudotumor.

Conclusion

Steroid pulse therapy was performed twice after the diagnosis, and she is under maintenance therapy in the outpatient clinic now.

Survival outcomes in patients with acute invasive fungal rhinosinusitis: c-reactive protein as an important prognostic factor

H.J. Cho¹, H.J. Dhong¹

¹ Department of Otorhinolaryngology, Head and Neck Surgery, Samsung Medical Center, Seoul, Korea

Abstract: ERS-0574

Session: Fungal sinusitis

Location: Hall E

Time: 26-06-14 11:15

Chair person: S. Reinartz

Presenting author: H.J. Cho

Objectives

Acute invasive fungal rhinosinusitis (AIFR) is often fatal and aggressive with high mortality rates. The objective of this study was to evaluate the various clinical factors related to survival of patients with AIFR.

Methods

A review of medical records of patients with AIFR between 1997 and 2013 were conducted. Forty-five patients with AIFR were enrolled for analysis. We evaluated demographics and clinical characteristics. Also, we assessed the disease course including treatment modalities, extension of lesion and long-term outcomes.

Results

Mean age of patients was 59.6 years. AIFR developed commonly in patients with immunosuppression associated with diabetes (n=23), hematologic malignancy (n=17). There were two main species of fungus, *Aspergillus* (n=30) and *Mucor* (n=14). Headache, visual loss and eyeball pain were the most presenting symptoms. Overall survival was 53%. Underlying hematologic malignancy (p=0.018) and diabetes (p=0.01) were significantly associated with overall survival, and accompanying severe neutropenia (p=0.023) and elevated C-reactive protein (CRP) (p=0.01) were also related to poor prognosis. Initially presenting facial swelling (p=0.014), involvement of nasal septum (p=0.023) and longer symptom duration (p=0.027) were also associated with survival reduction. Multivariate analysis showed CRP more than 5.50 (p=0.002; Odds ratio, 6.93) as an independent prognostic factor in patients with AIFR.

Conclusion

Overall survival rate remained about the half in patients with AIFR. Patients with some clinical features had significant association with prognosis. Early screening and suspicion for selected factors potentially improve the treatment outcomes of AIFR. Especially, elevation of CRP was an independent factor to predicting poor outcome and should be monitored appropriately.

Allergic rhinitis and the influence of environmental factors

D. Vicheva¹

¹ Department of Otorhinolaryngology, Medical Univeristy, Plovdiv, Bulgaria

Abstract: ERS-0575

Objectives

Allergic diseases such as allergic rhinitis represent a global health problem, affecting 10%–25% of the world population..

Methods

Results

Conclusion

There is evidence to support the concept that allergic diseases are influenced by genetic predisposition and environmental exposure. The environmental factors (eg, air pollution and bacterial/viral infection) also play an important role in the development of the diseases. The future studies are needed to identify the key genes and to investigate the interactions between genetic and environmental factors that influence the complex trait of allergic diseases. This will help us to further understand the etiology of the diseases and develop new avenues for genetically oriented diagnosis and more effective measures of prevention and intervention.

Radiological anatomy of frontal recess

A. Mickielewicz¹, K. Lazecka¹, R. Osmolski¹, P.H. Skarzynski², H. Skarzynski¹

¹ Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Ophthalmic diagnostics and rehabilitation and sensory organs department, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0576

Objectives

Anatomy of frontal recess can be very complex and thereby associated with frontal recess obstruction and chronic frontal sinusitis. The aim of this study is to assess anatomy of the frontal recess in order to investigate if incidence of Kuhn and intersinus septal cells is linked with higher incidence of frontal sinusitis.

Methods

The authors reviewed 100 left and right sides of coronal and sagittal computed tomography (CT) scans of the sinuses obtained from 50 consecutively presenting patients (100 sides) who were being evaluated for frontal sinusitis.

Results

In 29% of analyzed sides no frontal cells were found, but frontal sinusitis was found in 24.14%. Type I frontal cells was found in 33%, type II in 19%, type III in 18% and type IV in 1% of analyzed sides whereof inflammation was found in 45.45%, 52.63%, 33.33% and 100% respectively. Intersinus septal cell was found in 8 patients whereof inflammation occurred in 3 of them.

Conclusion

Frontal air cells were identified in 71% of analyzed sides of frontal recess. Bilateral occurrence of frontal cells was almost six times higher than unilateral, and type I cells were the most common type of frontal cells. The incidence of frontal sinusitis was higher in patients with frontal cells (32%) than in patients without frontal cells (7%). Based on this findings we consider that anatomic variations in the frontal recess play a vital role in frontal sinusitis.

Olfactory dysfunction in patients with bronchial asthma

A. Kamijo¹, K. Sugizaki², Y. Kase¹, M. Nagata³

¹ Dept Otorhinolaryngology / Allergy Center, Saitama Medical University, Saitama, Japan

² Dept Otorhinolaryngology, Saitama Medical University, Saitama, Japan

³ Dept Respiratory Medicine / Allergy Center, Saitama Medical University, Saitama, Japan

Abstract: ERS-0577

Session: Olfaction

Session Time: 25-06-14, 11:25

Location: Hall G

Chair person: B. Landis

Presenting author: A. Kamijo

Objectives

Chronic rhinosinusitis (CRS) is often accompanied by olfactory dysfunction, while bronchial asthma (BA) is sometimes comorbid with CRS; however, olfactory function in BA patients has yet to be revealed. To estimate the prevalence of olfactory dysfunction in patients with BA and to elucidate the relationship with BA phenotype.

Methods

A total of 132 patients 320 years old with a diagnosis of BA were recruited from the outpatient clinic at the Allergy Center or Ear, Nose and Throat (ENT) Clinic of Saitama Medical University, Saitama, Japan. Olfactory function was estimated by olfactory visual analog scale (VAS; 0–100 mm) and the Open Essence odor identification test (OE test). Asthma status was judged using the Asthma Control Test (ACT) questionnaire. Peripheral blood eosinophils (%) and specific allergens were also investigated. In cases with olfactory VAS ≤ 50 mm, whether patients had nasal polyps was identified by nasal endoscopy.

Results

Approximately 25% of BA patients showed severe olfactory dysfunction. Peripheral eosinophils were significantly higher in patients with olfactory dysfunction than in those without. Olfactory impairment may be more prevalent in non-atopic than in atopic BA. Nasal polyps were not seen in 60% of BA patients presenting with olfactory dysfunction (VAS ≤ 50), whereas two-thirds of BA patients who complained of olfactory dysfunction in the ENT clinic had concurrent polyps.

Conclusion

The prevalence of olfactory dysfunction is high among BA patients, whose characteristics may differ between ENT and respiratory medicine clinics. Olfactory function might contribute to the classification of BA phenotype.

Assessing the cough of Japanese pollinosis patients

K. Sugizaki¹, A. Kamijo¹, Y. Kase¹

¹ Otolaryngology, Saitama Medical University, Saitama, Japan

Abstract: ERS-0580

Session: United airways

Location: Hall D

Time: 26-06-14 12:10

Chair person: I. Terreehorst

Presenting author: K. Sugizaki

Objectives

About 30–60% of Japanese pollinosis patients complain of cough. Laryngeal allergy is considered a cause of this cough. Histamine H1 antagonists are considered to represent an effective treatment for cough in laryngeal allergy; however, this therapy sometimes proves ineffective. We examined the current status of cough in pollinosis patients.

Methods

A questionnaire survey was conducted in nine hospitals, and we obtained responses from 232 pollinosis patients. The questionnaire obtained data on age, sex, presence of cough, history of asthma and type of cough. To clarify the involvement of cough-variant asthma, a tulobuterol-containing adhesive preparation was prescribed to those patients for whom cough was not reduced using standard allergic rhinitis therapy.

Results

The complication rate of cough was 42.7%. The type of cough varied. The percentage of patients whose cough reduced with common allergic rhinitis therapy was 52.9%. In the 17 patients prescribed the tulobuterol-containing preparation, almost all experienced cough reduction.

Conclusion

When treating refractory cough in pollinosis patients, the possibility of cough-variant asthma should be considered.

Management of the severe obstructive sleep apnea (osas)- case report

A. Grubor¹, D. Rancic¹, M. Strbac¹, S. Grubor²

¹ ENT dept, Clinical Hospital Zemun, Belgrade, Serbia

² Dermatovenereology, Clinical Hospital Zemun, Belgrade, Serbia

Abstract: ERS-0581

Objectives

OSAS is serious condition, which is in a long term health and life threatening, with harmful effect on a life quality unless it is recognized and treated on time. Treatment is complex of dietetic measures (weight loss), application of mandible prosthesis with consecutive widening of pharynx-prosthetic mandibular advancement (PMA), continuous positive air pressure appliances (CPAP). Where conservative medical treatment is insufficient, surgery should be done. There are many surgical procedures for treating this condition specific for each patient. They can be done alone or in a combination. For most severe and treatment resistant cases tracheotomy should be done. Herein we present case report of severe OSAS resistant for all kind of treatments.

Methods

We present a case of 48yrs male patient. After diagnose of severe OSAS was made by polysomnograph, patient was treated by CPAP (BiPAP) appliance. As a result of inadequate treatment response, surgery has been done. Many surgical procedures were conducted, all for a one goal- airway widening and making it more resistant to negative air pressure. Temporary tracheostoma has been made.

Results

After spontaneous tracheostomal closure, due to inadequate oxygenation, retracheotomy has been made as a long term solution. Due to weakening mandible performing myoglossal advancement, spontaneous fracture can happen, especially when hyoid suspension is done in the same act.

Conclusion

In a patients with severe OSAS, resistant to all the ways of treating (nonsurgical and surgical), tracheotomy is inevitable and in some cases can be permanent. We advice plate enforcement of mandible after myoglossal advancement.

The ununified characteristics of children who experienced endoscopic sinus surgery: children vs. adolescent

J.G. Ha¹, H.J. Min¹, J.M. Hong¹, N.S. Sim¹, C.H. Kim¹, J.G. Lee¹, H.J. Cho², J.H. Yoon²

¹ Department of Otorhinolaryngology, Yonsei University College of Medicine, Seoul, Korea

² Department of Otorhinolaryngology / Airway mucus institute, Yonsei University College of Medicine, Seoul, Korea

Abstract: ERS-0582

Session: Nasal surgery in children

Session Time:

Location:

Chair person:

Presenting author: J.G. Ha

Objectives

Pediatric chronic sinusitis is a common pediatric ailment; endoscopic sinus surgery (ESS) has become a popular procedure for its treatment. Pediatric patients are younger than 18 years of age and include a broad range of patients. In this study, we hypothesized that pediatric chronic sinusitis patients might have various clinical characteristics, depending on age and compared symptoms, physical findings, and clinical features in younger children and older adolescent patients who underwent ESS.

Methods

A total of 195 pediatric patients who underwent ESS were enrolled. Subjective symptoms, physical findings, CT images, and clinical features were compared, dividing patients into children (age < 12 years, n=70) and adolescents (age ≥ 12 years, n=125). The different findings between children and adolescent groups were analyzed statistically using the t test, Chi-square test, and multivariate analysis.

Results

The mean age of the children and adolescent groups was 9.61 years and 14.73 years. Cough and nasal obstruction were more common in adolescents and sleep disturbance was more common in children. Septal deviation was a more common finding in adolescents, and total CT score and serum total IgE levels were higher in children. There was no statistical difference in rate of recurrence after ESS.

Conclusion

The clinical features of pediatric chronic sinusitis differed between the younger and older groups. ESS was successful in pediatric patients, and the rate of recurrence after ESS did not differ between children and adolescent groups. Symptomatic, anatomical, and clinical differences between these two groups suggest that further study of age in pediatric chronic sinusitis should be performed.

Immunomodulatory effect of adipose tissue-derived stem cells on T lymphocytes and cytokine expressions in nasal polyps

Y.W. Kim¹, K. Cho², H. Roh³, M.-J. Kang⁴

¹ Otorhinolaryngology, Inje University Haeundae Paik Hospital, Busan, Korea

² Otorhinolaryngology, Pusan National University Hospital, Busan, Korea

³ Otorhinolaryngology, Pusan National University Yangsan Hospital, Yangsan, Korea

⁴ Department of Hemato-oncology, Inje University Haeundae Paik Hospital, Busan, Korea

Abstract: ERS-0583

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 11:33

Location: Hall H

Chair person: P. Gevaert

Presenting author: Y.W. Kim

Objectives

Adipose tissue-derived stem cells (ASCs) have been reported to have a strong immune-suppressive effect in various inflammatory diseases including asthma and allergic rhinitis through the induction of T cell anergy. Nasal polyps (NPs) is a chronic inflammatory disease in the nose and paranasal sinus characterized histologically by the infiltration of inflammatory cells such as eosinophils or lymphocytes. This study was performed to investigate whether ASCs possess immunomodulatory effects on T-lymphocytes and cytokines expression in the NPs.

Methods

NP specimens were obtained from 34 patients with chronic rhinosinusitis and NPs. NPs were grouped into eosinophilic and non-eosinophilic types according to predominant inflammatory cells. Infiltrating cells were isolated from NPs tissue and co-cultured with 1×10^5 of ASCs. T-lymphocyte subsets and cytokines expression were evaluated before and after ASCs treatment according to eosinophilic and non-eosinophilic NPs.

Results

In the eosinophilic type, ASCs significantly decreased the proportions of CD4+ and CD8+ T cells and Th2 cytokines (interleukin (IL)-4, IL-5), but increased Th1 cytokines (IFN- γ , IL-2) and regulatory cytokines (TGF- β , IL-10) in NPs tissue. In the non-eosinophilic type, ASCs caused no significant difference in the proportions of CD4+ and CD8+ T cells and increased IL-2, IL-4, IL-10, and IFN- γ in the in NPs tissue.

Conclusion

ASCs have an immunomodulatory effects not in non-eosinophilic, but in eosinophilic nasal polyps, which is characterized by down-regulation of the activated T-lymphocytes and Th2 immune response.

An anatomical comparison of conventional and facelift incisions for parotid surgery

J. Dabrowska-Bien¹, K. Lazecka¹, H. Skarzynski¹

¹Otorhinolaryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

Abstract: ERS-0584

Session: Rhinoplasty and facial plastic surgery

Session Time: 23-06-14, 14:25

Location: Hall E

Chair person: K. Patel

Presenting author: J. Dabrowska-Bien

Objectives

Superficial parotidectomy via Blair incision leaves a visible scar and a hollow on the face and neck, which might be disappointing to some patients. The rhytidectomy approach allows the post-operative scarring to be invisible. Separate elevation of the Superficial Musculo-Aponeurotic System (SMAS) reduces the incidence of Frey's syndrome and provides vascularized soft tissue for contour reconstruction. Aim of the study is to assess the usefulness of rhytidectomy approach to the parotid gland.

Methods

We undertook an anatomical study. To compare the surgical access 10 fresh cadaver dissection were performed, on one side superficial parotidectomy using the conventional incision, while on the other side using the rhytidectomy approach with SMAS advancement flap.

Results

The duration of the procedure increased by an average of 17 minutes in the rhytidectomy approach. No major difficulties in exposing the facial nerve and its branches were observed. It was possible to demonstrate all regions of the parotid gland with either approach.

Conclusion

A rhytidectomy approach provides similar access to the parotid gland when compared to Blair's incision. It seems to be safe method and aesthetic results are more satisfactory as comparing to classical approach.

Comparison of T-I IgE (total minus individual specific IgE's) level in the paranasal sinus mucosal tissue between eosinophilic chronic sinusitis and infectious chronic sinusitis

Y. Ikemiyagi¹, Y. Ota¹, M. Suzuki¹

¹ Otolaryngology, Sakura Hospital Medical Center Toho University, Chiba, Japan

Abstract: ERS-0585

Session: CRS Basic 3

Session Time: 24-06-14, 17:05

Location: Hall E

Chair person: S. Vlamincx

Presenting author: Y. Ikemiyagi

Objectives

Eosinophilic inflammation may influence morbidity in eosinophilic chronic sinusitis(ECS). Recently, we found a significant effect of omalizumab, an anti-IgE antibody, in a patient suffering from ECS. This result suggests that IgE may be associated with the occurrence of refractory ECS. The purpose of this study was to compare IgE level in the paranasal mucosal tissue between ECS and infectious chronic sinusitis(ICS) with a view to proposing treatment options in chronic rhinosinusitis.

Methods

Paranasal mucosal tissue in the paranasal sinus was collected from 12 patients (8 patients with ECS and 4 patients with ICS) who underwent endoscopic sinus surgery at our department. The serum IgE value and the number of blood eosinophils were measured in each patient. Immunohistochemical staining was performed to observe IgE-positive cells in mucosal tissue. After homogenizing each mucosal tissue sample, quantitative analysis of IgE was performed to measure the IgE levels in paranasal mucosal tissue in ECS and ICS.

Results

The serum IgE value and the number of eosinophils were higher in ECS than ICS. In this study, non-specific IgE in paranasal mucosal tissue, which was calculated from "total minus individual specific IgEs level", was named 'T-I IgE'. The 'T-I IgE' in ECS was significantly higher than that in ICS.

Conclusion

T-I IgE in paranasal sinus mucosal tissue may lead to intractable states in ECS. Measuring IgE levels in tissue may help clarify the pathogenesis in ECS.

Cardiopulmonary coupling analysis: changes before and after treatment with a mandibular advancement device

W. Lee¹, C. Rhee¹, C. Lee¹, J. Kim¹

¹ Otorhinolaryngology, Seoul National University Bundang Hospital, Seong-nam si Gyeonggi-do, Korea

Abstract: ERS-0587

Session: OSAS

Location: Hall G

Time: 23-06-14 17:03

Chair person: M. Ravesloot

Presenting author: W. Lee

Objectives

The aim of this study is to evaluate the changes of sleep quality in patients using a mandibular advancement device (MAD) for obstructive sleep apnea (OSA) based upon cardiopulmonary coupling (CPC).

Methods

A total of 52 patients (mean, 53.7 ± 9.6 years; range, 33–74 years) were included in this study. All subjects were diagnosed with OSA after in-laboratory full-night polysomnography and reevaluated after 3 month use of a MAD. We compared CPC parameters of at baseline with those after 3 month use of a MAD.

Results

Low frequency coupling (59.5 ± 16.1 to 47.7 ± 14.8 %, $p < 0.001$) and elevated low frequency coupling (44.6 ± 18.4 to 32.6 ± 15.7 %, $p < 0.001$) significantly decreased. High frequency coupling (28.6 ± 16.0 to 36.5 ± 15.7 %, $p = 0.004$) and very low frequency coupling (11.7 ± 7.2 to 15.3 ± 6.6 %, $p = 0.028$) significantly increased. The change of AHI was significantly correlated with the changes of the CPC parameters: negative correlated with high frequency coupling change ($r = -0.572$, $p < 0.001$); positively correlated with low frequency and elevated low frequency coupling changes ($r = 0.604$ and 0.497 , $p < 0.001$, respectively). However, the changes of ESS and PSQI after MAD therapy showed no significant correlation with the changes in the CPC parameters.

Conclusion

The CPC parameters showed that the sleep quality was improved by MAD therapy. Among the parameters, low frequency coupling is associated with AHI increment while high frequency coupling is associated with AHI decrement.

Depletion of natural killer cells aggravates sinusitis and eosinophilia in a murine model of aspergillus-induced chronic rhinosinusitis

J. Kim¹, C. Gong¹, Y. Jang¹

¹ Department of Otolaryngology, Asan Medical Center, Seoul, Korea

Abstract: ERS-0588

Session: CRS Basic 2

Session Time: 24-06-14, 15:10

Location: Hall G

Chair person: R. Moesges

Presenting author: J. Kim

Objectives

Natural killer (NK) cells constitute a major component of the innate immune system. Although several studies suggest the important role of innate immunity in the pathogenesis of chronic rhinosinusitis (CRS), the role of NK cells has been poorly studied. We tested our hypothesis that NK cells may be involved in the chronic inflammation that occurs in CRS, particularly in eosinophilic inflammation.

Methods

An experimental controlled study was performed using an established CRS mouse model. Mice were sensitized to *Aspergillus fumigatus* extract (Af) by intraperitoneal injection. The animals subsequently received nasal challenges with Af for 4 weeks. NK cell depletion was performed by intraperitoneal injections of anti-ASGM1 antibodies. To characterize the inflammatory response, sinonasal complex and blood samples were studied histologically in experimental and control mice. Additionally, IL-4, IL-5, IL-8, IL-13, eotaxin, and IFN- γ were measured in nasal lavage samples.

Results

The depletion of NK cells increased Af induced inflammation, specifically neutrophilic and eosinophilic inflammation in histology and eosinophilia in blood. Af induced CRS mice showed significantly higher levels of IL-4, IL-5, and IL-13 in nasal lavage fluid. However, IL-5 and IL-13 levels were influenced by depletion of NK cell in control mice, not in Af induced CRS mice. IL-8 was significantly increased by depletion of NK cell in the Af induced CRS mice.

Conclusion

The depletion of NK cells may play an important role in the aggravation of fungal induced sinonasal inflammation, suggesting the possibility of a pathogenic role for the defective function of NK cells in CRS patients.

Long-term effect of posterior nasal neurectomy for patients with moderate to severe persistent allergic rhinitis or nonallergic rhinitis

H. Nagafuji¹, T. Kanaya¹, K. Kawano¹, S. Kasiwagi¹

¹ Nose clinic Tokyo, Nose and Sinus Surgicenter Tokyo Japan, Musasino, Japan

Abstract: ERS-0589

Session: Rhinitis, Clinical 1

Session Time: 25-06-14, 11:33

Location: Hall E

Chair person: J. Mullo

Presenting author: H. Nagafuji

Objectives

To evaluate the long-term effect of posterior nasal neurectomy (PNN) in patients with moderate to severe persistent allergic rhinitis or nonallergic rhinitis.

Methods

Questionnaires covering nasal symptoms were sent out to 526 patients at 1 year and 5 years postoperatively. Of 92 responders, we had postoperative evaluations at 1 year and 5 years for only 81 patients. A numeric rating scale was used to evaluate the clinical symptoms (sneezing, rhinorrhea, and nasal obstruction) of these 81 patients. The scores were compared.

Results

81 patients had undergone PNN between October 1997 and December 2004. The mean age at surgery was 25.6 years. 61 (75.3%) of the patients were male. Based on a preoperative score of 100 for all patients and all symptoms, patients then rated their symptoms postoperatively. An average postoperative score of less than 50 was found in 76.5% of patients for sneezing, in 67.9% for rhinorrhea, and in 75.3% for nasal obstruction. When we compared the 1-year and 5-year postoperative scores, we found that the score remained the same for sneezing in 49 (60.4%) of patients, for rhinorrhea in 44 (54.3%), and for nasal obstruction in 44 (54.3%).

37 (45.6%) patients experienced a recurrence of symptoms an average of 2.9 years after surgery. Patients with nonallergic rhinitis tended to experience greater recurrence of symptoms.

Conclusion

The therapeutic effects of PNN lasted more than 5 years in more than half of our patients. Patients with nonallergic rhinitis tend to experience a greater recurrence of symptoms.

Clinical studies of primary paranasal sinus cyst

H. Awakura¹, A. Ishibashi¹, T. Komatsuzaki¹, Y. Kyo¹, S. Watanabe¹, Y. Hinohira¹, H. Suzuki¹

¹ Department of Otorhinolaryngology, Showa University School of Medicine, Tokyo, Japan

Abstract: ERS-0590

Session: CRS miscellaneous

Session Time: 25-06-14, 14:55

Location: Hall J

Chair person: G. Adriaensen

Presenting author: H. Awakura

Objectives

Most of paranasal sinus cysts are postoperative, and primary paranasal sinus cysts are relatively rare in Japan. However, the number of primary paranasal sinus cysts is expected to increase by progress of image diagnosis.

Methods

Clinical studies were conducted on 11 patients at Showa University Hospital and Showa University Northern Yokohama Hospital over the past three years.

Results

There were 7 men and 4 women with the mean age of 51.7 years (32-80 year old). 5 cases were first seen The department of first contact was Ophthalmology in 5 cases, Otolaryngology in 3 cases, Dentistry in 2 cases and Internal medicine in 1 case. Cysts were located in the maxillary sinus in 6 cases, in the posterior ethmoid sinus in 2 cases, in the frontal sinus in 2 cases, both in the frontal sinus and the maxillary sinus in 1 case. Initial symptoms were eye symptoms in 5 cases, nasal obstruction in 3 cases, cheek swelling or pain in 2 cases, no symptoms in 1 case. The period between onset and surgery was relatively short in cases as follows; the department of first contact was Ophthalmology, initial symptom was eye symptom and cyst location was the posterior ethmoid sinus.

Conclusion

We performed endoscopic sinus surgery and opened paranasal sinus cysts using transnasal approach in all 11 cases. 10 cases had a simple cyst and 1 case had multiple cysts. No recurrence has been detected so far although the longer follow-up is required.

Postoperative evaluation using E score after endoscopic sinus surgery for chronic rhinosinusitis

Y. Kyo¹, A. Ishibashi¹, T. Komatsuzaki¹, S. Watanabe¹, Y. Hinohira¹, H. Suzaki¹

¹ Department of Otorhinolaryngology, Showa University School of Medicine, Tokyo, Japan

Abstract: ERS-0591

Session: Outcomes in CRS

Session Time: 24-06-14, 14:36

Location: Hall E

Chair person: TBC

Presenting author: Y. Kyo

Objectives

CT and endoscope findings are used for postoperative objective evaluation after ESS. However, universal methods of endoscopic findings have not been established. Using E score, simple postoperative endoscopic evaluation method advocated by Tsuzuki K et al., we performed postoperative evaluation after ESS and improved our surgical technique.

Methods

We conducted a study of 53 patients who underwent bilateral ESS for CRS and were able to evaluate postoperative outcomes by CT and endoscope findings over the past three years. 18 of them had been diagnosed as bronchial asthma. According to Lund-Mackay score of CT scan, we scored all sinuses and olfactory cleft by endoscope as follows (0: without abnormalities, 1: partial opacification, 2: total opacification) and the ratio of total score to bilateral total opacification (24 point) was calculated as E score.

Results

In 37 patients who underwent ESS by October 2011, postoperative CT score and E score were significantly higher in CRS with asthma (12 patients) compared with CRS without asthma (25 patients). Frontal sinus and anterior ethmoid sinus were relatively worse in postoperative CT score and frontal sinus and sphenoid sinus in postoperative E score. Based on these results, we improved our surgical technique and cleaned the frontal sinus drainage pathway thoroughly as much as we can. As a result, significant differences of postoperative CT and E score between CRS with asthma and CRS without asthma were disappeared in whole period.

Conclusion

Postoperative evaluation using E score was thought to be useful for comparison of surgical techniques and analysis of difficult cases such as CRS with asthma.

Hypoxia increases epithelial permeability in human nasal epithelia

S.Y. Seong¹, H.J. Min¹, H.J. Cho¹, S.Y. Choi², T.H. Kim², C.H. Kim¹, J.H. Yoon¹

¹ Department of Otorhinolaryngology, Yonsei University College of Medicine, Seoul, Korea

² The Airway Mucus Institute, Yonsei University College of Medicine, Seoul, Korea

Abstract: ERS-0592

Session: CRS Basic 3

Session Time: 24-06-14, 16:55

Location: Hall E

Chair person: S. Vlamincx

Presenting author: S.Y. Seong

Objectives

Nasal mucosa is the first site that encounters pathogens and forms continuous barrier to various stimuli. The epithelial barrier is composed of junction complex including tight and adherence junction. Here, we studied the effect of hypoxia on the barrier function in normal human nasal epithelial cells.

Methods

We performed real time PCR, western blot and immunofluorescence assay to check the alteration of mRNA and protein expression of ZO-1 and E-cadherin. Moreover, we evaluated the TER in NHNE cells after hypoxic stimuli to check the change of permeability.

Results

In our study, hypoxia decreased the expression of ZO-1 and E-cadherin at gene and protein level. We also found that hypoxic condition decreases the TER in normal human nasal epithelial cells which means increased permeability.

Conclusion

Our results suggest that hypoxic environment which might be caused by natural ostium obstruction alters the expression of junction complex molecules and induces barrier dysfunction in human nasal epithelia. This finding explains that hypoxia is one of major pathogenic mechanism of rhinosinusitis.

Immunological parameters of blood serum in patients with chronic polypoid rhinosinusitis

Y. Yaromenka¹, L. Makaryna-Kibak¹, S. Sidelova¹, P. Kulchitsky¹

¹Otorhinolaryngology, Republican Scientific and Practical Centre for Otorhinolaryngology, Minsk, Belarus

Abstract: ERS-0593

Session: CRS miscellaneous

Session Time: 25-06-14, 14:00

Location: Hall J

Chair person: G. Adriaensen

Presenting author: Y. Yaromenka

Objectives

The role of humoral immunity factors and their influence on the course of chronic polypoid rhinosinusitis (CPRS) still remains incompletely understood problem. The study of humoral immunity parameters in patients with CPRS seems promising for its further use as diagnostic and prognostic criteria.

The aim of the study: to select diagnostically significant parameters of humoral immunity in patients with CPRS.

Methods

Quantitative amount of G, M, A, E and secretory A immunoglobulins was defined in blood serum of 57 patients with CPRS.

Results

The increase of total IgG amount was revealed in 54 cases (94.7%). IgG shares the major part of antibodies in primary (later stages) and secondary immune response. A significant increase of IgE amount was noted in 24 cases (42.1%) indicating the possible presence of allergic component in pathogenesis. Secretory IgA content exceeded normal values in 22 patients (38.6%). Secretory IgA relates to markers of "local immunity" and its high content in blood serum is observed during infectious and somatic diseases including respiratory tract. It is assumed that namely in damaged tissues its synthesis is increased.

Quantitative levels of total IgA and IgM almost corresponded to normal levels in all patients.

Conclusion

Based on conducted investigations, one can distinguish IgG, IgE and sIgA levels in blood serum as diagnostic and prognostic parameters in patients with CPRS.

Prevalences of chronic rhinosinusitis, nasal septal deviation and allergic rhinitis in the Korean population: results from the Korean national health and nutrition examination survey 2008-2011

J. Ahn¹, S. Mun², D. Han¹, J. Kim³, C. Lee³, Y. Cho⁴, C. Rhee³

¹ Otorhinolaryngology-Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea

² Otorhinolaryngology-Head and Neck Surgery, Pusan National University Hospital, Pusan, Korea

³ Otorhinolaryngology-Head and Neck Surgery, Seoul National University Bundang Hospital, Seongnam, Korea

⁴ Otorhinolaryngology-Head and Neck Surgery, Samsung Medical Center, Seoul, Korea

Abstract: ERS-0594

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 17:03

Chair person: S. Reinartz

Presenting author: J. Ahn

Objectives

European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS) guideline and Allergic Rhinitis and its Impact on Asthma guideline has been updated recently. However, there had been conducted few studies for the Korean non-institutionalized population. The aims of this study were to evaluate the Korean prevalences of CRS, nasal septal deviation (NSD), and AR during the recent 4 years.

Methods

Using the 4-year Korea National Health and Nutrition Examination Surveys (KNHANES) 2008, 2009, 2010 and 2011, which is a cross-sectional non-institutionalized population based survey (n=37,753), the prevalences were calculated with corresponding symptoms and nasal endoscopic finding. CRS was evaluated according to EPOS 2012 guideline. Allergic Rhinitis was evaluated with allergic nasal symptoms and the triple immunoCAPs (*Dermatophagoides farinae*, cockroach, and dog dander). Serum levels of vitamin D were also analyzed with AR.

Results

The 4-year prevalence of CRS was 8.6% with high prevalence 12.9% and 11.0% in the adolescents and the elderly. The 4-year prevalences of NSD were 46.0%. The triple immunoCAPs showed that the prevalences of NAR and AR were 12.1%, and 16.9%. Considering a cumulative frequency 81.7% of the triple allergens in sensitization, the real prevalence of NAR and AR would be 8.3% and 20.7%. AR group had less serum vitamin D level than non-AR group (p=0.021).

Conclusion

This nation-wide epidemiologic study from the KNHANES, organized by both the Korean Otolaryngologic Society and the Ministry of Health and Welfare, would be a cornerstone for the additional studies to better prevent and manage rhinologic diseases.

What's new in rhinomanometry? A comparison of 4-phase rhinomanometry with the classic method using nose models

E. Wong¹, R. Eccles¹

¹ Common Cold Centre and Healthcare Clinical Trials, Cardiff School of Biosciences Cardiff University, Cardiff, United Kingdom

Abstract: ERS-0597

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:00

Location: Hall H

Chair person: G. Ottaviano

Presenting author: E. Wong

Objectives

Rhinomanometry is an objective test to measure the nasal patency in the form of nasal airway resistance (NAR). There are various different methods used to measure NAR in rhinomanometry, which include the classic method at fixed pressure of 150Pa or 75Pa, Broms method and the new 4-phase rhinomanometry. The more complex 4-phase rhinomanometry is now promoted as being superior to the simple classic method despite the long history of use of the classic method in clinical trials on medicines and nasal surgery. Clinicians and researchers studying the effects of surgery or other treatments on the nose may be confused by the choices available between these different parameters. Aim: To determine if there is any difference between the NAR measurements obtained by the classic and 4-phase rhinomanometry methods.

Methods

In-vitro study with measurements of NAR using both methods when applied across four artificial nose models of decreasing diameters, representing a wide range of human nasal resistances.

Results

No statistically significant differences were found between NAR values obtained from both methods ($U > U_{critical}$, $p > 0.05$). Strong, positive correlations were found between NAR measured with both methods, which were statistically significant ($r_s = 1.000$, $p < 0.001$).

Conclusion

No statistically significant differences were found between the NAR values measured using both methods. If we apply the principle of Ockham's razor, the simpler the method or hypothesis the better, the complexity of 4-phase rhinomanometry does not provide any benefit over the simpler classic measurements, as both methods give the same resistance values.

The contribution of nasal valve dysfunction to nasal obstruction in patients with obstructive sleep apnea syndrome

Z. Kaliadzich¹, A. Makaryn-Kibak¹, Y. Yaromenka¹

¹ Otorhinolaryngology, Republican Scientific and Practical Centre for Otorhinolaryngology, Minsk, Belarus

Abstract: ERS-0596

Session: OSAS

Location: Hall H

Time: 25-06-14 14:25

Chair person: N. de Vries

Presenting author: Z. Kaliadzich

Objectives

Nasal valve plays a significant role in nasal breathing. Nowadays low attention is paid to its narrowing after nasal surgery, but patients, especially those with obstructive sleep apnea, still continue complaining on difficulties in nasal breathing even after targeted surgery. The aim of the study: to reveal nasal valve dysfunction in patients with different degrees of OSAS and complaints on NO.

Methods

28 patients (18 males, 10 females) with primary OSAS and NO were observed. OSAS was diagnosed by cardiorespiratory monitoring (CRM) or polysomnography (PSG). All patients had previously undergone septoplasty, but still complained on disturbed nasal breathing. Computed tomography with nasal valve angle definition, Cottle's maneuver, acoustic and anterior active rhinomanometry were made to reveal nasal valve dysfunction. Anterior active rhinomanometry data were within normal values before the surgery. Dynamics of patients' state was estimated by CRM/PSG. Correction was made with different types of surgery according to the type of dysfunction.

Results

The following types of dysfunction were revealed: mucous – 7 patients, cartilaginous – 5 patients and mixed – 16 patients. A decrease of apnea/hypopnea index was observed: from 13.6 to 8.3 e/h. Acoustic rhinomanometry revealed no disturbances in nasal valve area. Nasal valve angle changed after surgery from 8.1° to 14.6°.

Conclusion

NO is an independent risk factor for OSAS. Septoplasty alone cannot be effective in patients with OSAS. Patients with nasal obstruction and OSAS require nasal valve function evaluation and its subsequent correction if needed.

Rhinologist-beware-not all nasal resistance values are the same! comparison of the classic and broms method in rhinomanometry using nose models

E. Wong¹, R. Eccles¹

¹ Common Cold Centre and Healthcare Clinical Trials, Cardiff School of Biosciences Cardiff University, Cardiff, United Kingdom

Abstract: ERS-0597

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:18

Location: Hall H

Chair person: G. Ottaviano

Presenting author: E. Wong

Objectives

Calculation of nasal airway resistance (NAR) using rhinomanometry can be obtained using different methods of analysis of the pressure-flow curve. The two commonest methods are the classic method using fixed pressure of 75 Pa or 150 Pa and the Broms method at radius 200. Aim: To compare the NAR values measured using both methods over a range of resistances.

Methods

In-vitro measurement and comparison of unilateral NAR values of four artificial nose models.

Results

The unilateral NAR measurements from the classic (at 75 Pa or 150 Pa) and Broms method gave either similar or different results depending on the level of nasal resistances. The different measurements can be explained by reference to the pressure-flow curves and the sample points calculated by the two methods. The magnitude of any change in resistance due to surgery or medical intervention is therefore also dependent on the method used to analyse the pressure-flow curves.

Conclusion

NAR is not a standardised measurement like blood pressure. Clinicians need to be careful when comparing unilateral measurements of resistance from the classic and Broms methods as the two methods can give the same or different measurements depending on the level of nasal resistance.

Matrix metalloproteinase-9 (MMP-9) profile in chronic rhinoinusitis with nasal polyps at ENT departement of dr. Sardjito hospital, Yogyakarta – Indonesia

L. Lusy Indrawati¹

¹ Ear Nose and Throat, Sardjito General Hospital/ Gajah Mada University School of Medicine, Yogyakarta, Indonesia

Abstract: ERS-0598

Session: CRS Basic 3

Session Time: 24-06-14, 17:10

Location: Hall E

Chair person: S. Vlamincck

Presenting author: L. Lusy Indrawati

Objectives

The aim of this study is to investigate matrix metalloproteinase-9's profile in chronic rhinosinusitis with nasal polyps.

Methods

This study was conducted with observational descriptive research design and consecutive sampling. The specimens of nasal polyps mucosa were obtained from 20 patients by Endoscopic Sinus Surgery. Specimens were processed for determinations of protein expression levels by immunohistochemical staining. Clinical characteristic of the patients were obtained from medical records.

Results

Sixteen samples (80%) of 20 spesimens show the profile of MMP-9 were strong positive (+++), 4 samples (20%) were mild positive (+). Patients are majority male, age 41-60 years old. Most of them did not have history of allergy or asthma.

Conclusion

Majority samples of chronic rhinosinusitis patients with nasal polyps had strong positive MMP-9 protein exprssion. Matrix Metalloproteinase-9 has significant role at many stages of nasal polyps formation and it also determines disease's severity.

Comparison of in office balloon sinuplasty with direct middle meatal lavage using trochar for persistent maxillary sinusitis in the elderly

A. Kacker¹

¹Otolaryngology Head And Neck Surgery, New York Presbyterian Weill Cornell Medical Center, New York City, USA

Abstract: ERS-0599

Objectives

To compare the efficacy of in office balloon sinuplasty with direct middle meatal lavage using trochar for persistent maxillary sinusitis in the elderly.

Methods

Retrospective chart review at a tertiary care practice.

Results

5 patients over the age of 65 with persistent maxillary sinusitis for more than 6 weeks with ct evidence of completely opacified maxillary sinus who underwent balloon dilation using the entellus® system via the natural os were compared to 5 patients who underwent middle meatal direct puncture and lavage. All patients in both groups, reported clinical and symptomatic resolution of their symptoms. There was no complications in either groups.

Conclusion

Direct middle meatal puncture and lavage was as effective as balloon sinuplasty in patients with persistent/chronic isolated maxillary sinusitis. It also provides a significant cost savings without increase in morbidity. Direct middle meatal puncture and lavage should be considered in patients with persistent maxillary sinusitis.

A new method of the sphenoid sinus on CT images by the growth of Onodi cell

K. Wada¹, K. Yanagi², C. Arai³, E. Mori³, N. Otori³, H. Edamatu¹

¹ Otorhinolaryngology, Toho university, Tokyo, Japan

² Otorhinolaryngology, St. Luke international hospital, Tokyo, Japan

³ Otorhinolaryngology, Jikei university, Tokyo, Japan

Abstract: ERS-0600

Session: Imaging

Session Time: 25-06-14, 11:30

Location: Hall G

Chair person: N. Freling

Presenting author: K. Wada

Objectives

We report that we have a prediction for surgical method for sphenoid sinus opening (an opening site and a direction) by classifying the front wall of sphenoid sinus by growth of Onodi cell.

Methods

The method of the classification is carried out with sagittal images of CT scan. First, we confirm optic canal with the sagittal section image in the outside. And next, we examined where the anterior wall of sphenoid sinus in the midline attach to skull base or pituitary gland. In other words, we can understand it is not Onodi cell if anterior wall of sphenoid sinus attach forward than Optic canal. So we can understand it is Onodi cell if anterior wall of sphenoid sinus attach backward than optic canal. When Onodi cell was present, we classified sphenoid sinuses as follows. 1) Skull base type (no Onodi cell), 2) Optic canal type (anterior wall of sphenoid sinus attach optic canal in the outside), 3) Sella type (anterior wall of sphenoid sinus attach pituitary gland in the midline), 4) Infra-sella type (anterior wall of sphenoid sinus attach posterior of pituitary gland in the midline).

Results

Skull base type is 49%, Optic canal type is 35%, Sella type is 11% and Infra-sella type is 5%.

Conclusion

As the latter, anterior wall of sphenoid sinus becomes horizontal, then, opening of sphenoid sinus becomes difficult. Because this method could predict an opening site and the direction of the sphenoid sinus preoperatively, we thought that this is a very useful classification for sphenoid sinus.

A study of late-phase reaction in allergic rhinitis using environmental challenge chamber

S. Yonekura¹, Y. Okamoto¹

¹ Otolaryngology Head and Neck Surgery, Chiba University Graduate School of Medicine, Chiba, Japan

Abstract: ERS-0601

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:55

Chair person: C. Bachert

Presenting author: S. Yonekura

Objectives

It is generally considered that nasal symptoms in patient with allergic rhinitis consist of two phases, immediate-phase and late-phase. Nasal obstruction is a major symptom observed in late-phase induced by the nasal provocation with antigen coated disks or antigen spray. We examined the nasal symptoms after exposure in the Environmental Challenge Chamber.

Methods

Fifteen patients with Japanese pollinosis were exposed to 8000 grains/m³ of cedar pollen for 3 hours in the chamber unit. Each patient recorded the number of induced sneezing and rhinorrhea subjectively assesses symptoms using mobile communication devices. The patients wore clean disposable clothes during pollen exposure and took off them when they left the chamber to avoid transport of any pollen out of the chamber. The patients were recorded frequency of symptoms after leaving the chamber using an allergy diary. We also examined the inflammatory mediators in the nasal secretion.

Results

The severity of symptoms in the chamber reached a peak about 2 hrs after the beginning of pollen exposure and plateaued thereafter. The symptoms including sneezing, nasal secretion as well as nasal obstruction, persisted for the following 3 days in the almost all patients. A various inflammatory mediators including histamine and tryptase were detected in the nasal secretion collected 6 hrs after pollen exposure.

Conclusion

The nasal symptoms including sneezing and nasal secretion continued for three days after a single pollen exposure for only 3 hrs. Allergen-independent histamine release may be related to the sneezing and nasal secretion observed in the late-phase.

Severity of symptoms and impairment of health related quality of life in chronic rhinosinusitis with and without nasal polyps

T. Greguric¹, D. Tomljenovic², M. Grgic², T. Baudoin², L. Kalogjera²

¹ Dept of Radiology, Univesity Hospital Center "Sestre Milosrdnice", Zagreb, Croatia

² Dept of ORL/Head and Neck Surgery, Univesity Hospital Center "Sestre Milosrdnice", Zagreb, Croatia

Abstract: ERS-0602

Session: Management of CRS

Session Time: 26-06-14 11:55

Location: Hall J

Chair person: TBC

Presenting author: L. Kalogjera

Objectives

The aim of the study was to compare severity of symptoms, health related quality of life (HRQL) impairment of chronic rhinosinusitis (CRS), as well as objective extension of the disease on sinus CT scans, between phenotypes of CRS with and without nasal polyps (CRSwNP and CRSsNP, respectively), including impact of comorbidities, like allergy and asthma.

Methods

The study included 50 patients suffering from CRSwNP and 45 with CRSsNP. Patients were evaluated for the disease severity and indication for surgery. After informed consent, patients filled in VAS for main CRS symptoms + headache, cough and fatigue and SNOT-22 questionnaires and underwent sinus CT scan. General questionnaire included evaluation for comorbidities. Sinus CT scans were scored using Lund Mackay staging system (LM score). Comparisons related to the disease severity between two major phenotypes, impact of risk factors and comorbidities, and correlation between subjective and objective outcomes were analysed.

Results

The difference between the two phenotypes related to VAS and LM scores were significantly different for almost all of the observed parameters. VAS for postnasal drip, facial pain, headache and fatigue were significantly higher in CRSsNP, while secretion, obstruction, smell impairment and LM score were significantly higher in CRS wNP. There was no difference in SNOT-22, cough and facial fullness. LM score does not correlate with SNOT-22 neither in CRSsNP and CRSwNP phenotype.

Conclusion

Major phenotypes of CRS differ in the pattern and severity of individual symptoms, however, impact of CRS on HRQL is similar in both phenotypes.

Herbal dry extract BNO 1011 suppresses human rhinovirus-induced pro-inflammatory cytokines in sinonasal tissue of chronic rhinosinusitis patients

S. Seifert¹, N. Zhang², G. Holtappels², J. Haunschild¹, C. Bachert²

¹ Preclinical & Project Management R&D, Bionorica SE, Neumarkt, Germany

² Upper Airways Research Laboratory, University Hospital Ghent / ENT-Department, Ghent, Belgium

Abstract: ERS-0603

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:15

Location: Hall J

Chair person: C. Hopkins

Presenting author: S. Seifert

Objectives

Virus infection can induce exacerbations in chronic rhinosinusitis (CRS) patients. The associated inflammation of sinonasal mucous membranes is a major therapeutic target. In a human mucosal tissue model, the herbal medicinal product Sinupret® extract, composed of a herbal dry extract of *Gentianae radix*, *Primulae flos*, *Sambuci flos*, *Rumicis herba*, and *Verbenae herba* (BNO 1011), was tested for its anti-inflammatory potential in human rhinovirus (HRV) infection.

Methods

Nasal sinus tissue samples of CRS patients without polyps (n=12) were collected during functional endoscopic sinus surgery. Tissue fragments were infected with HRV1B (24 h) and subsequently treated with BNO 1011 (1-100 µg/mL) for 24 h. Pro-inflammatory cytokines IL-1β, IL-6, IL-17, and IFN-γ were measured in supernatants by a multiplexing technique. In a second step, BNO 1011 was tested for its interference with HRV1B adhesion and replication. ICAM-1, the major HRV receptor on respiratory epithelial cells, was quantified in tissue culture supernatants after infection and BNO 1011 treatment. The MTT test in HeLa cells was used to investigate direct anti-viral effects via detection of virus-mediated cytopathy.

Results

HRV1B infection induced IL-1β, IL-6, IL-17, IFN-γ, and ICAM-1 secretion. BNO 1011 treatment significantly reduced cytokine release and the cytopathic effect of HRV1B but did not regulate ICAM-1.

Conclusion

Taken together, Sinupret dry extract (BNO 1011) demonstrated a prominent anti-inflammatory effect, mediated in part by its direct anti-viral effect. As pro-inflammatory cytokines are initiating and maintaining the post-viral symptomatology, the demonstrated effect may help to reduce rhinosinusitis symptoms.

Influence of septoplasty on olfactory function

V. Bogdanov¹

¹ ENT, Crimean State Medical University named after S.I. Georgievsky, Simferopol, Ukraine

Abstract: ERS-0604

Session: Olfaction

Location: Hall G

Time: 23-06-14, 15:12

Chair person: B. Landis

Presenting author: V. Bogdanov

Objectives

To determine influence of septoplasty on olfactory function.

Methods

49 patients with deviated nasal septum underwent septoplasty. Olfactory function was measured with adapted version of 'Sniffin Sticks' (with lateralized threshold test) before surgery, 1 week, 2 weeks, 1 and 3 months after surgery. Patients of the 'Main' (n=25, 16 males, 9 females, middle age $28 \pm 10,1$ years) and 'Control' (n=24, 16 males, 8 females, middle age $33,75 \pm 12,4$ years) groups have received standard therapy postoperatively. Patients of the 'Main' group have additionally received dexamethasone 4 mg intramuscularly once a day three days after surgery.

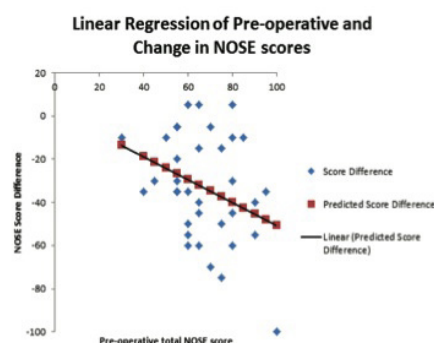
Results

Preoperatively 12 patients (22,6%) had hyposmia, 1 patient (1,9%)- functional anosmia. Lateralized scores on the side of obstruction didn't significantly differ from the other side ($p > 0,05$).

In first 2 weeks after surgery olfactory function in both groups was significantly impaired due to mucosa swelling and inflammatory reactions. The average TDI-score in 'Control' group restored to preoperative level 1 month postoperatively, while in 'Main' group- in 2 weeks. TDI-scores before and 3 months after surgery in both groups didn't differ significantly ($p > 0,05$). Individually a significant change in TDI-score 3 months after surgery (> 6 points) was observed only in 1 patient.

Conclusion

24,5% of the patients with deviated nasal septum have olfactory loss, which is not lateralized to the obstructed side. Septoplasty has statistically almost no influence on olfaction, although on individual basis can rarely lead to significant changes of olfactory acuity. Perioperative usage of corticosteroids speeds up the restoration of olfaction from 1 month to 2 weeks after surgery.



Expression of CC-chemokine receptor 3 and eotaxin levels in nasal polyps

K. Honda¹, H. Saito¹, C. Asaka¹, K. Ishikawa¹

¹ Department of Otorhinolaryngology and Head and Neck Surgery, Akita University Graduate School of Medicine, Akita, Japan

Abstract: ERS-0606

Session: CRS Basic 3

Session Time: 24-06-14, 16:40

Location: Hall E

Chair person: S. Vlamincx

Presenting author: K. Honda

Objectives

CC-chemokine receptor 3 (CCR3) is a chemokine receptor for which major ligands, eotaxin-1, 2, and 3, MCP-4, and RANTES, are known to be involved in chemotaxis for eosinophils. Nasal polyps from asthmatic patients demonstrated large number of eosinophils and asthma is associated with a higher rate of recurrence after surgery. In this study we aimed to investigate the expression of CCR3 and eotaxin levels and eosinophil number in nasal polyps from asthmatic patients and compared with non-asthmatic patients.

Methods

Thirty-seven patients with nasal polyps (11 asthmatic patients and 26 non-asthmatic patients) who underwent endoscopic sinus surgery were included in this study. To identify the cells expressing CCR3, double immunostaining was performed using anti-CCR3 antibody, monoclonal antileukocyte antibodies. Eotaxin levels in nasal polyps homogenates were measured by ELISA.

Results

The number of CCR3 positive cells in polyps from asthmatic patients was higher than from non-asthmatic patients. CCR3 was expressed on eosinophils and T-cells of the infiltrating cells in the nasal polyps. Eotaxin levels and eosinophil number in nasal polyps from asthmatic patients were significantly higher compared with non-asthmatic patients. Eotaxin levels were significantly correlated to the eosinophil number in nasal polyps. Eotaxin levels in recurrent group were significantly higher compared with non-recurrent group with asthma.

Conclusion

These results suggested that there is a clinical association between asthma and eosinophilic nasal polyps and CCR3-eotaxin system might play an important role in the pathogenesis of eosinophilic nasal polyps.

The pollen low-dose intradermal therapy evaluation (pollenlite) double-blind randomised control trial (RCT); rationale, design, recruitment and baseline demographics

A. Slovic¹, A. Douiri², R. Muir³, A. Guerra¹, K. Tsioulos¹, M. Shamji⁴, S. Ying¹, S. Durham⁴, S. Till⁵

¹ Division of Asthma Allergy and Lung Biology, Kings College London Guys Hospital, London, United Kingdom

² Department of Primary Care and Public Health Sciences, Kings College London, London, United Kingdom

³ Clinical Research Facility NIHR Biomedical Research Centre, Guys Hospital, London, United Kingdom

⁴ Faculty of Medicine, National Heart and Lung Institute Imperial College, London, United Kingdom

⁵ Division of Asthma Allergy and Lung Biology, MRC and Asthma UK Centre for Allergic Mechanisms of Asthma KCL, London, United Kingdom

Abstract: ERS-0607

Session: Immunotherapy

Session Time: 24-06-14, 11:51

Location: Hall E

Chair person: G. Hens

Presenting author: A. Slovic

Objectives

Allergic rhinitis (AR) impacts on quality of life in 5 million people in the UK. High dose allergen immunotherapy – subcutaneous or sublingual – is indicated in patients not responding to conventional medications. This is expensive, associated with systemic reactions or requires daily administration for several years. We aim to test efficacy and safety of a novel approach to grass pollen desensitisation based on low dose intradermal grass pollen injections. The protocol, recruitment campaign and base-line demographics are described.

Methods

Employing a novel media/website recruitment strategy, 93 adults with moderate-severe AR were randomised to receive 7 or 8 pre-seasonal intradermal grass pollen injections or histamine control. Primary outcome (symptoms, medication use) and secondary outcome data (e.g. QoL questionnaires, skin test sizes) were collected during/after summer 2013. Immune assays were performed on blood samples (pre- /post-therapy) and 40 participants underwent injection site skin punch biopsies for immunohistochemistry. Follow-up skin tests are being performed 3, 6 or 12 months after the last vaccine injection to investigate long-lasting effect on cutaneous responses.

Results

Groups were matched for age, gender, skin prick test wheal sizes and level of allergen-specific IgE to grass pollen. Intradermal vaccine injections were completed in 92 participants, of whom 84 continue in the follow-up skin test phase. 5 withdrew interest after completing all primary outcome data and 4 were lost to follow-up.

Conclusion

Recruitment and randomisation were successfully completed February 2013. The final participant will complete the trial protocol in August 2014.

Staphylococcus aureus enterotoxin and fungi specific IgE production in ethmoid sinus mucosa in chronic rhinosinusitis with nasal polyps

S. Matsune¹, N. Wakayama¹, K. Sekine¹, S. Yamaguchi¹, K. Okubo²

¹ Department of Otolaryngology, Nippon Medical School Musashikosugi Hospital, Kawasaki, Japan

² Department of Otolaryngology Head and Neck Surgery, Nippon Medical School Graduate School of Medicine, Tokyo, Japan

Abstract: ERS-0608

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:40

Location: Hall J

Chair person: C. Hopkins

Presenting author: S. Matsune

Objectives

In chronic rhinosinusitis, eosinophilic rhinosinusitis (ERS) is known as persistent type often complicated with bronchial asthma including aspirin intolerant one. While the pathophysiology of ERS is still under debate in detail, specific immune response to *Staphylococcus aureus* enterotoxin (SAE) and its role as a superantigen is advocated to be an important causative factor. Fungi are also thought to be another important causative factors, but mechanism is still unclear. This study was designed to show SAE and fungi specific IgE production in ethmoid sinus mucosa in chronic rhinosinusitis with nasal polyps including ERS in Japan.

Methods

Total IgE and SAE-A,-B, *Aspergillus*, *Candida* and *Alternaria* specific IgEs in peripheral blood and ethmoid sinus mucosa and skin test were analyzed and estimated in operation cases with chronic rhinosinusitis with nasal polyps. Ethmoid sinus mucosa was obtained during operation and kept in liquid nitrogen followed by mashing in 1ml PBS. After centrifugation of this PBS, the supernatant was harvested in each case to analyze total and antigen specific IgE based on the weight of each sample.

Results

In skin test, positive reaction was often observed only by *Candida* 48 hours after injection. While local 3 fungi- specific IgEs were negative, SAE-A,-B specific IgEs were positive and local total IgE level was elevated.

Conclusion

As ever reported, elevation of local total or SAE-A,-B specific IgEs levels were observed in our ERS operation cases. Fungi may have no relation to the mechanism of elevation of total IgE level in ERS.

Prophylactic use of antibiotics in rhinosurgery

B. Peric¹, I.A. Kim¹, E.V. Nosulya¹

¹Otorhinolaryngology, Russian Medical Academy Of Postgraduate Education, Moscow, Russia

Abstract: ERS-0609

Objectives

Features of the surgical correction of the intranasal structures define suitability of antibiotics. However, there is no clear differentiation between prophylactic use and antibiotic therapy in rhinosurgical interventions.

Methods

Trial included 35 male and female patients (33 y/o average) with complaints associated with impaired nasal breathing stipulated by septal deviation and hypertrophy of the inferior turbinate. All patients underwent comparable surgical interventions of septal deflections correction and reduction of the prominent inferior turbinate. Patients were randomized into two groups - main (14 patients) where single-shot antibiotic prophylaxis was administered and comparison group (21 patients) with five days antibiotic therapy. Criteria for expulsion was presence of inflammatory process. Groups were examined pre operation and on the 5th day after. Examination included analysis of the patients subjective sensations, results of the nasal endoscopy; mucociliary time clearance; body temperature and nasal microflora.

Results

Complications were absent in both groups. Subjective sensations were defined by decrease of the nasal obstruction after surgery in comparison with pre operative measurements in both groups and absence of notable variations of the olfaction function before and after operation. Intensity of the fibrin discharge in the nasal cavity was same in both groups. Average mucociliary clearance time after surgery was similar in both groups. Frequency of the body temperature growth in the post operation period was alike in the main group and in the comparison group.

Conclusion

Preoperation single-shot antibiotic prophylactics results were accompanied with minimal changes of the functional state of the nasal mucosa and low rate of hypothermia.

Chronic rhinosinusitis with nasal polyps and asthma: an analysis of upper and lower airway inflammation

K. Håkansson¹, C. Bachert², L. Konge³, S.F. Thomsen⁴, A.E. Pedersen⁵, S.S. Poulsen⁶, T. Martin-Bertelsen⁷, O. Winther⁸, V. Backer⁴, C. von Buchwald⁹

¹ Department of Otorhinolaryngology Head & Neck Surgery and Audiology, Rigshospitalet and Faculty of Health and Medical Sciences University of Copenhagen, Copenhagen, Denmark

² Upper Airways Research Laboratory, Ghent University Hospital, Ghent, Belgium

³ Centre for Clinical Education, University of Copenhagen and the Capital Region of Denmark, Copenhagen, Denmark

⁴ Department of Respiratory Medicine L, Bispebjerg Hospital University of Copenhagen, Copenhagen, Denmark

⁵ Department of International Health Immunology and Microbiology, University of Copenhagen, Copenhagen, Denmark

⁶ Department of Biomedical Sciences Endocrinology Research Section, University of Copenhagen, Copenhagen, Denmark

⁷ Department of Biology and Biotech Research and Innovation Centre (BRIC), University of Copenhagen, Copenhagen, Denmark

⁸ Section for Cognitive Systems, Technical University of Denmark, Copenhagen, Denmark

⁹ Department of Otorhinolaryngology Head & Neck Surgery and Audiology, Rigshospitalet University of Copenhagen, Copenhagen, Denmark

Abstract: ERS-0610

Session: Airway mucosa

Session Time: 23-06-14, 10:20

Location: Hall I

Chair person: T. Van Zele

Presenting author: K. Håkansson

Objectives

It has been established that Caucasian patients with chronic rhinosinusitis with nasal polyps (CRSwNP) often have co-existing asthma. From this, we generated two hypotheses: (1) upper and lower airway inflammation is uniform in agreement with the united airways concept; and (2) all CRSwNP patients have bronchial inflammation that remains subclinical in those without clinical asthma.

Methods

We collected biopsies from the nasal polyps, inferior turbinates and bronchi of 27 CRSwNP patients and 6 controls; all tested for lower airway disease according to international guidelines. Protein concentrations were standardized to total protein in the sample. Inflammatory cytokines were investigated using a Th1/Th2 chemokine and cytokine assay including: eotaxin, IL-8, IP-10, MCP-1, MCP-4, MIP-1, TARC, INF γ , IL-10, IL-12p70, IL-13, IL-2, IL-4, and IL-5. We used a permutation analysis to explore the correlation between inflammatory profiles of the upper and lower airways; univariate analyses were applied for the comparison of patients and controls.

Results

We found significantly higher concentrations of Th2 cytokines, not Th1 cytokines, in the nasal polyps compared to the inferior turbinate and bronchial biopsies.

Conclusion

Our findings support the united airways concept and points to the nasal polyps as an epicenter of airway inflammation in CRSwNP patients. We did not find evidence for subclinical bronchial inflammation in CRSwNP patients without asthma.

Microarray gene analysis of nasal epithelial cells in patients with chronic rhinosinusitis with nasal polyposis

M. Cornet¹, K. Kostamo², A. Rinia¹, A. Zwinderman³, W. Fokkens¹, C. van Drunen¹

¹ ENT, Academic Medical Center, Amsterdam, Netherlands

² ENT, University of Helsinki, Helsinki, Finland

³ Biostatistics, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0611

Session: CRS basic 1

Session Time: 23-06-14, 09:39

Location: Hall G

Chair person: H. Saleh

Presenting author: M. Cornet

Objectives

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a multifactorial disease of unknown aetiology. Although the link between CRSwNP and asthma suggests a systemic aspect of disease, polyps form only around the osteomeatal complex. Here we investigate whether epithelial cells from patients with CRSwNP differ from healthy controls and the impact of co-morbidities and location.

Methods

We obtained epithelial cells from concha media and sphenoid sinus of 10 healthy individuals and concha media and polyps of 29 CRSwNP patients using magnetic bead-assisted isolation procedure. The group CRSwNP patients included 10 patients without co-morbidities, 4 with only allergy, 9 only asthma, and 6 with both allergy and asthma. Micro-array was used to determine differences in expression profile as a function of disease, location and co-morbidities.

Results

We find 1022 significantly different regulated genes with 603 genes expressed higher and 419 genes expressed lower in polyps versus healthy concha. The affected genes belong to expected gene-ontology groups 'immune responses' and 'negative regulation of apoptosis'. Interestingly, also multiple biological processes involving 'amino acid biosynthesis' seem affected, which could be related to increase observed in genes associated with 'endoplasmatic reticulum stress' and 'response to unfolded proteins'. In addition we detected deregulation of multiple transcription factors and miRNAs. Moreover, we find a strong impact of co-morbidities on epithelial expression profile, interestingly mostly for asthma and less for allergy.

Conclusion

There are major differences between healthy nasal epithelial cells and epithelial cells from nasal polyps. A detailed analysis will contribute to a better understanding of pathological processes associated with CRSwNP.

3T- intraoperative MR imaging – a cost effective improvement in intraoperative imaging in endoscopic skull base surgery

D. Holzmann¹, M.B. Soyka¹, D. Vital¹, L. Regli²

¹ Otorhinolaryngology Head & Neck Surgery, University Hospital Zurich, Zurich, Switzerland

² Neurosurgery, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-0613

Session: Skull base surgery 3

Session Time: 26-06-14, 09:50

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: D. Holzmann

Objectives

Intraoperative imaging is considered to be a helpful tool during complex endoscopic skull base surgery. Intraoperative CT does not allow distinguishing different soft tissues clearly so that an intraoperative MRI (ioMRI) may provide more information for intradural work. Although ioMRI are available for almost 10 years it has not become the standard as it is too expensive and image quality with 0.15 T is fairly poor. The authors have experience with this type of ioMRI which has now been replaced by a new 3 Tesla ioMRI.

Methods

During 14 months 40 patients underwent endoscopic skull base surgery with 3T ioMRI. The ioMRI is next door to the operating room equipped with MRI compatible anaesthesiologic equipment.

Results

Hormone active and giant adenoma (>4cm diameter) of the pituitary are ideal indications for 3T ioMR. Success in hormone active adenomas requires radical adenoma removal protecting the healthy gland. Despite perfect endoscopic image quality insufficient compromises can be made in the area of the cavernous sinus, ICA and cranial nerves, in giant adenomas especially. Compared with the former ioMRI this technique with its better image quality and lower cost balance is a clear advantage.

Conclusion

The advantages of 3T ioMRI are convincing. As it can be used for regular MRI program, the scanner can be operated at full capacity. Except for a MRI compatible head holder no additional instrumentation is required. Structural measures like an MRI-unit close to the operating rooms are mandatory.

Allergen-induced IL-33 release from airway epithelial cells is mediated through PKC and SYK pathways

I. Tojima¹, H. Kouzaki¹, H. Kita², T. Shimizu¹

¹ Otorhinolaryngology, Shiga University of Medical Science Hospital, Otsu, Japan

² Division of Allergic Diseases Internal Medicine, Mayo Clinic, Rochester, USA

Abstract: ERS-0959

Session: Rhinitis Basic

Session Time: 23-06-14, 11:33

Location: Hall J

Chair person: L. Kalogjera

Presenting author: N. Tan

Objectives

Chronic rhinosinusitis (CRS) has been linked to the gram-negative bacteria *Staphylococcus aureus* in its biofilm or intracellular forms. Recent evidence suggests that *S. aureus* also exists in a small colony variant (SCV) form as a mechanism of altering its virulence capabilities. The aim of this study was to investigate the presence of SCVs in sinonasal mucosa of CRS patients and whether the phenomenon of phenotype switching can be applied to intracellular epithelial infections.

Methods

Sinonasal specimens were examined for the presence of intramucosal *Staphylococcus aureus* and characterised to the strain level. An airway epithelial cell culture infection model was utilised to investigate whether bacteria were capable of alterations in virulence phenotype.

Results

Intramucosal organisms harvested from sinonasal biopsies demonstrate phenotypic growth patterns and lack of coagulase activity consistent with SCVs. Intracellular infection of airway epithelial cell cultures with *S. aureus* led to decreased secretion of enterotoxins and phenotypic growth alterations consistent with SCVs

Conclusion

Regulation of *S. aureus* virulence factors is a dynamic process and exposure to the intracellular environment appears to provide the necessary conditions to enable these alterations in an attempt for the bacterium to survive and persist within host tissues. Further work is required to ascertain whether SCVs in CRS hold a clinically relevant pathogenic role in recalcitrant disease.

Influence of the inflammatory process in the nasal cavity and paranasal sinuses in snore and obstructive sleep apnea syndrome (OSAS)

M. Kozulina¹, B. Peric¹

¹ Otorhinolaryngology, Russian Medical Academy of Postgraduate Education, Moscow, Russia

Abstract: ERS-0615

Session: OSAS

Location: Hall H

Time: 25-06-14 14:30

Chair person: N. de Vries

Presenting author: M. Kozulina

Objectives

Pathology of the ENT organs such as chronic rhinosinusitis has great impact in OSAS pathogenesis. However, there is not enough data showing dependence between snoring and OSAS and character and the prevalence of the inflammatory process in the nasal cavity and nasal sinuses.

Methods

Examination underwent 60 male and female patients in age group from 24 till 68 years having chronic rhinosinusitis. Diagnostic workup included complaints and history analysis, endoscopy of the nose, anterior rhinomanometry and examination of the CT scans of the nose and sinuses, all patients answered questionnaire (Vane form and Epworth scale were used). During sleep patients underwent respiratory monitoring with pulse oximetry. All patients were divided into groups in dependence of the disorder type.

Results

Apnea/hypoapnea index was higher in patients with significant impairment of the intranasal structures and sinuses. In isolated sinuses diseases apnea/hypoapnea index was minimal or absent.

Conclusion

Prevalence and character of the inflammatory process in the nose and sinuses affect intensity of snoring and OSAS. Profound examination of the patients with chronic rhinosinusitis can reveal an early sleep disturbances.

Odor processing can take place among congenital anosmics – fMRI study

S. Shushan¹, Y. Yeshurun², A. Arzi², Y. Roth¹, N. Sobel²

¹Otolaryngology Head and Neck surgery, Wolfson medical center, Tel Aviv, Israel

²Neurobiology, Weizmann institute of science, Rehovot, Israel

Abstract: ERS-0616

Session: Olfaction

Session Time: 25-06-14, 14:20

Location: Hall G

Chair person: B. Landis

Presenting author: S. Shushan

Objectives

Congenital absence of the sense of smell, termed congenital anosmia, is typically incurable. Furthermore, whereas the underlying cause of congenital blindness and deafness is usually clearly identifiable, the cause of congenital anosmia often goes unidentified. We set out to investigate the brain mechanism underlying congenital anosmia.

Methods

To test this, we enrolled 12 individuals with congenital anosmia (4F) and 12 normosmic (5F) who underwent functional magnetic resonance imaging (fMRI, 3-Tesla Siemens scanner) in an olfactory event related paradigm. Computer-controlled olfactometer delivered four different odorants, 2 pleasant and 2 unpleasant, and clean air with 20 repetitions for each condition (total number of trials = 100).

Results

Surprisingly, We found that mere sniffing evoked extensive brain activation. Moreover, sniffing drive “olfactory regions” in the anosmic brain. Furthermore, regions of interest (ROI) analysis, revealed a significantly higher activation for unpleasant vs. pleasant odors in the anosmic anterior inferior frontal gyrus (IFG) (mean % change pleasant = 2.2, unpleasant = 2.8, $t(12,12) = 2.43$, $p = 0.03$), despite no conscious awareness for odor. In other words, odor quality (pleasantness) is reflected in patterns of brain activity in anosmics in the absence of perception.

Conclusion

These encouraging finding may imply that there is a new source of hope for congenital anosmics, as one may find a path to teach them what their brain “knows” yet they do not.

Endoscopic endonasal treatment of spontaneous csf leaks of the anterior skull base

A. Pusateri¹, E. Emanuelli², D. Borsetto², D. Cazzador², T. Volo², A. Berardi¹, E. Matti¹, F. Pagella¹

¹ Department of Otorhinolaryngology, Fondazione I.R.C.C.S. Policlinico San Matteo University of Pavia, Pavia, Italy

² Department of Otorhinolaryngology and Otologic Surgery, Azienda Ospedaliera - Policlinico di Padova University of Padua Italy, Padua, Italy

Abstract: ERS-0617

Session: CSF-leak and Management of Anterior Skull Base defects

Session Time: 24-06-14, 11:42

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: A. Pusateri

Objectives

Spontaneous cerebrospinal fluid (CSF) leaks represent a significant challenge due to frequent association with intracranial hypertension (ICH) and higher risk of surgical failure. We report our personal experience regarding endoscopic endonasal treatment of spontaneous CSF leaks of the anterior skull base.

Methods

A retrospective analysis was carried out on patients that underwent endoscopic surgery for spontaneous CSF leaks in Pavia and Padua ENT Departments between 2002 and 2012. Data analyzed included: location of the defect, history of intracranial complications, surgical technique, grafting material, lumbar drain, recurrence and follow-up.

Results

A total of 58 patients were identified. The group consisted of 43 females (74%), mean age was 52 years. The defect was located in cribriform plate in 29 patients (50%), in ethmoid sinus in 13 (22.4%) and in sphenoid sinus in 11 (18.9%). All patients underwent endoscopic endonasal repair of the defect. Six patients (10.3%) developed recurrent CSF leak and all of them had a successful surgical re-repair. Among these, two (33%) had defect in the same area, whereas the remaining four (66%) developed other areas of dehiscence (omo- or controlateral). Follow-up ranged from 15 to 137 months (mean 60.1 months).

Conclusion

The success rate in our series, in line with scientific literature data, points out the pathogenesis of spontaneous CSF leaks, in particular about the possible linkage with ICH. In our opinion, this is a key point in order to perform a valid preoperative diagnostic work-up, an adequate treatment planning and an effective follow-up.

Functional analysis of basophil and specific IgE in sensitized asymptomatic subjects and patients with cedar pollinosis

D. Sakurai¹, S. Yonekura¹, T. Iinuma¹, Y. Okamoto¹

¹ Otorhinolaryngology/Head and Neck Surgery, Chiba University Graduate School of Medicine, Chiba, Japan

Abstract: ERS-0618

Session: Rhinitis basic

Session Time: 24-06-14, 12:10

Location: Hall G

Chair person: TBC

Presenting author: D. Sakurai

Objectives

Many subjects are sensitized to cedar pollen in Japan, but not all subjects develop pollinosis. Subjects who are sensitized to allergen but have not developed AR are asymptomatic patients. However, the underlying mechanism from sensitization to development of AR is unclear. Basophils express the high affinity receptor for IgE, and histamine releasing test (HRT) and basophile activation test (BAT) are useful tools for the assessment of immediate-type responses to allergens mediated by IgE. However, there is a possibility of low responsiveness of basophils to allergen in asymptomatic patients.

Methods

In order to examine the functional alterations of basophils and specific IgE between asymptomatic subjects and patients with cedar pollinosis, HRT and BAT were performed and rat mast cell line (RS-ATL8) which expresses human FcεR1 and luciferase was used.

Results

The levels of specific IgE for cedar pollen were significantly lower in asymptomatic patients compared to patients with cedar pollinosis. HRT in high IgE subgroup of asymptomatic patients was comparable to that in patients with pollinosis, but almost not detected in low IgE subgroup of asymptomatic patients. Therefore we analyzed BAT and luciferase assay in patients with similar levels of specific IgE. BAT was low in asymptomatic patients than patients with pollinosis. However, there was no significant difference of Luciferase expressions in serum-sensitized RS-ATL8 cells between two groups.

Conclusion

It was suggested that the responsiveness of basophil to allergen mediated by IgE was altered from sensitization to development of pollinosis, but it was not clear the functional change of specific IgE.

Endoscopic endonasal mini-invasive surgical options for epistaxis treatment in hereditary hemorrhagic telangiectasia patients

A. Pusateri¹, F. Chu¹, M. Caputo¹, D. Zaccari¹, C. Danesino², C. Olivieri², E. Matti¹, F. Pagella¹

¹ Department of Otorhinolaryngology, Fondazione I.R.C.C.S. Policlinico San Matteo University of Pavia, Pavia, Italy

² Department of Molecular Medicine General Biology and Medical Genetics, University of Pavia, Pavia, Italy

Abstract: ERS-0619

Session: Epistaxis

Session Time: 23-06-14, 11:51

Location: Hall E

Chair person: A. Swift

Presenting author: A. Pusateri

Objectives

Rendu Osler Weber disease (ROW) or Hereditary Haemorrhagic Telangiectasia (HHT) is a rare autosomal dominant disease. Nose-bleeds from nasal telangiectasia are present in more than 95% of HHT patients. Surgical procedures for epistaxis may be classified as mini-invasive and more invasive. The main advantages of mini-invasive techniques are represented by less morbidity, reduced trauma of nasal mucosa, low-risk of septal perforation, treatment repeatability, no need for post-surgical nasal packing and short time of hospitalization. The aim of this report is to test the feasibility of different endoscopic endonasal mini-invasive surgical procedures for epistaxis treatment in HHT patients.

Methods

The Otorhinolaryngology Department of I.R.C.C.S. Policlinico San Matteo in Pavia is a reference center for the treatment and diagnosis of HHT since 1996. Nowadays, 571 patients have been hospitalized and screened for the HHT in our Department and of these, 368 underwent surgery for their epistaxis. In most of these patients an endoscopic endonasal mini-invasive surgical procedure (Argon Plasma Coagulation, Diode Laser, Tullium Laser, Diego-PK Shaver) was performed.

Results

A detailed summary of each surgical technique is reported in this communication. Moreover, videos of the endoscopic endonasal procedures are showed in order to discuss about advantages and disadvantages of each surgical option.

Conclusion

In our experience, endoscopic endonasal mini-invasive surgical options allow a control of epistaxis in HHT patients and may guarantee a long time free from blood transfusions. These treatment modalities are not invasive, well tolerated, and could be used as a first step even in patients with severe epistaxis.

Evolution in the treatment of sinonasal inverted papilloma: the pedicle oriented endoscopic surgery (poes)

A. Pusateri¹, I. Avato¹, D. Zaccari¹, P. Carena¹, E. Matti¹, F. Pagella¹

¹ Department of Otorhinolaryngology, Fondazione I.R.C.C.S. Policlinico San Matteo University of Pavia, Pavia, Italy

Abstract: ERS-0620

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14, 09:56

Chair person: R. Weber

Presenting author: A. Pusateri

Objectives

The efficacy of endoscopic endonasal surgery (ESS) in sinonasal inverted papilloma (IP) is known, and reaches a 95%. The objective of this study is to evaluate our experience in the treatment of sinonasal IP, with a focus on a conservative endoscopic approach based on research of the tumor's pedicle and the aggressive treatment concentrated on its site of attachment.

Methods

A retrospective analysis of patients treated in our Institution for sinonasal IP, between 2002 and 2012 (minimum follow-up: 12 months), was performed. In the comparative analysis Group A received a standard endoscopic sinus surgery. Group B patients' instead, underwent the Pedicle Oriented Endoscopic Surgery (POES), in this group, bony demucosization and drilling were selectively conducted around the site of pedicle's attachment of tumor.

Results

Between 2002 and 2012, 86 patients underwent surgery for sinonasal IP in our Institution. Comparative analysis between Group A and Group B included 73 patients (49 males, 24 females), mean age 59 years (25 – 83 years), mean follow-up 63 months (12 – 138 months). Group A/Group B: 37/36 patients. IP persistence-recurrence: Group A/Group B: 0/1 cases. Oncological success: Global endoscopic/Group A/Group B: 98.6% (72/73) / 100% (37/37) / 97.2% (35/36). No major intra- and post-operative complications were observed.

Conclusion

Our data confirm the efficacy of ESS in the treatment of sinonasal IP. Moreover, POES seems to offer good control of disease, shorter operating time, avoidance of unnecessary surgery with respect of not involved structures and permits a follow-up aimed at the site of pedicle's attachment.

Rhinology fellowship training at Derriford hospital: a survey of fellows from the past 6 years

M. Abo-Khatwa¹, A. Poullos¹, H.S. Khalil¹

¹ ENT, Plymouth Hospitals NHS trust, Plymouth, United Kingdom

Abstract: ERS-0621

Session: Simulation and training

Time: 24-06-14, 10:06

Location: Hall J

Chair person: S. Carney

Presenting author: M. Abo-Khatwa

Objectives

To evaluate an accredited Rhinology Fellowship post at Derriford hospital, Plymouth, a tertiary referral UK centre in the past 6 years.

Methods

An internet based survey using a 5-point Likert scale was completed by the five Fellows to date since the accreditation of the post.

Results

Completed responses from all 5 fellows were received. There was a high overall satisfaction score with the fellowship experience with a reported mean score of 4.4. The pooled scores for the comfort levels in management of medical rhinology issues was 4.8, comfort with various advanced rhinological surgical procedures was 4.00.

The fellows felt that this fellowship increased their opportunity in clinical research (mean score 4), increased their skills in supervising trainees during rhinological procedures with a mean score of 4.8. All the fellows stated that this fellowship increased their chances to get a consultant job with a mean score of 4.8. Certain surgical procedures such as the conventional osteoplastic flap were underrepresented in the surgical armamentarium the fellows were trained in.

Conclusion

An accredited national Rhinology Fellowship scheme as that available in Derriford hospital is positively evaluated by current and previous fellows. Due to the developments in surgical techniques, certain traditional rhinology surgical procedures may not be addressed by certain fellowships. This should be discussed with prospective fellows as part of the learning agreement.

Open versus endoscopic approach in paranasal sinus mucocele

O.D. Palade¹, V. Baldea², M.C. Baldea³, B.M. Cobzeanu¹, M.D. Cobzeanu¹

¹ E.N.T., UMF "Gr.T.Popa" Iasi, Iasi, Romania

² E.N.T., "N. Titulescu" Ambulatory Service, Buzau, Romania

³ Oral and Maxillofacial Surgery, UMF "Carol Davila" Bucuresti, Bucuresti, Romania

Abstract: ERS-0622

Objectives

Mucoceles of the paranasal sinuses are not very common. Once the endoscopy was introduced as a routine procedure almost everywhere, the classic, external approach, became less used. This study tries to identify today's indications for external or endoscopic approach in mucoceles of the paranasal sinuses.

Methods

A series of 25 patients operated in the past 10 years was investigated analyzing the size, localization and extension to the adjacent structures together with the type of approach that was used.

Results

Considering that in our Department the endoscopic procedures were used in the last 7 years, almost 60% of the patients were treated using endoscopic approach. The external approach was reserved only for some selected cases.

Conclusion

The external approach must still be used in some cases, especially in frontal sinus and extensive, complicated mucoceles.

Bacterial biofilm in patients with chronic rhinosinusitis: a confocal scanning laser microscopic study

K.J. Danielsen², O. Eskeland¹, K. Fridrich-Aas³, V.C. Orszagh³, G. Bachmann-Harildstad¹, E. Burum-Auensen³

¹ ORL, Akershus University Hospital, Lørenskog, Norway

² Department of ORL, Østfold Regional Hospital, Østfold, Norway

³ Department of Pathology, Akershus University Hospital, Lørenskog, Norway

Abstract: ERS-0623

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 10:06

Location: Hall J

Chair person: A. Lane

Presenting author: G. Bachmann-Harildstad

Objectives

Recent research into the pathophysiology of chronic rhinosinusitis suggests an important role for biofilm with a high percentage in chronic rhinosinusitis with and without nasal polyps. However, the detection of biofilm in both healthy and diseased nasal mucosa has been described as well. Several different laboratory methods for biofilm imaging have been described. This study investigates the presence of biofilm in a larger group of patients with chronic rhinosinusitis undergoing primary functional endoscopic sinus surgery.

Methods

Sixty-one patients with chronic rhinosinusitis and 25 controls, with nasal septal deviation, were included during the period from 2010 to 2012. Endonasal mucosa biopsies were harvested during surgery, snap frozen in isopentane cooled on dry ice and stored at -80 degrees C. The samples were prepared with Invitrogen BacLight LiveDead kit, and submitted to confocal scanning laser microscopy for investigation into the presence of biofilm. Clinical and CT-scan data were tabulated.

Results

In the chronic rhinosinusitis group 55/61 (90.2%) were biofilm positive as opposed to 14/25 (56.0%) in controls. The difference was highly significant ($p < 0.001$). The odds ratio was 7.2 (CI: 2.3-22.9). Clinical data and the Lund-Mackay CT score were tabulated.

Conclusion

Patients with chronic rhinosinusitis have a highly significant increased point prevalence of biofilm in nasal mucosa when compared to controls.

Outcome of nasal reconstruction following tumour excision in 68 patients

P. Surda¹, S. Hampal¹, H. Fowler¹

¹ ENT department, Warrington Hospital, Warrington, United Kingdom

Abstract: ERS-0624

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 09:57

Location: Hall G

Chair person: C. Wever

Presenting author: P. Surda

Objectives

Nose is the most prominent feature, occupying the central aspect of the face and has a unique place in facial identity. Even minor lesions might have a great impact on a patient's self-esteem and persona. Cutaneous neoplasms of the nose are often more extensive than they appear to the naked eye. Reconstruction of medium and large sized defects of the nose poses a challenge to the reconstructive surgeon. A variety of techniques are available to the surgeon. Our aim was to ascertain patient satisfaction with reconstruction, local recurrence of tumour and complications arising from reconstruction.

Methods

68 patients were identified who underwent reconstruction of the nose following tumour excision between January 2010 to November 2013. 65 patients were histologically confirmed to have basal cell carcinoma (BCC), and remaining 5 with squamous cell carcinoma. A variety of reconstructive techniques were used including bilobed flap, hatchet flap, island flap, nose transposition flap and forehead flap. We used the modified Rhinoplasty Evaluation Score Questionnaire to evaluate patient satisfaction.

Results

BCC local recurrence was in 5 patients (8.8 %) and early complications were in 3 patients (4.4 %). Questionnaire revealed overall high patient satisfaction with outcome of the nasal reconstruction.

Conclusion

The audit showed that the bilobed flap was the most commonly used reconstruction technique for the tip of the nose, which provides acceptable functional and cosmetic results. Our local recurrence rate is similar to recently published studies.

Facial paralysis secondary to infective otological causes requiring in-hospital management

S. Keh¹, M. Subhani¹, M. Gallanagh¹, M. Shakeel¹

¹ Otolaryngology, NHS Tayside, Dundee, United Kingdom

Abstract: ERS-0625

Objectives

One of the most common causes of facial paralysis is Bell's palsy that is managed in the community. At times the facial nerve palsy arises secondary to some infective cause in the ear which may necessitate a hospital admission for management.

We aim to identify the infective otological causes of facial paralysis in our patients requiring in-hospital treatment over a 3 years (2010-2013) period and to learn about the pathophysiology, clinical presentation, diagnostic work up, management strategies and final outcome in this cohort.

Methods

All the emergency admissions for acute ear infections to our unit over the study period were retrospectively studied. The patients were identified from the ward admission register and their case notes were reviewed to collect the required information. Excel was used for data collection and analysis.

Results

A total of 128 patients (113 adults and 15 children) were identified. There were equal numbers of female and male patients. Common admission diagnoses were Perichondritis of pinna, severe Otitis externa, Mastoiditis, Acute otitis media (AOM) and Malignant otitis externa.

A total of nine patients were admitted with lower motor neurone facial nerve paralysis; four had Ramsay-Hunt syndrome and 5 patients developed facial palsy due to AOM. These patients underwent radiological investigations and myringotomy with grommet insertion was carried out in AOM.

Conclusion

The most common infective otological condition causing facial paralysis was acute otitis media that was effectively managed by myringotomy. However, focus should be on aggressive management of AOM to prevent facial paralysis.

Comparison of functional and morphometric outcomes between 3 septoplasty techniques: cottle vs extracorporeal vs strut-graft

A. Lechot¹, L. De Gabory¹, B. Bacot¹

¹ Oto-Rhino-Laryngologie Et Chirurgie Cervico-Faciale, Chu Bordeaux, Bordeaux, France

Abstract: ERS-0626

Objectives

The extracorporeal septoplasty is the referent technique to repair several post-traumatic nasoseptal deviations. We suggest in these cases a new technique consisting in restoring function and aesthetic proportions of the nose with a columellar strut and a supralobular cartilage graft. The aim of this study was to assess and compare functional and aesthetic outcomes of 3 septoplasty techniques.

Methods

This is a monocentric prospective study. Four populations were compared before and 6 months after surgery: group 1 « extracorporeal septoplasty » (N=13), group 2 "strut-graft septoplasty" (N=12), group 3 "Cottle septoplasty" (N=50) and a control group without symptoms (N=50). The strut-graft technique was used when we couldn't conserve a wide piece of cartilage to perform an extracorporeal septoplasty. The functional results were measured with the NOSE and the RhinoQoL questionnaires and the morphometric results were assessed with standard photographs.

Results

The preoperative scores of group 2 were higher than the other groups. All patients were improved by every technique ($p < 10^{-5}$). There was no statistical difference between postoperative scores of group 1 and 2 vs group 3, and group 1 vs group 2. There was no statistical difference between postoperative scores of group 2 and control population. However, patients of group 1 did not regain a quality of life similar to the control population ($p < 10^{-2}$). The «strut-graft» technique leads to a nasal projection, and it's the opposite for the extracorporeal technique ($p < 10^{-2}$).

Conclusion

The "strut-graft" technique appears to be reliable to repair severe nasal septum deviations. It seems more efficient than the extracorporeal septoplasty.

Surgery for nasal dermoids in children: which approach?

A.M. Abd Elfattah¹, E. Kamal¹, A. Nageeb², A.M. Abdelwahab¹, A. Tawfik¹

¹ Otolaryngology, Faculty of Medicine-Mansoura University, Mansoura, Egypt

² Neurosurgery, Faculty of Medicine-Mansoura University, Mansoura, Egypt

Abstract: ERS-0627

Session: Pediatric rhinology

Session Time: 24-06-14, 11:45

Location: Hall H

Chair person: JB Watelet

Presenting author: A.M. Abd Elfattah

Objectives

Nasal midline masses of ectodermal origin include nasal dermoids (ND) and nasal dermal sinus cysts (NDSC). Those group of lesions are unsightly and prone to infection particularly when communicate with the central nervous system. Treatment is complete surgical excision. The goal of this study is to present our adopted approaches and outcome for those lesions.

Methods

We report our experience in 6 children (4-7 years old) in Mansoura University Hospitals. Those children included 3 NDSC patients, 2 ND patients limited to nasal dorsum and one involving nasal dorsum without sinus formation but with intracranial extension. Because a transfacial approach for NDSC with vertical incision may cause visible scarring, we applied a modified surgical approach in the 3 children of NDSC. This approach consisted of a simple local excision and mobilisation of the pit while the proximal part is resected using a bicoronal approach where craniotomy was made in one case. Open rhinoplasty in association with transcranial approach with frontal craniotomy was made in one child. A local external incision through nasal dorsum was made in 2 children.

Results

There was no recurrence in 5 of all operated patients after a mean follow-up of 3.9 years (range 0.8-7.2 years). One child with nasal dermoid had a small cyst recurrence in the skin of the nasal tip requiring further surgery but no deep recurrences occurred.

Conclusion

The approach which offers optimal exposure for complete eradication of the dermoid in all areas of its occult extension with desirable cosmesis in a single operation is the theme followed and described.

Clinical and histo-pathological features of the antrochoanal polyp: study of 42 patients

M. Warman¹, Y. Bawnik¹, M. Huszar², D. Halperin¹

¹ Department of Otolaryngology head and neck surgery, Kaplan Medical Center, Rehovot, Israel

² Department of pathology, Kaplan Medical Center, Rehovot, Israel

Abstract: ERS-0628

Session: Pediatric rhinology

Session Time: 24-06-14, 12:20

Location: Hall H

Chair person: JB Watelet

Presenting author: M. Warman

Objectives

To describe clinical and histological characteristics of antrochoanal polyp (ACP) as compared with bilateral nasal polyps (BNP), and determine the prevalence of inflammatory cells, cystic formation and squamous metaplasia (SM) in ACP.

Methods

Forty two histological specimens of patients with clinical presentations and surgical findings compatible with ACP, were compared to twenty randomly selected chronic rhinosinusitis patients with BNP. The clinical characteristics of both groups were compared. Pathologic specimens were retrospectively and blindly evaluated. For each polyp the epithelium was examined for overlying cells squamous metaplasia and goblet cells hyperplasia. Lamina propria was examined for edema, submucous glands and fibrosis. And basement membrane was examined for various inflammatory cells, mucin secretion and cystic formation. The inflammatory cells count was performed in a region determined to be a 'HOT SPOT'. Immunohistochemistry stains for plasma and mast cells, B and T lymphocytes and SM were performed.

Results

Clinically ACP group was younger, BNP group had more allergic symptoms and smoking history ($P < 0.001$ for all). A higher prevalence of SM, lower rate of goblet cell hyperplasia and submucosal glands were observed in the ACP group ($P < 0.001$). Inflammatory cell counts revealed a higher level of B-lymphocytes in the ACP group, while eosinophils and mast cells were more abundant in the BNP group ($P < 0.019$, $P < 0.001$ and $P < 0.02$ respectively).

Conclusion

Allergic characteristics both clinical and histological were more prominent in BNP patients. ACPs have a significant higher prevalence of SM, whether this finding plays a role in the pathogenesis of the polyp is yet to be determined.

Accurate nasal measurements for effective nasal packing

R.C. Costello¹, A. Williams², H.B. Whittet¹

¹ ENT, Singleton Hospital, Swansea, United Kingdom

² Medical School, Swansea University, Swansea, United Kingdom

Abstract: ERS-0629

Session: Epistaxis

Session Time: 26-06-14 10:15

Location: Hall J

Chair person: T. Van Zele

Presenting author: R.C. Costello

Objectives

With an increasing range of nasal packs available, and increased use of ventilated packs, we consider the importance of nasal measurements to pack size.

Methods

We retrospectively reviewed the most recent 100 CT sinus scans of patients within our unit. Using tools built into the IMPAX radiological imaging system, we were able to accurately measure three distances (1) total distance from anterior nares to post-nasal space (2) distance from anterior nares to posterior aspect of septum (3) post-nasal space size. Measurements were taken using axial and sagittal images, and the resulting average length was used.

Results

From our 100 patient sample, 63 were female and 37 male. The average total length of the internal nose from anterior nares to PNS was male: 102mm, female 95mm, with a range of 81 to 114 mm. The average distance from anterior nares to post-nasal space was 82mm male, 76mm female, with a range 61 to 97 mm. The average sagittal length of the post-nasal space was 20mm male and 18mm female, with a range of 7 to 30 mm.

Conclusion

Our work has demonstrated the significant range of internal nasal lengths amongst the population within which we work. Consideration must therefore be given to appropriate sizing of nasal packs for individual patients, thus ensuring optimum pack function, patient comfortable and preventing unnecessary trauma. This work is even more significant in the presence of ventilated packs, which if sized incorrectly will sit against the mucosa of the post-nasal space and not allow any ventilation.

Endoscopic trans-nasal repair of CSF leak with synthetic, biodegradable neurofilm

I.M. Syed¹, P. Modayil¹, S. Little¹, A. Toma¹

¹ Department of Rhinology & Facial Plastics, St George's Hospital, Tooting, United Kingdom

Abstract: ERS-0630

Session: CSF-leak and Management of Anterior Skull Base defects

Session Time: 26-06-14, 09:40

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: I.M. Syed

Objectives

OBEX is a purely synthetic and biodegradable self-adhesive neurofilm used to prevent cerebrospinal fluid (CSF) leak following neurosurgery procedures. It has a multi-laminated structure containing reactive polymers providing chemical bonding of the patch with the underlying biological surface. This is the first case series within the published literature of the use of OBEX neurofilm as first line treatment in ENT patients with CSF rhinorrhoea.

Methods

OBEX neurofilm was used for endoscopic repair of CSF rhinorrhoea (Tau protein positive) in 5 patients. The site of leak was identified using preoperative high resolution CT scans. Intraoperative handling, postoperative complications and outcomes were analysed.

Results

The size of bony defects ranged from 4 to 8 mm. None of our patients had postoperative CSF leakage. No postoperative complications or foreign body reactions were observed. The follow up period ranged from 4-12 months.

Conclusion

Trans nasal repair of small CSF leaks is simple, technically straight forward to perform & avoids the morbidity associated with harvesting of autologous grafts and foreign biological material. In our small case series of patients we achieved 100% success with this technique at 12 months post surgery.

Lack of association between matrix metalloproteinase-9 promoter gene polymorphism (-1562c>t) and obstructive sleep apnea syndrome

M. Yalçinkaya¹, S.S. Erbek¹, S.T. Babakurban¹, E. Küpeli², S. Bozbas², Y.K. Terzi³, F.I. Sahin³

¹ Otolaryngology, Baskent University, Ankara, Turkey

² Pulmonary Medicine, Baskent University, Ankara, Turkey

³ Medical Biology and Genetics, Baskent University, Ankara, Turkey

Abstract: ERS-0631

Session: OSAS

Location: Hall H

Time: 25-06-14 15:00

Chair person: N. de Vries

Presenting author: S.S. Erbek

Objectives

Obstructive sleep apnea syndrome (OSAS) is a common disorder with multiple comorbidities. The aim of this study was to investigate the association between obstructive sleep apnea syndrome (OSAS) and -1562C>T polymorphism in the promoter region of the matrix metalloproteinase 9 (MMP-9) gene.

Methods

The study population consisted of 106 adults who were diagnosed OSAS with polysomnography. Patients were divided into two groups according to their polysomnographic apnea hypopnea index (AHI) as AHI≤15 and AHI>15. Control group consisted of 88 healthy adults without any sleep disorders. Genotypes of MMP-9 (-1562C>T) were identified by restriction fragment length polymorphism analyses after polymerase chain reaction. The frequencies of the alleles and genotypes of patients and controls were compared.

Results

There was no statistically significant difference among the AHI≤15 and AHI>15 patient groups and controls, in terms of MMP-9 genotype and allele distribution ($p>0.05$). There was no association between body mass index or neck circumference measurements and the MMP-9 genotypes ($p>0.05$).

Conclusion

MMP-9 genotypes were not related to OSAS, in this study. Since OSAS is a multifactorial disease, further research should be performed to highlight the genetics of this disorder.

Surgical outcomes of choanal atresia with endoscopic choanoplasty without stents

V. Savastano¹, C. Tripodi¹, S. Bertin¹, T. Vittori¹

¹ Otorhinolaryngology Department of Pediatrics University "Sapienza" Rome Italy., Sapienza University of Rome, Roma, Italy

Abstract: ERS-0632

Session: Pediatric rhinology

Session Time: 25-06-14, 09:57

Location: Hall H

Chair person: P. Stjarne

Presenting author: V. Savastano

Objectives

To evaluate the effectiveness and safety of endoscopic choanoplasty technique in pediatric patients with congenital choanal atresia.

Methods

Eleven patients of mean age ranged from 2 days to 5 years, presenting congenital choanal atresia, were operated using an endoscopic choanoplasty technique, in the period between February 2006 and December 2011. The technique consisted in elevating a laterally based mucoperiosteal flap off both the posterior nasal septum and the atresic plate. Control of a complete recreation of a neochoncha has been done after execution of an endoscopic resection of the bony atresia. Nasal packing for two days only resulted enough without use of stent. It followed a seven days antibiotic therapy during which patients' parents have been cleaning nasal cavities with saline nasal drops, repeating the treatment many times in a day. After that, for two years patients have been kept under control for six months with sinunasal endoscopic visits.

Results

Preoperative computed tomography showed bony-membranous (81.9%) or pure bony atresia (18.1%). All patients improved at endoscopic examination after treatment at 2 years follow-up. During this period one of the patients operated, two days old, had unilateral restenosis that required revision. No intraoperative complications and adverse events or major bleeding were reported.

Conclusion

This technique was effective and safe, using nasal packing, without nasal stent. These described results are stable during follow-up. Age of 1 week or less was predictive factor of restenosis.

Frontal sinus mucocoele as a complication of external approach dacryocystorhinostomy

L. Syed¹, T. Gupta², S. Osborne², A. Toma³

¹ Department of Rhinology & Facial Plastics, St Georges Hospital NHS Trust, London, United Kingdom

² Department of Ophthalmology, Moorfields Eye Hospital, London, United Kingdom

³ Department of Rhinology & Facial Plastics, St George's Hospital NHS Trust, London, United Kingdom

Abstract: ERS-0633

Session: Complications in rhinology

Session Time: 25-06-14, 11:30

Location: Hall J

Chair person: N. Otori

Presenting author: L. Syed

Objectives

We highlight a previously undescribed complication of external approach dacryocystorhinostomy that may well be underreported & a cause of late post-operative sinus disease.

Methods

We investigated two cases of frontal sinus mucocoele in patients with no prior history of significant sinus disease that presented to the ear, nose & throat department following external approach dacryocystorhinostomy.

Results

Two cases of frontal sinus mucocoele in patients with no history of chronic sinus disease were identified following external approach DCR. We identified the likely anatomical site of interruption of the frontal sinus drainage pathway (FDSP).

Conclusion

During the external approach for dacryocystorhinostomy (DCR) the osteotomy is generally performed without any precise visual control on the effect upon endonasal structure. CT imaging to identify attachment of the uncinate process, frontal recess & frontal drainage sinus pathway (FDSP) is not a part of the routine pre-operative work-up for external approach DCR. We report the first two cases in the literature of frontal sinus mucocoele following external approach DCR. We feel that both rhinologists and ophthalmologists should be aware of such complications that may arise from inadvertent interruption of the FDSP during external approach DCR. We suggest that there should be greater awareness of these possible complications at post-operative follow up.

The use of CT in diagnosis the diagnosis of paranasal sinus disease; differences between specialities

C. O'Rourke¹, S. Ryan¹, A. Rehman¹, J.E. Fenton¹

¹ Otolaryngology/Head and Neck Surgery, University Hospital Limerick, Limerick, Ireland

Abstract: ERS-0634

Session: Imaging

Session Time: 24-06-14, 12:00

Location: Hall E

Chair person: K. Patel

Presenting author: C. O'Rourke

Objectives

The management of chronic rhinosinusitis has traditionally been the preserve of otolaryngologists but recently there has been a shift in this concept with an increasing contribution from respiratory physicians. The aim of this study is to examine for differences in the diagnostic workup of suspected paranasal sinus disease between otolaryngology and respiratory specialities, focusing on the use of computed tomography (CT) imaging.

Methods

Retrospective analysis of 80 patients undergoing CT sinus imaging, performed over a 2-year period, ordered by otolaryngology surgeons (Group 1) or respiratory physicians (Group 2).

Results

There was a male/female ratio of 1:1.7, ranging in age from 9 - 81 years (median = 42 years). Indications for CT Sinus scans ordered by otolaryngologists included pre-operative mapping (n=17, 43%), query for sinogenic pathology (n=13, 33%) and nasal polyposis (n=10, 25%). CT scans performed by respiratory physicians for the following indications: rhinorrhoea (n=16; 40%), persistent cough with post-nasal drip (n=12; 30%) and recurrent respiratory tract infections (n=12; 30%). The frequency of positive radiological findings for patients in Group 1 (90%) was significantly greater than that for Group 2 (70%) (p=0.023). None of the patients in Group 2 had nasal endoscopy prior to CT investigation. The mean Lund & Mackay score for group 1 was significantly higher than that of group 2 (8 vs. 4).

Conclusion

The results indicate that CT is used as a second line investigation to nasal endoscopy by otolaryngologists, and in most cases reserved for pre-operative mapping. This contrasts with the current practice by respiratory physicians in our hospital.

Comparison of intraoperative factors, complications and satisfaction between endoscopic sinus surgery and balloon sinuplasty

A. Koskinen¹, P. Mattila², M. Penttilä³, J. Myller¹, J. Silvola¹, I. Alastalo¹, M. Hytönen², S. Toppila-Salmi⁴

¹ Department of Otorhinolaryngology, Päijät-Häme Central Hospital, Lahti, Finland

² Department of Otorhinolaryngology, Helsinki University Central Hospital, Helsinki, Finland

³ Department of Otorhinolaryngology, Tampere University Hospital, Tampere, Finland

⁴ Skin and Allergy Hospital, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-0635

Session: Balloon sinuplasty

Time: 24-06-14, 09:39

Location: Hall G

Chair person: A. Leunig

Presenting author: A. Koskinen

Objectives

The aim of this study was to retrospectively compare intraoperative factors, early postoperative outcomes and satisfaction in CRS-patients who had undergone maxillary sinus operation with either balloon sinuplasty or ESS technique. No previous or additional sinonasal operations were accepted.

Methods

208 patients with CRS without nasal polyps underwent either balloon sinuplasty or ESS. The patients who met with the inclusion criterias (n=45 in ESS group, and n= 40 in balloon group) replied to a questionnaire. Satisfaction and their medical records concerning the operation, were evaluated.

Results

There were no significant difference between the operative techniques in operation time, anesthesia method or intra- or postoperatively prescribed antibiotics. No complications occurred with either technique. 8 balloon sinuplasty patients were operated in the outpatient clinic and 32 in operating room. In the ESS group a longer sick leave and more adhesion formation was found. A good and equal satisfaction was achieved by both procedures when evaluated on average 23 months postoperatively. During this follow-up period 2 revisions were performed in the balloon sinuplasty group and none in the ESS group.

Conclusion

ESS and balloon sinuplasty are identical in the operation time, anesthesia method and low complication rate and satisfaction. Balloon sinuplasty might be superior in short sick leave, low adhesion formation and in the possibilities to be performed as an in-office procedure. ESS might be superior in lower need of revision procedures.

Skin prick test, a worthwhile investigation?

R. Costello¹, K. Saw¹

¹ ENT, Singleton Hospital, Swansea, United Kingdom

Abstract: ERS-0636

Objectives

Our ENT department runs a skin prick testing (SPT) clinic, with the aim of investigating patients presenting with symptoms of rhinosinusitis, possibly resulting from allergy. We reviewed the findings from these clinical investigations, and the potential clinical implications.

Methods

All patients attending skin prick testing clinic have demographic and SPTs results recorded. We retrospectively reviewed results for an eight month period running from May 2013 until December 2013. During this time patients were regularly tested for house dust mite, tree, dog, cat, grass and aspergillus allergens.

Results

During this time period 130 patients attended the clinic. 154 positive patch tests were recorded. At 46 positive results House dust mite was the allergen which recorded the highest number of positive results, followed by grass with 31 positive results. Aspergillus allergen recorded the least number of positive results.

Conclusion

Skin prick testing provides a quick, accurate and safe method for identifying specific allergens. Identification of the allergen enables improved patient education, lifestyle changes and appropriate treatment methods to be employed. The SPT clinic is a valuable tool in the diagnosis and treatment of allergic conditions within the ENT setting.

P-Glycoprotein regulates IL-5, IL-6, and TSLP secretion in human sinonasal polyp explants

B. Bleier¹, J. Hoang², R. Feldman¹, A. Kocharyan¹, A. Singleton², X. Han²

¹ Otolaryngology, Massachusetts Eye and Ear Infirmary Harvard Medical School, Boston, USA

² Bioengineering, Boston University, Boston, USA

Abstract: ERS-0638

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 11:15

Location: Hall H

Chair person: P. Gevaert

Presenting author: B. Bleier

Objectives

P-glycoprotein(P-gp) functions as part of the innate chemo-immunity pathway through ATP-dependent efflux of intracellular toxins. P-gp has also been shown to regulate cytokine secretion in sinonasal epithelial cultures. Despite this, the immunomodulatory capacity of P-gp in the presence of supporting fibroblasts and inflammatory cells is unknown. The purpose of this study is to examine the expression and immunoregulatory function of P-gp in a human nasal polyp explant model.

Methods

IRB approved study in 40 human nasal polyp explants. Polyps were incubated with staphylococcal enterotoxin B(SEB) for 24 hours followed by an additional 24 hours in SEB +/- Zosuquidar, a P-gp inhibitor. The ratio of cytokine secretion over each exposure period was determined by ELISA and normalized to secretion in media alone. Membranous P-gp protein expression in polyps was determined by ELISA and compared to size matched septal explants derived from the same patient. Results were compared using a 2-tailed Student's t-test.

Results

The ratio of SEB stimulated IL-5(mean+/-SD, 339.94+/-315.48), IL-6 (217.53+/-89.51), and TSLP(37.86+/-18.88) secretion between the first and second treatment periods was significantly reduced(143.15+/-76.02, 137.86+/-38.10, and 22.32+/-12.76, respectively) following selective inhibition of P-gp(p<0.05). The concentration of membranous P-gp protein in polyps(1.28+/-0.83 ng/mL) was significantly greater than that of the septal explants(0.85+/-0.25 ng/mL, p<0.05).

Conclusion

Within polyp explants, P-gp is capable of regulating the secretion of cytokines implicated in chronic rhinosinusitis with nasal polyps(CRSwNP). The additional finding of P-gp protein overexpression in nasal polyps is consistent with previous studies supporting a possible therapeutic role for P-gp inhibitors in CRSwNP.

Are symptoms of post-traumatic stress in patients experiencing nasal fractures reduced following surgery? A pilot study

S. Gallagher¹, C. O'Rourke², C. Wijaya², J.C. Oosthuizen², J.E. Fenton²

¹ Department of Psychology, University of Limerick, Limerick, Ireland

² Otolaryngology/Head and Neck Surgery, University Hospital Limerick, Limerick, Ireland

Abstract: ERS-0639

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 09:39

Location: Hall G

Chair person: C. Wever

Presenting author: C. Wijaya

Objectives

Recently researchers have paid increasing attention to psychological adjustment associated with abnormalities of appearance with discrimination, social isolation and elevated levels of stress being reported. In cases of facial trauma, nasal fractures account for approximately 40% of bone injuries. However, little attention has been paid to the psychological consequences of patients experiencing nasal fractures or how surgical manipulation may affect these experiences.

Methods

Seventeen patients (1 female), attending the ear nose and throat clinic in our hospital participated in a pilot study that examined the psychological correlates of nasal fracture pre and post-surgery. Injuries were primarily sports-related (76%) and measures of post-traumatic stress symptoms, coping, and body image concerns were completed at both time-points.

Results

Based on a clinical score of > 25 on the post-traumatic stress scale, 35% of patients needed psychological support before surgery and 29% afterwards; this percentage decrease was not significant ($p = .28$). A significant positive correlation between body image concerns and post-traumatic stress symptoms after surgery was also found ($p = 0.005$); patients more concerned about their body image reported higher stress symptomology. Moreover, patients whose fractures were not attributed to sport had higher rates of post-traumatic stress before surgery ($p = .03$), this pattern was not evident after surgery implying that surgical manipulation is a stress reducing agent.

Conclusion

Nasal fractures are associated with high rates of stress symptomology and there appears to be differences in stress symptomology depending on source of injury.

Endoscopic orbital decompression of sphenoid wing meningioma

I. Syed¹, R. Jayaram², M. Manisali², J. Uddin³, A. Toma⁴

¹ Department of Rhinology & Anterior Skull Base Surgery, St Georges Hospital NHS Trust, London, United Kingdom

² Department of Maxillo-Facial Surgery, St Georges Hospital NHS Trust, London, United Kingdom

³ Department of Ophthalmology, Moorfields Eye Hospital, London, United Kingdom

⁴ Department of Rhinology & Anterior Skull Base Surgery, St George's Hospital, London, United Kingdom

Abstract: ERS-0640

Objectives

Around 18% of meningiomas arise from the sphenoid wing. Their location in close proximity to the orbital apex means that they often present late with insidious visual deficit. There are several approaches to the surgical management of sphenoid wing meningioma (SWM) including fronto-temporal, frontotemporal-orbitozygomatic & craniotomy approaches. We aim to identify the merits of surgical intervention in the form of medial decompression without debulking to delay further deterioration of vision and explore the evidence base for more invasive surgical interventions.

Methods

We present the management of a case of sphenoid wing meningioma (SWM) by endoscopic medial wall decompression surgery and review the literature for surgical intervention of SWM. Literature review using Medline and Embase databases search items "sphenoid wing" AND "meningioma" and "surgery" or "treatment" performed on 20th December 2013. Only publications in English language were selected.

Results

Literature review identified 4 reviews and 8 case reports in the English Language.

Conclusion

Neurosurgical techniques may be associated with significant morbidity and are still associated with risk of recurrence. We suggest there is an important role of endoscopic medial orbital decompression in a patient with orbital apex SWM to delay progression of optic neuropathy. Depending on the rate of growth of SWM, age & co-morbidities of patient, this may be the only surgical intervention required and may avoid significantly invasive intracranial procedures with higher risk of complications.

Time to consider discharging patients with anterior nasal packs?

R. Costello¹, R. McLeod²

¹ ENT, Singleton Hospital, Swansea, United Kingdom

² ENT, University Hospital Wales, Cardiff, United Kingdom

Abstract: ERS-0641

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:45

Chair person: S. Reinartz

Presenting author: R. Costello

Objectives

Nasal packing for epistaxis in the United Kingdom regularly requires 24-hour hospital admission for observation. Current Australian practice allows sensible patients with no significant co-morbidities, home with nasal packing in-situ, provided appropriate follow-up has been organised. We reviewed complication rates associated with anterior nasal packing and discharge home, over a 29 month period, in Emergency Departments in Southern Melbourne.

Methods

The Emergency Department computer system was interrogated for patients presenting from August 2008 until December 2011, coded under diagnosis "Epistaxis" and "Anterior Nasal Packing". We reviewed electronic notes to determine if they had been discharged home with the packing in-situ, and if they had been discharged had they represented to any one of the three emergency departments with a complication of the packing.

Results

During our study period 1915 paediatric and adult patients presented across the three Emergency Departments with epistaxis. Only 83 separate episodes of nasal packing were recorded, of which 22 patients were packed and discharged, with follow-up arrangements being either with GP, ENT clinic or Emergency Department. Of the packed patients discharged eight re-presented with problems relating to epistaxis, of which four were bleeding following pack removal, three were bleeding through their packs and one was bleeding from the opposite nostril.

Conclusion

In sensible patients with few medical co-morbidities, nasal packing and discharge home is appropriate, provided suitable follow-up has been organised. Of the patients who did represent complications were minor, and required only re-examination, cautery or further nasal packing.

Do conchopexy sutures (middle turbinate medialisation suturing) affect olfaction ?

D. Siau¹, J. Walken², J. de Carpentier²

¹ Department of ENT, Royal Blackburn Hospital, Blackburn, United Kingdom

² Department of ENT, Royal Preston Hospital, Preston, United Kingdom

Abstract: ERS-0642

Session: Olfaction

Location: Hall G

Time: 23-06-14, 15:03

Chair person: P. Rombaux

Presenting author: D. Siau

Objectives

To investigate whether Conchopexy (medial turbinate medialisation suturing) compromises olfaction in patients without pre-existing sinonasal disease. Previous studies investigating middle turbinate medialisation techniques and olfaction were carried out in patients with chronic rhinosinusitis undergoing endoscopic sinus surgery (ESS). We feel that ESS alone with the consequent alteration of sinonasal anatomy and physiology and hopefully the resolution of the chronic rhinosinusitis will affect olfactory function, potentially confounding these studies. This study was designed to evaluate the effects of the conchopexy sutures on olfaction in patients undergoing pituitary surgery without significant pre-existing sino-nasal symptoms and where the sino-nasal anatomy has not been altered significantly.

Methods

Prospective controlled study involving 23 adult patients undergoing routine transphenoidal pituitary surgery without co-existing sinonasal symptoms. Olfactory function was assessed objectively using University of Pennsylvania Smell Identification Test (UPSIT) pre-operatively and 3 months post-operatively; and subjectively with patient interviews.

Results

There was a small increase in mean UPSIT score from 30.48 to 31.13 post-operatively. The increase was not statistically significant ($p=0.15$, 95% CI [-0.5, 1.5]). Subjectively, 20(87%) reported unchanged smell post-operatively and 3(13%) reported improve smell; none reported a reduction in smell.

Conclusion

This study has shown that the middle turbinate medialisation conchopexy suture has no detectable adverse effect on olfaction both subjectively and objectively. This quick, simple and safe technique should be routinely applied in endoscopic pituitary surgery where the turbinates are always lateralised during the surgery and may be considered as an alternative to other medial turbinate medialisation procedures in ESS.

Acute bacterial rhinosinusitis: new aspects regarding bacterial spectrum and microbiologic diagnosis

I. Sabaru¹, A. Neagu¹

¹ ENT&HNS, Sp Clinic Sf Maria, Bucharest, Romania

Abstract: ERS-0643

Session: Acute Rhinosinusitis

Time: 23-06-14, 09:57

Location: Hall J

Chair person: A. Lane

Presenting author: I. Sabaru

Objectives

In most cases, the etiology of acute rhinosinusitis (ARS) is viral, but 0,5 – 2% of them can be complicated by bacterial infection. Traditionally, the microbiologic spectrum of ABRS include: *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Moraxella catarrhalis*, but in the past years there is a lack of studies regarding this issue in our country.

For the microbiological diagnosis of acute bacterial rhinosinusitis (ABRS) can be used 2 sampling techniques: from middle meatus, under direct endoscopic control (EDMM) and through puncture of the canine fossa (MST).

The aim of the study was to identify the bacterial spectrum in a lot of patients diagnosed with ABRS and to establish the sensitivity and specificity of the two types of sampling techniques.

Methods

We performed a prospective study on 40 adult patients with ABRS microbiologically confirmed from a lot of 52 patients clinically diagnosed with ARS. Cultures were sampled by EDMM in all patients; in 19 patients samples were taken both by EDMM and MST.

Results

A total of 18 types of pathogen bacteria were isolated. Results indicate changes in the percentages of the "classic trio" in favor of other germs, other species of streptococci in particular.

Concerning the culture sampling, the results from EDMM compared with those from MST showed a correlation over 90%.

Conclusion

Study results demonstrate changes of the bacteriologic spectrum in ABRS.

Although MST is considered the gold standard for sampling, EDMM is also an accurate choice for microbiological diagnosis.

The importance of eosinophilia in the surgical outcome of chronic rhinosinusitis: a 3-year prospective observational study

S. Vlaminck¹, T. Vauterin¹, P. Hellings², M. Jorissen², F. Acke³, P. Van Cauwenberge³, C. Bachert³, P. Gevaert³

¹ ENT service Rhinology, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

² ENT service, University Hospital Leuven, Leuven, Belgium

³ ENT service, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-0706

Session: Outcomes in CRS

Session Time: 24-06-14, 14:27

Location: Hall E

Chair person: TBC

Presenting author: S. Vlaminck

Objectives

The influence on clinical outcome after ESS of eosinophils, eosinophilic mucin (EM) and Fungal Hyphae (FH) remain unclear.

Methods

A prospective monocenter study including 180 CRSwNP patients who were unresponsive to medical treatment and underwent ESS, was performed. All tissue and sinonasal secretions were microscopically examined for the presence of EM and FH. Patients were followed for a minimum of 7 years after surgery. Recurrence was defined according to the European position paper on rhinosinusitis and nasal polyps (EPOS).

Results

A total of 180 CRSwNP patients were included. Eosinophilic involvement was found in 142 (79.3%) of the patients. EM was found in 93 (52%) of the patients. In 33 patients (18.4%) EM and FH were present. For the three groups the mean age was 51.7y, 49.4y, and 45.9y respectively; allergy : 23%, 33%, and 44% respectively; for asthma 21%, 30%, and 53% respectively. Recurrence occurred in 20% of the eosinophilic group without EM ; 52% in the EM (+) and FH(-) group and 71% in the EM(+) and FH(+) group.

Conclusion

CRSwNP patients may be separated in a non-eosinophilic and eosinophilic subgroup. The presence of EM with or without FH provides valuable information regarding the increased likelihood of recurrent disease after ESS. This implicates the possible need of permanent sustained care in some subgroups with evident bad outcome.

Immune dysfunction in medically resistant CRS

M. Al-Qudah¹

¹ Otolaryngology, Jordan University of Science and technology, Irbid, Jordan

Abstract: ERS-0645

Session: CRS miscellaneous

Session Time: 25-06-14, 14:15

Location: Hall J

Chair person: G. Adriaensen

Presenting author: M. Al-Qudah

Objectives

The purpose of this study was to examine the prevalence of subtle immunodeficiency and allergy prevalence in medically failed chronic rhinosinusitis patients. This study was performed at a tertiary care academic referral center.

Methods

The charts and medical records of all patients who failed to respond to maximum medical treatment and underwent endoscopic sinus surgery under the care of the author were reviewed.

Exclusion criteria included history of human immunodeficiency virus, and other causes of secondary immunodeficiency (including history of chemotherapy or other immunosuppressive drugs); Wegener's granulomatosis; Churg- Strauss syndrome; cystic fibrosis; primary ciliary dysfunction, sinonasal tumor and allergic fungus sinusitis.

Results

Data analysis of serum IgG, IgA, IgM, IgE, IgG subclasses as well as serum concentration of allergen-specific IgE to aeroallergen measured by radioallergosorbent test fluorescence enzyme immunoassay showed interestingly high percentage of the included patients to fit into abnormal range of these result values.

Conclusion

This study indicates the importance of thorough allergy and immune function evaluation in chronic rhinosinusitis patients who failed to respond to maximum medical therapy.

Computer aided sinus surgery in paranasal sinus pathologies with skull base and/ or orbital erosion

M. Al-Qudah¹

¹ Otolaryngology, Jordan University of Science and technology, Irbid, Jordan

Abstract: ERS-0646

Objectives

To review the outcome in management different paranasal sinus pathologies with skull-base and/or orbital erosion who have been treated with navigation guided surgery.

Methods

A retrospective chart and medical record review for all patients who had erosion in their skull base and /or orbit secondary to different paranasal sins pathologies and underwent image guided surgical approach at department of otolaryngology, King Abdullah university hospital, Irbid Jordan, under the author care.

Results

Proptosis and headache were the most common presenting symptoms. Paranasal sinus tumor was the most common causative pathology and frontoethmoid area was the most common primary anatomical location. Endoscopic image guidance surgery alone was effective in controlling the primary disease with no reported major complications.

Conclusion

Computer aided sinus surgery is sufficient and reliable approach to control different sinus pathology with skull-base and/or orbital erosion.

The balloon sinus dilatation method in treatment of patients with chronic rhinosinusitis

A. Kryukov¹, N. Kunelskaya¹, A. Ivoylov¹, M. Artemyev¹, M. Studyonii², D. Gorin¹

¹ Department of Healthcare of Moscow, Moscow State Scientific center of otorhinolaryngology, Moscow, Russia

² Department of Healthcare of Moscow, Moscow State Scientific center of otorhinolaryngology 2- Medical Center Nebolit, Moscow, Russia

Abstract: ERS-0647

Objectives

To estimate efficiency of balloon sinus dilatation method (BSD) in patients with Chronic Rhinosinusitis (CRS).

Methods

35 patients with CRS were operated, age varied in 18-60 y.o., no surgery on sinuses before.

Results

When comparing the CT PNS of patients one year after surgery with the original CT PNS in the preoperative stage, we can see freely permeable natural ostium, also that uncinata process is not touched and thickening of the mucosa of the PNS is not marked. As survey made with SNOT 20 showed the main indicator was a headache pressure, the rate of which was 3.8 points. In the following surgical treatment the indicator was 1,0 points already in 1 day after surgery, after 6 months – 0,8 points, after 1 year it doesn't change. After making nasal endoscopy the nasal mucosa, mucosa of natural sinus ostium, especially osteomeatal complex were evaluated (VAS, 0-3 points).

Conclusion

Based on our research, we can conclude that the BSD is a minimally invasive method of surgical treatment in rhinosinusitis. This technique has minimal negative effect on the mucosa of the nose, on mucociliary clearance from the first day after surgery in contrast with endonasal endoscopic procedures under which mucociliary clearance and the mucosa membrane of the nasal cavity is also recovering, but at a later date. BSD method allows to achieve a clinical benefit in the shortest possible time.

Impact of mmad, accoustic airflow and breathing patterns on intrasinus drug deposition in a realistic nasal cast

L. Leclerc¹, J. Pourchez², G. Aubert³, L. Vecellio⁴, S. Le Guellec⁴, M. Cottier⁵, M. Durand⁶

¹ Ecole Nationale Supérieur des Mines CIS-EMSE, Universite Jean Monnet LINA EA4624 Université de Lyon, Saint etienne, France

² Ecole Nationale Supérieur des Mines CIS-EMSE, LINA EA4624, Saint etienne, France

³ Antibiology department, CHU Saint Etienne, Saint etienne, France

⁴ DTF-Aerodrug/ CEPR INSERM U1100/EA6305, Universite François Rabelais, Tours, France

⁵ SFR IFRESIS, Université Jean Monnet LINA EA 4624 Université de Lyon, Saint Etienne, France

⁶ ENT Department, Centre Hospitalier Emile Roux, Le Puy en Velay, France

Abstract: ERS-0648

Session: CRS Basic 2

Session Time: 24-06-14, 14:05

Location: Hall G

Chair person: R. Moesges

Presenting author: L. LeClerc

Objectives

Targeting delivery of nebulized drug into the maxillary sinuses is a main issue to improve clinical outcomes in patients with sinus disorders. To enhance the drug deposition in sinuses, the impact of 100 Hertz (Hz) acoustic airflow, MMAD (9 μ m, 3 μ m, 500nm and 250nm) and breathing pattern (no breathing, 10 breaths/min I/E=1 TV=750mL; 15 breaths/min I/E=40/60 TV=500mL) were investigated using a realistic nasal cast.

Methods

After segmenting airways from high resolution computed tomography scan images, rapid prototyping technology was employed to build stereolithographic resin nasal replica. Using gentamicin as a marker, 168 experiments of aerosol deposition were performed with changes of particles size and breathing features under different nebulization conditions (100Hz acoustic airflow or not).

Results

The results of drug deposition clearly demonstrate that micrometric aerosol can be efficiently deposited into the maxillary sinuses. We also confirmed that 100 Hz acoustic airflow led to increase the deposition of drug into the maxillary sinuses by a factor 2-3 (e.g. 9mg/L vs. 4mg/L for the 3 μ m-particles). Finally a significant increase of drug intrasinus deposition was observed with the decreasing airflow rate.

Conclusion

Acoustic airflow, specific breathing patterns and aerosol size are the main parameters piloting drug intrasinus deposition. We emphasized in this study that the optimum deposition was obtained for micrometric particles with no breathing and 100Hz acoustic airflow. These fundamental data could improve benefits of drug deposition for the patients.

Endoscopic endonasal resection of respiratory epithelial adenomatoid hamartomas of the sinonasal tract

L. Volpi¹, M. Bignami¹, A. Karligkiotis¹, A. Pistochini¹, F. De Bernardi¹, F. Ferreli¹, F. Meloni², P. Herman³, P. Castelnovo¹

¹ Department of Otorhinolaryngology University of Insubria Varese Italy, Dept of Otorhinolaryngology - Head & Neck Surgery University of Insubria, Varese, Italy

² Department of Otorhinolaryngology University of Sassari Sassari Italy, Dept of Otorhinolaryngology - Head & Neck Surgery, Sassari, Italy

³ Department of Otolaryngology University of Diderot-Paris France, Dept of Otorhinolaryngology - Head & Neck Surgery, Paris, Italy

Abstract: ERS-0649

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14 10:05

Chair person: R. Weber

Presenting author: L. Volpi

Objectives

Sinonasal respiratory epithelial adenomatoid hamartoma (REAH) is benign lesion characterized by a glandular proliferation with ciliated epithelium. The aim of this study is to report our experience with patients affected by REAH and analyze the long term results of the endoscopic approach in our experience.

Methods

A retrospective analysis of a database dedicated to patients with REAH treated at the Department of Otolaryngology at the University of Insubria-Varese, Italy and Diderot-Paris, France from May 2003 to December 2012 was performed.

Results

The patient cohort included 13 males and 13 females, ranged from 24 to 85 years (mean, 51 years), who underwent endoscopic sinus surgery. 10 cases (38.5%) of REAH were found associated with nasal polyposis. 16 cases (61.5%) of REAH presented as an isolated sinonasal mass. The majority of lesions (88.5%) originated in the olfactory clefts. Follow-up ranged from 12 to 126 months (mean 61,2) with no recurrences of REAH.

Conclusion

REAH is a benign well defined pathological entity but is still unknown to many clinicians and pathologists. Despite its rarity, REAH should be kept in mind as a differential diagnosis of symptomatic sinonasal lesions because misinterpretation could lead to inappropriate aggressive surgical procedure for this benign lesion. The major advantage of the endoscopic approach lies in the outstanding possibility of having a magnified visualization of the site of origin of the mass as well as explore around corners. The complete but conservative endoscopic resection is essentially curative for these lesions.

Endoscopic DCR in a UK tertiary centre; a 2 cycle audit

H.S. Khalil¹, C. Tanner²

¹ ENT, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

² BMBS Programme, Peninsula College of Medicine and Dentistry, Plymouth, United Kingdom

Abstract: ERS-0650

Session: Orbit lacrimal system

Session Time: 26-06-14 11:40

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: H.S. Khalil

Objectives

To evaluate the results of Endoscopic Dacryocystorhinostomy (eDCR) at Derriford Hospital, a tertiary referral centre in the South West of England.

Methods

A retrospective case note review was carried out. All patients had a detailed ENT and Ophthalmological assessment including syringing and the Fluorescein dye test. Patients had silastic stents inserted at the end of the procedure and removed at approximately 8 weeks. The standard used was that of the National Institute for Health and Care Excellence (NICE) The endoscopic approach should have a success rate of 75% or higher. 75% of patients undergoing endoscopic DCR should be asymptomatic at 12 month follow-up. (NICE Interventional Procedure Guidance 113)?

Results

Twenty-nine patients (30 procedures) had eDCR between 2004-2007. Forty-two patients had eDCR between 2009 and 2012. Only 39 patients' records were available for the second audit (47 procedures). The total combined surgical success rate for the 2012 audit is 83%. This surpasses the success rate of 75% stipulated by NICE guidelines. The success rate for the first audit cycle (2004-2007) was 93.3%. Three patients in the 2012 audit (6.4%) had pre-saccal obstruction and an unsuccessful outcome. Using Fisher's exact test, the two-tailed P value is 0.29973 ($P > 0.05$) demonstrating that the difference in outcome in both audit cycles is not statistically significant.

Conclusion

eDCR does not by pass pre-saccal obstruction. The success rate would have been 88.6% excluding these patients. More stringent criteria are required for listing.

Bacteriology of chronic rhinosinusitis

S. Stern¹, E. Yaniv¹, T. Hadar¹, Y. Nachalon¹

¹ ENT, Rabin medical center, Petach-Tikva, Israel

Abstract: ERS-0652

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:45

Location: Hall J

Chair person: C. Hopkins

Presenting author: S. Stern

Objectives

Chronic rhinosinusitis (CRS) with nasal polyposis (CRSwNP) or without (CRSsNP), affects 10% of population. While immunological difference of these conditions is established, the role of bacterial pathogenesis is not fully understood and little is known of their effect on disease severity. The aim of this study is to define aerobic and anaerobic bacteria in CRS patients.

Methods

Data and bacterial cultures were taken from 111 patients undergoing FESS for CRSsNP, CRSwNP and SMR for deviated nasal septum as control group. Severity of disease was stratified according to Lund-Kenedy scoring system and Lund-Macay CT score.

Results

Aerobic and anaerobic cultures were taken from 44 patients with CRSsNP, 49 CRSwNP and 18 of other causes. 23 bacterial species were isolated (20 pathogens 5 anaerobic). Most common bacteria were *Staphylococcus aureus*. There were 26 positive cultures in CRSsNP (59%), 40 in CRSwNP (82%), and 8 in control group (50%). A higher amount of Gram negative species were isolated in CRSwNP. No significant difference found between Gram stain among other groups. No statistically significant relation was found between severities to cultured bacteria.

Conclusion

23 different bacterial species were identified in patient undergone FESS and SMR. Gram negative bacteria were more commonly found in patients with CRSwNP. *Staphylococcus aureus* was the most common in CRSsNP and control group. Positive cultures were found in the control group, despite a healthy nasal appearance. It is well known that CRSwNP is an inflammatory disease. It seems that bacterial infection plays an important role which should imply on disease treatment.

The forgotten foramina: descriptive anatomy and surgical consequences of the ethmoidal fissure and anterior ethmoidal slit

V. Patron¹, J. Berkaoui¹, R. Jankowski², S. Moreau¹, M. Hitier¹

¹ Head and Neck Surgery, CHU de Caen, Caen, France

² Head and Neck Surgery, CHU de Nancy, Nancy, France

Abstract: ERS-0653

Session: CSF-leak and Management of Anterior Skull Base defects

Session Time: 24-06-14, 11:33

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: V. Patron

Objectives

The olfactory cleft (OC) has gained interest since the advent of endoscopic skull base surgery. This has highlighted the misunderstanding and the obsolete descriptions of this area. It seems composed in its most anterior part of two foramina, one medial, the 'ethmoidal fissure' (EF) and one lateral the 'anterior ethmoidal slit' (AES). The EF would contain a process of the dura mater, and the AES the anterior ethmoidal nerve. The aim of this study was to verify the existence of those elements and to bring out landmarks for their identification during endoscopic surgery.

Methods

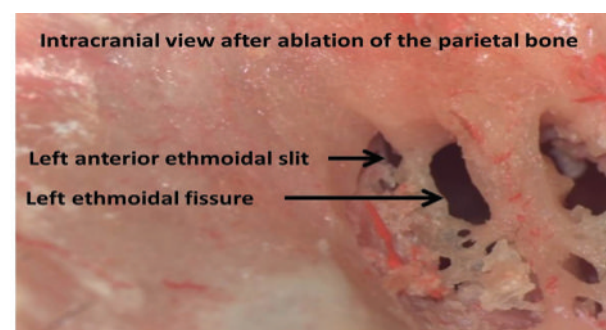
We performed an anatomical and pathological study in 3 males and one female fresh cadavers. A total of 8 OC were studied.

Results

An EF and an AES were found in respectively 100% and 75% of the OC analyzed (fig1). They measured respectively 4mm[+/-1.22] and 1.75mm[+/-0.55] in their higher length. The anterior ethmoidal artery was the more constant landmark: the EF and AES were located respectively 5.25mm[+/-1.49] and 5.8mm[+/-1.17] ahead of it. The anterior ethmoidal artery allowed the delimitation of a risk area for the surgical access to the OC located 2.8mm ahead of it. The pathological study could not identify if a process of dura mater was present in the EF.

Conclusion

Our anatomical study demonstrated the existence of both foramina. The EF clearly represents an area of weakness at the anterior part of the OC, that could have a role in the occurrence of anterior skull base CSF-leaks and meningoceles.



Modified textile for nasal packing with phyto-nanostructured coating to prevent staphylococcal, pseudomonal and *Candida albicans* in-vitro biofilm development

I. Anghel¹, A.M. Grumezescu², E. Andronescu², M.C. Chifiriuc³, A.G. Anghel¹, M. Dumitru¹

¹ Coltea Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

² Faculty of Applied Chemistry and Materials Science, University Politehnica Bucharest, Bucharest, Romania

³ Faculty of Biology, University of Bucharest, Bucharest, Romania

Abstract: ERS-0654

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 15:00

Location: Hall J

Chair person: C. Hopkins

Presenting author: I. Anghel

Objectives

In recent years, researchers aimed to find alternative methods of dealing with infections with biofilm embedded bacteria, knowing that adherent microbial cells exhibit high antibiotic resistance. One of the most efficient strategies is to interfere with bacterial adherence, the first step in the biofilm formation, by direct blockage of surface receptors or using a non-specific strategy, usually involving compounds with antiadherence properties. Nasal packing using textile materials renders the ideal conditions for biofilm formation with a high risk of developing a chronic infection and requiring high doses of preventive antibiotics. We report the in-vitro experience a newly fabricated nanophyto-modified textile material with microbicidal and anti-adherence properties.

Methods

Nanofluid-based magnetite doped with eugenol or limonene was used to fabricate modified textile material. Nanostructure coated materials were characterized by TEM, XRD, and FT-IR. For the quantitative measurement of biofilm-embedded microbial cells, a culture-based method for viable cell count was used.

Results

We report a successful antimicrobial system represented by modified textile material coated by a hybrid nanofluid based on magnetite and natural compounds of vegetal. The functionalized textile material cumulate the anti-adherent properties of magnetite and microbicidal activity of eugenol and limonene, exhibiting significant anti-adherence and anti-biofilm properties against *Staphylococcus*, *Pseudomonas* and *Candida*.

Conclusion

After further testing on the interaction between this new textile material with nanofluid coating and cell cultures from normal nasal epithelium we hope to introduce this textile material for in-vivo nasal packing in order to prevent biofilm formation in chronic rhinosinusitis and to decrease the use of preemptive antibiotics during nasal packing.

Chronic rhinosinusitis and mood disturbance

S.E. Erskine¹, C.M. Philpott¹

¹ Norwich Medical School, University of East Anglia, Norwich, United Kingdom

Abstract: ERS-0655

Session: Outcomes in CRS

Session Time: 24-06-14, 14:54

Location: Hall E

Chair person: TBC

Presenting author: S.E. Erskine

Objectives

This study is part of the Chronic Rhinosinusitis Epidemiology Study (CRES). The overarching aim of CRES is to determine factors which influence the onset and severity of chronic rhinosinusitis (CRS). The aim of this analysis is to determine the numbers of patients consulting with their general practitioner about anxiety or depression amongst those with CRS and controls.

Methods

Study-specific questionnaires including demographic and socioeconomic factors and past medical history as well as the standard, widely used SNOT-22 (sino-nasal outcomes) and SF-36 (general health survey) were distributed to patients with CRS (including AFRS (allergic fungal rhinosinusitis)) attending ENT clinics and to a control population across many centres in the United Kingdom.

Results

1,519 participants have been recruited including 57 with AFRS, 659 CRSwNP (with nasal polyps), 577 CRSsNP (without nasal polyps), 236 controls (no nasal problems). Self-reported consultation with GP for depression was 9/57 (15.8%), 132/659 (20.0%), 142/577 (24.6%) and 36/226 (15.9%) respectively. $P < 0.02$ for differences between participant subgroups. For anxiety: AFRS 10/57 (17.5%), CRSwNP 105/659 (15.9%), CRSsNP 130/577 (22.5%), controls 39/236 (16.5%), $p = 0.04$ between groups.

Conclusion

There are differences in rates of consulting health professionals for depression and anxiety problems between those with different types of CRS and controls, with those with CRS without polyps most likely to have sought advice. Mood disturbance may be caused by nasal symptoms and experience of nasal symptoms may be influenced by mood. These results can be used to help better understand and manage the range of patients and spectrum of experiences of CRS.

Improved method for measuring the differential pressure at the active anterior rhinomanometry

A. Nechyporenko¹, O. Garyuk², V. Chmovzh³

¹ Biomedical Engineering Department, Kharkiv National University of Radio Electronics, Kharkov, Ukraine

² Otorhinolaryngology Department, Kharkiv Medical Academy of Postgraduate Education, Kharkov, Ukraine

³ Aerohydrodynamics Department, Kharkiv National Aerospace University, Kharkov, Ukraine

Abstract: ERS-0656

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:45

Location: Hall H

Chair person: G. Ottaviano

Presenting author: A. Nechyporenko

Objectives

Differential pressure between the nasopharynx and space under the mask is one of the parameter for active anterior rhinomanometry. Pressure in the nasopharynx is measured in all cases standard in obturated half of the nose. Pressure in the space among other different manufacturers rhinomanometers is measured in different way. For example, the pressure is measured by the bacterial filter or on the tube which connects the filter mask. Distortions appear during such measurement method.

Methods

Using the basic principles of fluid mechanics, we propose to carry out the measurement of the pressure in space under the mask where air velocity is zero, namely in the area over the back of the nose.

Results

The difference between the pressures measured at the point where the flow velocity is zero and one of the traditional measurement points depending on the volumetric flow rate are presented in the table.

INSP		EXP	
Flow rate, cm ³ /c	Difference between Pold and Pnew, Pa	Flow rate, cm ³ /c	Difference between Pold and Pnew, Pa
50	0,8	50	0,5
150	2	150	1,5
250	4,5	250	3,5
400	11	400	10
600	26	600	21

Conclusion

The difference between data obtained at the peak of the inspiratory or expiratory flow according to its intensity by means of the proposed schemes and schemes that are used in other devices ranges from 20 Pa to 40 Pa. As a result, such a distortion measurement can greatly affect the further calculations of volumetric air flow characteristics that are important to the physiological functions of the nose.

THE USE OF A ROMANIAN LANGUAGE VERSION OF THE COSMETIC PROCEDURES SCREENING QUESTIONNAIRE AS A SCREENING TOOL FOR BODY DISMORPHIC DISORDERS AMONG PATIENTS SEEKING RHINOPLASTY

A.G. ANGHEL¹, M.DUMITRU¹, A.O. ANGHEL², C. SARAFOLEANU³

¹ COLTEA CLINICAL HOSPITAL, CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY, BUCHAREST, ROMANIA

² FLOREASCA CLINICAL EMERGENCY HOSPITAL, CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY, BUCHAREST, ROMANIA

³ SAINT MARY CLINICAL HOSPITAL, CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY, BUCHAREST, ROMANIA

Abstract: ERS-0657

Objectives

The growing number of young patients seeking rhinoplasty draws attention to a possible overlap with cases of body dysmorphic disorder (BDD). Therefore the surgeon must include in his preoperative planning the necessity to administer a psychological questionnaire to the patients in order to ascertain their mental status. There are many questionnaires available worldwide for screening BDD but none in Romanian language, making it imperative to develop one.

Methods

We have translated into Romanian language the Cosmetic Procedures Screening Questionnaire (COPS). We have administered this translated version of the questionnaire to a cohort of 30 patients seeking rhinoplasty.

Results

From the 30 patients seeking rhinoplasty, 7 presented high scores after completing the Romanian version of COPS. These patients were referred to a mental health specialist for further evaluation and 2 of them were not allowed to receive plastic surgery due to their associated mental health problems.

Conclusion

The risks for rhinoplasty complications are many and a dissatisfied patient can become a complication mainly when facing an undetected case of body dysmorphic disorder. Further validation of the Romanian version of COPS is needed but we hope that its future usage will prevent surgery on mentally unstable patients.

Evaluating the normal inferior turbinate by measuring cross-sectional area on computed tomography

S.E.J. Farmer¹, A. Hyde², B.C. Symonds², H.B. Whittet¹

¹ Department of Otorhinolaryngology, Singleton Hospital, Swansea, United Kingdom

² College of Medicine, Swansea University, Swansea, United Kingdom

Abstract: ERS-0658

Session: Imaging

Session Time: 25-06-14, 11:20

Location: Hall G

Chair person: N. Freling

Presenting author: S.E.J. Farmer

Objectives

This study aims to investigate the normal inferior turbinate by determining the ratio of inferior turbinate cross-sectional area (CSA) to nasal cavity CSA.

Methods

All computed tomography (CT) sinus scans performed over a 20-month period were reviewed. Patients with a normal CT scan and a straight nasal septum were included in the study. The cross-sectional area of the inferior turbinate and nasal cavity were measured on each side of the septum, anteriorly using coronal images. The ratio of the CSA of the inferior turbinate to the CSA of each nasal cavity was calculated.

Results

76 patients (152 inferior turbinates) were included in the study and the data was normally distributed ($p=0.3$). The mean inferior turbinate to nasal cavity ratio was $0.161\text{mm}^2 \pm 0.065\text{ SD}$ (range $0.011 - 0.334\text{mm}^2$). The 95% reference range for the inferior turbinate to nasal cavity ratio in this normal population was $0.044 - 0.304\text{mm}^2$.

Conclusion

The inferior turbinate to nasal cavity ratio is an easy and novel measurement. A normal ratio range may be useful when assessing the contribution of the inferior turbinates in patients complaining of nasal obstruction.

Lonicera Tatarica and Viburnum Opulus plant extracts present in vitro bactericidal and antibiofilm activity suitable for use in a nasal spray

A.G. Anghel¹, I. Anghel¹, M. Grumezescu², M.C. Chifriuc³, M. Dumitru¹

¹ Coltea Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

² Faculty of Applied Chemistry and Materials Science, University Politehnica Bucharest, Bucharest, Romania

³ Faculty of Biology, University of Bucharest, Bucharest, Romania

Abstract: ERS-0659

Session: CRS Basic 2

Session Time: 24-06-14, 14:45

Location: Hall G

Chair person: R. Moesges

Presenting author: G. Bertazzoni

Objectives

The increasing occurrence of multidrug resistant microbial strains has gradually decreased the effectiveness of traditional antimicrobial treatment. Moreover the situation is aggravated by recent discoveries placing biofilm formation as a central piece in CRS pathology. *Viburnum Opulus* and *Lonicera Tatarica* are deciduous shrubs widespread in central Europe and Asia used in some traditional medicine recipes. The purpose of the present work was to evaluate the bactericidal/ antibiofilm efficiency of extracts from these two plants.

Methods

Three extractions with water for each vegetable sample were performed in microwave conditions using a reflux installation. The antimicrobial activity was tested against 18 *S. Aureus* and 17 *S. Epidermidis* bacterial strains. We also performed qualitative screening for the antimicrobial activity and quantitative assay of minimal inhibitory concentration. We have analyzed the microbial adherence to the plastic substratum represented by 96 multi-well plates.

Results

Our results showed that the *Lonicera Tatarica* and *Viburnum Opulus* extracts influence differently the growth and adherence ability of *S. Aureus* and *S. Epidermidis* strains. *Lonicera Tatarica* predominantly interfered with the bacterial growth exhibiting an inhibitory effect of similar intensity against all tested strains, while *Viburnum Opulus* attenuated the ability of all tested strains to form biofilms.

Conclusion

These results are leading us to the hypothesis that *Lonicera Tatarica* and *Viburnum Opulus* species could be used for the development of novel antimicrobial products or strategies for fighting medical biofilms. Due to their aqueous state these extracts could be incorporated in nasal sprays used in treating CRS.

A report on 15 years of medical negligence claims in rhinology

T. Geyton¹, S. Little², T. Odutoye², R. Mathew²

¹ St Georges University of London, St Georges Hospital, Tooting, United Kingdom

² ENT department, St Georges Hospital, Tooting, United Kingdom

Abstract: ERS-0660

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 17:21

Chair person: S. Reinartz

Presenting author: T. Geyton

Objectives

To determine the characteristics of medical negligence claims in rhinology.

Methods

Claims relating to rhinology between 1995 and 2010 were obtained from the NHS Litigation Authority (NHSLA) and analysed for cause of injury, type of injury, outcome of claim and costs.

Results

The series contains 65 closed claims that resulted in payment totalling £3.1 million GBP (\$4.7 million USD). 50 claims were related to surgical complications. Functional endoscopic sinus surgery and septoplasty were the procedures most commonly associated with successful claims. There were 11 cases of orbital injury including 6 cases of visual loss and 5 cases of diplopia. The series contains 2 deaths. The most common cause of a claim was failure to recognize the complication or manage it appropriately. Lack of informed consent was claimed in 8 cases. Other claims arose due to errors in outpatient procedures (2), diagnosis (6), delayed surgery (1) and errors in medical management (3).

Conclusion

This is the first study to report the outcomes of negligence claims in rhinology in the United Kingdom. Claims in rhinology are associated with a high success rate. Steps that can be taken to reduce litigation include careful patient work up and ensuring adequate informed consent. Where there is a suspicion of orbital damage early recognition and intervention is needed to reduce long term injury to the patient.

Fronto-ethmoidal mucocele with intracranial and intraorbital extension as a cause of painless facial swelling: a case report

A.G.J. Binnie¹, M.S. Atfeh², H.S. Khalil³

¹ Department of ENT Derriford Hospital, Peninsula College of Medicine & Dentistry, Plymouth, United Kingdom

² Department of ENT Derriford Hospital, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

³ Department of ENT Derriford Hospital, Plymouth Hospitals NHS Trust Plymouth University Peninsula Schools of Medicine & Dentistry / Peninsula College of Medicine & Dentistry, Plymouth, United Kingdom

Abstract: ERS-0661

Objectives

Mucoceles are chronic gradually growing cystic lesions of the paranasal sinuses. The clinical presentation of a mucocele can vary considerably depending on the affected sinuses. This is a case of a fronto-ethmoidal mucocele with significant intraorbital and intracranial extensions.

Methods

Clinical Picture:

Background: 1. 67 year old male; 2. Past medical history of oropharyngeal carcinoma, abdominal aortic aneurysm repair and a previous open skull fracture following a road traffic accident.

Symptoms: 1. Progressively enlarging left facial swelling over forehead; 2. Diplopia and intermittent epiphora; 3. No rhinological symptoms.

Signs: 1. Large fluctuant mass over the left frontal region; 2. Mild proptosis; 3. Normal nasal endoscopy

Investigations: 1. Cytology findings suggestive of a mucocele; 2. CT and MRI showed a mucocele extending intracranially and into the left orbit. Damage to left orbitofrontal cortex was noted in keeping with previous trauma.

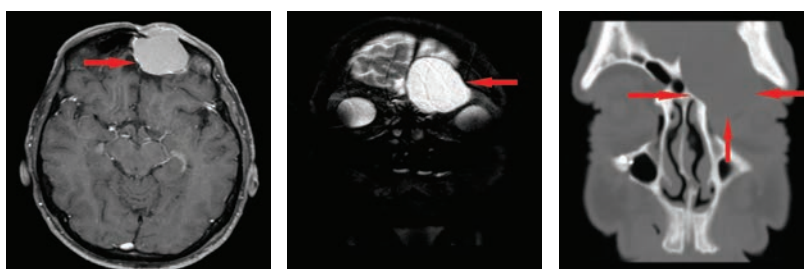
Management: Functional endoscopic sinus surgery (FESS) including a left middle meatal antrostomy, anterior ethmoidectomy and opening of frontal recess.

Results

1. Post-operative pulsation over forehead; this gradually settled and then resolved completely
2. Full recovery with no recurrence on outpatient review

Conclusion

This case highlights the importance to consider mucoceles as a differential for patients presenting with subcutaneous facial masses. Clinicians should consider that mucoceles may have intracranial and/or intraorbital extensions. Following appropriate investigations, minimally invasive surgery can achieve excellent outcomes.



Diagnosis of acute bacterial sinusitis in children

J. Fejza Bulaj¹

¹ ENT dept, UHC Mother Teresa, Tirana, Albania

Abstract: ERS-0662

Objectives

The paranasal sinuses are a common site of infection in children. The diagnosis of acute bacterial sinusitis (according to literature) is based on clinical criteria in young children. The necessity of endoscopic and X rays findings in diagnosis of acute sinusitis is controversial. The aim of this study is to find out the correlations between clinical, endoscopic and X rays findings and to establish their role in diagnosis of bacterial sinusitis in children.

Methods

In this prospective study were enrolled 102 children from 3 to 6 year old which were presented at our clinic during the period 2008-2013. The criteria of selection were nasal discharge and cough for more than 14 days or children with severe symptoms. The children with severe allergic problems are excluded. All patients underwent clinical, X rays and endoscopic examinations. The data from clinical, X rays and endoscopic findings were compared.

Results

63% of children with cough (64) and thick yellow nasal discharge had sinusitis in X ray findings. 25% of children (26) had adenoiditis revealed by videonasal endoscopy, and 12% of children (12) had prolonged viral upper respiratory tract infections.

Conclusion

Correlation between clinical and X rays findings in our study is 63%, lower than literature references which are approximately 88% in children younger than 6 and 70% in children older than 6. So the endoscopy and X rays examinations are important to establish the right diagnosis even in children under 6.

Multi-centre audit of epistaxis management in the United Kingdom: is there a case for a national review of practice?

A. Hall¹, H. Blanchford², P. Chatrath³, C. Hopkins⁴

¹ ENT, Royal National Throat Nose and Ear Hospital, London, United Kingdom

² ENT, James Cook Hospital Middlesbrough, London, United Kingdom

³ ENT, Queens Hospital Romford, London, United Kingdom

⁴ ENT, Guys and St Thomas' Hospital, London, United Kingdom

Abstract: ERS-0663

Session: Management of severe epistaxis

Session Time: 26-06-14 09:30

Location: Hall J

Chair person: T. Van Zele

Presenting author: A. Hall

Objectives

The Clinical Audit and Practice Advisory Group (CAPAG) of ENT-UK initiated a pilot audit to investigate variance in epistaxis management between six inpatient ENT units spread throughout England.

Methods

Six centres were invited by members of the ENT-UK Clinical Audit and Practice Advisory Group (CAPAG) across England to participate in locally approved data collection over a 3 month period between Nov 2011 – Feb 2012. This involved prospective enrolment of all adult patients referred to ENT with a diagnosis of epistaxis that were admitted for inpatient care.

Results

166 patients were included in the sample from the six hospitals. Variance was demonstrated between units in a number of the key outcome areas. Uptake of operative intervention for epistaxis included 28% of appropriate patients on analysis in one unit to only 12% in another. Overall surgical management accounted for 9% of in-patient epistaxis episodes across the centres. Mean length of stay varied from 2.125 to 3.076 days between units, although this was demonstrated most markedly in variance in the longest stays at each unit. No mortality was demonstrated.

Conclusion

There are measurable, patient relevant outcomes to assess epistaxis management and highlight areas of potential improvement. This pilot audit gives a snapshot of modern practice with variance between units demonstrated. A national audit may allow us to dually improve patient experience and maximise efficiency in delivering emergency care in our most common patient encounter.

Visual outcomes post-endoscopic endonasal surgery in craniopharyngioma: a systematic review

Y. Ramakrishnan¹, C. Nicholson², A. Jenkins², J. Hill¹, S. Carrie¹

¹ ENT, Freeman Hospital, Newcastle upon Tyne, United Kingdom

² Neurosurgery, Royal Victoria Infirmary, Newcastle upon Tyne, United Kingdom

Abstract: ERS-0664

Session: Skull base surgery 1

Location: Hall H

Time: 23-06-14 09:30

Chair person: R. Weber

Presenting author: Y. Ramakrishnan

Objectives

The proximity of craniopharyngiomas to vital neurovascular structures and a propensity to recurrence lead to challenging management dilemmas. As an alternative to traditional approaches, the endoscopic endonasal option is gaining popularity. It is essential that outcomes are critically analysed before recommendations are made to change surgical practice. This review aims to evaluate visual outcomes post-endoscopic endonasal surgery for craniopharyngioma.

Methods

A literature review was carried (using PubMed Medline databases) for English-language articles commencing 2000 pertaining to the endoscopic treatment of craniopharyngioma. The primary endpoint was visual outcome. In addition, the degree of resection, adjuvant treatment and tumour details (primary v residual/recurrent) were also noted.

Results

There were 14 studies involving 329 patients (49 children). There were 2 paediatric, 2 mixed and 10 adult case series (all retrospective). Most cases were primary rather than residual/recurrent disease. Gross total or subtotal resection was achieved in the majority of cases. In the paediatric group, visual fields/acuity improved in 85.7% cases, remained unchanged in 8.5% and worsened in 5.7%. In the adult group, visual fields/acuity improved in 84% cases, remained unchanged in 12% and worsened in 4%.

Conclusion

Direct comparison of visual outcomes between studies is challenging due to baseline differences in tumour, patient demographics as well as treatment factors. In addition, there is a selection bias with smaller, accessible tumours favouring the endoscopic rather than alternative approaches. Only one study specified that all consecutive craniopharyngioma cases were operated endonasally, minimising the selection bias. Overall, these visual outcomes are favourable compared to the transcranial and microscopic approaches.

Recurrent infectious mononucleosis syndrome in a child with previous tonsillectomy

R.Q. Mehdi¹, M.S. Atfeh², H.S. Khalil²

¹ ENT Derriford Hospital, Peninsula College of Medicine & Dentistry, Plymouth, United Kingdom

² ENT Derriford Hospital, Plymouth Hospitals NHS Trust, Plymouth, United Kingdom

Abstract: ERS-0665

Session: OSAS

Location: Hall H

Time: 25-06-14, 15:05

Chair person: N. de Vries

Presenting author: R.Q. Mehdi

Objectives

Infectious Mononucleosis (IM) Syndrome is a multi-systemic manifestation of the viral infection caused by the Epstein - Barr virus (EBV). Recurrence or reactivation of the infection is uncommon and usually asymptomatic. This is a report of a case of IM syndrome recurrence with complications despite previous tonsillectomy.

Methods

A retrospective case report showed the following:

Background: 1. 15-year old male patient 2. Past history of infectious mononucleosis, recurrent tonsillitis and tonsillectomy

Symptoms: 1. A week history of sore throat and malaise 2. Three-day history of purulent rhinorrhoea, intermittent epistaxis, neck stiffness, and photophobia

Signs: 1. Septic (temperature of 38.5° C) 2. Stertor 3. Bilateral palatal fullness, marked trismus and bilateral cervical lymphadenopathy 4. Endoscopy showed hypertrophic lymphoid tissue in the postnasal space and tongue base 5. Meningitis was rule out

Tests: 1. Positive IM screen 2. CT Neck with contrast demonstrated a diffuse lymphoid tissue hypertrophy filling the nasal cavity, nasopharynx and oropharynx. No collections or parapharyngeal space involvement were identified (figures 1&2).

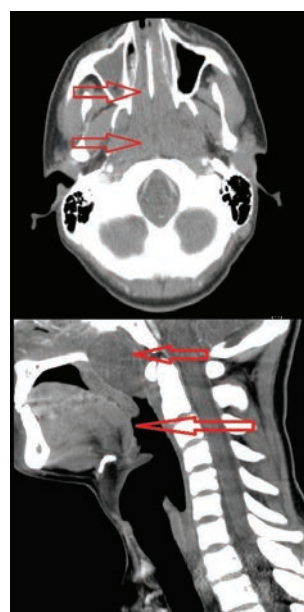
Management: 1. Resuscitation 2. Intravenous Benzylpenicillin and Metronidazole for one week 3. Infection control procedures to prevent the spread of infection

Results

The patient was discharged home with routine IM syndrome advice, having had a week of intravenous antibiotics.

Conclusion

This case highlights the importance of recognising recurrence of IM despite previous tonsillectomy. Clinicians need to be aware as well of the potential for airway obstruction due to IM lymphoid hypertrophy.



Genotype-specific variations in the TNFRSF1B gene are associated with disease severity in CRS

F. Romano¹, L. Mfuna-Endam², Y. Bossé², A. Filali-Mouhim², M. Desrosiers²

¹ Otolaryngology, University of Sao Paulo, Sao Paulo, Brazil

² Otolaryngology, University of Montreal, Montreal, Canada

Abstract: ERS-0666

Session: CRS basic 1

Session Time: 23-06-14, 10:24

Location: Hall G

Chair person: H. Saleh

Presenting author: F. Romano

Objectives

We have previously described (Romano, 2011) an association between CRS and rs235214, a single nucleotide polymorphism (SNP) in the TNFRSF1b gene, which regulates TNF-alpha inflammation. Recent studies (Schnabel, 2009) demonstrate a functional link between genotypes of this SNP and biomarkers of systemic inflammation. We thus hypothesized that this gene variation may influence inflammation of the sinus mucosa.

Given that persistent underlying inflammation is believed to contribute to severity of disease in CRS, we wished to identify whether the SNP rs235214 influenced evolution of sinus disease.

Methods

A population of 206 patients with severe CRS and 196 controls previously genotyped for rs235214 was assessed for genotype-specific differences in demographic and phenotypic markers. The impact of rs235214 on different phenotypes within the CRS population was analyzed using 1-way ANOVA and Fisher's exact test.

Results

The TT genotype is associated with an increased risk of CRS (OR= 3.51), and a lower age at first surgery for CRS (Age in years: TT: 30.0, CC: 40.2, CC: 40.9; $p=0.013$), and a trend to higher rates of self-reported asthma (% reporting: TT: 84.6 years, CC: 61.1, CC: 60.0; $p=0.06$). A difference in serum IgE level was seen but was not statistically significant.

Conclusion

Genetic variations in the TNFRSF1b gene influence the severity of sinus disease. This association supports the potential role for TNF-related inflammation in CRS, and suggests that variations in the function of the TNFRSF1b gene may contribute to severity and type of inflammation of the sinus mucosa.

CRS endotypes and disease control in chronic rhinosinusitis

P. Sacks¹, M. Lam¹, R. Sacks², R. Harvey¹

¹ UNSW and Macquarie University, Applied Medical Research Centre, Sydney, Australia

² Sydney University and Macquarie University, Concord General Hospital, Sydney, Australia

Abstract: ERS-0667

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 17:12

Chair person: S. Reinartz

Presenting author: R. Harvey

Objectives

Chronic Rhinosinusitis (CRS) is a heterogeneous disease and its pathophysiology poorly understood. Inflammatory cell predominance varies from neutrophilic to eosinophilic. The latter is associated with the T helper cell (Th)2 inflammatory response, nasal polyps, greater clinical severity and higher recurrence of disease. Recent immunological studies have implicated three epithelial-derived cytokines (IL-25, IL-33 and TSLP) in the initiation of Th2 inflammation and eosinophilia. This study aims to investigate the clinical and endoscopic implications of endotyping patients based on these cytokines at 1-year post primary FESS.

Methods

A prospective study of patients with CRS undergoing endoscopic sinus surgery was performed. Histological samples were analysed for IL-25, IL-33 and TSLP mRNA expression by quantitative PCR. Patient reported outcomes (, nasal symptoms, SNOT-22), endoscopic scores (Lund-Kennedy), oral steroid use, frequency of nasal steroid irrigations and infective exacerbations were assessed at one year post-surgery.

Results

39 patients (mean age: 48±15 years, 15 female) 13 CRS with Nasal Polyps (CRSwNP), 20 CRS without Nasal Polyps (CRSsNP) were recruited. IL-25 and IL-33 were significantly overexpressed in eosinophil-dominated CRS compared to lymphocytic/lymphoplasmacytic-dominated inflammation (p=0.004 & p=0.007) and controls (p=0.010 & p=0.016). Expression was significantly associated with degree of tissue eosinophilia (p=0.005 & p=0.003), eotaxin-3 expression (p=0.015 & p<0.001) and overall inflammatory severity (p=0.028 & p=0.011). Patient reported outcomes, endoscopy and medication use at 12 months post-operatively will be presented.

Conclusion

It is acknowledged that CRS is a heterogeneous disease and attempts to move away from simple phenotypes may improve our understanding of the clinical implications of different inflammatory profiles.

Effects of benzalkonium chloride on cultured human nasal epithelial cells

M. Kawabata¹, Y. Kurono¹

¹ Otolaryngology Head and Neck Surgery, Kagoshima University Graduate School of Medical and Dental Science, Kagoshima, Japan

Abstract: ERS-0669

Session: Rhinitis basic

Session Time: 24-06-14, 11:55

Location: Hall G

Chair person: TBC

Presenting author: M. Kawabata

Objectives

Traditional pharmaceutical nasal sprays or drops require preservatives to prevent microbial contamination. However, the use of preservatives in nasal formulations remains controversial. Although benzalkonium chloride is by far the most used preservative in aqueous nasal formulations, several studies have revealed damages to human nasal epithelium and exacerbation of rhinitis medicamentosa with benzalkonium chloride. In the present study, we examined the impact of pretreatment with benzalkonium chloride on cultured human nasal epithelial cells.

Methods

HNEpC, a human nasal epithelial cell line, were pretreated with benzalkonium chloride. Benzalkonium-induced expression of histamine 1 (H1) receptor was analyzed using the real-time polymerase chain reaction and flow cytometry.

Results

Pretreatment with benzalkonium remarkably increased mRNA expression of H1 receptor in HNEpC.

Conclusion

The results suggest that increased expression of H1 receptor with benzalkonium chloride might be one of the mechanism underlying exacerbation of rhinitis medicamentosa.

Would you always perform a sinus surgery in severe chronic rhinosinusitis with nasal polyps?

C. Morales Minovi¹

¹ Otorhinolaryngology, Marienhospital Gelsenkirchen, Gelsenkirchen, Germany

Abstract: ERS-0831

Session: Management of CRS

Session Time: 24-06-14, 16:54

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: C. Morales Minovi

Objectives

When the medical therapy of a chronic rhinosinusitis (CRS) with and without nasal polyps fails, surgery is the treatment of choice. The most appropriate treatment of CRS continues to be unclear. A 53 years old female patient was referred to our allergy consultation at the ENT Department to repeat an Acetylsalicylic Acid desensitization. Unfortunately she suffered of a nonallergic anaphylaxis with severe involvement of the respiratory system after trying an intravenous desensitization in another center. She complained about completely obstruction of the nose, anosmia, headache, postnasal drip and impossibility of training any sports after been operated twice. Asthma and intolerance against analgesic were known. Her last surgery was 3 months before she came to our consultation. The Lund-Kennedy score was 12 and the Lund-Mackay score was 24. The topical corticoid sprays and the use of sporadic systemic corticoids were not helping any more. The patient refused another revision operation of the sinuses.

Methods

We admit her to our hospital and made a slowly oral Acetylsalicylic Acid desensitization until 500 mg/day. She remained with 100 mg /day.

Results

After 3 Months she did not have anymore complains; the nose and sinuses were totally free of polyps. The same findings persist in two years of controls.

Conclusion

Desensitization is an effective treatment option especially in patients with a Samter's triad. This therapy might be considered in patients with a severe CRS with nasal polyps before performing a revision Surgery.

Suggestions on the surgical classification on opening the sphenoid sinus

K. Yanagi¹, K. Wada², N. Otori³, H. Moriyama³

¹ Otorhinolaryngology, St. Luke's International Hospital, Tokyo, Japan

² Otorhinolaryngology, Toho University, Tokyo, Japan

³ Otorhinolaryngology, Jikei University, Tokyo, Japan

Abstract: ERS-0671

Session: Outcomes in CRS

Session Time: 24-06-14, 14:00

Location: Hall E

Chair person: TBC

Presenting author: K. Yanagi

Objectives

There are several operative roots in the sphenoid sinus. Namely; the olfactory root, ethmoid root and the septal root. These roots are different from the difficult operative levels and the safety operative levels. And we have selections for these operative roots basing on the pathological conditions of the sphenoid sinus. But still now, there isn't any specific useful operative method; classified for a clinical application that can be carried out.

Methods

This time, we classified the operative procedures for the sphenoid sinus this way: Type1 :(Simple drainage). Type2 :(Lateral drainage). Type3 :(Combined drainage) and Type4 :(Median drainage).

Results

Type1 (Simple drainage): Open the natural ostium of the sphenoid sinus from the olfactory root.

Type2 (Lateral drainage): Open the anterior wall of the sphenoid sinus from the ethmoid root.

Type 3 (Combined drainage): Mix or combine the methods of TYPE1 and TYPE2.

Type 4 (Median drainage): Remove the septum of the sphenoid sinus.

Additional two subtypes are added for supplementary purposes or methods.

Subtype (a):-The treatment of the superior turbinate.

Subtype (b):- Treatment of the posterior septal branch of the sphenopalatine artery.

Conclusion

This new classification of the operative method of the sphenoid sinus is very useful for planning a safe and exact procedure before the surgery. This time we also performed a new CT classification on the sphenoid sinus. So here is a show on the new findings we've made on the CT classification depending on the operatives on the sphenoid sinus.

Eosinophil chemotaxis assay in nasal polyps by using a novel optical device EZ-taxiscan: role of CCR3

H. Saito¹, K. Honda¹, K. Ishikawa¹

¹ Department of Otorhinolaryngology and Head and Neck Surgery, Akita Graduate School of Medicine, Akita, Japan

Abstract: ERS-0672

Session: CRS Basic 3

Session Time: 24-06-14, 16:50

Location: Hall E

Chair person: S. Vlamincx

Presenting author: H. Saito

Objectives

CC-chemokine receptor 3 (CCR3) is a chemokine receptor for which major ligands, eotaxin, RANTES, MCP-4, are known to be involved in chemotaxis for eosinophils. It is thought that CCR3 has an important role for accumulation and activation of eosinophils in eosinophilic airway inflammation. We examined nasal polyp extracts-induced eosinophil chemotaxis and the effect of CCR3 antagonist by using a novel real-time chemotaxis assay device, EZ-TAXIScan.

Methods

Nasal polyps were obtained from chronic sinusitis patients and samples were homogenized. Eosinophils were purified from human peripheral blood by the CD16 negative selection method. Eosinophil chemotaxis induced by nasal polyp extracts was assessed by EZ-TAXIScan.

Results

Eosinophil chemotactic response were observed by stimulation with nasal polyp extracts by using EZ-TAXIScan. Eosinophil chemotaxis by polyps from asthmatic patients were increased compared with non-asthmatic patients. Eosinophils isolated from hypereosinophilic patients have high chemotactic activity compared with eosinophils from healthy donors. Nasal polyp extracts-induced chemotaxis was inhibited by CCR3 antagonist.

Conclusion

The reaction through CCR3 system may play an important role in the pathogenesis of eosinophilic nasal polyps through selective eosinophil chemotaxis.

Efficacy of endoscopic marsupialization for huge frontal and/or ethmoidal sinus mucoceles with orbital symptoms

T. Koh¹, W. Bae¹, J. Seo¹

¹ Otorhinolaryngology Head and Neck Surgery, Dong-A University College of Medicine, Busan, Korea

Abstract: ERS-0673

Session: Management of CRS

Session Time: 26-06-14 11:35

Location: Hall J

Chair person: TBC

Presenting author: T. Koh

Objectives

Mucocele in the paranasal sinus is an accumulation of mucoid secretion and desquamated epithelium within the sinus with distension of its wall. Patients with huge frontal and/or ethmoidal sinus mucoceles often have orbital symptoms such as visual disturbance, proptosis, diplopia and so on. The purpose of this study was to evaluate the efficacy of the endoscopic marsupialization for the huge frontal and/or ethmoidal sinus mucoceles with orbital symptoms.

Methods

It was a retrospective, consecutive case review of the huge frontal and/or ethmoidal mucocele patients with orbital symptoms who were treated with endoscopic marsupialization between January 2012 and April 2013. Medical records included age, sex, nasal and orbital symptoms, X-ray findings, operation records and so on.

Results

There were 6 huge frontal and/or ethmoidal sinus mucoceles accompanied by orbital symptoms and the mean age of patients was 48.1 years. Two patients got the endoscopic sinus surgery for the chronic rhinosinusitis previously. Orbital symptoms included 4 eyeball proptosis, 2 visual disturbances and 1 eyeball pain. Other symptoms were nasal stuffiness, rhinorrhea and headache. All patients underwent endoscopic marsupialization for mucocele and had improvement in nasal and orbital symptoms and signs.

Conclusion

Endoscopic marsupialization is effective in the treatment of the huge frontal and/or ethmoidal mucoceles with the orbital symptoms.

Preservation of functioning sinus in frontal sinus posterior table fractures

D. Chin¹, I. Loh¹

¹ Otolaryngology Head & Neck Surgery, Changi General Hospital, Singapore, Singapore

Abstract: ERS-0674

Session: CSF-leak and Management of Anterior Skull Base defects

Session Time: 24-06-14, 11:24

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: D. Chin

Objectives

Preservation of sinus function post posterior table frontal fractures(PTFF) may be preferable to obliteration/cranialization for minimising risk of mucocoele development. A retrospective series of traumatic PTFF was assessed for complications and functional outcomes after frontal sinusotomy(FS) with/without repair of cerebrospinal fluid(CSF) leak.

Methods

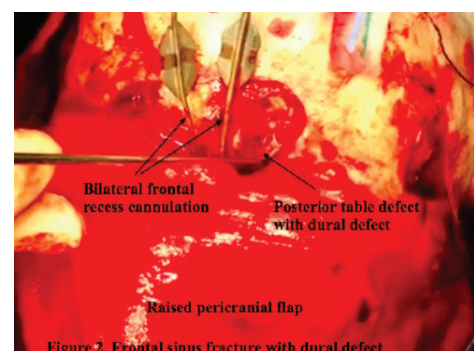
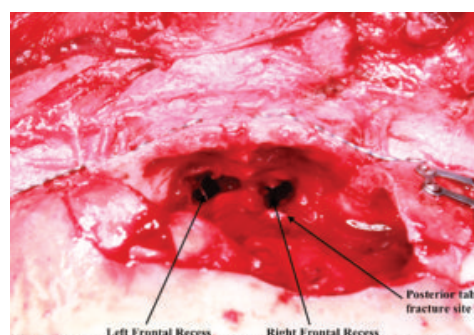
Patients treated for PTFF from July 2012-December 2013 were assessed. Characteristics of injury were fracture type/extent, presence/extent of dural injury and CSF leak. Management of PTFF, approach/extent of frontal sinusotomy, use of frontal stents, lumbar drain, peri-operative antibiotic were recorded. Outcomes evaluated were CSF leak closure, incidence of peri-operative meningitis and patency of FS.

Results

3 patients with PTFF were managed with bicoronal approach combined with endoscopic FS. For 2 patients with displaced PTFF but intact dura and no CSF leak, displaced fragment/s were removed without requiring dural repair(Figure 1). For the patient with CSF leak, a 1 cm dural defect was associated with comminuted PTFF (Figure 2); two-layered closure with underlay Duragen patch and pericardial flap(FP) was performed. Lumbar drainage was not used in any patient. In 2 patients, Draf 2a frontal sinusotomy was performed with silastic stenting for 3 weeks. There were no cases of peri-operative meningitis. Frontal sinuses were aerated in all cases with no post-operative CSF leak or cranial prolapse at 20, 14 & 6 months, Widely-patent FER after sinusotomy was observed at 20 & 6 months.

Conclusion

Preservation of frontal sinus may be a valid option for selected cases of PTFF. Cranial prolapse Dural graft plus vascularised PF alone may be used for frontal sinus CSF leak repair.



Olfactory function in patients with chronic rhinosinusitis with polyps

V. Bogdanov¹

¹ ENT, Crimean State Medical University named after S.I. Georgievsky, Simferopol, Ukraine

Abstract: ERS-0675

Session: Olfaction

Session Time: 25-06-14, 14:45

Location: Hall G

Chair person: B. Landis

Presenting author: V. Bogdanov

Objectives

The objective of this study was to determine the impact of chronic rhinosinusitis with polyps (CRSwP) on olfactory function and its dependence on age, sex of the patients and illness duration.

Methods

Olfactory function was tested in 52 patients with CRSwP (30 males, 22 females, age 23-77 years, mean age $53,98 \pm 13,93$ years) using the 'Sniffin Sticks' test battery with threshold, discrimination and identification tests. All the patients underwent a detailed ENT-investigation and estimated their olfactory ability on the scale from 1 to 10 using the visual analog scale (VAS).

Results

TDI-scores of men and women were statistically not different ($p > 0,05$). Patients' age and illness duration didn't correlate significantly with the TDI-scores (Pearson's $r = -0,25$, $p > 0,05$ and $r = -0,208$, $p > 0,05$ accordingly). 44 out of 52 patients (84,6%) complained of an olfactory deficit, 43 of which showed hypo- and anosmia in olfactory testing (1 patient had normosmia). Other 8 patients (15,4%) estimated their olfactory function as normal, although in 4 of them hyposmia was revealed, and in 1-anosmia. VAS-scores had a significant correlation with the TDI-score (Pearson's $r = 0,754$, $p < 0,01$).

Conclusion

Olfactory function in patients with chronic rhinosinusitis with polyps is significantly impaired, which is not dependent on patients' age, sex or illness duration. More than 90% of patients have a quantitative olfactory loss, more than 2/3 – anosmia. Olfactory function loss is so profound, that most of the patients know about it and are able to estimate it on the VAS, although some of them are not aware of their hyposmia or even anosmia.

Diode laser versus radiofrequency treatment of the inferior turbinate – a randomized clinical trial

B. Olzowy¹, K. Stelter², U. Kisser²

¹ Department of Otorhinolaryngology Head & Neck Surgery, Universitymedicine Rostock, Rostock, Germany

² Department of Otorhinolaryngology Head & Neck Surgery, University of Munich Medical Center, Munich, Germany

Abstract: ERS-0676

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 10:06

Chair person: N. Keles

Presenting author: B. Olzowy

Objectives

Laser and radiofrequency (RF) induced volume reduction of the inferior turbinates are frequently used treatment modalities, both proven effective in several clinical studies. In order to specify advantages and disadvantages, we compared both methods regarding complications, patient comfort, improvement of nasal breathing and wound healing.

Methods

Prospective, randomized, single-blinded clinical trial with intraindividual design. In local anesthesia one side of the nose was treated with a 940nm diode laser in a non-contact mode and the other side with bipolar RF therapy. Pre- and postoperative evaluation was performed using questionnaires, nasal endoscopy and objective measurements of nasal patency.

Results

Of 27 enrolled patients 26 completed the protocol. No severe complications were observed. Intraoperative discomfort was low for both methods but significantly more severe on the RF side (VAS laser 0.4, RF 2.3, $p = 0.008$). After three months, a significant reduction of nasal obstruction was observed for laser treatment (VAS pre-op 5.94, post-op 1.91, $p = 0.001$) and RF therapy (VAS 6.12 and 2.28, $p = 0.001$) with no significant difference between them. Objective parameters did not improve significantly. When asked which treatment modality they would chose again 50 % of the patients decided for radiofrequency treatment, 23 % for laser treatment, and 19 % for both.

Conclusion

Both treatment modalities are well-tolerated and similarly effective.

Clinical feature of sinonasal inverted papilloma: an analysis of 50 cases

S. Kwon¹

¹ Otorhinolaryngology, Chonbuk National University Medical School, Jeonju, Korea

Abstract: ERS-0677

Session: Skull base surgery 3

Session Time: 26-06-14 10:35

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: S. Kwon

Objectives

Sinonasal inverted papilloma (IP) is an uncommon benign tumour characterized by frequent recurrence and by neoplastic transformation. Endoscopic resection has been an increasingly popular method of treating sinonasal IP. Aim of this study was to assess clinical feature and the origin site of sinonasal IP.

Methods

Retrospective chart review of 50 patients who had operations performed to remove sinonasal IP at Chonbuk National University Hospital between 2009 and 2013. A case series was performed assessing sex, age, presenting symptoms, origin of lesion, primary versus recurrence, and method of treatment.

Results

The study group consisted of 36 (72%) male and 14 (28%) female patients. Age range was from 40 to 83 years. The chief complaint was unilateral nasal obstruction. Seven patients (14%) had undergone previous surgery. Most common origin of IP was ethmoid sinus (56%), and next was maxillary antrum (20%). All patients were treated by pure endoscopic surgery. Maxillary antral IP was managed with adjunctive procedure.

Conclusion

Management of sinonasal IP is still challenge. But endoscopic procedure is common method for sinonasal IP treatment. Origin of sinonasal IP may be an important factor for choice of surgical methodology.

Invasive fungal rhinosinusitis: our experience with 23 cases

K. Rha¹, K. Ryu¹, Y. Kim¹

¹ School of medicine Chungnam National University, Department of Otorhinolaryngology, Daejeon city, Korea

Abstract: ERS-0678

Session: Fungal sinusitis

Location: Hall E

Time: 26-06-14 11:24

Chair person: S. Reinartz

Presenting author: K.Rha

Objectives

Invasive fungal rhinosinusitis, which includes acute and chronic forms, is an aggressive and often fatal fungal infection of paranasal sinuses and nearby vital organs including eye and brain. Immunocompromised patients such as hematologic malignancies, aplastic anemia, and uncontrolled diabetes mellitus, are especially susceptible to this disease. This study aimed to investigate the clinical features of invasive fungal rhinosinusitis and to determine the prognostic factors associated with survival.

Methods

We retrospectively reviewed 23 patients who were diagnosed as invasive fungal rhinosinusitis between January 1999 and December 2012. Prognosis was analysed according to various factors including the underlying disease, the extent of disease at presentation, the causative organisms, and treatment modalities.

Results

The mean age at presentation was 58.5 years (range 32-77 years) and the patients composed of 13 females and 10 males. 12 cases were Mucormycosis and 11 cases were Aspergillosis. Most patients (11/12) with Mucormycosis were diabetic. In contrast, most patients (8/11) with Aspergillosis had hematologic diseases such as leukemia and aplastic anemia. The overall mortality rate was 56.5%. There was significant survival gain when the underlying disease was well controlled ($p=0.001$) and when surgical debridement was done. ($p=0.037$). However, there were no differences in survival rate in terms of the causative organisms and the extent of disease at presentation.

Conclusion

The most important prognostic factors are whether the underlying disease was controlled and whether the surgical intervention was done.

Long-term results of functional endoscopic sinus surgery in children with chronic rhinosinusitis with nasal polyps

M. Cornet¹, C. Georgalas¹, S. Reinartz¹, W. Fokkens¹

¹ ENT, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0679

Session: Pediatric rhinology

Session Time: 25-06-14, 09:39

Location: Hall H

Chair person: P. Stjarne

Presenting author: M. Cornet

Objectives

Nasal midline masses of ectodermal origin include nasal dermoids (ND) and nasal dermal sinus cysts (NDSC). Those group of lesions Chronic rhinosinusitis with nasal polyps (CRSwNP) is rare in children and has a major impact on Quality of Life (QoL). Functional endoscopic sinus surgery (FESS) has proven to be an effective treatment, but it is still unclear what long term outcomes are in children with CRSwNP. The objective of this study was to assess long term results of FESS in children with CRSwNP.

Methods

We performed a combined prospective and retrospective study. A QoL questionnaire was send to all children who received FESS because of CRSwNP between the year 2000 and 2010. Almost half of these children also filled in this questionnaire preoperatively. Primary outcome was R-SOM score.

Results

44 Children underwent FESS. From 18 patients we also prospectively collected preoperative QoL questionnaires. The response rate was 82% (36/44) and mean follow-up period was 4.0 years (\pm 2.9). The mean age at surgery was 13 years (\pm 2.9). Of these children 9 had CF (25%) and 10 children asthma (28%). R-SOM scores showed a significant improvement both in general symptoms as well as several different domains when comparing pre- and postoperative questionnaires ($p=0.04$). Only 14% (5) of the patients needed a subsequent intervention. In children with CF this was 33% (3/9).

Conclusion

This study demonstrates that long term results of FESS in children with CRSwNP are good. Overall QoL has improved significantly for the whole group, especially in nasal symptoms, showing that FESS is a good treatment in children with CRSwNP. Furthermore even children with CF show good results.

Neuroradiological assessment of sphenoid sinus disease: a retrospective analysis of 116 cases with correlation after endoscopic sphenoidectomy (2004-2014)

P. Ziglienas¹, P. Mordasini², C. Pfeiffer¹, C. Ozdoba², M.D. Caversaccio¹

¹ ENT Department, Inselspital Bern University, Bern, Switzerland

² Department of Neuroradiology, Inselspital Bern University, Bern, Switzerland

Abstract: ERS-0680

Session: Imaging

Session Time: 24-06-14, 11:42

Location: Hall E

Chair person: K. Patel

Presenting author: P. Ziglienas

Objectives

To assess the accuracy of neuroradiological imaging (CT and MRI) in the diagnosis of sphenoid sinus disease.

Methods

We retrospectively analyzed 116 consecutive cases of sphenoid sinus disease operated in the last 10 years in our rhinology department. Preoperative imaging was re-evaluated and compared with definitive histopathological findings following endoscopic sphenoidectomy.

Results

All patients underwent CT and 56% underwent MRI of the paranasal sinuses. Sphenoidectomy was performed as sole procedure in 68% of cases and combined with surgery of other sinuses in 32%. Inflammatory disease (fungal sinusitis, bacterial sinusitis, polyps) was diagnosed in 74% of cases, followed by tumors in 17%. The sensitivity of CT and MRI in diagnosing chronic inflammation of the sphenoid sinus was 74% and 66%, respectively, whereas the specificity was 81% and 94%, respectively. In the tumor subgroup, sensitivity and specificity was 76% and 96% for CT and 100% and 88% for MRI, respectively.

Conclusion

Thorough analysis of neuroradiological imaging is essential to preoperatively assess sphenoid sinus disease and MRI gives information complementary to that of CT. Nevertheless, only definitive histopathological examination can rule out neoplastic disease.

Role of hypoxia-inducible factor 1-alpha expression in regulatory T cells on nasal polypogenesis

Y. Kim¹, S. Kim¹, J. Jin¹, K. Rha¹

¹ Chungnam National University School of Medicine, Department of Otorhinolaryngology, Daejeon, Korea

Abstract: ERS-0681

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 11:51

Location: Hall H

Chair person: P. Gevaert

Presenting author: Y. Kim

Objectives

Hypoxia-inducible factor 1alpha (HIF-1 α) is considered as a key molecule in regulating Th17:regulatory T-cells (Tregs) balance. The aims of this study were to investigate whether HIF-1 α is associated with the orphan nuclear receptor gamma (ROR γ) expression of Tregs in nasal polyps and to verify whether SEB is involved in this process.

Methods

Forty patients with Chronic rhinosinusitis with nasal polyposis (CRSwNP) were enrolled and divided into eosinophilic nasal polyps (EPs) and non-eosinophilic nasal polyps (NEPs) according to the proportion of eosinophils. Fifteen subjects who were undergoing septoplasty were enrolled as control subjects. Expression of HIF-1 α in the tissue was measured using RT-PCR, western blot, and flow cytometry. The mRNA expression of RORC and HIF-1 α in Tregs separated from tissues were measured by RT-PCR. Double immunofluorescent (IF) staining for RORC/FOXP3 and HIF-1 α /FOXP3 were conducted on the tissues. Expression of RORC and HIF-1 α in Tregs from PBMC was measured using flow cytometry after stimulation with SEB.

Results

Expression RORC and HIF-1 α in Tregs was significantly higher in EPs and NEPs compared with control mucosa, and there was a significant correlation between RORC and HIF-1 α expression in Tregs. Expression of RORC and HIF-1 α mRNA in Tregs separated from the tissues was also significantly higher in nasal polyps compared with control mucosa. Expression of RORC and HIF-1 α in Tregs were increased after 24 hour stimulation with SEB in the PBMCs.

Conclusion

HIF-1 α -induced RORC expression in Tregs may play a key role in the pathogenesis of nasal polyps.

MUCOCELE IN FRONTAL SINUS: HOW I DO IT

A. PUNAGI¹

¹ OTOLARYNGOLOGY, HASANUDDIN UNIVERSITY, MAKASSAR, INDONESIA

Abstract: ERS-0682

Objectives

Mucoceles are gradually expanding lesion involving paranasal sinuses. This is usually caused the obstruction to the normal drainage channels of paranasal sinuses leading on to pent up secretions with it. These patients clasically do not present with symptoms pertaining to nose and sinuses. 60% of paranasal sinus mucocele are present in the frontoethmoid region.

Methods

We report two cases of frontal sinus mucocele that underwent surgery with external approach combined with endoscopic surgery.

Results

Both cases has a good result, 3 months after surgery we found no evidence of mucocele recurrence.

Conclusion

Mucocele of frontal sinus is a challenge with or without endoscopic surgery.

Orbital preservation in extensive involvement with acute invasive fungal sinusitis: considerations, results and systematic literature review satisfaction

D. Lal¹

¹ Otorhinolaryngology, Mayo Clinic Hospital, Phoenix, USA

Abstract: ERS-0683

Session: Fungal sinusitis

Session Time: 26-06-14 11:51

Location: Hall E

Chair person: S. Reinartz

Presenting author: D. Lal

Objectives

Orbital involvement in acute invasive fungal sinusitis (AIFS) is a sign of far advanced disease in critical ill patients. Orbital exenteration was been traditionally mandated in surgical management of such disease. However, recent advances in surgical techniques and anti-fungal therapy prompt rethinking this paradigm.

Aims: 1. Review results of surgical management of orbital AIFS. 2. Present considerations for orbital preservation versus exenteration in AIFS.

Methods

A retrospective review of all cases of orbital AIFS treated by the author since September 2010 was conducted. A systematic literature review was also conducted.

Results

Fourteen cases of AIFS were surgically managed since September 2010.. Of these, 7 patients had orbital AIFS involvement, and six had proptosis and fixed globe at time of presentation. All patients underwent serial surgical debridement. Five of seven patients underwent successful debridement and control of AIFS with preservation of the globe. Two patients underwent orbital exenteration and with maxillectomy but both subsequently died.

A systematic literature review was conducted. A surgical treatment algorithm was created using experience from our case series as well as the literature review. Central retinal artery occlusion and orbital apex syndromes may be relative contra-indications for exenteration.

Conclusion

In the setting of serial debridement, intensive monitoring and aggressive antifungal and supportive therapy, orbital preservation may be successfully attempted in select patients with extensive orbital involvement with AIFS. If disease can be controlled, even non-functioning eye can serve cosmetic needs. A management algorithm is presented to discuss considerations in such decision making.

Bilateral diplopia and abducent nerve palsy secondary to odontogenic sinusitis: an unusual presentation

S. Malas¹, H. Al-Reefy¹

¹ Maxillofacial Department, King Hamed University Hospital, Manama, Bahrain

Abstract: ERS-0684

Session: Complications in rhinology

Session Time: 25-06-14, 11:55

Location: Hall J

Chair person: N. Otori

Presenting author: S. Malas

Objectives

Odontogenic sinusitis is a well recognized condition and accounts for approximately 10-12% of cases of maxillary sinusitis. An odontogenic cause should always be considered in patients with symptoms of maxillary sinusitis, who give a positive history of odontogenic infection such as periapical or perilateral abscesses or periodontitis. Severe infections in the maxillary sinus may present with neurological inflammation, which may delay or misinterpret the diagnosis and treatment required.

Methods

We present a patient with the initial diagnosis being meningitis representing with bilateral diplopia, severe unilateral facial pain and nasal blockage. Patient underwent a septic screening and a CT scan of the nose and paranasal sinuses confirmed unilateral pan sinusitis with enhancement of bilateral abducent nerves of MRI secondary to irritation of the meninges by the opacified sphenoidal sinus.

Results

A full recovery with intravenous antibiotics and intravenous steroids.

Conclusion

High suspicion must be maintained for the possibility of an underlying acute pan sinusitis with oro-antral communications in all patients representing Bilateral Diplopia. Best means of diagnosis would be through Cat Scans, Ortho Pentagrams, and Intra Oral Peri-apical Xrays. The best treatments are according to the case, but best prognosis is according to least time the treatment and diagnosis is done.

Treatment outcome of sinonasal inverted papilloma in our department

Y. Suzuki¹, H. Tokano¹, Y. Inaba¹, M. Nagaoka¹, K. Kitamura¹

¹ Otorhinolaryngology, Tokyo Medical and Dental University, Tokyo, Japan

Abstract: ERS-0685

Session: Skull base surgery 4

Location: Hall G

Time: 26-06-14 11:40

Chair person: E. Wright

Presenting author: Y. Suzuki

Objectives

Sinonasal inverted papilloma is the disease that we often meet at an outpatient clinic. It is a benign tumor, but it sometimes damages bones as it increases its size. Sinonasal sinus is very complicated, so it might be easy to recur after surgery. This time, we focus on sinonasal inverted papilloma based on staging, surgical method, and recurrence rate.

Methods

There are 49 cases (35 men and 14 women) of sinonasal inverted papilloma that we performed surgery in our department between 1997 and 2013. We mainly perform CT scan preoperatively, and classify using the classification by Krouse. The number of cases is 4 (T1), 29 (T2), 15 (T3), 1 (T4), respectively.

Results

There was no recurrence in T1 case. In T2 case, it was only one recurrence case which was preoperatively diagnosed as chronic sinusitis. In T3 case, a recurrence was found in 7 out of 15 patients. The major recurrence site is anterior or lateral wall of maxillary sinus, and posterior or superior wall of ethmoid sinus.

Conclusion

As well as CT, we perform MRI for the case with suspected sinonasal inverted papilloma. It is also helpful to evaluate the basal part of the disease.

Recently, we polish the basal part of the disease. It is thought that it is important to prevent a recurrence.

Treatment outcome of isolated sphenoid fungal infection

D.H. Lee¹, S.C. Lim¹

¹ Otolaryngology-Head & Neck Surgery, Chonnam National University Hwasun Hospital, Jeollanam-do, Korea

Abstract: ERS-0686

Session: Fungal sinusitis

Time: 24-06-14, 09:45

Location: Hall E

Chair person: R. Kamel

Presenting author: D.H. Lee

Objectives

Isolated sphenoid fungal infection can be easily overlooked because of its rarity and vague symptoms such as headache, and has higher probability of ocular and intracranial involvement than those of other paranasal sinuses.

Methods

The medical records of 52 cases with isolated sphenoid fungal infection were retrospectively reviewed.

Results

Non-invasive fungal sphenoiditis and invasive fungal sphenoiditis were 37 cases and 15 cases, respectively. Non-invasive types included fungus ball (n=32), chronic non-invasive, destructive fungal infection (n=3) and colonization (n=2).

Invasive types included chronic invasive fungal infection (n=10) and acute fulminant fungal infection (n=5). Etiologic organisms included *Aspergillus* species (n=50) and *Mucor* species (n=2). The most common symptom of non-invasive and invasive fungal sphenoiditis was headache and visual disturbance, respectively. Visual disturbance is more common in invasive type (12/15) than in non-invasive type (1/37) ($p < 0.001$). Endoscopic removal of fungus ball or colonies was adequate for treatment of non-invasive fungal sphenoiditis and aggressive treatment including multiple surgeries and antifungals were necessary in the treatment of invasive fungal sphenoiditis. In non-invasive fungal sphenoiditis, there were no recurrences or deaths. However, six patients with invasive fungal sphenoiditis have died of disease (6/15, 40%). In invasive fungal sphenoiditis with visual disturbance (n=12), visual acuity improved in only 3 cases.

Conclusion

Non-invasive fungal sphenoiditis had excellent prognosis. However, mortality rate of invasive fungal sphenoiditis was high, especially in acute fulminant type and therefore, a high index of suspicion should be required and prompt treatment should be started.

Spontaneous fracture of the maxillary sinus after blowing a nose

S.C. Lim¹, D.H. Lee¹

¹Otolaryngology-Head & Neck Surgery, Chonnam National University Hwasun Hospital, Chonnam, Korea

Abstract: ERS-0687

Objectives

Maxillofacial fractures in older patients are often seen after falling on a level surface and a traffic accident. Spontaneous fracture of the maxillary sinus is extremely rare.

Methods

The medical record of a case with spontaneous fracture of the maxillary sinus was retrospectively reviewed.

Results

We present a case with spontaneous fracture of the maxillary sinus after blowing a nose.

Conclusion

In conclusion, spontaneous fracture of maxillary sinus can occur uncommonly in elderly patients, even in the absence of any preceding trauma or pathology. In our case, recurrent blowing a nose was the determining factor of fracture of the maxillary sinus. Although it is rare, spontaneous fracture of maxillary sinus should be considered in the differential diagnosis of pain and swelling of the cheek and eye in elderly patients.

Clinical features and treatment outcomes of paranasal sinus osteomas

D.H. Lee¹, S.C. Lim¹

¹ Otolaryngology-Head & Neck Surgery, Chonnam National University Hwasun Hospital, Jeollanam-do, Korea

Abstract: ERS-0688

Session: Skull base surgery 4

Location: Hall G

Time: 26-06-14 11:25

Chair person: E. Wright

Presenting author: D.H. Lee

Objectives

The purpose of this study is to investigate the incidence and location of paranasal sinus (PNS) osteomas by computed tomography (CT) scan in our hospital, and to describe our experience in the surgical treatment of PNS osteomas.

Methods

This study was performed on 1,724 patients subjected to CT scans due to suspected sinus disease in the period between 2004 and 2013.

Results

PNS osteoma was diagnosed in 110 (6.4%) patients. Triple osteomas were detected in 2 cases. Double osteomas were detected in 7 cases. In total, PNS osteomas were detected in 121 lesions. Ethmoid sinus was the most common location of osteomas (57.0%), followed by the frontal sinus (25.6%), frontal recess (9.1%), maxillary sinus (5.0%), olfactory fissure (1.7%), and sphenoid sinus (1.7%). Thirty four patients were surgically treated for PNS osteoma. A purely endoscopic approach was performed in 33 patients. Combined approach, endoscopic approach and frontal trephination, was performed in one case. There were no major surgical complications and tumor recurrence.

Conclusion

Incidence of PNS osteoma is 6.4%. Technical improvement has extended the indications for endoscopic surgery of PNS osteomas. Successful osteoma surgery requires both the appropriate technical conditions and the comprehensive training in endoscopic and external surgical techniques.

Management of choanal atresia with meningocele

F. Perkasa¹

¹ Otolaryngology, Hasanuddin University, Makassar, Indonesia

Abstract: ERS-0689

Objectives

Choanal atresia is a condition where one or both posterior nasal cavity is blocked by abnormal bony or soft tissue. This condition can occur concomitant with other congenital anomalies. Bilateral choanal atresia causes emergency situation at birth. The incidence of choanal atresia is one case per 5000-8000 births and are twice as much in females.

Methods

We present a case of a baby girl 16 days old which was diagnosed in the operating theatre, undetected previously because of the meningocele. The patient underwent transnasal choanoplasty and stenting.

Results

After the removal of stent 6 weeks later, the hole were still wide opened and the baby can breath easily. A year after surgery the baby has gain weight and growth normally.

Conclusion

Choanal atresia can occure with other congenital abnormalities, a careful examination is mandatory as bilateral choanal atresia needs prompt management.

Intraocular pressure, glaucoma, lens opacity and the use of intranasal corticosteroids: a systematic review

N. Ahmadi¹, K. Snidvongs², L. Kalish³, E. Pratt⁴, N. Mrad⁴, R. Sacks⁵, R. Harvey⁶

¹ Surgery, Royal Prince Alfred Hospital, Sydney, Australia

² Otolaryngology and Skull Base surgery, Australian School of Advanced Medicine Macquarie University, Sydney, Australia

³ Otolaryngology and Skull Base surgery, Concord Hospital and University of Sydney, Sydney, Australia

⁴ Otolaryngology and Skull Base surgery, Applied Medical Research Centre St Vincents Hospital, Sydney, Australia

⁵ Otolaryngology and Skull Base surgery, Australian School of Advanced Medicine Macquarie University and University of Sydney, Sydney, Australia

⁶ Otolaryngology and Skull Base surgery, Rhinology and Skull Base Applied Medical Research Centre St Vincents Hospital and University of New South Wales Macquarie University, Sydney, Australia

Abstract: ERS-0690

Session: Rhinitis, Clinical 1

Session Time: 25-06-14, 11:42

Location: Hall E

Chair person: J. Mullol

Presenting author: N. Ahmadi

Objectives

Intranasal corticosteroids (INCS) are increasingly prescribed for the long-term prophylactic treatment of inflammatory upper airway conditions. Although some systemic absorption does occur via topical routes, the clinically relevant impact is controversial. The effects of orally administered corticosteroids on intraocular pressure and lens opacity are well established, but the impact from INCS is less well defined. This study aims to systematically review the literature for evidence of INCS impact on ocular pressure and lens opacity.

Methods

A systematic review of literature from Medline and Embase databases from January 1974 to 21st of Nov 2013 was performed. Using the PRISMA guidelines, all clinical trials of patients using INCS, that reported original data measures of intraocular pressure (IOP), lens opacity, glaucoma or cataract incidences were included. Studies with adjuvant administration of oral, inhaled or intravenous steroids were excluded.

Results

The search yielded 663 articles (377 from Medline, 283 from Embase, and 3 from bibliographic search). Only 135 were considered for full text review. Of these 115 (85%) were literature reviews on the subject. 18 studies were included for the qualitative review; of which 16 trials reported data on IOP and 9 on Cataract or lens opacity. The pooled data are presented qualitatively and with meta-analysis.

Conclusion

The ocular effects from INCS appear to be very limited, and the clinical impact of such treatment in the long-term management of chronic upper airway disease is likely to favour benefit over harm.

Fungal ball of the paranasal sinuses treated with endoscopic sinus surgery in Taiwan

Y. Chen¹, T. Huang¹

¹ Department of Otolaryngology-Head and Neck Surgery, Taipei Tzu Chi Hospital, New Taipei City, Taiwan

Abstract: ERS-0691

Session: Fungal sinusitis

Session Time: 24-06-14, 09:35

Location: Hall E

Chair person: R. Kamel

Presenting author: Y. Chen

Objectives

Sinus fungus ball is a form of fungal sinusitis defined as noninvasive chronic fungal sinusitis without inspissated allergic mucin and occurs in immunocompetent hosts. Our aim is to present our experience in the management of sinus fungal ball.

Methods

Ninety one patients diagnosed with sinus fungal ball who underwent endoscopic sinus surgery from March 2005 to December 2013 were included. Clinical features, surgical techniques, operative findings, bacterial and fungal cultures, postoperative results, and complications were analyzed retrospectively.

Results

In this study, 65 were female and 26 were male. Their age at surgery ranged from 25 to 87 years, with a mean of 55.1. Four patients had bilateral diseases. The maxillary sinus was the most frequently involved site (78/95 sides, 82.1%). All patients were treated successfully by transnasal endoscopic sinus surgery, and only one patient had recurrence due to residual lesion. Gauze-assisted technique was applied for complete removal of fungus balls of the maxillary sinus from the middle meatal antrostomy. Canine fossa puncture was never performed in our cases. No postoperative complications were observed. Histology showed fungal colonization but no invasion in all cases.

Conclusion

Transnasal endoscopic sinus surgery with gauze-assisted technique is a safe and effective treatment for fungal ball of the paranasal sinuses.

Synergy between TLR-2 and TLR-3 signalling in primary human nasal epithelial cells

J. van Tongeren¹, K. Golebski¹, D. van Egmond¹, E. de Groot¹, W. Fokkens¹, C. van Drunen¹

¹ Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0692

Session: Rhinitis Basic

Session Time: 23-06-14, 11:15

Location: Hall J

Chair person: L. Kalogjera

Presenting author: K. Golebski

Objectives

Although we have a detailed understanding of how single microbial derived triggers activate specialized TLRs on airway epithelial cells, we know little of how these receptors react in a more complex environment. As in everyday life nasal epithelial cells are exposed to multiple TLR agonists, we wanted to explore whether exposure to one trigger could affect the responsiveness to another TLR trigger.

Methods

Primary nasal epithelium from healthy individuals and the bronchial epithelium cell line NCI-H292 were exposed to different TLR agonists and the effect on the expression of different TLRs was determined using the quantitative PCR. Moreover, we evaluated the effect of TLR-3 stimulation on TLR-2 functionally by ELISA.

Results

Stimulation of airway epithelium with a specific TLR agonist affects gene expression of another TLRs. In primary nasal epithelium, poly(I:C) challenge results in an up-regulation of the TLR1, TLR2, and TLR3 genes and reduction of expression of TLR5. Furthermore, we show that poly(I:C) induced activation of TLR-2 contributes to stronger cell responses to the TLR-2 agonist PGN and that regulation of these synergistic responses may take place at the mRNA level of IL6 and IL8. Although the effect of TLR-3 stimulation on TLR-2 functionality and most of the effects on the expression of other TLRs could be replicated in our NCI-H292 model, poly(I:C) failed to up-regulate TLR1 and showed an additional up-regulation of TLR4.

Conclusion

Our data suggests that to better understand TLR mediated innate responses we need to consider the impact of the presence of multiple triggers.

Isolated sphenoid sinus lesions

M. Bahgat¹, Y. Bahgat¹, A. Bahgat¹

¹ Department of Otolaryngology and Head&Neck surgery, Alexandria University, Alexandria, Egypt

Abstract: ERS-0693

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:20

Location: Hall H

Chair person: P. Nicolai

Presenting author: M. Bahgat

Objectives

Sphenoid disease commonly results as an extension of disease from the posterior ethmoid sinuses. Occasionally disease may arise within the sphenoid sinus and may remain isolated within. Disease from the surrounding region as the skull base, orbit and petrous apex may expand into the sphenoid sinus.

Isolated sphenoid lesions are uncommon but have been reported with increasing frequency in the past decade. Due to their nonspecific signs and symptoms, these lesions are difficult to diagnose. Common presenting complaints include headaches, nasal obstruction and postnasal drip. Occasionally, they may present with complications related to the involvement of surrounding structures leading to decreased visual acuity, diplopia and facial numbness.

Methods

A review of published papers on isolated sphenoid lesions, with data collected in the last 25 years, yielded seven series with 366 cases.

Results

The majority of the lesions were non-neoplastic. By far the commonest lesion was inflammatory (50.3%) in nature, with fungal infections making up a third of these infections. Mucocoeles was the next commonest disease, forming 20.2% of the cases, with other lesions like cerebrospinal fluid (CSF) leaks, fibrous dysplasia and inverted papillomas making up the rest of the disease. Of the 37 reported neoplastic lesions, 51.3% were malignant. The presentation and management of each entity would be discussed.

Conclusion

Isolated sphenoid sinus lesions are rare. With increasing availability of diagnostic modalities like CT, they are being more frequently diagnosed. The differential diagnosis of an isolated sphenoid sinus opacification includes wide varieties of pathologies as chronic sinusitis, mucopyoceles, polyps, and fungal sinusitis, benign and malignant tumors.

Analysis of obstruction site in obstructive sleep apnea syndrome patients by drug induced sleep endoscopy

E. Hernández-García¹, E. Amarillo¹, B. Vielva¹, A. Lara², G. Plaza¹

¹ Servicio de Otorrinolaringología, Hospital Universitario de Fuenlabrada, Madrid, Spain

² Servicio de Otorrinolaringología, Hospital La Zarzuela, Madrid, Spain

Abstract: ERS-0694

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 17:12

Chair person: M. Ravestloot

Presenting author: G. Plaza

Objectives

We analyzed site, pattern and degree of obstruction in obstructive sleep apnea syndrome (OSAS) patients by drug-induced sleep endoscopy (DISE). We also investigated possible links between BMI, AHI and DISE findings.

Methods

Eighty-eight patients underwent DISE. DISE findings were reported using the VOTE classification and the NOHL classification regarding obstruction type, site of obstruction, degree of obstruction and anatomical site. Associations were analyzed among the results of the polysomnography, patients' characteristics and DISE finding.

Results

Multilevel airway obstruction was found in 71,6% of patients and 28,4% had a unilevel obstruction. Among those with unilevel obstruction, 92% had retropalatal level obstruction and only two patients had isolated retrolingual level obstruction. Palate with lateral pharyngeal wall obstruction (39,1%) is the most common obstruction type of the retropalatal level. Examining the relation between obstruction site according to BMI and severity of OSAS (AHI), the lateral pharyngeal wall collapse was statistically significant associated with higher AHI.

Conclusion

AHI, the DISE findings indicate that the lateral pharyngeal wall is the most important.

Chronic rhinosinusitis with nasal polyps (CRSwNP): does the need for surgery predict a higher asthma prevalence? an ongoing trial

M. Frendø¹, K. Håkansson¹, S. Schwer², V. Backer³, C. von Buchwald¹

¹ Department of Otorhinolaryngology Head & Neck Surgery and Audiology, Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark

² Schwer/Larsen ENT Clinic, -, Copenhagen, Denmark

³ Department of Respiratory Medicine, Copenhagen University Hospital Bispebjerg, Copenhagen, Denmark

Abstract: ERS-0695

Session: United airways

Session Time: 26-06-14 12:01

Location: Hall D

Chair person: I. Terreehorst

Presenting author: M. Frendø

Objectives

CRSwNP is a common chronic inflammatory disorder of the nose and paranasal sinuses. An increased prevalence of asthma has been reported in previous studies; however, the majority of these studies were performed in the tertiary sector and few were based upon thorough pulmonary function test and evaluation. Our group has found an asthma prevalence of more than 60% in patients referred for Functional Endoscopic Sinus Surgery in Copenhagen, of whom many were undiagnosed. In this study we aimed to examine the prevalence of asthma in patients in the same geographical area who never had a need-for-surgery.

Methods

This was a prospective cross sectional study. Participants diagnosed with CRSwNP according to the EPOS criteria were recruited from private ENT clinics. Participants underwent the following tests: spirometry with bronchodilator-test, mannitol-challenge, peak expiratory flow, expiratory and nasal nitric-oxide, skin prick-test, and nasal endoscopy. The participants were diagnosed +/- asthma and classified according to the GINA guidelines by a senior consultant of respiratory medicine.

Results

As of 15th of January 2014 20 patients and 12 controls are enrolled. Data collection is still in progress. We expect to finish in May 2014. A total of 80 patients and 30 controls will be included.

Conclusion

We expect to find that the prevalence of asthma among patients without a need-for-surgery is either similar to or lower than the asthma prevalence in the tertiary sector. A similar prevalence would indicate that asthma co-exists regardless of disease severity whereas a lower prevalence would indicate that need-for-surgery is a predictor of asthma.

Ethmoid drug-eluting catheter for nasosinus polyposis: a prospective randomized controlled study assessing safety and efficacy

E. Hernandez-Garcia¹, E. Amarillo¹, G. Eisenberg¹, V. Garcia-Peces¹, J. Montojo¹, G. Plaza¹

¹ Servicio de Otorrinolaringología, Hospital Universitario de Fuenlabrada, Madrid, Spain

Abstract: ERS-0696

Session: Management of CRS

Session Time: 24-06-14, 16:27

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: E. Hernandez-Garcia

Objectives

Chronic rhinosinusitis with polyposis (CRSwP) is currently treated by endoscopic sinus surgery (EES) when intensive medical care fails. The study objective was to assess the safety and efficacy of a drug-eluting catheter to be inserted into the ethmoid sinuses during ESS to elute triamcinolone in patients with CRSwP.

Methods

Design: Prospective, randomized, controlled, double-blind, clinical trial using inpatient control design.

Subjects and Methods. The study enrolled 40 patients with CRSwP undergoing ESS. In every case, after polypectomy was done to expose the ethmoid bulla, a drug-eluting catheter to elute triamcinolone (0,3 ml) was randomly applied to one nasal fossa, whereas the other was treated by conventional total ethmoidectomy. Outcome measures were visual analogue scales, RSDI, endoscopy, and olfactometry assessment at baseline, 3 months, 6 and 12 months. Safety assessments included ocular exams at baseline and 30 days. CT imaging was also assessed after 12 months of minimum follow-up.

Results

After randomization was performed, unilateral devices were successfully placed in all patients. Most were also easily removed after four weeks. When comparing both nasal fossae in postop endoscopies, at 6 and 12 months, the prevalence of edema, adhesions and recurrent polyposis were statistically similar. Changes from baseline in patient-reported outcomes were statistically relevant in both sides. No clinically important changes in intraocular pressure occurred. CT resolution of pathology was achieved in both sides, without significant differences.

Conclusion

This trial provides clinical evidence on the safety and efficacy of a drug-eluting catheter for use in patients with CRSwP. It achieves similar results compared to complete ethmoidectomy, without any major complications.

Orbital cellulitis as complication of chronic rhinosinusitis

A. Zakiah¹, F. Perkasa¹, A. Punagi¹

¹ Otolaryngology, Hasanuddin University, Makassar, Indonesia

Abstract: ERS-0697

Objectives

Orbital cellulitis due to chronic rhinosinusitis occur by bacterial spread from infected sinus. As the orbit is bordered by several sinuses, the frontal, ethmoid, and maxillary, an infection from any of these sinuses can potentially spread to the orbit. The ethmoid sinus is almost exclusively implicated in the spread of infection to the orbit.

Methods

We present a case an adult male with left orbital cellulitis and visual decrease that had been suffered for chronic rhinosinusitis in the last 2 years. The patient underwent endoscopic sinus surgery, during surgery we found brownish material content from the ethmoid sinuses with a suspicion of fungal invasion.

Results

After surgery, hyperemic and congested tissue surround the affected orbit decreased and the visual is getting better.

Conclusion

Orbital cellulitis is a result of incomplete medication of chronic rhinosinusitis. Prompt management is mandatory to achieve good result and to avoid further complication.

The sleep position trainer: a new treatment for positional obstructive sleep apnea

J.P. van Maanen¹, N. de Vries¹

¹ Otolaryngology Head and Neck Surgery, St Lucas Andreas Hospital, Amsterdam, Netherlands

Abstract: ERS-0698

Session: Positional therapy/new surgeries for severe to extreme OSAS

Session Time: 23-06-14, 10:00

Location: Hall D

Chair person: A. Marzetti

Objectives

To assess the effectiveness (part A), long-term compliance and effects on subjective sleep parameters (part B) of the Sleep Position Trainer (SPT) in position dependent OSA (POSA).

Methods

Adult patients with mild to moderate POSA were included. A: patients used the SPT for a period of 1 month. At baseline and after one month effects on objective sleep parameters of using the SPT were assessed using polysomnography. B: patients used the SPT for a 6-month period. At baseline, 1, 3 and 6 months questionnaires would be filled in: Epworth Sleepiness Scale (ESS), Pittsburgh Sleep Quality Index (PSQI), Functional Outcomes of Sleep Questionnaire (FOSQ) and questions related to their SPT use over time.

Results

A: 31 patients were included. Median percentage of supine sleep time decreased from 49.9% [20.4 – 77.3%] to 0.0% [range: 0.0 - 48.7%] ($p < 0.001$). The median apnea-hypopnea index decreased from 16.4 [6.6 – 29.9] to 5.2 [0.5 – 46.5] ($p < 0.001$). 15 Patients developed an overall apnea-hypopnea index below five when using the SPT. B: 145 Patients were included. SPT use and SPT data could not be retrieved in 39 patients. In the remaining 106 patients SPT compliance was 64.4%. ESS (11 to 7), PSQI (7 to 6) and FOSQ (91 to 103) values showed a significant change compared to baseline.

Conclusion

SPT is a successful treatment for patients with mild to moderate POSA in terms of AHI decrease and effects on supine position. Furthermore, it diminishes subjective sleepiness, it improves sleep-related quality of life and has a high compliance.

POSTERIOR NASAL NEURECTOMY: A POSTGANGLIONIC ALTERNATIVE TO PREGANGLIONIC VIDIAN NEURECTOMY

T. KANAYA¹, K. KAWANO¹, S. KASHIWAGI¹, H. NAGAFUJI¹, A. HARA¹, T. KIKAWADA¹

¹ SURGERY, NOSE CLINIC TOKYO, TOKYO, JAPAN

Abstract: ERS-0699

Objectives

I will demonstrate how our technique resects the posterior nasal nerves at the sphenopalatine foramen, using continuous irrigation (the 'underwater' technique).

Methods

We used a 0° endoscope with a suction-irrigation system (K-endosheath from Koken) and an HD camera (Karl Storz IMAGE 1 HUB™). Continuous irrigation of the surgical field kept it clear and enhanced visualization of the nerves and blood vessels. We identified and selectively resected posterior superior lateral nasal nerves.

Results

Use of the underwater technique improved visualization to the degree that we were able to differentiate nerves from blood vessels easily.

Conclusion

PNN with the underwater technique, also called the endoscopic diving technique or hydroscopy, enables us to resect only the nerves and to spare the blood vessels. This technique may have wider applications in a variety of delicate surgical procedures.

Osteitic changes in unilateral maxillary sinus fungal ball

B. Baek¹

¹ Otorhinolaryngology-Head Neck Surgery, Cheonan Hospital Soonchunhyang University, Cheonan, Korea

Abstract: ERS-0701

Session: Fungal sinusitis

Session Time: 24-06-14, 09:50

Location: Hall E

Chair person: R. Kamel

Presenting author: B. Baek

Objectives

Although some studies reported characteristic CT features of sinus fungal ball(SFB), the changes that may occur in the underlying bone have been less well described. The aim of this study was to evaluate sinus wall thickness (WT) and sinus wall density (WD) in patients with unilateral maxillary SFB. And also investigate how the presence or absence of bacteria affects bony changes of maxillary sinus wall.

Methods

From July 2006 to December 2012, forty-one patients underwent endoscopic sinus surgery for unilateral maxillary SFB treatment. Preoperative CT images of all of the patients were reviewed. WT was measured and compared with the contralateral side. WD was also evaluated and expressed in Hounsfield units (HU). WT and WD were measured at 3 separate areas and were averaged. A total of 41 specimens were obtained for aerobic and anaerobic culture during surgery.

Results

The age of the patients ranged from 21 to 75 years (mean age, 55.9 years). Thirty cultures (73.2%) were positive for bacteria. Average WT was 1.68 ± 0.49 mm on the diseased side and 1.16 ± 0.32 mm on the healthy side ($P < .001$). Average WT in culture positive group (1.72 ± 0.54 mm) was thicker than in culture negative group (1.59 ± 0.37 mm) ($p=0.45$). Average WD was 1077.1 ± 200.1 HU on the diseased side and 945.5 ± 260.1 HU on the healthy side ($P < .001$).

Conclusion

WT and WD from CT scans may be indices for evaluation of unilateral maxillary SFB. Further studies may be necessary to elucidate how this osteitic changes affects the clinical features in unilateral maxillary SFB.

A correlation study between drug-induced sleep endoscopy and 3D MDCT in obstructive sleep apnea

K. Lee¹, S. Hong¹, J. Lee¹, S. Lee²

¹ Otorhinolaryngology and Head&Neck Surgery, Kangbuk Samsung Hospital, Seoul, Korea

² Otorhinolaryngology and Head&Neck Surgery, Korea University Hospital, Seoul, Korea

Abstract: ERS-0702

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:45

Chair person: M. Ravesloot

Presenting author: K. Lee

Objectives

To pinpoint the narrowed portion and the sites of upper airway collapse during sleep is important factor in treatment of obstructive sleep apnea. Drug-induced sleep endoscopy is dynamic and multi-detector computed tomography is static. both study provides 3D image. The aim of this study is to evaluate the association between findings from DISE and 3D MDCT in OSA.

Methods

Study included 39 patients who had undergone portable PSG(Watch PAT), DISE and 3D MDCT from December 2012 to June 2013. DISE findings were characterized according to the VOTE classification. We measured upper airway length from 3D MDCT. We also computed the volume of upper airway by 3D reconstruction. We evaluated correlations between parameters of 3D MDCT and DISE scores. Furthermore, we classified into two groups according to AHI scores(AHI \geq 15, AHI<15) and evaluated correlations in each groups and an association between these measurements and severity of OSA. The Pearson correlations and t-test was used for statistical analysis.

Results

UAL adjusted for patient's height was statistically significant correlation with total DISE scores.(p=0.046) Otherwise, there were no correlations between 3D MDCT parameters including upper airway volume and total DISE scores. DISE scores, UAL, UAL adjusted for patient's height, soft palate length, AP dimension behind epiglottis were showed significant differences between two groups.

Conclusion

There was little association between DISE and 3D MDCT findings. This result was explained that two techniques were performed in different patient's conditions. But some parameters of 3D MDCT and total DISE scores were useful for evaluation about severity of OSA.

JUVENILE NASOPHARYNGEAL ANGIOFIBROMA-THERAPEUTIC MANAGEMENT

C. DOROS¹, N. BALICA¹, M. DOBRE¹, M. POENARU¹, G. IOVANESCU¹

¹ ENT DEPARTMENT TIMISOARA, VICTOR BABES UNIVERSITY OF MEDICINE AND PHARMACY TIMISOARA RO, TIMISOARA, ROMANIA

Abstract: ERS-0703

Objectives

Juvenile nasopharyngeal angiofibroma (JNA) is a rare benign tumor and affects almost exclusively adolescent boys. Clinically is very aggressive and destructive. This study analysed the clinical features, radiological aspects(CT and MRI) and treatment modalities. Many surgical approaches for resection of this tumor have been introduced.

Methods

Between 2000-2013, in ENT Department Timisoara were diagnosed and treated 11 patients with JNA. All the patients were young males aged between 11-18 years old. Tumors were classified using Radkwowski's staging system. CT and RMI allowed accurate diagnosis and staging of JNA. Epistaxis and progressive nasal obstruction was present in all patients. Conductive hearing loss and serous otitis media occurred in 63,63% cases. All patients underwent combined surgical techniques. We don't use endoscopic approach.

Results

Surgical techniques performed were: Denker-Rouge technique in 4 cases (36,3%), paralateronasal technique in 3 cases (27,2%), retrovelopalatin technique in 2 cases(18,1%), and transpalatin technique in 2 cases(18,1%). Rate of recurrence was 18,1%(2 cases) in transpalatal approach. Radiotherapy was performed in the 2 recurrences cases.

Conclusion

Clinical stadialization is very important in the selected external approach type. Early diagnosis reduced the risk of the recurrence rate and improved the results. The external approach remains the best option for the resection of JNA in advanced stages.

FRONTAL SINUS OSTEOMAS MANAGEMENT

C. DOROS¹, N. BALICA¹, H. STEFANESCU¹, M. POENARU¹, M. DOBRE¹, E. BOIA¹

¹ ENT DEPARTMENT TIMISOARA, VICTOR BABES UNIVERSITY OF MEDICINE AND PHARMACY TIMISOARA RO, TIMISOARA, ROMANIA

Abstract: ERS-0704

Objectives

Craniofacial osteomas are benign tumors of the skull-base, often involving the paranasal sinuses. The frontal sinus is the most common site of involvement. The growth rate is very slow, and it may take many years for osteomas to become clinically apparent.

Methods

Between the years 2003-2013, in the ENT Department Timisoara, 9 patients were treated for frontal sinus osteoma, 3 females and 6 males. Management of uncomplicated sinus osteomas is controversial, since surgery involves serious potential risks. In ENT Department Timisoara we used external approach in each case.

Results

All 9 patients underwent surgery, the postoperative results were very good.

Conclusion

Frontal sinus osteomas, skull base benign tumors, are very rare and the treatment is surgical by an external approach.

Activation patterns of Toll-like receptors and antimicrobial peptides in chronic rhinosinusitis with or without nasal polyposis

A. Hirschberg¹, M. Kiss², E. Kadocsa³, H. Polyanka², Z.S. Razga⁴, Z.S. Bella³, L. Tizslavicz⁴, L. Kemeny²

¹ Otolaryngology, St John Hospital, Budapest, Hungary

² Dermatology and Allergology, University of Szeged, Szeged, Hungary

³ Otolaryngology, University of Szeged, Szeged, Hungary

⁴ Pathology, University of Szeged, Szeged, Hungary

Abstract: ERS-0705

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 11:42

Location: Hall H

Chair person: P. Gevaert

Presenting author: A. Hirschberg

Objectives

Both up- and down-regulation of the Toll-like receptors (TLRs) and antimicrobial peptides (AMPs) of the sinonasal mucosa have already been associated with the pathogenesis of chronic rhinosinusitis (CRS) with (CRSwNP) or without (CRSsNP) nasal polyps. Determination of the expression profiles of all known TLRs and several AMPs in association with allergy, asthma, aspirin intolerance (ASA) and mucosal changes in CRS with or without nasal polyps.

Methods

Gene expression array and immunohistochemistry were performed to compare the expression profiles in tissue samples from patients with CRS (n=43) and from subjects with healthy nasal mucosa (n=12). Histopathological evaluation was performed to reveal special features in the mucosa.

Results

TLR2, TLR4, TLR5, TLR6, TLR8, TLR9, β -defensins and lysozyme were consistently and significantly increased in CRSwNP, whereas only TLR2 and TLR6 were up-regulated in CRSsNP compared to controls. Expressions of TLR7, TLR8 and TLR9 were significantly higher in CRSwNP compared to CRSsNP. The incidence of allergy and asthma was not different between either patient groups as well as between CRSsNP and CRSwNP(ASA-) groups, respectively. TLR7 and lactoferrin expression was higher in the ASA(+) polyps.

Conclusion

This study provides evidences that almost the complete toll-like receptor array is up-regulated in CRSwNP compared to CRSsNP and controls. The activation pattern of TLRs and AMPs was found to be different in CRSsNP and CRSwNP, which was not influenced by allergy and asthma. The expression profiles of the CRSwNP and the ASA(-) samples were shown to be almost identical, which suggests that the alterations are independent from aspirin intolerance.

The presence of eosinophilic mucin influences the surgical outcome in nasal polyp patients

S. Vlaminck¹, T. Vauterin¹, H. Kawauchi², E. Prokopakis³, P. Hellings⁴, M. Jorissen⁴, F. Acke⁵, P. Van Cauwenberge⁵, C. Bachert⁵, P. Gevaert⁵

¹ ENT, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

² ENT, Shimane University Hospital, Shimane, Japan

³ ENT, Crete University Hospital, Crete, Greece

⁴ ENT, University Hospital Leuven, Leuven, Belgium

⁵ ENT, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-0706

Objectives

The influence on clinical outcome after ESS of eosinophils, eosinophilic mucin (EM) and Fungal Hyphae (FH) remain unclear.

Methods

A prospective monocenter study including 180 CRSwNP patients who were unresponsive to medical treatment and underwent ESS, was performed. All tissue and sinonasal secretions were microscopically examined for the presence of EM and FH. Patients were followed for a minimum of 7 years after surgery. Recurrence was defined according to the European position paper on rhinosinusitis and nasal polyps (EPOS).

Results

A total of 180 CRSwNP patients were included. Eosinophilic involvement was found in 142 (79.3%) of the patients. EM was found in 93 (52%) of the patients. In 33 patients (18.4%) EM and FH were present. For the three groups the mean age was 51.7y, 49.4y, and 45.9y respectively; allergy : 23%, 33%, and 44% respectively; for asthma 21%, 30%, and 53% respectively. Recurrence occurred in 20% of the eosinophilic group without EM ; 52% in the EM (+) and FH(-) group and 71% in the EM(+) and FH(+) group.

Conclusion

CRSwNP patients may be separated in a non-eosinophilic and eosinophilic subgroup. The presence of EM with or without FH provides valuable information regarding the increased likelihood of recurrent disease after ESS. This implicates the possible need of permanent sustained care in some subgroups with evident bad outcome.

Rhinoseptoplasty and growth of septum in children: justified or not

G. Kopacheva Barsova¹

¹ ENT dept., ENT Clinic University Hospital, Skopje, Macedonia

Abstract: ERS-0708

Objectives

Numerous observations on retarded growth of the nose after submucosus resection caused the above-mentioned restriction in surgery at a young age. If the septum is determined to be the reason of nasal obstruction in a childhood, a clinical dilemma arises. Recent basic researches, assessment the results of the thesis of negative influence of surgical trauma in growth and development of nasal and skull bone.

Methods

Some parts of the septum has been identified, which are very important in septal growth (praemaxilla area, ventrocaudal angle of quadrangular cartilage), as far for operative technique modification. Therefore rhinologic, orthodontic and cephalometric data should be essential elements in the follow-up of children after injury or surgery of the nose. Often, difficult septal deformations in children are followed with deformation of nasal pyramid (rhinoscoliosis, rhinolordosis). In those cases we can not solve septal pathology without nasal pyramid intervention in the same time and opposite.

Results

Clinical reports have not produced solid evidence for the statement that septal surgery has no negative effect on nasal growth or can serve for correcting abnormal growth. The functional and esthetic problems of the patient, however, mean a continuous stimulus for further clinical and experimental investigations.

Conclusion

In summary, the growth centers of the nose have to be avoided if possible; long term nasal issues will theoretically be minimized. If the surgeon replaces it, the cartilage of the nose becomes straighter but still intact.

Suppression of inflammatory cytokines from cultured epithelial cells by CAM and EM900 in chronic rhinosinusitis with nasal polyps cases

N. Wakayama¹, S. Matsune¹, K. Sekine¹, S. Yamaguchi¹, Y. Yosioka¹, K. Okubo²

¹ Otolaryngology, Nippon Medical School Musashikosugi Hospital, Kawasaki, Japan

² Otolaryngology, Nippon Medical School Hospital, Tokyo, Japan

Abstract: ERS-0709

Session: CRS Basic 2

Session Time: 24-06-14, 15:05

Location: Hall G

Chair person: R. Moesges

Presenting author: N. Wakayama

Objectives

Low-dose long-term 14-membered macrolide therapy (LDMT) by erythromycin (EM), clarithromycin (CAM) or roxithromycin (RXM) is now prevalent conservative therapy for chronic rhinosinusitis with/without nasal polyp in Japan.

This LDMT is considered to be based not on antibiotic but on anti-inflammatory effect of macrolides. However, the possibility of inducing macrolide-resistant bacteria by LDMT has ever been pointed out. EM 900 is a novel derivative of EM and is one of the most eligible macrolides which has only anti-inflammatory without antibiotic effect.

Anti-inflammatory effect by EM900 on the suppression of inflammatory cytokines was experimentally elucidated in comparison with CAM.

Methods

Nasal polyps were harvested from operation cases. Epithelial cells from nasal polyp were cultured. CAM or EM900 was administered into these cultured epithelial cells on the 4th day after culturing. Then, 48 hours later, IL-8 and vascular endothelial growth factor (VEGF) were estimated in culture medium by ELISA.

Results

EM900 and CAM significantly suppressed IL-8 production from inflamed epithelial cells of nasal polyps, and also suppressed VEGF production. It has been well known that IL-8 is a key cytokine for increasing neutrophil infiltration and that VEGF increases vascular permeability and induces endothelial cell-specific mitosis in inflammation. EM900 is thought to be one of promising anti-inflammatory drug.

Conclusion

A novel EM derivative EM900, as well as CAM, suppresses inflammatory cytokine production from cultured epithelial cells from nasal polyps in chronic rhinosinusitis with nasal polyp cases.

Sinusitis orbital and palpebral abscess complications

N. Balica¹, M. Poenaru¹, A.H. Marin¹, C. Doros¹, M. Dobre¹, H. Stefanescu¹

¹ ENT Department Timisoara, "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania

Abstract: ERS-0710

Objectives

Acute rhinosinusitis is a very common disorder that at one time or another affects most people. From a temporal standpoint acute rhinosinusitis lasts for up to 4 weeks. *Streptococcus pneumoniae* (20%-45%) and *Haemophilus influenzae* (22%-35%) are the predominant organisms in acute bacterial rhinosinusitis in adults. An external ethmoidectomy is an alternative approach for treating orbital complications of acute rhinosinusitis, such as a subperiosteal abscess.

Methods

We present the patient V.G. 22 years old which first addressed to the Infectious Diseases Department and 2 weeks later to the ENT Department with the following diagnosis: Left Fronto-Ethmoido-Maxillary Acute Bacterial Rhinosinusitis, Left Intraorbital Abscess with Exophthalmia, Left Upper Eyelid Abscess, Left Chemosis, Left Lower Eyelid Inflammatory Edema. The blood culture were negative.

Results

The treatment consisted in administration of i.v. broad spectrum antibiotics for 15 days. In ENT Department we performed left external ethmoidectomy, left intraorbital and upper eyelid abscesses drainage followed by Phenoxyethylpenicillin potassium 2g/day – 7 days.

Conclusion

Orbital and nasal signs and symptoms at one month after the surgical procedure were resolved, the patient presented a slight left proptosis and a mild divergent strabismus.

Internal carotid artery pseudoaneurysm with life-threatening epistaxis as a complication of deep neck space infection

Y. Ozono¹, S. Nishiike², T. Michiba², R. Imai¹, M. Nakamura², T. Kishikawa², Y. Tomiyama², T. Shikina¹, C. Masumura¹, H. Inohara¹

¹ Department of Otorhinolaryngology-Head and Neck Surgery, Osaka University Graduate School of Medicine, Osaka, Japan

² Department of Otorhinolaryngology-Head and Neck Surgery, Osaka Rosai Hospital, Osaka, Japan

Abstract: ERS-0711

Session: Complications in rhinology

Session Time: 25-06-14, 11:50

Location: Hall J

Chair person: N. Otori

Presenting author: Y. Ozono

Objectives

To summarize our experience in diagnosis and treatment of pseudoaneurysm of the cervical internal carotid artery (ICA) in patients with deep neck space infection.

Methods

Case presentation.

Results

Pseudoaneurysm of the cervical internal carotid artery (ICA) is a very rare, but it can occur as a potentially fatal complication of deep neck space infection. A 62-year-old male presented with left neck swelling, was sent to our emergency unit, and was referred to our department. A computed tomography revealed a large mass in the left parapharyngeal space and his illness was diagnosed as deep neck space infection. The mass displaced the left common carotid artery anteriorly and extended along the left ICA to the level of the petrous temporal bone. He underwent surgical drainage with neck incision and postoperative course was well for a while. On postoperative 21st day, however, he suddenly had massive epistaxis and required blood transfusion. A transnasal endoscopic examination found massive bleeding gushing out of the sphenoid sinus, and nasal packing was applied. Immediate intra-arterial angiography revealed two pseudoaneurysms at the petrous segment of left ICA, and the left ICA was embolized with coils. The man made an uneventful recovery after the embolization and was discharged with no complications such as hemiparesis, sensory or cognitive deficit.

Conclusion

Pseudoaneurysms of ICA after deep neck space infection can be associated with delayed and potentially fatal massive epistaxis. Prompt treatment along with accurate diagnosis is essential for successful management of these patients.

The role of macrolides in the treatment of chronic rhinosinusitis: an update on the evidence and safety

S. Toma¹, C. Theokli², N. Gibbins³, C. Hopkins²

¹ Otolaryngology, East Kent Hospitals NHS Trust, Ashford, United Kingdom

² Otolaryngology, Guy's and St Thomas' NHS Trust, London, United Kingdom

³ Otolaryngology, University Hospital Lewisham, London, United Kingdom

Abstract: ERS-0712

Session: Management of CRS

Session Time: 26-06-14 11:25

Location: Hall J

Chair person: TBC

Presenting author: S. Toma

Objectives

The European Position Paper on Rhinosinusitis recommends macrolides for patients with CRS without nasal polyps (CRSsNP) resistant to treatment with nasal corticosteroids and saline. Cardiotoxicity of macrolide antibiotics used in chronic airway diseases has been recently reported. The purpose of this paper is to review the evidence for the role of macrolides in CRS and potential toxicity in order to guide clinicians in the management of patients with CRS.

Methods

A review of the potential of macrolide antibiotics to modify the inflammatory response in CRSsNP, the associated risk of cardiotoxicity, and randomised controlled studies in long term treatment with antibiotics in CRSsNP was conducted.

Results

There is limited in vivo and vitro evidence of macrolide ability to affect the underlying pathophysiology in CRS. To date only 3 prospective clinical studies have evaluated the efficacy of macrolides in CRS. Azithromycin is associated with the least cardiac toxicity, erythromycin the greatest.

Conclusion

The mechanism of the efficacy of long-term low-dose macrolide therapy for chronic sinusitis is not fully understood. Further larger placebo randomised controlled trials in a defined CRS population are required.

Although the risk of QT prolongation under single antimicrobial therapy is low, we propose that otolaryngologists undertake a full anamnesis, in particular for coexisting cardiac disease, careful drug history and consider pre-treatment ECG. IgE levels may be useful to guide likely benefit. Balancing risks of cardiotoxicity and drug interactions with current available evidence, it would seem sensible to use clarithromycin to minimise risks.

18 years old patient with stage IV rhinopharyngeal carcinoma – case report

N. Balica¹, M. Poenaru¹, C. Doros¹, S. Lupescu¹, M. Dobre¹, E. Boia¹, H. Stefanescu¹

¹ ENT Department Timisoara, "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania

Abstract: ERS-0713

Objectives

Nasopharyngeal carcinoma is the predominant tumor type arising in the nasopharynx with cervical lymph nodes present in 60-90% of all cases at the time of presentation.

Methods

We present a case of non-keratinizing undifferentiated carcinoma of the nasopharynx with parapharyngeal and middle cranial fossa space involvement in a 18-year old male who presented recurrent otitis media and no lateral cervical lymph nodes.

In April 2013, the patient was admitted in City Emergency Hospital, ENT Department for recurrent right ear otitis media. Symptoms consisted in: mild conductive hearing loss, trigeminal V2 nerve anesthesia, right ear tinnitus, mild dysphagia, mild dysphonia, right hypoglossal nerve paralysis and right Claude Bernard Horner's syndrome.

Results

We performed rhinopharyngeal biopsy, right tympanotomy and grommet tube insertion.

The tissue specimens were processed in the routine histological technique. Subsequent immunohistochemical reactions for pan-cytokeratin AE1/AE3 and leucocytes common antigen were performed. The positivity of tumor cells for pan-cytokeratin established the final diagnosis of non-keratinizing undifferentiated carcinoma. The patient was addressed for radiochemotherapy.

Conclusion

The age of onset, the clinical signs and symptoms and advanced stage at presentation represents the particular aspects of the case.

The upregulation of CystatinSN in nasal epithelial cells among patients with allergic rhinitis

Y. Imoto¹, T. Tokunaga¹, S. Fujieda¹

¹ Department of Otorhinolaryngology Head & Neck surgery, University of Fukui, Fukui, Japan

Abstract: ERS-0714

Session: Rhinitis basic

Session Time: 24-06-14, 11:45

Location: Hall G

Chair person: TBC

Presenting author: Y. Imoto

Objectives

The number of patients who suffering from allergic rhinitis has been increasing, however, the mechanism had not been well understood. The aim of our study is to identify genes that related to allergic rhinitis.

Methods

8 patients who suffering from seasonal allergic rhinitis by Japanese cedar pollen (SAR-JC group) and 6 healthy subjects (Control group) were conducted in 2009. We collected samples from February to April in 2009 at the time of Japanese cedar pollen dispersion. Total RNA was extracted from nasal epithelial cells by brushing inferior turbinate and subjected to microarray analysis. Quantitative real-time RT-PCR was performed to verify gene expression pattern.

Results

Microarray analysis revealed that 32 genes altered significantly during allergen exposure. Among these genes, CystatinSN (CST1) was extremely higher in SAR-JC group than in control group. Immunohistochemical staining confirmed the expression of CST1 in nasal epithelial cells. Papain, JC pollen, IL-4, IL-13, and the combination of IL-25 and TSLP brought about CST1 mRNA expression in cultured nasal epithelial cells. We also demonstrated that zonaoccludens-1 (ZO-1) and claudin-1 were significantly decreased by incubation with papain and JC pollen compared with non-stimulation in cultured nasal epithelial cells, and supplementation with recombinant CST1 preserved both ZO-1 and claudin-1 mRNA expression as the same level as non-stimulation.

Conclusion

We identified CST1 as one of the candidate genes that related to allergic rhinitis. We suppose that CST1 contribute the blockage against protease allergen and maintain the barrier integrity of nasal mucosa by using allergic inflammation.

Rhinoseptoplasty-expected and unexpected psychological patient reactions

G. Kopacheva Barsova¹, V. Gerazova², S. Arsova²

¹ ENT dept., ENT Clinic University Hospital, Skopje, Macedonia

² Clinic of Psychiatry, University Clinic of Psychiatry Clinical Center- Skopje, Skopje, Macedonia

Abstract: ERS-0715

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:30

Chair person: K. Patel

Presenting author: G. Kopacheva Barsova

Objectives

Rhinoseptoplasty (RSP), especially cosmetic rhinoplasty ranks among the most commonly performed cosmetic surgical procedures. The surgeon, except skill, experience and knowledge of operative techniques, has to choose a psychological adequate patient for septo/rhinoplasty.

Methods

In this study, 140 patients with nasal septal deviation (deviation septinasi), alone or together with other nasal deformities were observed. The patients who were on operative list for RSP at the clinic for Ear, Nose and Throat, Clinical Center, Skopje were observed in the period of 4 years. In the patients who wanted to fill the psychological questioner their psychological reactions were taken in consideration. From 140 patients, 108 were filled the questioner. Our patients were psychologically followed by two standard psychological tests: Patients selection for septorhinoplasty and their psychological abilities ("Self-body image" questioner) and Brief Symptom Inventory (BSI) test which includes: somatization, obsessive-compulsive reactions, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid ideas, and those without symptoms were evidenced.

Results

Most of the patients thought that after rhinoseptoplasty their self-confidence arise, 32(29, 6%) expected changings in their lifes, few of them 9(8, 3%) thought that the environment will act different with them.

High statistically significant score shows patients who think that their self-confidence raised up after RSP. Dominant, 65, 7% have been operated before.

Conclusion

Conclusion: According to Patients selection for septorhinoplasty and their psychological abilities ("Self-body image" questioner) and Brief Symptom Inventory (BSI) test, the patients made a right decision about their aesthetic intervention, which was useful for the surgeon too.

Sinonasal symptoms and signs tell a little about the differential diagnosis of the acute rhinosinusitis

M. Hytönen¹, K. Blomgren¹, A. Pitkäranta¹

¹ Otorhinolaryngology, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-0716

Objectives

Acute rhinosinusitis is a very common disease but the diagnostic is still a challenge. The purpose of this study was to study whether the differential diagnostics of acute rhinosinusitis can be made based on symptoms and signs.

Methods

There were 265 patients having acute rhinosinusitis symptoms. The patients filled a questionnaire of their symptoms. The doctor filled a status form. A maxillary puncture was done if considered necessary for the diagnosis and/or the treatment. For the analysis the patients were divided in groups based by the diagnosis made by their doctor.

Results

Bacterial growth in 65/85 (76%) of the cases. In this group there were pus or mucosal oedema in the nasal cavity in 40.5 or 52.6 percent, respectively. Acute bacterial rhinosinusitis based on the symptoms and the signs without MSP was diagnosed in another 84 patients. Common cold was the diagnosis in 57 patients. The common symptoms in all three groups above were nasal blockage, headache, facial pressure, mucopurulent rhinorrhea, impaired sense of smell and watery nasal discharge. There were differences (48 – 90%) in the prevalence of these symptoms. However, the differences in symptoms and signs were so heterogeneous that it is difficult to use them in the clinical work for the differential diagnosis of acute rhinosinusitis.

Conclusion

Based on this study the differential diagnostics of the different acute rhinosinusitis can not be based only on the clinical symptoms and signs but also more objective methods should be included.

Sinusitis as a predisposing factor for intracranial abscesses; A retrospective study

A. Laulajainen-Hongisto¹, J. Jero², A.A. Aarnisalo²

¹ Department of Otorhinolaryngology and Skin and Allergy Hospital, Helsinki University Central Hospital, Helsinki, Finland

² Department of Otorhinolaryngology, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-0717

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:10

Location: Hall J

Chair person: C. Hopkins

Presenting author: A. Laulajainen-Hongisto

Objectives

Brain abscess formation is a rare, potentially life-threatening, complication of sinusitis that can lead to permanent neurological deficits. We have reviewed a large material of patients treated due to intracranial abscesses in order to find out what the predisposing medical conditions are.

Methods

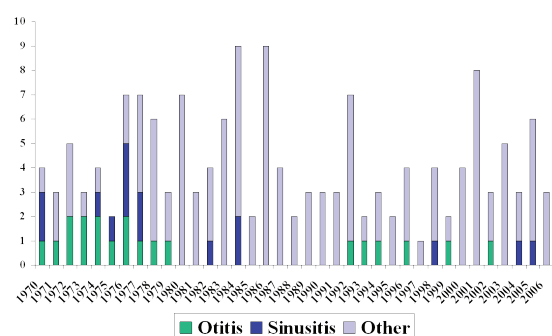
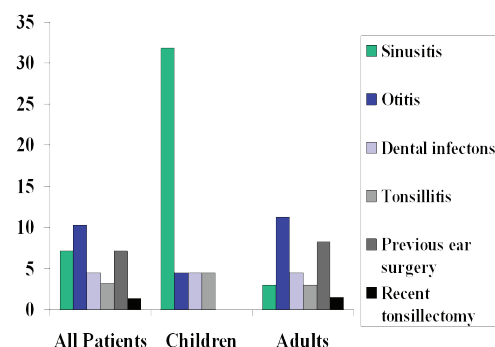
Clinical data has been collected from all patients treated for intracranial abscesses at the Helsinki University Central Hospital, Department of Neurosurgery. The study material has been collected between 1970 and 2006 and consists of 156 patients (108 male and 48 female), 14% (22) were children. The clinical data has been analysed according to the predisposing condition

Results

The most common predisposing conditions were otorhinolaryngological (ORL) and dental conditions in 33.5%, cardiac problems in 11.5%, trauma in 10.9% and immunosuppression in 3.2%. Dental infections were found in 4.5%. 10.3% had otitis and 3.2% tonsillitis as the predisposing condition. In adults, otitis was the most common ORL predisposing factor found in 11.2%. Sinusitis was the predisposing condition in 7.1% (11/156, 7 in children). 4 patients had maxillary-, 1 frontal- and 3 pansinusitis. 3 had unspecified sinusitis. In children sinusitis was the most common predisposing ORL factor in 31.8%. Otitis and sinusitis were more common predisposing factors in the beginning of the study period.

Conclusion

As a group ORL infections remain the most common predisposing factor for intracranial abscesses. In children sinusitis was the most common ORL infection found as a predisposing condition for brain abscess formation. This should be remembered when treating children with severe symptoms and sinusitis.



Immunocompetent patient with cerebrospinal fluid leakage associated with a fungal ball

S. Vlaminck¹, T. Vauterin¹, J. Casselman²

¹ ENT, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

² Radiology, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

Abstract: ERS-0718

Objectives

A 58-year immunocompetent old lady presented with intermittent spontaneous right sided watery rhinorrhea since 6 months. She had no other complaints and there were no traumatic or surgical events. Biochemical analysis of the fluid showed beta 2-transferrin positive. Other Immunocompetent patients are described showing neurological symptoms suspicious for invasive disease in relation to a silent fungus ball.

Methods

Immunocompetent patients have been selected with a fungus ball showing neurological symptoms with evidence for invasive disease. The diagnostic work is

Results

After intrathecal administration of 0.5 cc Gadolinium the exact localisation of the fistula was seen on a second MRI (4 and a half hours later) at the junction of the anterior ethmoidal roof and posterior wall of the frontal sinus. Prior to surgery intrathecal Fluoresceine was administered without a lumbar tap. At surgery a fungus ball in the right frontal recess was found. A leak of cerebrospinal fluid (CSF) with fluoresceine was observed through a mucosal and bony defect a few millimetres anterior to the right ethmoidal artery. The lesion was successfully closed endoscopically with a free mucoperiosteal graft.

Conclusion

We describe a spontaneous CSF-fistula at the skull base in association with a fungus ball not previously reported in literature. Other immunocompetent patients were selected with neurological symptoms suspicious for invasive disease based on a fungus ball presence. We present some evidence sustaining the potential invasive character of a fungus ball in immunocompetent patients.

Concordance between subjective nasal symptom and objective finding in South Korea: the 2010 Korea national health and nutrition examination survey

S.K. Chung¹, M.S. Jang¹, H.J. Dhong¹, H.Y. Kim¹, S.D. Hong¹, H.J. Cho¹

¹ Otorhinolaryngology-Head and Neck Surgery, Samsung Medical Center Sungkyunkwan University School of Medicine, Seoul, Korea

Abstract: ERS-0719

Session: Rhinitis, Clinical 1

Session Time: 25-06-14, 11:24

Location: Hall E

Chair person: J. Mulloj

Presenting author: S.K. Chung

Objectives

The relationship of nasal symptom, endoscopic finding and diagnosis was evaluated in Korean general population.

Methods

The data were obtained from the fifth Korean National Health and Nutrition Examination Survey (KNHANES V-1, 2010), which was a cross-sectional survey of general public of South Korea (n=8,473). All subjects underwent following otolaryngologic interviews: 1) the subjective symptoms of nasal obstruction, purulent nasal discharge, olfactory dysfunction and facial fullness; 2) endoscopic examination of purulent nasal discharge, nasal polyp (NP), and deviated nasal septal (DNS). Concordance of diagnosis for chronic rhinosinusitis (CRS) between clinical and epidemiologic criteria of European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS) 2012 was analyzed. Also, the prevalence and relevance with subjective nasal obstruction (SNO) of NP and DNS were evaluated.

Results

Among 6071 adults, epidemiologically, 158 (2.60%) subjects were diagnosed with CRS. However, only 47 (0.77%) were satisfied with the CRS clinical criteria of EPOS 2012. The prevalence of SNO, NP, and DNS were 5.09%, 2.54%, and 48.34%, respectively. DNS was observed in 57.37% of subjects with SNO and 47.85% of subjects without SNO. The prevalence of SNO was 6.05% of DNS group. NP was noted in 9.61% of subjects complaining SNO and 2.17% of subjects without SNO.

Conclusion

This study revealed that the epidemiologic prevalence may be higher than the clinical prevalence. Also, accustomed diagnosis should be avoided because the concordances between symptom and causative finding were quite low than expected.

Pharmacokinetics of nasally administered tobramycin, colistin sulphomethate sodium and a combination of tobramycin and colistin sulphomethate sodium

M.C. Berkhout¹, A.J. van Velzen², D.J. Touw³, B.M. de Kok⁴, W.J. Fokkens⁵, H.G.M. Heijerman¹

¹ Pulmonary Diseases, Haga Hospital, Den Haag, Netherlands

² Central Hospital Pharmacy, Apotheek Haagse Ziekenhuizen, Den Haag, Netherlands

³ Clinical and Hospital Pharmacy, University Medical Center Groningen, Groningen, Netherlands

⁴ Otorhinolaryngology, Haga Hospital, Den Haag, Netherlands

⁵ Otorhinolaryngology, Academic Medical Center Amsterdam, Amsterdam, Netherlands

Abstract: ERS-0720

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 17:09

Chair person: R. Kamel

Presenting author: M.C. Berkhout

Objectives

In Cystic Fibrosis (CF) the paranasal sinuses can constitute a niche for bacteria which can migrate to the lungs and cause lung infections. Nasal administration of antibiotics may be effective, but safety has to be established first.

Aim: Investigation of pharmacokinetics (PK) of nasally administered tobramycin (T), colistin sulphomethate sodium (CSS) and a combination of both drugs using systemic absorption, expressed as % absorbed, as surrogate for safety. In addition, tolerability of the nasal irrigations was examined.

Methods

Ten adult CF patients performed three different nasal irrigations: 300 mg of T, 2 million IU of CSS and 300 mg of T combined with 2 million IU of CSS. Individual PK parameters were calculated and assimilated with T and CSS serum values using a computerized CF-based population model. Maximum serum level (C_{max}), trough serum level (C_{trough}) and bioavailability (F) were calculated. $T C_{max} > 30$ mg/L and $C_{trough} > 0.5$ mg/L were considered to be toxic. For colistin toxic levels are not known. Tolerability was measured using a Visual Analog Scale (VAS).

Results

Following T and combined irrigations only 2 patients had detectable tobramycin serum levels with a $C_{max} < 0.06$ mg/L and C_{trough} values < 0.015 mg/L. T bioavailability was approximately 0.76% for one patient and 0.27% for the other patient. The results on colistin pharmacokinetics are expected in February 2014. Tolerability for all irrigations was high, with the tolerability of CSS being the highest.

Conclusion

Nasal irrigations with T and a combination of T and CSS resulted in safe T serum levels and were well tolerated.

Temporal bone pneumatization in cystic fibrosis: a correlation with genotype?

M. Berkhout¹, C.J. van Rooden², R.C. Aalbers³, L.H. el Bouazzaoui¹, W.J. Fokkens⁴, E. Rijntjes³, H.G.M. Heijerman¹

¹ Pulmonary Diseases, Haga Hospital, Den Haag, Netherlands

² Radiology, Haga Hospital, Den Haag, Netherlands

³ Otorhinolaryngology, Haga Hospital, Den Haag, Netherlands

⁴ Otorhinolaryngology, Academic Medical Center Amsterdam, Amsterdam, Netherlands

Abstract: ERS-0721

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 16:51

Chair person: R. Kamel

Presenting author: M. Berkhout

Objectives

Paranasal sinus pneumatization in patients with Cystic Fibrosis (CF) is less extensive compared to the general population and seems correlated to CF genotype. Interestingly, in CF patients temporal bone pneumatization is more extensive compared to the general population and middle ear pathology is generally uncommon in CF. It is debated whether temporal bone pneumatization is influenced environmentally or genetically. The aim of the present study was to investigate pneumatization of the temporal bone in patients with CF and to correlate this with genotype and paranasal sinus volume.

Methods

In 104 adult CF patients computed tomography of the temporal bone and the paranasal sinuses was performed. Temporal bone pneumatization was graded using a validated scoring system. Patients were divided into two groups, mild and severe CF, based on their mutations in the Cystic Fibrosis transmembrane conductance regulator gene.

Results

Of the 31 patients with mild CF 71% had extensive temporal bone pneumatization and of the 73 patients with severe CF 82% had extensive pneumatization of the temporal bone. Temporal bone pneumatization did not differ significantly for CF genotype and TBP was not correlated to paranasal sinus volume.

Conclusion

Whereas paranasal sinus pneumatization in CF patients seems related to CF genotype, amongst other influencing factors, this study showed no correlation between temporal bone pneumatization and CF genotype. Temporal bone pneumatization was not correlated to paranasal sinus volume. Hypothetically in CF, pneumatization of the temporal bone is under a different influence than the paranasal sinus pneumatization.

Therapeutic evaluation on radiofrequency coagulation over peripheral branches of the posterior nasal nerve in patients with severe allergic rhinitis

W.Y. Su¹

¹ Otorhinolaryngology Head & Neck Surgery, Taipei Tzu Chi Hospital Buddhist Tzu Chi Medical Foundation, New Taipei City, Taiwan

Abstract: ERS-0722

Session: NAR

Location: Hall G

Time: 23-06-14, 11:42

Chair person: L. Van Gerven

Presenting author: W.Y. Su

Objectives

Posterior nasal valve (PNV) innervates inferior turbinate (IT), posterior half of the middle turbinate (MT) and nasal septum; and resection of it can significantly decrease nasal hypersecretion, hypersensitivity, and sneezing. Radiofrequency coagulation of inferior turbinate (RFIT), a less invasive and complex procedure, not only decreases nasal obstruction via reduction the volume of hypertrophic nasal mucosa, damage of PNV during the procedure also results in comparable therapeutic effects as transnasal resection of PNV. This study aims to evaluate the effects of radiofrequency coagulation over peripheral branches of PNV (RFIT-PNV) in patients with severe AR.

Methods

Between June 2012 and June 2013, 40 patients with severe AR who received RFIT at Taipei Tzu-Chi Hospital were retrospectively analyzed. There were 20 patients in each group with male to female ratio equaled one. The bipolar radiofrequency electrode was introduced into the nasal mucosal at ant, middle, and posterior part of IT (10W, 5 seconds) in RFIT group. Further coagulation at nasal mucosa between sphenopalatine foramen and the posterior ends of middle and inferior turbinate were performed in RFIT-PNV group. Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) was used as evaluation tool preoperatively and 6-months postoperatively.

Results

There was no significant difference in mean age and RQLQ scale preoperatively. Both groups had significant improvement in all RQLQ mean scale. The severity of sneezing and rhinorrhea appeared to be less in RFIT-PNV group ($p > 0.05$).

Conclusion

RFIT-PNV is an effective surgical procedure for patients with severe AR and appears to further reduce the severity of nasal symptoms then RFIT alone.

Topical cocaine and adrenaline gel applied to nasal mucosa, a local audit of clinician awareness of maximum safe dose

R. Costello¹, A. Murphy², A. Hyde³, B. Symonds³

¹ ENT, Singleton Hospital, Swansea, United Kingdom

² Anesthetics, Singleton Hospital, Swansea, United Kingdom

³ College of Medicine, Swansea University, Swansea, United Kingdom

Abstract: ERS-0723

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:54

Chair person: S. Reinartz

Presenting author: R. Costello

Objectives

Establish the awareness among ENT surgeons and anaesthetists working in local ENT theatres of the safe maximum dosage of cocaine 5% and adrenaline 1:2000 gel that can be applied topically to nasal mucosa.

Methods

In a single urban hospital setting, senior ENT surgeons and anaesthetists working in ENT theatres were given a simple questionnaire to identify individual knowledge of the safe maximum dosage of topical cocaine 5% with adrenaline 1:2000 gel that may be applied to nasal mucosa. The questionnaire also ascertained where they had gathered this information.

Results

Of eighteen clinicians surveyed (9 ENT surgeons and 9 anaesthetists) only two identified the correct safe maximum dosage of cocaine/adrenaline gel. Sources of information were widespread, ranging from 'taught knowledge' to various textbooks.

Conclusion

Staff awareness of a safe maximum dose of cocaine/adrenaline gel in this hospital setting was poor, with most clinicians overstating the safe dose. Our findings raise the issue of the efficacy of use for cocaine/adrenaline gel, and whether an alternative agent with a more established safe dose should be considered.

Intranasal corticosteroid treatment failure in allergic rhinitis: assessment of unmet need by measuring shift to multiple therapies

D. Price¹, G. Scadding², C. Bachert³, H. Saleh⁴, S. Nasser⁵, V. Carter⁶, J. Von Ziegenweidt⁷, D. Ryan⁸

¹ Division of Applied Health Sciences, University of Aberdeen, Aberdeen, United Kingdom

² Otolaryngology, Royal National Throat Nose and Ear Hospital, London, United Kingdom

³ Department of Oto-Rhino-Laryngology, University of Ghent, Ghent, Belgium

⁴ Consultant Rhinologist/Facial Plastic Surgeon, Charing Cross & Royal Brompton Hospitals, London, United Kingdom

⁵ Respiratory (Chest) Allergy & Immunology, Addenbrookes Hospital, Cambridge, United Kingdom

⁶ Research, Research in Real Life Ltd, Cambridge, United Kingdom

⁷ Data, Research in Real Life Ltd, Norfolk, United Kingdom

⁸ Allergy and Respiratory Research Group, University of Edinburgh, Edinburgh, United Kingdom

Abstract: ERS-0724

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:37

Chair person: C. Bachert

Presenting author: D. Price

Objectives

Intranasal corticosteroids (INS) are the most effective allergic rhinitis (AR) treatment.¹ However, they provide insufficient symptom relief for some patients. The burden of this pharmacologic insufficiency has not been fully elucidated.

In this study we (1) numerically describe INS treatment-failure in AR-patients in real-life, and (2) describe how those patients with insufficient symptom-control are currently managed.

Methods

A retrospective database study using the Optimum Patient Care Research Database. Patients included in the analysis had a recorded AR diagnosis and ≥ 1 AR therapy prescription during 01.03.10 to 31.08.10. Here we focus on those AR patients for whom an INS was the first prescription.

Results

In all, 2197 AR patients were included. INS proved insufficient for 36.1% of these patients; 32.4% (n=712) required an add-on therapy and 3.7% (n=82) changed INS AND received additional therapy. Of patients who received an add-on to their INS, 75.7% received one, 22.2% received two and 2.1% received 3 add-ons. The most common single medications added on to existing INS therapy were anti-histamines (AH) (77.6% of patients), eye drops (9.5%), systemic corticosteroids (9.3%) and leukotriene receptor antagonists (2.8%).

Conclusion

INS provide insufficient symptom control in one-third of AR patients visiting their doctor. Combined use of INS and oral AH is not recommended by ARIA due to lack of clinical data or proven non-superiority over INS monotherapy. There is a need for a faster, more effective AR therapy with proven superiority over current gold-standard therapy in direct comparison head-to-head studies.

1. Bousquet J et al.. Allergy 2008;63(suppl 86):8-160.

Control of local inflammation is useful for olfactory nerve recovery following injury

M. Kobayashi¹, K. Tamari¹, T. Miyamura¹, K. Takeuchi¹, R.M. Costanzo²

¹ Department of Otorhinolaryngology-Head and Neck Surgery, Mie University Graduate School of Medicine, Tsu, Japan

² Department of Physiology and Biophysics, Virginia Commonwealth University School of Medicine, Richmond, USA

Abstract: ERS-0725

Session: Smell disorders, diagnosis and treatment

Location: Hall C

Time: 23-06-14, 10:18

Chair person: D. Simmen

Presenting author: M. Kobayashi

Background

The olfactory system has a remarkable capacity for neural regeneration and recovery following injury. Clinically, however, prognosis of olfactory dysfunction by head injury is reported to be poor. We investigated to find factors that influence the degree of recovery.

Methods

First, using transgenic (OMP-tau-lacZ) mice, we studied mild and severe injury models obtained by performing olfactory nerve transection (NTx) using flexible and rigid blades. Histological assessment was made for regenerating olfactory nerves (ON), astrocytes and macrophages.

Results

With mild injury we observed less injury-associated tissue and better ON regeneration. At 42 days recovery, more astrocytes and macrophages were observed with severe injury. Dexamethazone sodium phosphate (DXM)- or anti-IL-6 receptor antibody-injected mice with severe injury showed less injury-associated tissue, better ON recovery and fewer astrocytes and macrophages. Additionally, patients with head injury usually discover their olfactory dysfunction several weeks or months after the injury, which may be a factor in poor recovery. Therefore, we examined the term of effect of anti-inflammatory treatment. With severe injury models, DXM injection was started at 7, 14, 28 and 42 days after the NTx. DXM was effective until 7 days but ineffective 14 days or longer after head injury.

Conclusion

These results indicate that ON recovery depends on the severity of injury and that treatment with anti-inflammatory drug is effective in improving recovery outcome during an acute phase of head injury, but not in a chronic phase, suggesting that different therapeutic strategy from inhibition of inflammation may be needed for traumatic olfactory dysfunction in a chronic phase.

Regional effect of 1,25-dihydroxyvitamin D3 in allergic rhinitis mouse model

J. Shin¹, D. Kim², B. Lee³

¹ SoonChunHyang University Seoul Hospital, Department of Otorhinolaryngology - Head and Neck Surgery, Seoul, Korea

² Seoul National University College of Medicine, Department of Otorhinolaryngology-Head and Neck Surgery, Seoul, Korea

³ Soonchunhyang University College of Medicine, Department of Otorhinolaryngology-Head and Neck Surgery, Seoul, Korea

Abstract: ERS-0726

Session: Treatment Of Allergic Rhinitis

Location:

Time:

Chair person:

Presenting author: J. Shin

Objectives

The active form of vitamin D (1,25-Dihydroxyvitamin D3) has an essential role in calcium homeostasis and normal mineralization of bone. Recently, many studies identified additional roles of Vitamin D in the immune system as having potential immunomodulatory activity. However, there is controversy in the literature regarding the role of vitamin D in allergic inflammation. The objective of this study was to establish the effect of 1,25-Dihydroxyvitamin D3 on allergic symptoms and changing levels of inflammatory and anti-inflammatory cytokines by using a murine model of allergic rhinitis.

Methods

An ovalbumin (OVA)-sensitized and –nasally challenged mouse model of allergic rhinitis was established. High- and Low-dose 1,25(OH)D3 (20ng vs. 0.2 ng) were administered intranasally 3 hours before each nasal challenge, and multiple parameters of allergic response were measured.

Results

Topically applied 1,25(OH)D3 reduced allergic symptoms, total IgE and OVA-specific IgE level in serum. However, mice administered with 20 ng of 1,25(OH)D3 showed weight loss significantly and this finding might associated with toxicity of hypervitaminosis D and low-dose 1,25(OH)D3 increased IL-5 production in the draining LN and eosinophil inflammation in the nasal tissue.

Conclusion

This study shows that topically applied 1,25(OH)D3 attenuated allergic symptoms, total and OVA-specific IgE levels even though that induced eosinophil inflammation in the nasal tissue. And we speculate that the active form of vitamin D seems to reduce antigen-specific response via inhibition of B-cell dependent allergic immune mechanism.

Insertion of a second nasal pack in epistaxis - a significant indicator for requirement of definitive surgery

V. Varadarajan¹, O. Mirza¹, E. Ridyard², S. Loughran³

¹ Otolaryngology Head and Neck Surgery, North West Higher Surgical Training Scheme, Manchester, United Kingdom

² Otolaryngology Head and Neck Surgery, University of Manchester, Manchester, United Kingdom

³ Otolaryngology Head and Neck Surgery, Manchester Royal Infirmary, Manchester, United Kingdom

Abstract: ERS-0727

Session: Epistaxis

Session Time: 26-06-14 09:57

Location: Hall J

Chair person: T. Van Zele

Presenting author: V. Varadarajan

Objectives

To quantify the significance of second pack insertion in epistaxis patients, as a measure of requirement for theatre.

Methods

A one year retrospective analysis of 100 patient notes was undertaken. After application of exclusion criteria (patients treated as outpatients, inappropriate documentation and patients transferred from peripheral hospitals) a total of n=34 patients were included. Of the many variables measured, specific credence was given to requirement of second packing and requirement for definitive management in theatre.

Results

Of all patients, 88.5% required packing. A further 25% (7/28) of this group had a second pack for cessation of recalcitrant haemorrhage. Of the second pack group, 85.7% (6/7) ultimately required definitive management in theatre. One sample t-test showed a statistically significant correlation between patients with a second nasal pack and requirement for theatre ($p < 0.001$).

Conclusion

Indications for surgical management for epistaxis vary from centre to centre. The results of this study show that insertion of a second pack is a statistically significant indicator of requirement for definitive management in theatre.

The influence of balloon sinuplasty and minimal endoscopy sinus surgery on antral mucociliary clearance

M. Rautiainen¹, A.J. Bizaki¹, J. Numminen¹, R. Taulu¹

¹ Otorhinolaryngology, Tampere University Hospital, Tampere, Finland

Abstract: ERS-0728

Session: Balloon sinuplasty and other developments

Time: 24-06-14, 09:48

Location: Hall G

Chair person: A. Leunig

Presenting author: M. Rautiainen

Objectives

To find out the effect minimal invasive sinus surgery on antral mucociliary clearance and do it correlate with symptom improvement.

Methods

30 patients with chronic rhinosinusitis without severe findings in the CT-scans, were randomized in two operative groups: Endoscopy sinus surgery and Balloon sinuplasty. The mucociliary clearance of maxillary sinuses was measured before and 6 months after the operation. To measure the mucociliary clearance, a drop of albumin labeled with ^{99m}Tc, methylene blue dye and saccharine mixture was applied through puncture needle into the bottom of both maxillary sinuses at the same time. The clearance of tracer in both sinuses was monitored at from anterior view for 40 min with gamma camera. The appearance of dye in the nasal cavity and the oropharynx was followed with endoscope.

Results

There was an objective improvement in the quality of life as a decrease in SNOT22 in both groups without significant difference. The use of antibiotics decreased in both groups. We did not find any clear correlation with antral mucociliary clearance and the improvement of symptoms. Mucociliary clearance of ^{99m}Tc and the time to see the dye in nasal cavity correlated very well. The taste of sweet saccharine in the mouth was not as reliable for the measurement of ciliary transport rate from maxillary sinus.

Conclusion

There was no difference between the groups. The antral mucociliary clearance did not correlate with the improvement of symptoms. The time to see dye in the middle meatus with endoscope proved to be a reliable method to measure antral mucociliary clearance.

Sinonasal surgical procedures: whom to blame for failure?

Y. Nour¹

¹ Department of Otolaryngology, Faculty of Medicine, Alexandria, Egypt

Abstract: ERS-0729

Session: Complications in rhinology

Session Time: 25-06-14, 12:05

Location: Hall J

Chair person: N. Otori

Presenting author: Y. Nour

Objectives

The past three decades have witnessed a marked revolution in the spectrum of sinonasal surgical procedures. However, there is still a considerable percentage of patients who reported failure of their sinonasal procedures because of persistent or recurrent symptoms. Analysis of potential causes for failure was undertaken.

Methods

The records of 105 patients who presented to the author over a period of 5 years with persistent or recurrent symptoms following previous sinonasal surgical procedures were reviewed.

Results

Two groups were identified; Group A (78 patients, 74.3%) in whom failure could be attributed to improper surgical technique. Factors identified included: 1. Persistent deviation of dorsal/caudal septum \pm nasal valve collapse, 2. Synechiae between the septum and lateral nasal wall, 3. Partial or complete resection of the inferior turbinate with manifestations of empty nose syndrome, 4. Lateralization of the middle turbinate with obliteration of the ethmoid cavity, middle meatal antrostomy and/or frontal recess area. 5. Improper middle meatal antrostomy (missed natural ostium, double ostium, or unnecessary wide antrostomy, and 6. Residual ethmoidal/frontal cells with neo-osteogenesis. Group B (27 patients, 25.7%) in whom failures were mostly related to the nature of the initial pathology. Further analysis revealed potential contributing factors mainly noncompliance of some patients to the recommended postoperative medications.

Conclusion

Successful outcome following sinonasal surgery requires adequate knowledge of the anatomy and physiology of the sinonasal area, appropriate training and proper preoperative planning. In certain conditions, patients should be informed that a targeted postoperative medical therapy is an integral part of surgical management.

Aetiology, management, and outcome of 483 patients with nasal fracture

S. Hammarén-Malmi¹, S. Vehmanen¹, S. Paananen¹, A. Mäkitie¹, K. Blomgren¹

¹ Department of Otorhinolaryngology Head and Neck Surgery, Adnan Menderes University Faculty of Medicine, Aydin, Turkey

Abstract: ERS-0730

Session: Rhinoplasty and facial plastic surgery

Session Time: 23-06-14, 14:45

Location: Hall E

Chair person: K. Patel

Presenting author: S. Hammarén-Malmi

Objectives

Nasal fractures are common but their management remains controversial. The aim of this study was to investigate the aetiology, management and outcome of these traumas at a tertiary referral centre.

Methods

All patients with a closed nasal fracture who were managed at the Department of Otorhinolaryngology - Head and Neck Surgery, Helsinki University Central Hospital, Helsinki, Finland during 2005 were retrospectively reviewed. All patients had a minimum follow-up time of six years. The referral area comprises 1.6 million people.

Results

There were 483 patients with a median age of 27 years (range, 0 to 100) and most were male (328, 67,9%). Causes of the injuries were assaults (43,3%), sports (23,8%), falls (21,3%), other accidents (5,8%), work related accidents (2,9%), and traffic accidents (2,9%). Alcohol was related to 11,4% of the injuries. Radiological investigations were used in a majority of patients (59,6%). Closed reduction was performed for 333 (68,9%) and corrective surgery for 28 (5,8%) patients. The average time to reduction was 5,6 days (range, 0 to 32) after the injury. Almost all primary operations in adults (229, 95,0%) were performed under local anaesthesia. Re-operation was performed for 19 (5,7%) patients after a median of 12 days (range, 6 to 22) after the trauma. The number of reoperations had no relation to the delay of primary correction.

Conclusion

Local anaesthesia seems feasible in patients with isolated nasal fracture. Delay of closed reduction had no correspondence to the number of re-operations or corrective surgery.

Endoscopic assisted septoplasty: surgical technique and outcome

Y. Nour¹

¹ Department of Otolaryngology, Faculty of Medicine, Alexandria, Egypt

Abstract: ERS-0731

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 12:30

Chair person: S. Carrie

Presenting author: Y. Nour

Objectives

Endoscopic technology has revolutionized the visualization within the confines of the sinonasal cavity. The aim of this study is to evaluate the role of the endoscope during septoplasty either as a primary or an adjuvant tool.

Methods

A series of 132 septoplasty procedures was reviewed including 38 primary endoscopic septoplasty procedures for localized septal deviations/spurs (Group A) and 94 procedures where the endoscope was utilized as an adjuvant tool during conventional septoplasty (Group B).

Results

The indication of septoplasty was nasal airway obstruction in all patients. Concomitant procedures included coblation assisted inferior turbinate reduction (56%) and endoscopic sinus surgery (17.4%). Controlled incision of the septal mucosal flap overlying the deviation was performed in 65 patients of Group B, suturing was done in all cases for proper approximation of mucosal flaps. Nine patients (6.8%) reported persistent symptoms due to either residual dorsal septal deviation or nasal valve collapse. Complications included septal hematoma (1.5%), asymptomatic septal perforation (0.75%) and transient dental paresthesia (15%).

Conclusion

Several authors reported the primary use of nasal endoscopy in the resection of discrete septal pathologies through a limited flap dissection. Moreover, the endoscope can be utilized during conventional septoplasty. It provides better magnified view during the procedure with complete visually controlled elevation of mucosal flaps especially in the region of the maxillary crest. Furthermore, it provides a detailed view of the posterior portion of the septal skeleton with clear identification of the role of the sphenoidal process of the septal cartilage as an important factor in the exacerbation of septal deviation.

Endoscopic surgery of posterior sinuses; the experience of ENT department Cluj- Napoca, RO

M. Cosgarea¹

¹ University ENT Department, Emergency County Clinical Hospital Cluj Napoca, CLUJ-NAPOCA, Romania

Abstract: ERS-0732

Objectives

The endoscopy has succeeded to revolutionize the diagnosis and the surgical techniques on the posterior sinuses, dangerous areas, difficult to approach from anatomical point of view. The modern imagistic examinations have increased the safety of the surgical act and also the postinterventional results are better.

Methods

Our clinic's surgical team has a 5 years experience (517 cases) in the endoscopical treatment of the posterior sinuses' inflammatory diseases, mostly localized in the posterior ethmoid and in most of cases also in the anterior ethmoid; the sphenoid sinus was affected more rarely, only in 115 cases. The pituitary gland adenoma tumors have been approached in 11 cases, each of them showing a very good evolution.

Results

Chronic inflammatory diseases, due to the endoscopic control were more often solved without endangering the functions of the related areas, with no infectious complications and so, the long term postsurgical evolution has been, in most of the cases, very good. The tumors localized in these sites, especially those of the pituitary gland were able to be approached endoscopically (depending on their size) and the results of this type of surgery were very good, too.

Conclusion

The anatomical and surgical experience of the surgeon assure:

- to increased rate of the therapeutical success,
- to decrease the complications
- allows performing targeted procedures on the affected sinus.

Improved visualization for parapharyngeal extension of sino-nasal tumor by utilizing angle endoscope and robotic system-assisted surgery

B. Roongpuvapaht¹, K. Tanjararak¹, W. Cheewareungroj¹, T. Bhongmakapat¹, A. Hansasuta²

¹ Otolaryngology Head and Neck Surgery, Ramathibodi Hospital Mahidol University, Bangkok, Thailand

² Surgery, Ramathibodi Hospital Mahidol University, Bangkok, Thailand

Abstract: ERS-0733

Session: Skull base surgery 3

Session Time: 26-06-14, 09:45

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: B. Roongpuvapaht

Objectives

Sino-nasal tumor with parapharyngeal extension is not common. However, in advance stage, it can extend via infratemporal fossa into parapharyngeal space. Because of anatomical obscuration that hinders access to the tumor, endonasal technique cannot easily reach this particular area. Its narrow corridor results in difficulty for access. Surgical approaches can be performed by transoral route, neck approach or mandibular split. These approaches, however, still limit rostral view into the infratemporal fossa or sinus cavities. Hence, these conventional approaches do not suit for the sino-nasal mass with extension into parapharynx. The authors demonstrate the enhanced view by using angle endoscope and robotic system to assist surgery in this area.

Methods

Video clips of three cases are shown. They were surgeries from sino-nasal tumors that extended to parapharynx. First, standard endonasal surgeries were done in all cases. Subsequently, they were followed by transoral angle endoscopy or robotic system application for the parapharyngeal part.

Results

Endoscopy assisted transoral approach was done in 2 cases. They were recurrent juvenile angiofibroma and Ewing sarcoma with extension into parapharynx. The third patient had meningioma, transoral approach was performed with robotic system.

Conclusion

Via transoral route, endoscopy or robotic system assisted surgery for sino-nasal tumor that extended to parapharynx can be done with superior visualization. Utilizing this technique, improved magnification along with rostral view significantly aids surgical resection.

Symptom comparison between chronic rhinosinusitis subtypes: data from the chronic rhinosinusitis epidemiological study (CRES)

K. Owden¹, J. Woods², C. Davis-Husband², S. Erskine¹, A. Clark¹, C. Hopkins³, J. Wilson⁴, C. Philpott¹

¹ Norwich Medical School, University of East Anglia, Norwich, United Kingdom

² ENT, James Paget University Hospital, Great Yarmouth, United Kingdom

³ ENT, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

⁴ ENT, Freeman Hospital, Newcastle, United Kingdom

Abstract: ERS-0734

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:00

Location: Hall J

Chair person: P. Lekakis

Presenting author: K. Owden

Objectives

The European Position Paper on Chronic Rhinosinusitis (CRS) and Nasal Polyps (EPOS) classifies the condition according to the absence (CRSsNP) or presence (CRSwNP) of nasal polyps. The clinical impression of otolaryngologists is that patients with CRSsNP more often complain of facial pain whilst CRSwNP patients complain of obstruction and hyposmia. The aim is to establish if there is a statistically significant variation in symptoms between patients from different CRS subtypes.

Methods

Data was obtained from the recently completed Chronic Rhinosinusitis Epidemiological Study (CRES), which incorporated study-specific questions, SNOT-22 and SF-36 questionnaires. These questionnaires were distributed to patients with CRS (defined by EPOS guidelines) attending ENT clinics across the UK between 2007 and 2013. Controls were recruited for their lack of sinonasal complaints and no history of hospitalisation in the preceding 12 months.

Results

Completed questionnaires were collected from 1524 participants; subgroups comprised CRSsNP (n=573), CRSwNP (n=664), allergic fungal rhinosinusitis (n=53) and controls (n=234). The mean SNOT-22 total score was 41.5 in CRSwNPs and 41.2 in CRSsNPs. The average SNOT 22 Symptom scores of dizziness (1.23), otalgia (1.03) and facial pain (1.91) were statistically significant symptoms of CRSsNP ($p < 0.05$), whereas the average score of hyposmia (3.37) was the lone statistically significant symptom of CRSwNP. SNOT 22 symptom groupings for CRS subtype comparison (nasal, ear/facial, sleep/concentration and mood/affect) were not statistically significant ($p > 0.05$).

Conclusion

These results suggest that CRSsNP patients were significantly more likely to be dizzy, have otalgia and facial pain. Conversely, CRSwNP patients were more likely to suffer hyposmia as a predominant symptom.

Can oral steroids be a better adjunct to surgery in allergic fungal rhinosinusitis?

A. Shankar¹, N. Panda², A. Chakrabarti³, A. Gupta², A.S.I.M. Das⁴

¹ Otolaryngology Head And Neck Surgery, All India Institute Of Medical Sciences Patna, Patna, India

² Otolaryngology Head And Neck Surgery, Pgimer- Chandigarh, Chandigarh, India

³ Medical Microbiology, Pgimer- Chandigarh, Chandigarh, India

⁴ Pathology, Pgimer- Chandigarh, Chandigarh, India

Abstract: ERS-0735

Session: Fungal sinusitis

Location: Hall E

Time: 26-06-14 11:33

Chair person: S. Reinartz

Presenting author: A. Shankar

Objectives

To compare the efficacy of various treatment modalities in allergic fungal rhinosinusitis and the outcome with each treatment modality at six months follow up period.

Methods

This was a prospective randomized study involving 102 consecutive patients with allergic fungal rhinosinusitis, who attended our tertiary care centre over last one year. The records of 78 patients, who were available for six months follow up period, were finally analysed to compare treatment outcome. All the patients post endoscopic sinus surgery were randomized into three groups viz. Group TS (only topical steroids), Group OS (only oral steroid) and Group CS (both topical and oral steroids). The patients were followed up at six weeks, twelve weeks and six months with post operative nasal endoscopy, CT paranasal sinus, and symptomatic scoring using VAS. Recurrence of disease assessed by various parameters.

Results

Patients taking oral steroids had the least recurrence (2 out of 18, 6.7%) which was statistically significant ($p < 0.001$). Groupwise analysis, by using Chi-square test in terms of recurrence revealed significant difference in between group TS and group OS ($p < 0.05$) whereas the difference between rest of groups were not significant ($p > 0.05$).

Conclusion

Oral steroids appeared to be the most effective postoperative adjuvant medical treatment in terms of less recurrence and disease free period at six months follow up.

Usefulness of unirhinal olfactory tests for the early diagnosis of Alzheimer's disease

C. Huart¹, A. De Bont¹, P. Rombaux¹, A. Ivanoiu², A. Mouraux³

¹ Department of Otorhinolaryngology, Cliniques universitaires Saint Luc, Brussels, Belgium

² Department of Neurology, Cliniques universitaires Saint Luc, Brussels, Belgium

³ Institute of Neuroscience, Université catholique de Louvain, Brussels, Belgium

Abstract: ERS-0736

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:00

Chair person: P. Rombaux

Presenting author: C. Huart

Objectives

Olfactory dysfunction is one of the earliest signs of Alzheimer's disease (AD), and is already present in patients with mild cognitive impairment (MCI). Based on the assumption that early neurodegeneration in AD is asymmetrical and that olfactory input is primarily processed ipsilaterally, we proposed that unirhinal assessment of olfaction may be useful in the evaluation of MCI patients.

Methods

Olfactory function of 13 MCI patients with positive amyloid PET, 13 aged-matched controls (AC) and 13 patients with postinfectious olfactory loss (OD) was assessed unirhinally using (1) psychophysical test (Sniffin' Sticks test) and (2) the recording of olfactory event-related potentials. Asymmetry in olfactory function was computed as the difference between the "best" and the "worse" nostril. Moreover, we performed a psychophysical and electrophysiological assessment of trigeminal and auditory functions. Electrophysiological responses were analyzed using a time-frequency analysis.

Results

Psychophysical evaluation showed that MCI patients exhibit a marked asymmetry of global olfactory function that is significantly greater than the asymmetry in AC and OD. Furthermore, this asymmetry was able to efficiently discriminate between MCI and AC (sensitivity: 85%, specificity: 77%), and between MCI and OD (sensitivity: 85%, specificity: 70%). Trigeminal and auditory psychophysical testing did not show any difference between the three groups, indicating a specific impairment of olfactory function. Moreover, EEG results confirmed that MCI patients have a relatively specific olfactory impairment.

Conclusion

MCI patients have a marked asymmetry of olfactory function. Unirhinal assessment of olfactory function could be useful for the early detection of AD.

Repair of orbital floor fracture using folded silastic tube through transantral approach-a novel technique

J. Kwon¹, J. Kim¹

¹ Otolaryngology, Kosin University College of Medicine, Busan, Korea

Abstract: ERS-0737

Session: Rhinoplasty and facial plastic surgery

Session Time: 23-06-14, 14:50

Location: Hall E

Chair person: K. Patel

Presenting author: J. Kwon

Objectives

The orbital blowout fracture occurs in the most vulnerable part of the orbital floor and medial wall when severe blunt impact is directly delivered to the eyeball. We used silicon tube to support the fractured orbital floor via transantral approach, and would like to evaluate the advantage, usefulness, and limitation of this material.

Methods

A retrospective study was conducted from Jan. 2000 to Dec. 2011 in 68 patients with pure orbital floor fracture, who underwent reduction surgery using folded silastic tube to support fractured orbital floor in the maxillary sinus via transantral approach. A chart review, including pre- and post-operative as ocular symptoms, operation records, and complications, was done.

Results

Thirty patients complained of diplopia before surgery, which was improved in 21 patients postoperatively. Extraocular muscle limitation was seen in 19 patients preoperatively, and it was improved in 17 patients postoperatively. Enophthalmos resolved postoperatively in 4 of the 5 patients. Complications after surgery were occurred in 3 patients; an overcorrection, an infection in the maxillary sinus, an implant extrusion, which were corrected with revision surgeries.

Conclusion

This reduction using folded silastic tube through transantral approach was easy and effective technique to perform, which shows good postoperative results, minimal implant related complications and no donor site morbidity. The authors consider that this procedure can be another surgical option for reduction of orbital floor fractures.

Comparison of peripheral blood eosinophil counts in chronic rhinosinusitis patients since 1995 to 2010 in Japan

T. Shikina¹, C. Masumura¹, S. Nishiike², H. Inohara¹

¹ Dept of Otorhinolaryngology-Head and Neck Surgery, Osaka University, Suita Osaka, Japan

² Dept of Otorhinolaryngology-Head and Neck Surgery, Osaka Rosai Hospital, Sakai Osaka, Japan

Abstract: ERS-0738

Session: CRS Basic 3

Session Time: 24-06-14, 16:30

Location: Hall E

Chair person: S. Vlamincx

Presenting author: T. Shikina

Objectives

It had been taken granted that the pathology of CRSwNP is deferent between Europe and eastern Asia. Studies revealed that the cytokine expression or eosinophil infiltration in nasal polyps showed a similar pattern in Japan and Europe, recently. In this study, we compared the preoperative blood eosiophil counts of patients underwent ESS in our institute at some time points since 1995-1996 to 2010.

Methods

We reviewed the clinical records of endoscopic sinus surgery cases treated at our department in 1995-1996, 2000 and 2010. Chronic rhinosinusitis cases were divided into CRSwNP and CRSsNP according to the presence of nasal polyps.

Results

In 2000, preoperative peripheral blood eosinophil counts between CRSwNP and CRSsNP were not significantly different. But, eosinophil counts in CRSwNP were significantly higher than CRSsNP in 2010. Furthermore, even if asthma and aspirin intolerant asthma (AIA) cases were excluded from CRSwNP, the blood eosinophil counts were significantly higher in the CRSwNP than in CRSsNP in 2010. It suggests that eosinophils play a definitive role in the pathology of nasal polyps in 2010.

Conclusion

The preoperative blood eosinophil counts in CRSwNP has been increased in Japan since 1995 to 2010. It may reflect the drastic change of the pathology of nasal polyps in Japan from neutrophil to eosinophil predominant inflammation at the same time period.

Midline malignant granuloma – nasal non-Hodgkin lymphoma with T cells – rare case

M. Poenaru¹, N. Balica¹, H. Stefanescu¹, M. Dobre¹, C. Sarau², C. Doros¹

¹ ENT Department Timisoara, Victor Babes University of Medicine and Pharmacy Timisoara RO, Timisoara, Romania

² I Medical Semiology Department Timisoara, Victor Babes University of Medicine and Pharmacy Timisoara RO, Timisoara, Romania

Abstract: ERS-0739

Objectives

We present a case of a Midline malignant granuloma – nasal NonHodgkin Lymphoma with T cells.

Methods

Midline malignant granuloma involved the nasal cavity and determined right thigh cutaneous metastases in a 47 years old female, which presented in the same time a chronic viral type C hepatitis and chronic cirrhosis. Clinic and paraclinic complex investigations were performed. Essential for diagnosis and treatment protocol included nasal videoendoscopy and bioptic - morphologic exam (hystochemic and immunohystochemic).

Results

It was instituted antibiotic and corticoid treatment, with favorable evolution. The prognosis is reserved, radiotherapy remaining the only therapeutic method in this case.

Conclusion

his rare affection has an unclarified ethiopathogeny with rapid evolution and poor prognosis by tumor aggressively midline tissue destruction. The positive diagnosis is morphologic - hystochemic and immunohystochemic. Actual treatment modalities did not achieve a local tumor control.

Office based nasal surgery for nasal obstruction; tertiary centre experience

F. Abulfateh¹, H. AL-Reefy¹, S. AL-Khalifa¹

¹ Otolaryngology Head & Neck Surgery, King Hamad University Hospital, Manama, Bahrain

Abstract: ERS-0740

Objectives

Rhinosinusitis and allergic rhinitis are the leading causes for nasal obstruction in the Arabian Gulf region. Anatomical obstruction by a deviated nasal septum, septal spur or enlarged inferior turbinates may well contribute to any underlying pathology causing further reduction in nasal airflow. Patients who fail to respond to maximum medical therapy for allergic rhinitis are qualified for surgical intervention. The aim for surgery is to increase nasal airflow and to optimise access for topical medication. We would like to report our experience at a tertiary centre for the management of such cases with combination of laser Diode and CO2 for turbinate reduction and removal of septal spurs in an out patient setting for patients with allergic rhinitis.

Methods

Forty patients have been diagnosed with allergic rhinitis and underwent maximum medical therapy based on the ARIA guidelines for management of allergic rhinitis, all patients had enlarged inferior turbinates and septal spurs occluding the nasal airway. Patients underwent Diode laser to the inferior turbinates in combination with CO2 laser for removal of septal spur in an outpatient setting as a one stop treatment.

Results

Patients report a significant improvement of the nasal airflow and better response to anti-allergic treatment post surgery.

Conclusion

Office based nasal surgery remains an attractive option in the presence of the right setup and good patient selection.

Evaluation of nasal obstruction with rhinomanometry after nasal provocation in allergic rhinitis

M. Poenaru¹, A. Toma¹, C. Sarau², C. Doros¹

¹ ENT Department Timisoara, Victor Babes University of Medicine and Pharmacy Timisoara RO, Timisoara, Romania

² I Medical Semiology Department Timisoara, Victor Babes University of Medicine and Pharmacy Timisoara RO, Timisoara, Romania

Abstract: ERS-0742

Objectives

The diagnosis of allergic rhinitis is a multi-factorial process. Evaluation of nasal epithelial samples is a part of clinical allergy practice. Throughout the course of allergic inflammation, the allergic effector unit, the functional interface between mast cells and eosinophils, represents a central functional entity.

Methods

The number of mast cells and eosinophilia are both of them important and are interpreted as an additional confirmation of nasal allergy. The present study was made to see the importance of the mast cells and eosinophilia in nasal secretion and biopsies in patients of allergic rhinitis and nasal polyps.

Results

Forty patients suffering from allergic rhinitis, diagnosed on the basis of history, clinical examination and positive skin-prick test were selected for the study. All patients were fully symptomatic with sneezing, nasal congestion and running nose. It was collected by scraping the mucous membrane in the mid portion of inferior meatus (turbinate) and any contact with septum and head of the inferior meatus was avoided. We also harvested a portion of the nasal mucosa at this level and in patients, who had associated nasal polyps, were harvested intraoperatively, fragments of the polyp. All samples were subjected to immunohistochemical analysis.

Conclusion

Mast cells and eosinophils reside in a niche in the late and chronic phases of the inflammatory process, which enables the close proximity and tight interactions between the two cell types. These interactions, which can be mediated through soluble and physical pathways of communication, are possibly involved in modulating the severity and/or duration of the allergic response.

Characterization of hemolysin, the non-superantigenic exotoxin of *Staphylococcus aureus*, in chronic rhinosinusitis

T. Haruna¹, M. Okano¹, S. Kariya¹, T. Higaki¹, Y. Noyama¹, K. Uraguchi¹, A. Torigoe¹, T. Koyama¹, K. Nishizaki¹

¹ Department of Otolaryngology-Head&Neck Surgery, Okayama University, Okayama, Japan

Abstract: ERS-0743

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:35

Location: Hall J

Chair person: C. Hopkins

Presenting author: T. Haruna

Objectives

We have shown that not only the superantigenic exotoxins such as staphylococcal enterotoxin B (SEB) but also the non-superantigenic toxins such as hemolysin of *Staphylococcus aureus* can evoke cytokine production in nasal polyp cells. However, little is known whether *S. aureus* secretes hemolysin in the nose of patients with chronic rhinosinusitis (CRS). We sought to characterize the presence of *S. aureus*-derived hemolysin in CRSwNP.

Methods

Nasal discharge was sampled from patients with CRS (n=33) and controls (n=11). The samples were incubated on mannitol salt agar plates at 37°C for 48 hours, then *S. aureus* was detected. The isolated colonies were further incubated on sheep blood agar plates for 24 hours, and the presence of hemolysis was examined. In addition, relationship between the detection of hemolysin and pathological characteristics of CRS was analyzed.

Results

S. aureus was detected in 20 out of 33 cases (60.6%) in CRS group and 9 out of 11 cases (81.8%) in control group. Hemolysis was seen in 17 out of 20 strains (85.0%) in CRS group and 8 out of 9 strains (88.9%) in control group, showing no significant difference in the detection of hemolysin between the groups. In CRS group, hemolysis was detected in 58.8% and 41.2% of *S. aureus* isolated from patients with and without nasal polyps.

Conclusion

S. aureus isolated in the nose produces hemolysin with a high frequency. Substantial exposure to hemolysin may play a part in the pathogenesis of CRS.

Extramedullary plasmocytoma of nasal cavity: a rare entity

M. Poenaru¹, C. Doros¹, N. Balica¹

¹ ENT Department Timisoara, Victor Babes University of Medicine and Pharmacy Timisoara RO, Timisoara, Romania

Abstract: ERS-0744

Objectives

We report a case of extramedullary plasmocytoma of the nasal cavity in a 50 year old female, with history of tobacco abuse. The patient underwent surgical excision followed radiotherapy.

Methods

The patient presented with a 8-month history of progressive nasal obstruction, predominantly to the left side, and self-limiting epistaxis. There was history of occasional headaches. Nasal endoscopy revealed a pale-reddish tumor in the left nasal cavity which was firm in consistency, bleeding easily and intensive to probing. The CT scan showed a left nasal cavity hypodense mass with no bony erosion, and no evidence of lymphadenopathy. A nasal biopsy was taken and tumor was surgically removed using a mid-facial degloving approach. This was followed by radiotherapy over a 6 weeks period.

Results

Anatomopathological exam with immunohistochemical techniques established the diagnosis of plasmacytoma. A 6 month follow-up did not reveal any recurrence, but at 12 months the biopsy revealed a multiple myeloma.

Conclusion

The case demonstrates the multidisciplinary approach required for the optimal diagnosis and management of such tumors.

The role of laryngopharyngeal reflux (LPR) in chronic sinusitis

J. Fejza Bulaj¹

¹ ENT, UHC Mother Teresa, Tirana, Albania

Abstract: ERS-0746

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:36

Location: Hall J

Chair person: P. Lekakis

Presenting author: J. Fejza Bulaj

Objectives

It is increasingly suggested that there may be a connection between laryngopharyngeal reflux (LPR) and chronic sinusitis. The acid causes sinonasal congestion, making impossible the sinus discharge and clearance, leading to the chronic sinusitis. The objective of this study is to determine the prevalence of LPR in patients with chronic sinusitis.

Methods

43 consecutive patients with chronic sinusitis presented at our clinic and 28 normal volunteers (control group) were enrolled in this prospective study. Both patients and control group underwent clinical examinations and double probe 24-hours pH metry. To establish the presence of LPR we used Reflux Symptom Index (RSI), Reflux Findings Score (RFS), Reflux Area Index (RAI) and Total Reflux Events (TRE). The data obtained from patients and volunteers were compared.

Results

RSI, RFS, RAI and TRE values were higher in patients with chronic sinusitis than in normal volunteers. We found out that the prevalence of LPR in patients with chronic sinusitis was 46.5% while the prevalence of LPR in normal volunteers is 3.6% ($p < 0.05$).

Conclusion

Our study reveals a significant difference in prevalence of LPR between patients and volunteers group. This suggests that LPR play an important role in pathogenesis of chronic sinusitis.

Clinical usefulness of endoscopic intranasal dacryocystorhinostomy

O. Tonuzi¹, O. Tonuzi¹

¹ ENT-Ophtalmology Department, University Hospital Center "Mother Teresa", Tirana, Albania

Abstract: ERS-0747

Objectives

In the treatment of nasolacrimal duct obstruction or chronic dacryocystitis in with epiphora or ocular discharge the endoscopic intranasal DCR is safe, easy, minimally invasive and reliable approach.

Methods

The subject were 190 patients with nasolacrimal duct obstruction who all done endoscopic intranasal DCR procedure.

Results

Closure of the surgical opening was seen in 8 cases (9.7%). In this cases, after seen closed region we put a silicon tube for 6 weeks.

Conclusion

Lacrymal passage obstruction was not observed by lacrimal irrigation in any patient. none of the patients in the present study don't have major complication during or after surgery. When compared to external DCR with endoscopic intranasal DCR showed no statistically significant difference in postoperative results.

Configuration of ethmoidal roof: a radiological anatomical study

S. Thanaviratananich¹, S. Kessomboon², P. Kasemsiri², P. Warinthorn³

¹ Department of Otorhinolaryngology Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

² Department of Otorhinolaryngology Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

³ Department of Radiology, Faculty of Medicine Khon Kaen University, Khon Kaen, Thailand

Abstract: ERS-0749

Session: Imaging

Session Time: 24-06-14, 11:24

Location: Hall F

Chair person: SJ. Zinreich

Presenting author: S. Thanaviratananich

Objectives

To determine the patterns and prevalence of slope of ethmoidal roof assessed from CT paranasal sinuses.

Methods

This is a descriptive study assessing the slope of ethmoidal roof by measuring the height between ethmoidal roof and floor of nasal cavities at five equidistance of ethmoidal roof by CT sinuses, saggital view. CTs from 150 patients with ages over 18 years old who attended at Srinagarind hospital between January 1, 2007 and December 31, 2011 were included.

Results

This study determined the slopes of ethmoidal roof at 3 different planes: most medial aspect of ethmoid sinus, most lateral aspect of ethmoid sinus and mid-ethmoid sinus. The most common pattern at the most medial aspect was downslope_ and then upslope 80.3% (95%CI 75.5-84.4) followed by downslope pattern , 13% (95%CI 9.7-17.3). Downslope pattern was found to be the most prevalent for the most lateral aspect plane being 50.7% (95%CI 45.0-56.3) followed by downslope _upslope pattern, 40% (95%CI 34.6-45.6). However downslope-upslope pattern was found mostly in mid-ethmoidal plane, 52% (95%CI 46.4-57.6) followed by downslope pattern 39.3% (95%CI 34-44).

Conclusion

There are different patterns of ethmoidal roof configuration depending on the plane of sagittal view, most medial plane, most lateral plane and mid-ethmoidal plane.

Nasal glomangiopericytoma presenting with osteoporosis

S. Thanaviratananich¹

¹ Department of Otorhinolaryngology Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Abstract: ERS-0750

Objectives

To present a 'nasal glomangiopericytoma' presented with severe osteoporosis.

Methods

A case report.

Results

A 43-year old woman presented at the ENT OPD, Srinagarind Hospital, Faculty of Medicine, Thailand, with nasal stuffiness on right side for 6 months. She had a history of low back pain for 2 years and was diagnosed by an orthopaedist as generalized osteoporosis with hypophosphatemia, low serum calcium, increase alkaline phosphatase, high level of parathyroid hormone. The osteoporosis could not be relieved with any medications. Rhinologic examination revealed a pedunculated hypervascular soft tissue mass originated from the area around sphenopalatine foramen. Angiogram showed to be a hypervascular mass with feeding vessels from sphenopalatine artery. Endoscopic surgical removal of the mass was performed. The pathological study with immunohistochemistry stain revealed the perivascular oval and spindle neoplastic cells stain positive with vimentin, focal positive with smooth muscle actin, negative with CD34, CD31, desmin, myogenin, S100-protein and panCK (AE1/AE3) with focal myxoid changes which was consistent with 'glomangiopericytoma'. After the operation, she recovered from osteoporosis very quickly without any medications.

Conclusion

Nasal glomangiopericytoma may present with severe osteoporosis before having nasal symptoms. The rhinologist should be aware of this diagnosis in a severe osteoporosis patient presented with unilateral nasal mass lesion.

Current significance of subfrontal craniotomy

F. Kral¹, A. Giotakis¹, M. Scheithauer², H. Riechelmann¹

¹ Department of Otorhinolaryngology, Medical University Innsbruck, Innsbruck, Austria

² Department of Otorhinolaryngology, Medical University Ulm, Ulm, Germany

Abstract: ERS-0751

Session: Skull base surgery surgery 3

Location: Hall G

Time: 26-06-14 10:00

Chair person: M. Bernal-Sprekelsen

Presenting author: F. Kral

Objectives

We report about indications, surgical procedure and outcome of 60 patients who underwent subfrontal craniotomy for treatment of pathologies of the frontal skull base.

Methods

32 patients were female, the median age of all patients was 44 years. 85 % of the subfrontal craniotomies were performed due to malignancies, in 8 cases patients had a trauma and 4 cases were done for surgical therapy of an inflammatory process. The surgical procedure was performed as described by Raveh, obliteration of the frontal sinus was done with abdominal fat and fascia lata. Surgical therapy of malignancies was followed by radiation therapy and in some cases in combination with chemotherapy.

Results

The most frequent complication was hyposmia, followed by diplopia, rhinoliqorrhoea, pneumenzephalon and infection. The 5-year-survival rate of the patients with malignancies was 52 %. Mortality of the described procedure was 1 out of 60 cases.

Conclusion

Although morbidity with endoscopic techniques is lower, the subfrontal approach has its benefits in pathologies beyond the lamina cribrosa as well as in traumatology, when clearance of bone fragments is needed.

The effect of dacryocystorhinostomy and septoplasty combination surgery for lacrimal obstruction with septal deviation

O. Tonuzi¹, O. Tonuzi¹

¹ ENT-Ophtalmology Department, University Hospital Center "Mother Teresa", Tirana, Albania

Abstract: ERS-0752

Objectives

The clinical effect of endonasal dacryocystorhinostomy (DCR) and septoplasty combination surgery for lacrimal obstruction in patients with nasal septal deviation.

Methods

The study group consisted of 32 eyes of 30 lacrimal obstruction patients with nasal septal deviation who had undergone endonasal DCR combined with septoplasty from 2011 to 2014. The types of lacrimal obstruction included nasolacrimal duct obstruction (21 cases), common canaliculus obstruction (12 cases). The operations' procedure was as follows: first, an otorhinolaryngologist performed septoplasty and then, an otorhinolaryngologist and an ophthalmologist if necessary performed endonasal DCR.

Results

A total of 32 eyes of 30 patients were included in the present study. Ten patients were males, 22 patients were females and the mean patient age was 54 years. During 16 months, loss of epiphora was observed in 26 cases, improvement in epiphora was found in 4 cases, and the functional and anatomical success rate was 95.8% (29/30). 5 cases of postoperative complication were observed, 4 cases of granuloma were found in the bony ostium and surrounding area, and 1 case of synechia was found in the nasal cavity.

Conclusion

The combination surgery of endonasal DCR and septoplasty provides a wider surgical view, allowing for an easier nasal cavity treatment, rendering the operation and after-care less difficult, as well as reducing the risk of surrounding tissue damage. This method is adequate for preventing complications after surgery and offers a better prognosis.

Transnasal endoscopic prelacrimal recess approach -- an alternative approach for maxillary sinus diseases

T. Huang¹, Y. Hsu¹, T. Chiu¹

¹ Department of Otolaryngology, Taipei Tzu Chi Hospital Buddhist Tzu Chi Medical Foundation, New Taipei City, Taiwan

Abstract: ERS-0753

Session: CRS surgical techniques

Session Time: 26-06-14 09:30

Location: Hall H

Chair person: V. Lund

Presenting author: T. Huang

Objectives

Middle meatal antrostomy (MMA) is widely used for maxillary sinus diseases, but more aggressive procedures should be selected if the diseases can not be removed thoroughly via MMA. These procedures usually sacrifice some normal anatomic structures and impair related nasal functions. Transnasal endoscopic prelacrimal recess approach (PLRA) is a relatively less invasive technique among them. This study reported our experience about PLRA.

Methods

A retrospective chart review was performed in patients who had undergone PLRA by the authors between 2011 and 2012. The procedure was carried out under general anesthesia. Incision was made along the anterior margin of the inferior turbinate. Inferior turbinate-nasolacrimal duct mucosal flap was developed and medialized. After removing part of the medial wall of the maxillary sinus, access via prelacrimal recess into the maxillary sinus was gained. Further removal of mucocele, odontogenic cyst or inverted papilloma was performed.

Results

Eight patients were enrolled in this study. The diagnosis of these patients included odontogenic cyst in 3 patient, mucocele in 2, and inverted papilloma in 3. The follow-up period ranged from 8 to 17 months, with a mean of 12.6 months. One patients had epiphora after surgery and was treated with dacryocystorhinostomy. Neither facial numbness nor paresthesia was recorded. No disease recurrence was seen in all patients.

Conclusion

Transnasal endoscopic PLRA can be applied to severe or extensive diseases of the maxillary sinus. This technique preserves the intact structure and function of the inferior turbinate and lacrimal drainage system.

Neutrophil extracellular traps (NET) are more expressed in peripheral blood and nasal mucosa from CRSwNP patients rather than controls

A. Barbosa¹, F. Valera¹, E. Arruda Neto², A. Murashima¹, V.M. Alves², M. Rossato¹, W. Anselmo-Lima¹, E. Tamashiro¹

¹Ophthalmology Otorhinolaryngology Head and Neck Surgery, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (FMRP-USP), Ribeirão Preto, Brazil

²Department of Cell Biology Molecular Pathogenic, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (FMRP-USP), Ribeirão Preto, Brazil

Abstract: ERS-0754

Session: Prognostic factors in CRS

Session Time: 24-06-14, 15:03

Location: Hall J

Chair person: P. Lekakis

Presenting author: A. Barbosa

Objectives

Several studies have demonstrated that in the sinonasal mucosa from patients with chronic rhinosinusitis there is a rich inflammatory cells infiltration of neutrophils and eosinophils, which potentially could explain the presence of ET in the sinonasal mucosa. Thus we would like to investigate the presence of neutrophil extracellular traps (NETs) in the sinonasal mucosa from patients with Chronic Rhinosinusitis with nasal Polyps (CRSwNP) and to compare with control patients.

Methods

Samples of polyps from patients with CRSwNP (n=14) and middle turbinate from control patients (n=15) were collected, besides polymorphonuclear cells from peripheral blood. NETs were visualized by scanning electron microscopy and immunofluorescence. They were also stimulated using phorbol myristate acetate (PMA), in order to observe NETs formation after stimulus.

Results

Representative images of nasal polyps and middle turbinate demonstrated the presence of extracellular traps, similar to the structures observed from peripheral blood purified polymorphonuclear (PMN). Greater amount of NETs was detected in CRSwNP in relation to control patients, both the tissue and the blood, pre and post stimulation with PMA. This stimulation led to greater production of NETs only in purified neutrophils from control patients, but not in the samples of polyps/nasal mucosa or purified PMN from CRSwNP patients..

Conclusion

Peripheral blood and nasal polyps neutrophils present the ability to generate more amounts of NETs than patients without CRS. The presence of these structures in nasal mucosa from patients with chronic rhinosinusitis may be involved in innate immunity responses of the respiratory tract or might be related to the pathophysiology of CRS.

Transnasal endoscopic repair of congenital bilateral choanal atresia: one step surgery repair without stenting

S. Vlaminck¹, A. Willaert¹

¹ ENT, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

Abstract: ERS-0755

Objectives

Several techniques for surgical repair of congenital bilateral choanal atresia have been described over the years, yet there is still conflicting data in current literature regarding the ideal procedure for managing this malformation.

Methods

We present a case of transnasal endoscopic repair with resection of the vomer without bilateral postoperative stenting, and discuss the management options proposed in literature.

Results

Case report: A neonate boy with bilateral congenital choanal atresia aged 5 days was operated in our centre. Transnasal endoscopic approach allowed partial resection of the vomer. After resection of the atretic plates only a small right-sided nasogastric tube was left for one week. Postoperative control included daily fiberoptic nasal endoscopy with suction cleaning. Immediate adequate functional nasal breathing was observed post-surgery. Normal breastfeeding was possible after removal of the nasogastric tube one week after surgery. Follow up of more than one year with normal daily life breathing and feeding.

Conclusion

The described technique proved effective allowing instant normal breathing. Review of literature shows lack of direct evidence either supporting or opposing the use of any specific techniques. Nowadays the endoscopic transnasal approach is favoured. Breathing outcomes appear to be independent of the use of any postoperative stenting, yet we notice concern regarding the advantages of using stents in the healing process.

Allergic rhinitis is a key factor of chronic rhinosinusitis with asthma association in adult

F. Balfas¹, R. Wardani¹, N. Irawati¹, C. Wicaksono², I. Rengganis², S. Bardosono³

¹ ENT, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

² Internal Medicine, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

³ Medical Research Unit, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

Abstract: ERS-0756

Session: United airways

Session Time: 26-06-14 11:52

Location: Hall D

Chair person: I. Terreehorst

Presenting author: F. Balfas

Objectives

Heterogeneity relationship of chronic rhinosinusitis (CRS) and asthma included pathophysiological mechanism and inflammatory markers. Based on a thorough concept of united airway, allergic rhinitis (AR) plausibly determines clinically phenotype of CRS associated with asthma and acts as risk factor of disease association.

Methods

The operational – cross sectional research was conducted to evaluate association between CRS and Asthma in Rhinology and Internal Medicine clinic of our institution. Eighty-seven CRS patients were recruited from Rhinology clinic and underwent asthma workup and 17 asthma patient was referred from Internal Medicine clinic and underwent the vice versa procedure. The diagnostic procedures included VAS symptoms evaluation of EPO3S and GINA criteria, nasoendoscopy, mucociliary-transport time using saccharine test, allergic skin prick test, and spirometry.

Results

CRS with Asthma was found in 66 patients (68%), CRS without Asthma in 27 patients (28%) and 4 patients (4%) with Asthma only. AR gave higher risk in CRS with Asthma group compare to CRS without Asthma (OR= 1,36 95% CI 0.78 – 0.98, p = 0,035). When AR calculated to subgroup cases with and without Asthma, OR = 2,69, 95% CI 1,08 – 6,73, p = 0.031. AR also a significant risk factor in asthma onset of age less than sixteen years old (OR = 9.75, 95% CI 2,04 – 46,52; p = 0.001).

Conclusion

Operational research represented the real condition in how multifactorial disease managed in our institution. The research result gives strong reminder of multidisciplinary approach importance in case finding, diagnostic and therapy.

Real-world effectiveness of a new allergic rhinitis therapy (MP29-02*)

L. Klimek¹, C. Virchow², U. Wahn³, R. Moesges⁴, M. Wagenmann⁵, U. Munzel⁶, C. Bachert⁷

¹ Director, Zentrum für Rhinologie und Allergologie, Wiesbaden, Germany

² Department of Internal Medicine, Universität Rostock, Rostock, Germany

³ Charité Berlin, Children's Hospital, Berlin, Germany

⁴ Institute of Medical Statistics Informatics and Epidemiology Medical Faculty, University of Cologne, Cologne, Germany

⁵ Dept. of Otorhinolaryngology Head & Neck Surgery (HNO-Klinik), Düsseldorf University Hospital, Düsseldorf, Germany

⁶ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁷ Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Belgium

Abstract: ERS-0757

Session: Rhinitis clinical

Session Time: 25-06-14, 14:55

Location: Hall E

Chair person: A. Swift

Presenting author: L. Klimek

Objectives

In clinical trials MP29-02 (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) provided complete/near-to- complete symptom-control in 1 of 6 moderate-to-severe SAR- patients¹ and complete-relief in 7 of 10 mild-to-moderate PAR-patients.² Objective: Assess the effectiveness of MP29-02 in routine clinical practice.

Methods

Results from Germany (n=1133) from a multicentre, observational study in adults/adolescents with moderate-to-severe AR for whom MP29-02 was prescribed according to summary of product characteristics are reported. Patients assessed symptom-severity using a visual-analog-score (VAS) from 0mm (not at all bothersome) to 100mm (very bothersome), in the morning prior to MP29-02-use, on Days 0, 1, 3, 7 and treatment-end. Intended study duration was 14 days. VAS <20mm was considered controlled.³ Patients' perceived level of disease-control (i.e. well-, partly- and un-controlled) was assessed on Day-3.

Results

MP29-02 (1 spray/nostril bd; daily doses:AZE=548µg;FP=200µg) provided effective symptom control from Day-1, averaging 21.03mm by treatment-end. 62.7% of patients had VAS <20mm at that time. Symptoms were well-controlled in those with more- (baseline VAS 75-100mm) and less-severe symptoms (baseline VAS 50-74 mm). 1 in every 2 patients felt their symptoms were well-controlled after just 3 days treatment.

Conclusion

MP29-02 provides effective and rapid symptom control in a real-world setting with responder rates in moderate-to-severe patients higher than those observed in a clinical trial, supporting MP29-02's position as the drug of choice for the treatment of AR.

The growing nose: correlation between normal values in 4-phase-rhinomanometry with age and anthropometric parameters

K. Peksis¹, J. Unger¹, S. Indriksone¹, A. Emsina¹, K. Vogt²

¹ Klinika Headline, Faculty of Medicine, Riga, Latvia

² Center of Experimental Surgery, Faculty of Medicine, Riga, Latvia

Abstract: ERS-0758

Session: Pediatric rhinology

Session Time: 24-06-14, 12:15

Location: Hall H

Chair person: JB Watelet

Presenting author: K. Peksis

Objectives

Four phase rhinomanometry allows objective assessment of nasal patency; however, no reliable reference values are available in the pediatric age group. The aim of this study was to determine normal values of 4-phase rhinomanometry in the age of 10 – 15 years) and to find correlations between rhinomanometric data and anthropometric parameters.

Methods

4-phase rhinomanometric measurements was performed in 114 healthy teens (age 10–15 years; 35 boys and 79 girls) and in 37 kids (age 7- 10 years; 16 boys and 21 girls). Both Logarithmical Effective Resistance (LOGReff) and Logarithmical Vertex Resistance (LogVR) have been analysed. These values as well as the standard values as recommended by ISCOANA have been correlated with anthropometric data of the face.

Results

As a result of this study, upper, lower and mean normal values were obtained. No significant differences in nasal resistance between nose sides or sexes were found ($p>0.05$). The following correlations between anthropometric and rhinomanometric data were found:

1. LogReff and Log VR decrease and nasal patency improves with increasing age, height, weight, nasal height, nasal length, lateral nasal length, nasal height and alar length,
2. LogReff and LogVR increase with increasing nasal basis width, nostril width and upper lip length.

Conclusion

In children nasal resistance is significantly higher than in adults. The smaller the child the higher is the nasal resistance. The results of the study should be incorporated in the computerized quantitative diagnosis of the nasal air stream and to adjust the proposed grading of nasal obstruction as given by Vogt et al. in 2010.

Chondrosarcoma of posterior nasal septum

I. Gavrilă¹, V. Petrescu², D. Saftă¹, L. Mitran¹, R. Stanciulescu¹, R. Grigore³, S.V.G. Bertesteanu³, D. Mirea¹

¹ Otolaryngology Head and Neck Surgery, Elias Emergency University Hospital, Bucharest, Romania

² Maxillofacial Surgery, Elias Emergency University Hospital, Bucharest, Romania

³ Otolaryngology Head and Neck Surgery, Coltea Clinical Hospital, Bucharest, Romania

Abstract: ERS-0759

Objectives

Chondrosarcoma of the nasal septum is a rare malignancy, with nonspecific onset symptoms like nasal obstruction, anosmia or headache.

Methods

The authors report a 57 years old female who presented with progressive bilateral nasal obstruction and headaches. Nasal endoscopy showed a posterior nasal mass that obstructs both nasal cavities without modifications of mucosa surface. A biopsy was performed and the result was suggestive of chondrosarcoma. A CT scan was performed to assess the tumor extension.

Results

Radical surgical resection was performed using an external bilateral transmaxillary approach. We preferred this approach because of the size, site and extensions of the tumor. This approach provided excellent exposure of posterior nasal cavities, nasopharynx and pterygoid region. The follow up visits showed no local recurrence or distant metastases.

Conclusion

Radical surgical excision provides a good chance of cure, because chondrosarcomas are slow growing radioresistant tumors.

A new allergic rhinitis therapy (MP29-02*) provides nasal symptom relief days faster than current firstline monotherapies

C. Bachert¹, K. Jenko², S. Steinsvag³, D. Rauba⁴, U. Munzel⁵, G. Scadding⁶

¹ Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Germany

² Department of Otorhinolaryngology and Cervicofacial Surgery, University Medical Centre Ljubljana, Ljubljana, Slovenia

³ Department of ORL, Sørlandet Hospital, Sand, Norway

⁴ ENT department, Vilnius University Hospital Santariskes, Vilnius, Lithuania

⁵ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁶ Allergy & Rhinology, The Royal National Throat Nose and Ear Hospital, London, United Kingdom

Abstract: ERS-0760

Session: Rhinitis, Clinical 1

Session Time: 25-06-14, 11:15

Location: Hall E

Chair person: J. Mulloj

Presenting author: C. Bachert

Objectives

New allergic rhinitis (AR) treatments should provide rapid, sustained nasal-symptom relief.

The objective was to assess the efficacy of MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) in providing nasal symptom relief versus AZE, FP or placebo (PLA).

Methods

610 moderate-to-severe SAR-patients (≥ 12 yrs) were randomized into this double-blind, PLA-controlled, 14-day, parallel-group trial to MP29-02*, AZE, FP or PLA nasal sprays (1 spray/nostril bd; daily dose:AZE=548 μ g; FP=200 μ g). Change from baseline in reflective total nasal symptom score (TNSS) and each nasal symptom score was assessed over time.

Results

Overall, MP29-02*-patients had significantly greater reduction in rTNSS versus FP, AZE and PLA (relative diff: 47% to FP, 66% to AZE) evident from treatment Day-1 ($p \leq 0.015$) and sustained for 14-days. The MP29-02-induced level-of-relief on Day-2 (-3.40) was not achieved before Day-5 by FP-patients or Day-9 by AZE-patients. With MP29-02*, a consistent pattern of superior relief was noted for each symptom on each day, with benefit observed over AZE or FP from Day-1 and sustained. FP and AZE provided more inconsistent symptom relief. For congestion, the level of relief provided by MP29-02* on Day 2 (-0.77) was not achieved before Day 6 and Day 9 for FP and AZE, respectively.

Conclusion

The consistent and rapid effect in alleviating all nasal symptoms is unique to MP29-02* and should improve patient-concordance. MP29-02*'s rapidity and effectiveness in alleviating nasal congestion, should reduce the need for decongestants. MP29-02* is considered a new standard of care in AR.

*Dymista

Intracranial meningioma presenting as a parapharyngeal tumour - a unique extracranial presentation

A. Shankar¹, S. Mohindra², S.K. Gupta³, N. Gupta⁴

¹ Otolaryngology head and neck surgery, ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA, Patna, India

² Otolaryngology head and neck surgery, PGIMER- Chandigarh, Chandigarh, India

³ Neurosurgery, PGIMER- Chandigarh, Chandigarh, India

⁴ Pathology, PGIMER- Chandigarh, Chandigarh, India

Abstract: ERS-0761

Objectives

Meningioma is one of the commonest tumours in the intracranial space but quite rare in other parts of the body. The latter are generally designated as extracranial or ectopic. They have been sporadically reported in orbits, nose, paranasal sinuses and skin. Presentation of a meningioma in the parapharyngeal space is extremely rare. We report a unique case of a child who presented with a neck swelling and parapharyngeal space mass with extension into intracranial space.

Methods

A 10 year old male child presented to our ENT clinic with a one year history of a gradually enlarging painful swelling in the right upper part of the neck associated with difficulty in swallowing and a muffled voice for the last four months. Physical examination of the neck revealed a 4x5 cm firm swelling, approximately 2 cm below the angle of the mandible (Fig 1) with intraoral bulge (Fig 1b).

Fine needle aspiration cytology from the neck revealed a meningioma. The tumour was excised by a combined cervical and intracranial approach along with the neurosurgeons. Post operative histopathology report was suggestive of meningioma.

Results

Pictures of Meningioma with extracranial extension in a child.

Conclusion

Meningiomas of intracranial origin may have unique extracranial presentations in the form of sinusitis, proptosis, neck swelling, bulge in the oral cavity or preauricular mass. They may present in a child as well as in adults with or without cranial nerve involvement. A combined approach by an otolaryngologist and neurosurgeon offers the best surgical outcome.

Sub-optimal control of allergic rhinitis: the need for a new and more effective treatment option

C. Bachert¹, D. Price², P. Hellings³, G. Scadding⁴, R. Dhillon⁵, U. Munzel⁶, J. Mullol⁷

¹ Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Germany

² Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, United Kingdom

³ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

⁴ Allergy & Rhinology, The Royal National Throat Nose and Ear Hospital, London, United Kingdom

⁵ Postgraduate Medical Education, Rila Institute of Health Sciences, London, United Kingdom

⁶ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁷ IDIBAPS CIBERES, Hospital Clinic, Barcelona, Spain

Abstract: ERS-0762

Session: Rhinitis clinical

Session Time: 25-06-14, 15:00

Location: Hall E

Chair person: A. Swift

Presenting author: C. Bachert

Objectives

Seasonal allergic rhinitis (SAR)-patients want more-complete symptom-relief and use multiple-therapies trying to achieve it. The objectives were to(i) Explore the SAR unmet medical need by examining symptomatology of treated patients and, by modelling these results to the clinical trial setting, (ii) show how MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) fulfils this need.

Methods

Symptomatology and medication-usage data were collected from 746 moderate/severe AR patients who completed a UK-survey. These patients had a similar clinical profile as those those in MP29-02*'s clinical trials. Symptoms were assessed by reflective total nasal symptom score (rTNSS) and reflective total ocular symptom score (rTOSS). MP29-02*'s clinical efficacy was compared to AZE, FP or placebo nasal sprays in a 14-day randomized controlled trial of 610 patients (≥ 12 years with moderate-to-severe SAR). Time-to-response was assessed post-hoc. A $\geq 30\%$ to $\geq 90\%$ change-from-baseline in rTNSS defined response.

Results

96.2% of patients surveyed were taking medication but remained symptomatic (mean rTNSS of 12.8/24; mean rTOSS of 8.6/18). Most (70.5%) were taking ≥ 2 medications. In clinical trial more MP29-02* patients (1 in 2) achieved $\geq 50\%$ rTNSS-reduction and ≤ 6 days faster than FP ($p=0.0284$) or AZE ($p=0.0223$). A $\geq 60\%$ response was identified as the threshold not achievable with firstline therapy. 1 in 3 MP29-02* patients achieved this response.

Conclusion

SAR is often poorly-controlled with current therapy (even combination therapies). MP29-02* should reduce this unmet need as it provides faster and more-complete symptom-relief than firstline therapy (i.e. intranasal corticosteroid or anti-histamine).

*Dymista

Electromagnetic tracking in microscopic frontal skull base surgery

A. Giotakis¹, H. Riechelmann¹, W. Freysinger¹, F. Kral¹

¹ Otorhinolaryngology, Medical University Innsbruck, Innsbruck, Austria

Abstract: ERS-0763

Session: Skull base surgery 3

Location: Hall G

Time: 26-06-14 09:55

Chair person: M. Bernal-Sprekelsen

Presenting author: A. Giotakis

Objectives

Navigation is used for localization of tracked instruments in a registered radiologic data set. Electromagnetic tracking is easily integrated in daily clinical routine, because there is no need of direct line of sight and the sensors are very small. Ferromagnetic distortions can influence the application accuracy of electromagnetic tracking, therefore the influence of different microscopes was evaluated.

Methods

A CT data set of a plastic skull was acquired after implantation of titanium screws for registration and measurement of the target registration error. The position of each titanium screw was recorded with an electromagnetic pointer (NDI Aurora). Ten titanium screws, evenly distributed over the skull base, were defined as target screws. The target screws were defined with the electromagnetic pointer without a microscope and then using a Zeiss S21, NC4, NC31, OPMI Vario 700 and a Leica OH 5.

Results

The use of a microscope significantly influences the target registration error. Best application accuracy could be achieved with the Zeiss S21 (0.69 mm +/- 0.31 mm). When using larger, motorized microscopes the target registration error was higher than 2 mm.

Conclusion

Although optical tracking needs direct line of sight between its components and therefore the intraoperative setup can be challenging, electromagnetic tracking has its drawbacks in accuracy so far when used in combination with modern microscopes.

The importance of atopy, asthma and aspirin intolerance to chronic rhinosinusitis recurrence

W. Anselmo-Lima¹, G.C.P. Sella¹, J.W. Spies¹, T.N. Mendonça¹, L.K. Arruda², E. Tamashiro¹, F.C.P. Valera¹

¹Ophthalmology Otorhinolaryngology Head and Neck Surgery, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (FMRP-USP), Ribeirão Preto, Brazil

² Medical Clinic, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (FMRP-USP), Ribeirão Preto, Brazil

Abstract: ERS-0764

Session: United airways

Session Time: 25-06-14, 16:33

Location: Hall E

Chair person: E. Wright

Presenting author: W. Anselmo-Lima

Objectives

The influence of clinical factors on the prognosis of Chronic Rhinosinusitis (CRS) associated with Sinus Polyps (CRSwNP) or not (CRSsNP) is still little addressed in the literature. Objectives: To evaluate patients with CRS undergoing Endoscopic Sinus Surgery (ESS) in our institution from 2002 to 2006, and to correlate relapse with asthma, aspirin intolerance and atopy.

Methods

Eighty-eight patients were followed for a mean period of 9 years and 2 months. Clinical data were collected, as well as examinations of endoscopy, tomography, serum levels and prick test. The follow-up period was considered, being considered bad prognosis when a new surgery was indicated.

Results

The presence of atopy did not influence surgical recurrence in any group, whether CRSsNP or CRSwNP. Among patients with CRSwNP, asthmatic patients had significantly higher risk (OR = 4.47, $p = 0.003$) of new surgical approach when compared with patients without asthma; whereas in the group CRSsNP asthma did not influence the recurrence ($p = 0.58$). Intolerance to aspirin in patients with CRSwNP increased the risk of further surgery at 3.73 ($p = 0.0203$) compared to patients without intolerance.

Conclusion

From this study it can be concluded that atopy does not relate to recurrence of CRSwNP or CRSsNP. The presence of asthma and aspirin intolerance significantly increased the risk of further surgery in cases of CRSwNS, but not for patients with CRSsNP.

Clinically relevant effect of a new intranasal therapy MP29-02* in seasonal allergic rhinitis (SAR) assessed by responder analysis

P. Hellings¹, G. Rasp², A. Cuvillo³, U. Munzel⁴, D. Price⁵

¹ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

² University Clinic of Ear Nose and Throat, ENT Department, Salzburg, Austria

³ ENT department, Hospital Jerez, Cadiz, Spain

⁴ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁵ Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, United Kingdom

Abstract: ERS-0765

Session: Rhinitis clinical

Session Time: 25-06-14, 14:15

Location: Hall E

Chair person: A. Swift

Presenting author: P. Hellings

Objectives

Allergic rhinitis (AR) clinical trials should show a statistically-significant improvement in reflective total nasal symptom score (rTNSS) and that the magnitude of improvement is clinically-relevant. The objective was to compare the efficacy of MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) with FP, AZE or placebo nasal sprays in SAR patients, using responder analyses.

Methods

610 moderate-to-severe SAR-patients (≥ 12 yrs; rTNSS >8 ; congestion ≥ 2) were randomized into a double-blind, placebo-controlled, 14-day, parallel-group trial. rTNSS time-to-response was assessed post-hoc. Response was defined as $\geq 30\%$, 50%, 60%, 75% or 95% rTNSS change-from-baseline.

Results

More MP29-02*-patients achieved each response cut-off, and days faster than AZE and FP. 49.1% of MP29-02*-patients achieved $\geq 50\%$ response after 14-days versus 38.2% FP- and 37.4% AZE-patients, up to 6 days faster than FP ($p=0.0284$) or AZE ($p=0.0223$). Responders decreased for stricter response criteria, but differences between MP29-02* and active-comparators remained: for $\geq 60\%$ response or higher, only MP29-02* could be statistically differentiated from placebo. One in 3 MP29-02*-patients achieved a $\geq 60\%$ response and did so up to 7 and 8 days faster than FP ($p=0.0496$) and AZE ($p=0.0404$), respectively.

Conclusion

MP29-02* provided more-complete and faster symptom control than FP and AZE and should be considered the drug-of-choice for the treatment of moderate-to-severe AR. The responder sensitivity analysis defined a level of response not achievable with available first-line therapy (i.e. 60% response). Responder analyses may become a new standard in assessing efficacy of current and novel AR therapies.

* Dymista

Sphenoid sinus pneumatization to anterior clinoid process increasing the risk of dehiscence and protrusion of internal carotid artery and optic nerve

C. Jenny¹, V. Wulani¹, R. Wardani², J. Prihartono³

¹ Radiology, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

² ENT, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

³ Community Medicine, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

Abstract: ERS-0766

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:10

Location: Hall H

Chair person: P. Nicolai

Presenting author: R. Wardani

Objectives

Endoscopic trans-sphenoid pituitary surgery needs a combined effort between endoscopic rhinologists and neurosurgeons. In our institution, the first step of building strong platform through anatomical radiology research represents the future powerful competency in endoscopic skullbase surgery team.

Methods

This is an analytic cross sectional study to investigate the pneumatization of sphenoid sinus to the anterior clinoid process (ACP) in relationship to the incidence of dehiscence and protrusion of Internal Carotid Artery (ICA) and Optic Nerve (ON).

Results

Of 613 CT scans collected during February 2012 – June 2013, there were 120 CT scan fulfilled inclusion and exclusion criteria consisting of 60 CT-scan with sphenoid sinus pneumatisation to ACP and 60 CT scan without its pneumatisation. 94 sides were selected from the pneumatisation group and the other 94 from non-pneumatisation group. There were significant relationship between ACP pneumatization to ICA and ON dehiscence, with ratio-odds of 13.6 and 7.29 higher in pneumatized ACP compared to non-pneumatized ACP. In our study, it is nearly a statistically significant absolute risk of ACP pneumatization to protrusions of ICA (OR = 269.8; 95% CI 95.47 – 762.49) and ON (OR = 2945; 95% CI 917.3 – 9454,3).

Conclusion

This study further defines a diagnostic study of radiological anatomy of skullbase and its endoscopic surgical findings in adenoma pituitary cases

A new therapy (MP29-02*) is effective for the treatment of chronic rhinitis: results from a randomized long-term trial

D. Price¹, C. Bachert², P. Hellings³, K. Peksis⁴, G. Scadding⁵, U. Munzel⁶, W. Fokkens⁷

¹ Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, United Kingdom

² Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Belgium

³ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

⁴ Center of Experimental Surgery Private ENT Clinic, Faculty of Medicine University of Latvia, Riga, Latvia

⁵ Allergy & Rhinology, The Royal National Throat Nose and Ear Hospital, London, United Kingdom

⁶ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁷ Department of Otorhinolaryngology - Head and Neck Surgery, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0767

Session: Rhinitis clinical

Session Time: 25-06-14, 14:20

Location: Hall E

Chair person: A. Swift

Presenting author: D. Price

Objectives

Almost half of all allergic rhinitis (AR)-sufferers have persistent disease and need symptomatic relief for >14-days. The objective was to evaluate long-term efficacy of MP29-02* (novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) versus FP in chronic rhinitis patients (i.e. perennial allergic rhinitis [PAR] or non-allergic rhinitis [NAR]).

Methods

612 chronic rhinitis patients

(≥12 yrs; PAR: n=424; NAR: n=188) were enrolled into this randomized, open-label, active-controlled, parallel-group study to MP29-02* (1 spray/nostril bid) or FP nasal spray (2 sprays/nostril qd) for 52-weeks. Efficacy was assessed by change-from-baseline in PM reflective total nasal symptom score (rTNSS). Time-to-achieve 100% PM rTNSS response and % symptom-free days were assessed post-hoc.

Results

MP29-02* reduced patients' rTNSS from baseline significantly more than FP, from Day-1 to Week-28 (-2.88 vs -2.55; p=0.0048), with treatment difference maintained for 52-weeks. By Day-1 almost twice as many MP29-02*-patients achieved complete-symptom-relief. Within the first month, 70% of MP29-02*-patients (7 of 10) experienced 100% reduction in rTNSS vs 59% of FP-patients, and 8 days faster than FP (p=0.0024). Similarly, in the PAR sub-population, more MP29-02*-patients achieved 100% response, and 8 days faster than FP within Month 1 (p=0.063). MP29-02*-patients experienced 25.9 more symptom-free-days in the total population (8.4% more than FP (p=0.0005)) and 23.9 more symptom-free-days in the PAR-population (7.3% more than FP (p=0.0122)).

Conclusion

These results confirm MP29-02*'s large therapeutic spectrum and its consistent superiority over an intranasal steroid. MP29-02* can be considered the drug of choice for the treatment chronic rhinitis.

* Dymista

A new therapy (MP29-02*) effectively controls nasal symptoms of seasonal allergic rhinitis irrespective of severity and effectively targets ocular symptoms in symptomatic patients

W. Fokkens¹, N. Lindblad², E. Serrano³, M. Kalvet⁴, U. Munzel⁵, J. Mullo⁶

¹ Department of Otorhinolaryngology - Head and Neck Surgery, Academic Medical Center, Amsterdam, Netherlands

² Allergy Clinic, Terveystalo Turku, Turku, Finland

³ Oto-Rhino-Laryngology and Head and Neck Surgery, Larrey Hospital, Toulouse, France

⁴ Centre of Otorhinolaryngology, East Tallinn Central Hospital, Tallinn, Estonia

⁵ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁶ IDIBAPS CIBERES, Hospital Clinic, Barcelona, Spain

Abstract: ERS-0768

Session: Rhinitis clinical

Session Time: 25-06-14, 14:25

Location: Hall E

Chair person: A. Swift

Presenting author: W. Fokkens

Objectives

Most seasonal allergic rhinitis (SAR) patients presenting to doctors have moderate-to-severe disease and suffer from ocular symptoms. The objective was to assess the efficacy of MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) versus firstline therapies in SAR patients by severity.

Methods

610 moderate-to-severe patients (≥ 12 yrs) were randomized into a double-blind, placebo-controlled, 14-day, parallel-group trial to MP29-02*, AZE, FP or placebo nasal sprays (1 spray/nostril bid; daily doses: AZE= 548 μ g; FP=200 μ g). Efficacy, assessed by reflective total nasal symptom score (rTNSS), was analysed by severity post-hoc. Those with median baseline rTNSS >18.9 or rhinitis-quality-of-life-questionnaire (RQLQ) score >3.9 were more-severe. Those with baseline rTNSS ≤ 18.9 or RQLQ score ≤ 3.9 were less-severe. Symptomatic ocular patients had a baseline reflective total ocular symptom score (rTOSS) ≥ 8 .

Results

MP29-02* provided significantly better nasal symptom relief than FP or AZE regardless of disease severity. When categorizing severity by rTNSS, the relative difference to MP29-02* was 42% versus FP ($p=0.0188$) and 64% versus AZE ($p=0.0002$) for less-severe patients; 49% vs FP ($p=0.0436$) and 70% vs AZE ($p=0.0035$) for more-severe patients. A similar pattern was observed with severity was categorized by RQLQ. In patients with ocular symptoms at baseline, MP29-02* was significantly superior to both FP and AZE; relative difference 63% versus FP ($p=0.0012$), 42% versus AZE ($p=0.0456$).

Conclusion

MP29-02*, provides significantly greater relief from nasal symptoms versus two firstline therapies regardless of disease severity and most effectively relieved ocular symptoms in symptomatic patients.

* Dymista

A new allergic rhinitis therapy (MP29-02*) provides ocular symptom relief days faster than current firstline monotherapies

J. Mullol¹, M. Gelardi², D. Deleanu³, U. Munzel⁴, P. Hellings⁵

¹ IDIBAPS CIBERES, Hospital Clinic, Barcelona, Spain

² Rhinology, University Hospital Policlinico Bari, Policlinico Bari, Italy

³ Rhinology, Lulu Hatieganu University of Medicine and Pharmacy, Cluj Napoca, Romania

⁴ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁵ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

Abstract: ERS-0769

Session: Rhinitis clinical

Session Time: 25-06-14, 14:05

Location: Hall E

Chair person: A. Swift

Presenting author: J. Mullol

Objectives

New allergic rhinitis (AR) treatments should provide rapid and sustained ocular symptom relief. The objective was to assess the efficacy of MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system) in providing ocular symptom-relief vs AZE, FP or placebo (PLA) in seasonal AR (SAR) patients.

Methods

610 moderate-to-severe SAR patients (≥ 12 yrs) were randomized into a double-blind, PLA-controlled, 14-day, parallel-group, trial to MP29-02*, AZE, FP or PLA nasal sprays (1 spray/nosril bd; daily doses: AZE=548 μ g; FP=200 μ g). Change from baseline in reflective total ocular symptom score (rTOSS) and each ocular symptom score was assessed over time.

Results

MP29-02*-patients had greater rTOSS-reduction vs FP, AZE and PLA (relative difference 58% to FP, 35% to AZE) evident from treatment Day-1 (-2.12) vs FP ($p=0.010$) or PLA ($p<0.001$), and from Day-3 (-2.90) vs AZE ($p=0.029$) and sustained. The MP29-02*-induced level of relief on Day-2 (-2.12) was not reached before Day-8 for FP-patients. The level of relief achieved by MP29-02*-patients on Day-3 (-2.90) was not reached before Day-9 for AZE-patients. This pattern of rapid and sustained symptom relief by MP29-02* was observed for each ocular symptom. For example, MP29-02* provided an 8-day time advantage over FP and AZE for ocular itching relief.

Conclusion

The consistent and rapid effect of MP29-02* in alleviating all ocular symptoms contributes to its superiority over AZE and FP. The time-advantage over firstline therapy should improve patient concordance. MP29-02* is considered a new standard of care in AR.

*Dymista

Endoscopic sinus surgery for sinus mucoceles

U.S. Dharmabakti¹, R.S. Wardani¹, K. Prameswari¹

¹ ORL-HNS Department, Faculty of Medicine University of Indonesia, Jakarta, Indonesia

Abstract: ERS-0770

Session: CRS surgical techniques

Session Time: 26-06-14 10:10

Location: Hall H

Chair person: V. Lund

Presenting author: K. Prameswari

Objectives

Sinus mucoceles (mucus-retention cysts) are chronic, slow-growing, cystic lesions. Mucoceles arise as a result of obstruction of the sinus ostium secondary to previous surgery, inflammation and allergic reaction, trauma or a tumor mass. The gradual accumulation of mucous material in a sinus causes progressive distension of the bony walls until they compress the intracranial and/or intraorbital structures. Surgery is the only curative treatment for paranasal sinus mucoceles. External approach was the technique previously used by many surgeons. Recent advances in technology enable surgeons in using the endonasal technique as an alternative for paranasal sinus mucoceles.

Methods

Two cases of sinus mucoceles managed with endoscopic removal was analyzed based on the difference of clinical symptoms and radiological descriptions. Evidence based analysis was performed to determine the best choice of technique for sinus mucoceles.

Results

External approach was the technique used for many years, but with recent advances in endonasal approach, endoscopic sinus surgery is now generally used, as it is more conservative and less aggressive.

Conclusion

Orbital complications in both cases were caused by pressure from the sinus mucoceles on structures around. Orbital complications were reversible because of the non-invasive nature of the sinus mucoceles. The use of endoscopic technique in the preservation of patent sinus ostium without disrupting the normal mucosa can return the sinus into its physiologic state and in turn contributes to a low recurrence rate.

Novel efficacy parameters in AR management: results with a new AR therapy (MP29-02*)

C. Bachert¹, J. Fenton², V. Ristioja³, E. Lesinskas⁴, S. Albu⁵, U. Munzel⁶, P. Hellings⁷

¹ Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Belgium

² ENT department, University of Limerick, Limerick, Ireland

³ Tartu University, ENT Clinic, Tartu, Estonia

⁴ ENT Center, University Santariskes Hospital, Vilnius, Lithuania

⁵ II-nd Department of Otolaryngology, Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca, Cluj-Napoca, Romania

⁶ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁷ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

Abstract: ERS-0771

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:10

Chair person: C. Bachert

Presenting author: C. Bachert

Objectives

We propose two new, stricter allergic rhinitis (AR) response criteria to more stringently test efficacy: time-to-achieve a ≤ 1 point remaining for (i) each nasal symptom and (ii) for each nasal AND ocular symptom.

The objective was to compare the proportion of SAR-patients achieving these criteria, and the time taken to achieve them, following treatment with MP29-02* (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP) in an advanced delivery system), FP, AZE or placebo (PLA).

Methods

A total of 610 moderate-to-severe SAR-patients (≥ 12 years) were randomized into a double-blind, PLA-controlled, 14-day, parallel-group trial to MP29-02*, AZE, FP or PLA nasal sprays (1 spray/nostril bid; daily dose: AZE=548 μ g;FP=200 μ g). Response criteria were assessed post-hoc.

Results

Significantly more MP29-02*-patients (17.8%; 1 out of 6) achieved ≤ 1 pt remaining in each nasal-symptom vs 9.2% of FP-patients, 8.3% of AZE-patients and 7.8% of PLA-patients and ≤ 8 days faster than FP ($p=0.0262$) or PLA ($p=0.0094$) and ≤ 7 days faster than AZE ($p=0.0152$). 14.2% of MP29-02*-patients (1 out of 7) achieved complete/near-to-complete elimination from both nasal AND ocular symptoms compared to 8.5%, 6.2% and 5.7% for FP, AZE and PLA-patients, respectively, and ≤ 8 days faster than FP ($p=0.0929$), AZE ($p=0.0204$) or PLA-patients ($p=0.0123$). Neither AZE nor FP differed from PLA for either parameter.

Conclusion

MP29-02* is the drug of choice for AR since it provides faster and more complete symptom relief than firstline nasal therapies for AR. These efficacy criteria should become the new way of assessing efficacy of current and novel AR medications.

* Dymista

A new allergic rhinitis therapy (MP29-02*) is more effective than current firstline monotherapies in providing nasal and ocular symptom relief in seasonal allergic rhinitis patients

J. Mullo¹, M. Soyka², P. Roche³, M. Adali⁴, U. Munzel⁵, W. Fokkens⁶

¹ IDIBAPS CIBERES, Hospital Clinic, Barcelona, Spain

² Klinik für ORL, Universitätsspital Zürich, Zurich, Switzerland

³ ENT department, Tallaght Hospital, Dublin, Ireland

⁴ ENT department, Trakya University Hospital, Edirne, Turkey

⁵ Statistics & Market Access, Meda Pharmaceuticals, Bad Homburg, Germany

⁶ Department of Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0772

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:19

Chair person: C. Bachert

Presenting author: J. Mullo

Objectives

New allergic rhinitis (AR) treatments should provide relief from both nasal and ocular symptoms. The objective was to assess the efficacy of MP29-02* (a novel intranasal formulation of azelastine hydrochloride [AZE] and fluticasone propionate [FP] in an advanced delivery system) in providing relief for SAR-patients presenting with common symptom patterns.

Methods

610 moderate-to-severe SAR-patients (≥ 12 yrs) were randomized into this double-blind, placebo-controlled, 14-day, parallel-group trial to MP29-02*, AZE, FP or placebo nasal sprays (1 spray/nostril bid; daily doses:AZE=548 μ g; FP=200 μ g). The primary efficacy variable was change from baseline (CFB) in reflective total nasal symptom score (TNSS; congestion, itching, rhinorrhoea, sneezing), over 14-days. CFB in reflective-total-of-5 symptom-scores (T5SS; rTNSS plus ocular itching) and reflective-total-of-7-symptom-scores (T7SS; rTNSS plus ocular itching, redness and watering) were assessed post-hoc.

Results

MP29-02*-patients had a significantly greater reduction in rTNSS (-5.31) vs FP (-3.84; $p=0.0031$), AZE (-3.25; $p<0.0001$) and placebo (-2.02; $p<0.0001$); relative difference: 47% to FP; 66% to AZE. MP29-02* reduced rT5SS significantly more (-6.72) than FP (-4.81; $p=0.0020$), AZE (-4.23; $p<0.0001$) or placebo (-2.83; $p<0.001$) (49% to FP; 64% to AZE) and most effectively treated the entire rhinitis symptom complex, reducing the rT7SS from baseline (-8.74) significantly more than FP (-6.05; $p=0.0013$), AZE (-5.83; $p=0.0004$) and placebo (-3.55; $p<0.0001$) (52% to FP; 56% to AZE). These benefits were observed during the first day of treatment and sustained.

Conclusion

Compared to FP and AZE, MP29-02* most effectively treats AR patients presenting with common symptom patterns and could be considered firstline treatment for both nasal and ocular symptom relief.

* Dymista

Assessing allergic rhinitis symptom control using a simple visual analogue scale: the digital solution

D. Price¹, P. Demoly², C. Bachert³, S. Acaster⁴, R. Murray⁵, J. Bousquet⁶

¹ Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, United Kingdom

² CHU Montpellier and INSERM U454, Hôpital Arnaud de Villeneuve, Montpellier, France

³ Department of Otorhinolaryngology, Ghent University Hospital, Ghent, Belgium

⁴ Patient Reported Outcomes, Perspective Health Outcomes, London, United Kingdom

⁵ Medical Communications, Medscript, Dundalk, Ireland

⁶ Hôpital Arnaud de Villeneuve, University Hospital, Montpellier, France

Abstract: ERS-0773

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 15:13

Chair person: C. Bachert

Presenting author: D. Price

Objectives

ARIA developed a visual analogue scale (VAS) to assess allergic rhinitis (AR) symptom-control and improve management. The objective was to develop a VAS-based app for patients to document AR symptom-control with current medication.

Methods

The app was developed by members of the ARIA Executive Committee and experts in patient-reported-outcomes, who mutually agreed the information which should be captured and recorded. Based on this information, app wireframes were generated and a prototype developed. The content and functionality of the app were tested in both patients (n=14) and GPs (n=6) to assess comprehension and usability.

Results

The app collects information on symptoms experienced, disease type, how symptoms impact users' lives, and type(s) of AR medication used. Users assess their daily symptom control by clicking on 3 consecutive VAS (i.e. general-, nose- and eye-symptoms) in response to the prompt 'describe your AR symptoms today', from 'not-at-all bothersome' to 'extremely bothersome'. An asthma VAS is included for those with asthma comorbidity. A push-to-track symptoms and take medication is an included option. VAS-scores are logged and plotted over time and control assessed by predefined cut-offs; well-controlled: VAS <20 mm; partly-controlled VAS >20 mm <50mm; uncontrolled VAS >50 mm.

Conclusion

This app was well-accepted by patients and physicians. It is a simple and consistent way to assess AR symptom-control on currently-used medication. It will allow doctors to better tailor AR medications to patients' needs. The 'have you taken your medication' push function is expected to improve patient compliance. It is available for download from the app store.

Correlation of peak nasal inspiratory flow and radiographic evaluations in pediatric patients with adenoid hypertrophy

H.B. Yilmaz¹, A. Sahin-Yilmaz²

¹ Otolaryngology, Kartal Training and Research Hospital, Istanbul, Turkey

² Otolaryngology, Umraniye Training and Research Hospital, Istanbul, Turkey

Abstract: ERS-0774

Session: Pediatric rhinology

Session Time: 24-06-14, 11:40

Location: Hall H

Chair person: JB Watelet

Presenting author: H.B. Yilmaz

Objectives

The primary objective of this study is to find out whether there is a correlation between peak nasal inspiratory flow (PNIF) measurements and lateral radiographic x-ray measurements in pediatric patients with adenoid hypertrophy. The secondary objective of this study is to determine whether the use of a decongestant will have an effect on these correlations.

Methods

Data from 50 pediatric patients that was referred to the otolaryngology outpatient clinic with the main complaint of nasal obstruction due to adenoid hypertrophy was reviewed. All had lateral radiographic x ray graphs and PNIF measurements before and after decongestant application. The adenoid size in lateral radiographic graphs were measured according to three different methods described by authors Fujioka M et al, Cohen and Konak, and Johannesson S. Correlation analysis was performed between PNIF measurements and the size of adenoid calculated by these methods.

Results

Subjects had a mean age of 7.8 ± 2.9 . Correlation analysis revealed statistically significant correlations between PNIF measurements (baseline and after decongestant respectively) and the adenoid size detected by lateral x ray in three different methods (Fujioka M: $r=0.51, 0.50$, Cohen and Konak: $r=0.34, 0.33$ and Johannesson S: $0.51, 0.51$) ($p < 0.05$ for all)

Conclusion

Our study, for the first time, has shown that PNIF is perfectly correlated with lateral radiographic methods both in the decongested and congested state. It is a quick, cheap, noninvasive, simple technique and can be used as an objective method of measurement in adenoid hypertrophy in pediatric patients.

Assessing allergic rhinitis symptom control: results from a digital survey conducted during EAACI 2013

P. Hellings¹, C. Bachert², W. Fokkens³, D. Price⁴, G. Rasp⁵, R. Murray⁶, J. Mullool⁷

¹ Department of Otorhinolaryngology - Head and Neck Surgery, University Hospitals Leuven, Leuven, Belgium

² Upper Airway Research laboratory Department of Oto-Rhino-Laryngology, Ghent University Hospital, Ghent, Belgium

³ Department of Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

⁴ Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, United Kingdom

⁵ ENT department, University of Ear Nose and Throat, Salzburg, Austria

⁶ Medical Communications, Medscript, Dundalk, Ireland

⁷ IDIBAPS CIBERES, Hospital Clinic, Barcelona, Spain

Abstract: ERS-0775

Session: Rhinitis clinical

Session Time: 25-06-14, 14:50

Location: Hall E

Chair person: A. Swift

Presenting author: P. Hellings

Objectives

Allergic rhinitis (AR) is poorly-controlled in many patients. A fast and simple way to assess AR-control is needed; using a common language for both physicians and patients. The objectives were to assess how physicians (i) measure AR-control, (ii) perceive patients' control-status, and (iii) regard the usefulness of a visual analogue scale (VAS) to gauge control.

Methods

307 EAACI-2013 delegates completed an iPad survey. Delegates were asked to (i) indicate how many AR patients they saw per week during the season, (ii) assess the proportion of patients they considered to be well-, partly- and un-controlled, (iii) communicate how they routinely gauged control, and (iv) assess how useful they would find a VAS to gauge control.

Results

Respondents reported seeing 46.8 (SD 68.5) AR patients/week on average during the season. They considered that AR was well-controlled, partly-controlled and uncontrolled in 38.7% (SD 24.0), 34.2% (SD 20.2) and 20.0% (SD 16.34) of patients, respectively. Disease control was assessed in many different ways, including symptom severity (74%), frequency of day- and night-time symptoms (67%), activity-impairment (57%), respiratory function monitoring (40%), and incidence of exacerbations (50%). 91% of delegates felt that a VAS was a useful tool to assess disease-control.

Conclusion

Physicians assessed AR-control in many different ways and considered that over 50% of their patients had sub-optimally controlled disease. Almost all physicians considered the VAS a useful tool to assess AR-control. Such a tool would enable control assessment in a simple and consistent way and should improve the way this disease is perceived and managed.

Iatrogenic foreign bodies of the maxillary sinus

C. Manea¹, C. Sarafoleanu¹, V. Postelnicu²

¹ ENT&HNS Department "Sfanta Maria" Hospital, UMF Carol Davila, Bucharest, Romania

² ENT&HNS Department, Medlife Private Hospital, Bucharest, Romania

Abstract: ERS-0776

Session: CRS miscellaneous

Session Time: 25-06-14, 15:00

Location: Hall J

Chair person: G. Adriaensen

Presenting author: C. Manea

Objectives

Due to the continuous development of invasive dental procedures, presently we encounter a permanent growing of medical complications, like protrusion of foreign bodies (FB) into the axillary sinus during therapeutic maneuvers on the superior dental arch. We tried to find out the most frequent etiology of the iatrogenic FB of the maxillary sinus, type of complications produced and the best way to manage this pathology.

Methods

We performed a prospective clinical study on 28 consecutive patients with various types of FB of the maxillary sinus admitted in our Department between January 2011 - January 2012. All the patients were referred to us either by dental practitioners, or they addressed directly due to the presence of rhinosinusitis. In all cases we performed cranio-facial CT scans and dental panoramic radiography. The removal of the FB was performed surgically.

Results

Most common FB was dental implant (11 patients), followed by amalgam fragments (8 patients), Gutta percha points (3 patients), dental burr (2 patients), Kerr needles (2 patients), tooth fragments (2 patients). The complications encountered were: acute/chronic rhinosinusities (22 patients – 78,5%, with 9 cases of fungal colonization proved at histopathological exam), 10 cases of oro-antral fistula, 1 case of orbital abscess. The removal of the foreign body and the treatment of the rhinosinusal complications were accomplished using ESS in 25 patients and Caldwell-Luc approach in 3 cases.

Conclusion

Iatrogenic FB of the maxillary sinus are presently more and more common. ESS is the gold standard in managing both foreign bodies' extraction and rhinosinusal complications.

Unusual case of septal perforation in a young patient

R. Grigore¹, C.R. Popescu¹, B. Popescu¹, A. Nicolaescu¹, D. Mirea², S.V.G. Bertesteanu¹

¹ ENT head&Neck Surgery, Coltea Clinical Hospital, Bucharest, Romania

² ENT head&Neck Surgery, Elias Emergency Hospital, Bucharest, Romania

Abstract: ERS-0777

Objectives

Septal perforations are not very common “per se”, and often a young patient is subject to drug abuse suspicion. Accurate diagnosis might be tricky and often difficult.

Methods

We present a clinical case report of a 27 years old patient who presented with nasal obstruction, bad smell, sporadic epistaxis for 6 months. He denied drug abuse, trauma of the nose and surgery.

Results

The patient was carefully asked and examined for drug abuse, other common causes of septal perforations. We performed an endoscopic examination which revealed a large septal perforation with hypertrophic margins, easily bleeding and crusts. CT exam revealed only a cyst in maxillary sinus and septal perforation. We also performed several biopsies from margins of the tissue and the surprise was the result of pathology exam which showed nonhodgkin lymphoma with T/NK cells.

Conclusion

Although not very common, a septal perforation should be carefully examined and always biopsied if it is not secondary to nasal surgery. Young patients are often subject to drug abuse suspicion or post-traumatic etiology and superficially treated. The clinician should always consider a serious disease and perform multiple biopsies to be sure of the etiology of perforation. Cooperation with the pathologist for correct finding of the pathological tissue is mandatory.

Expression of transient receptor potential Vanilloid 1 (TRPV1) and Ankyrin 1 (TRPA1) receptors in chronic rhinosinusitis

E. Tóth¹, J. Kun², A. Perkecz², T. Tornoczky³, I. Gerlinger⁴, J. Szolcsányi², E. Pinter²

¹ Department of Otorhinolaryngology Head-and Neck Surgery, Medical Centre Hungarian Defence Forces, Budapest, Hungary

² Department of Pharmacology, Faculty of Medicine University of Pécs, Pécs, Hungary

³ Department of Pathology, Faculty of Medicine University of Pécs, Pécs, Hungary

⁴ Department of Oto-Rhino-Laryngology Head and Neck Surgery, Faculty of Medicine University of Pécs, Pécs, Hungary

Abstract: ERS-0778

Session: CRS Basic 3

Session Time: 24-06-14, 17:15

Location: Hall E

Chair person: S. Vlamincik

Presenting author: E. Tóth

Objectives

The „capsaicin receptor“ Transient Receptor Potential Vanilloid 1 (TRPV1) is a heat and noxious stimuli sensor that mediates neuro-genic inflammation and pain sensation. Transient Receptor Potential Ankyrin 1 (TRPA1) is a similar receptor in terms of localization, structure and function. Both receptors have been described on sensory nerves of the nasal mucosa but their non-neuronal function has not been elucidated yet.

Our aim was to detect the presence and expression change of extraneural TRPV1 and TRPA1 receptors in chronic rhinosinusitis with nasal polyps (CRS+NP).

Methods

Samples with nasal polyp (n=33) were obtained during routine endonasal surgery, control samples from subjects without inflammation during mucotomy (n=5). Patient subgroups were based on comorbidities (allergy, asthma, smoking) and the use of intranasal steroid. We detected receptor gene expression by quantitative PCR and protein localization by immunohistochemistry.

Results

We presented immunohistochemical evidence that TRPV1/A1 receptors are expressed in CRS+NP. TRPV1 immuno-positivity was observed in mast cells but not in eosinophils. Epithelial and glandular cells were stained by TRPA1 antibody. The local gene expression of extraneural TRPV1/A1 receptors was also proven. TRPV1 mRNA expression levels significantly increased only in patients with CRS+NP and asthma compared to the non-inflamed nasal mucosa. TRPA1 gene expression showed a decreasing tendency.

Conclusion

CRS by itself did not influence extraneural expression of TRPV1/A1 suggesting no function in the pathomechanism of CRS. However, in the case of comorbid asthma, we propose a role for TRPV1 receptors on mast cells, possibly by modulating the release of inflammatory mediators.

Management of nasal congestion with posterior nasal neurectomy in patients with vasomotor rhinitis and mild Osa

M. Lekatompessy¹, R. Wardani¹

¹ ENT department, Cipto Mangunkusumo Hospital, Jakarta Pusat, Indonesia

Abstract: ERS-0779

Objectives

Nasal congestion is the most complaint symptom in Allergic Rhinitis (AR) and Vasomotor Rhinitis (VR), also one of the risk factor of Obstructive Sleep Apnea (OSA). The effectiveness of Vidian Neurectomy (VN) in relieving nasal congestion is well established, but this technique has dry eyes as its complication. Posterior Nasal Neurectomy (PNN) is a minimally invasive operation technique which is developed from VN, giving the same result as VN but without the dry eyes complication. Purpose: We present this case to introduce PNN technique in relieving nasal blockage in VR patients, and using Polysomnography's (PSG) parameters as instrument to evaluate the effectiveness of PNN.

Methods

Case: A case of 60 years old man with VR that presented with mild OSA. Case management: It was treated with PNN and middle meatal antrostomy then evaluated subjectively using Epworth Sleepiness Scale (ESS) questioner and Visual Analog Scale (VAS) and objectively using Peak Nasal Inspiratory Flow (PNIF) measurement and PSG pre and post operation.

Results

PNN relieving nasal blockage in VR patients and improving OSA symptoms.

Conclusion

PNN has been proven effective in relieving nasal blockage in VR patients and improving OSA symptoms with nasal blockage as the main problem. The parameters in PSG also can be used as instrument to evaluated the effectiveness of PNN objectively.

Sinonasal fungal disease-aspergillosis after stomatology treatments

R. Grigore¹, C.R. Popescu¹, B. Popescu¹, D. Mirea², S.V.G. Bertesteanu¹

¹ ENT Head&Neck Surgery, Coltea Clinical Hospital, Bucharest, Romania

² ENT Head&Neck Surgery, Elias Emergency Hospital, Bucharest, Romania

Abstract: ERS-0780

Session: Fungal sinusitis

Session Time: 24-06-14, 09:55

Location: Hall G

Chair person: R. Kamel

Presenting author: R. Grigore

Objectives

Nasal aspergilloma is a rare disease, usually related with imunocompromised status, but sometimes can occur in healthy subjects. Authors noticed an increasing number of maxillary and ethmoid sinuses aspergilloma after dental treatments.

Methods

Authors present a series of 5 patients presenting with sinusitis symptoms. CT exam were suggestive for fungal sinusitis and all patients were treated by an endoscopic approach for paranasal sinuses. All patients had history of dental treatments with occlusive materials, but they were investigated also for diseases which can compromise the immune system.

Results

Under general anesthesia we performed an endoscopic endonasal surgery with opening of ethmoid and maxillary sinuses, and the pathology exam confirmed the diagnosis of aspergilloma

Conclusion

The increasing number of cases of aspergilloma after dental treatment raises the question of causality related with the material used by the dentist; in healthy subjects aspergilloma is very rare and the appropriate treatment is surgical drainage under endoscopic control. Systemic treatment is still controversial.

Eosinophilic fungal rhinosinusitis: a separate clinical entity ?

S. Vlaminck¹, C. Speleman¹

¹ ENT, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

Abstract: ERS-0781

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:27

Chair person: S. Reinartz

Presenting author: S. Vlaminck

Objectives

Between 1992 and 2006 118 patients were retained with the diagnosis of Eosinophilic Fungal Rhino sinusitis (EFRS). The diagnostic approach, clinical features and recurrence patterns have been observed

Methods

Patients with chronic rhino sinusitis (CRS) were retained with the diagnosis of EFRS based on the pathological findings of eosinophilic mucin (EM) Charcot-Leyden crystals (CLC) and fungal hyphae (FH). Positive fungal cultures have not been included.

Results

Sixty-seven patients (57 %) were female and 51 (43 %) male. Nasal Polyposis (NP) was noted in 70 (59%) CRS patients. Diagnosis was obtained through sampling sinonasal airway mucus secretions at surgery in 45 (38%) cases. In 73 (61.8%) cases diagnosis was obtained by sampling sinonasal airway mucus secretions following endoscopic sinus surgery (ESS). In 95 patients (50 %) FH were only found after repeated samplings. In 71 (60%) patients, only one operation was performed. Forty-two (35.6%) patients needed more operations to a maximum of 7 operations in one patient. In 5 CRS patients (4%) diagnosis was based on sampling sinonasal airway mucus secretions. In 109 (92%) of the patients a pan sinusitis was observed. Unilateral disease occurred in 9 (8%) patients. Allergy was noted in 39 patients (33%); asthma in 39 (33%); both allergy and asthma in 24 (20%) cases. APA syndrome was retained in 15 (13%) cases.

Conclusion

The increased likelihood of recurrent disease in EFRS patients is much higher in the Nasal Polyposis group. The sampling of sinonasal mucus secretions provides additional information regarding the clinical outcome in CRS patients after ESS.

Recurrent epistaxis due to low-flow carotid-cavernous fistula

A. Giotakis¹, F. Kral¹, M. Freund², H. Riechelmann¹

¹ Otorhinolaryngology, Medical University Innsbruck, Innsbruck, Austria

² Radiology, Medical University Innsbruck, Innsbruck, Austria

Abstract: ERS-0782

Objectives

This report concerns a 90-year-old man with recurrent epistaxis under anticoagulation therapy without any traumatic history.

Methods

Posterior endoscopy has revealed a pulsating blood clot in the right sphenoid sinus. Removal of the blood clot resulted in a pulsating ascending bleeding. After placing a tamponade, the patient was sent off for MR Angiography scans, which showed high suspicion of a low-flow carotid-cavernous fistula. An evaluation of the associated cranial nerves didn't show any abnormalities. The existence of the carotid-cavernous fistula was confirmed with a digital subtraction angiography.

Results

The fistula was successfully occluded with selective coilembolization of the right cavernous sinus by femoral venous approach. No further epistaxis was noted.

Conclusion

In cases of recurrent epistaxis from the sphenoid sinus, radiologic imaging is mandatory. In case of low-flow carotid-cavernous fistulas, state of the art therapy is the coil-embolization via the transfemoral venous approach.

The aging nose, its anatomical and physiological specialties and normal values of 4-phase-rhinomanometry

K. Vogt¹, K. Peksis², A. Lizuma²

¹ Center of Experimental Surgery, University of Latvia Faculty of Medicine, Riga, Latvia

² Klinika Headline, University of Latvia Faculty of Medicine, Riga, Latvia

Abstract: ERS-0783

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:09

Location: Hall H

Chair person: G. Ottaviano

Presenting author: K. Vogt

Objectives

4-phase- rhinomanometry (4PR) allows objective assessment of nasal patency; however, no reliable reference values are available in the age group above 65 years of age. The aim of this study was to determine normal values of 4PR in 50 elderly persons and to identify mucosal specialties.

Methods

Rhinomanometry was performed in 50 healthy volunteers (age 65-94 years) without nasal complaints. Data were classified in different age groups (each 5 years of age) and compared both with the adult's normal values and between each other. It was analysed if any of the rhinomanometric parameters is correlated with anthropometric measurements of the nose. The "valve effect" was analysed by visual analysis of the xy-diagram.

Results

1. The mean values of Logarithmic Effective Resistance (LogReff) and Logarithmic Vertex Resistance (LogVR) for people aged 65 to 95 are significantly lower as in adults (Mean 49%).
2. Comparing anthropometric data of older people and adults, no differences have been found.
3. Significant correlations of Nasal resistance and anthropometric parameters were found.
4. Having no rhinologic complaints aging nose demonstrates excessive mucosal reactions. In 42 % of cases slight congestion after using decongestant was identified. In 46% significant reduction of nasal resistance after decongestion was found.
5. No serious nasal valve dysfunction was identified.

Conclusion

In aging nose nasal conductance improves. Normal values for rhinomanometry in elderly are different as in adults and different in every age group. In aged people, the reactivity towards Xylometazoline as decongestant may be reversed, The reason is up to now unknown.

Preliminary results of a survey of hereditary haemorrhagic telangiectasia (HHT) in the northeast UK

Y. Ramakrishnan¹, I. Iqbal¹, M. Puvanendran¹, P.A. Corris², S. Carrie¹

¹ ENT, Freeman Hospital, Newcastle upon Tyne, United Kingdom

² Respiratory, Freeman Hospital, Newcastle upon Tyne, United Kingdom

Abstract: ERS-0784

Session: Epistaxis

Session Time: 26-06-14 10:24

Location: Hall J

Chair person: T. Van Zele

Presenting author: Y. Ramakrishnan

Objectives

To identify the demographics and epistaxis severity of hereditary hemorrhagic telangiectasia (HHT).

Methods

A questionnaire was sent to HHT participants recruited from respiratory clinic database in a tertiary hospital. Demographic details, HHT symptoms, family history, epistaxis severity and treatment received were recorded.

Results

Preliminarily, 15/60 patients responded (2 passed away). Of the 13 evaluable patients (5 male, 8 female), the average age was 45 (range 23-67) years. Average age on HHT diagnosis was 30 years (range 7-46 years). The diagnosis of HHT was made by the respiratory team in 6/13 patients, neurologist (1/13), ENT (2/13), general practitioner (3/13), not mentioned (1/13). Ten (76.9%) patients had a positive family history of HHT. Only 3 patients had formal genetic testing (2: endoglin, 1 unknown).

All patients presented with epistaxis. The average age at initial epistaxis was 12.6 years (range 2-30). The frequency of nose bleeds was daily 46.1% (6/13), weekly 23.1% (3/13), monthly 15.4% (2/13) and a few times a year 15.4% (2/13). Two patients required a transfusion. Four patients felt they were unable to perform daily activities due to epistaxis. Only 6/13 patients were under the care of ENT. The treatment plan for epistaxis management was deemed good in 3/13 patients, adequate in 3/13, poor in 2/13 and not mentioned in 5/13 patients.

Conclusion

This ongoing survey is the first to quantify the epistaxis burden within the Northeast of England. The management of epistaxis needs specific education and treatment in order to optimise the quality of life amongst these patients.

Clinical efficacy evaluation of 5 year subcutaneous and sublingual immunotherapy in patients monosensitized to house dust mites

O.Yildirim¹, B.U. Coskun¹, Y.O. Ucal¹, I. Ucak¹, F. Tetik¹

¹ Sisli Etfal Training and Research Hospital, Sisli Hamidiye Etfal Hospital, Istanbul, Turkey

Abstract: ERS-0785

Session: Immunotherapy

Session Time: 24-06-14, 11:33

Location: Hall E

Chair person: G. Hens

Presenting author: O. Yilderim

Objectives

Specific immunotherapy, which is the only treatment modality to be able to modify the course of the allergic rhinitis disease, is mainly administered by two routes; subcutaneous (SCIT) and sublingual (SLIT). The aim of this study was to investigate and compare the clinical efficacy of subcutaneous immunotherapy and sublingual immunotherapy with standardized house dust mite extract (*D. pteronyssinus*, *D. farinae*) for allergic rhinitis.

Methods

111 adult (aged 18 – 50) allergic rhinitis patients monosensitized to house dust mite allergens who completed SCIT or SLIT regimen for five years were enrolled in this study. The symptom scores (sneezing, rhinorrhea, nasal obstruction, pruritus, postnasal drip, wheezing, ocular symptoms, cough, loss of smell) were recorded using a four-point rating scale.

Results

Both SCIT and SLIT significantly reduced the individual symptom scores of sneezing, rhinorrhea, nasal obstruction, postnasal drip, pruritus, cough, loss of smell after 5-years treatment when compared with the baseline ($p < 0.05$). There was no significant difference in decreased mean scores of the symptoms between the SCIT and the SLIT groups ($p > 0.05$). A significant reduction in ocular symptom scores was found in the SCIT group compared with the SLIT group. In the quality of life assessments, and treatment satisfaction questionnaires, there were no statistically significant differences between the groups. SLIT and SCIT demonstrated a significant reduction in medication scores.

Conclusion

SLIT and SCIT both demonstrated a significant clinical improvement in allergic rhinitis patients sensitized to HDM after five years of treatment. The overall clinical efficacy was similar with SCIT and SLIT.

RARE METASTATIC TUMORS IN MAXILLARY SINUS

R. GRIGORE¹, C.R. POPESCU¹, B. POPESCU¹, D. MIREA², S.V.G. BERTESTEANU¹

¹ ENT HEAD&NECK SURGERY, COLTEA CLINICAL HOSPITAL, BUCHAREST, ROMANIA

² ENT HEAD&NECK SURGERY, ELIAS EMERGENCY HOSPITAL, BUCHAREST, ROMANIA

Abstract: ERS-0786

Objectives

Paranasal sinuses tumors are not very common and mostly late diagnosed because of lack of symptoms and patients are treated long time for inflammations.

Methods

We present 2 case reports: the first case of a male patient presenting with severe repeated epistaxis, but investigations showed a large invading tumor of maxillary sinus and the second one, a female patient presenting with cranial nerves palsy, but further investigation revealed a tumor of ethmoid and maxillary sinus.

Results

Both patients were surgically treated, the extension of the surgical procedure depending of the extension of the tumor. Because both patients had history of malignant tumors (female patient had breast cancer diagnosed and treated 4 years before and the male patient was treated for renal cancer 3 years before) they were investigated for metastasis in the common sites for these diseases. The investigations showed no secondary determinations at the common sites for breast cancer, nor renal cancer. The surprise is the result of pathology exam which showed that both tumors were metastasis of the primary cancer, breast and kidney.

Conclusion

Metastatic tumors of the sinuses are unusual and very rare diagnosed. Both patients were carefully examined by the surgeon who underwent the surgical procedure for the first tumor and by the oncologist also, and they considered no metastases occurred, so patients are treated. Symptoms regarding paranasal sinuses should carefully investigated at patients with history of different malignant tumors. The clinician should cooperate with the pathologist for correct finding of the tumor origin.

Unusual complications of anti-TNF therapy in CRS patients: an emerging disease entity?

S. Alromaih¹, B. Ibrahim¹, M. Desrosiers¹

¹ Otolaryngology Head and Neck Surgery, Centre Hospitalier de l'Université de Montreal, Montreal, Canada

Abstract: ERS-0787

Session: Complications in rhinology

Session Time: 25-06-14, 11:20

Location: Hall J

Chair person: N. Otori

Presenting author: S. Alromaih

Introduction

Members of the anti-TNF alpha drug classes have demonstrated efficacy in a number of inflammatory conditions but may be accompanied by a number of serious adverse effects secondary to immunosuppression, their mechanism of action. Over the past year, we have encountered five cases of CRS patients treated with anti-TNF agents for an underlying systemic disease presenting with unusual complications of CRS.

Objectives: We wished to describe our experience in the management of patients with CRS concomitantly managed with anti-TNF agents in order to inform other rhinologists of possible complications related to these therapies and therapeutic implications for management.

Methods

Five patients with complicated CRS under treatment with anti-TNF-alpha agents were seen in a tertiary outpatient setting. Complications are described for each case.

Results

Patients with CRS and TNF-alpha agents presented 1) Silent dental abscesses producing unilateral pansinusitis (two cases) 2) Failed surgery for oro-antral fistula (one case) 3) Abnormal serum biochemistry (Total serum IgE 19, 200 IU/ml (one case) and serum eosinophilia 52% with pericarditis and asthma exacerbation (one case)).

Conclusion

Patients under therapy with anti-TNF alpha agents may present with unusual courses of CRS, principally secondary to asymptomatic dental complications or unexpected immunologic disorders. These may manifest as silent dental abscesses, unusual biochemical values, and failure to heal following therapy. As symptomatology may be atypical, assessment of these patients must be thorough, with appropriate imaging and biochemical testing. Anti-TNF therapy might have to be paused during exacerbations or following surgery to ensure optimal outcomes.

The role of trpv1 in allergic rhinitis mouse model

J. Mo¹, S. Ramachandran¹, H. Son¹

¹ Otorhinolaryngology, Dankook University Hospital, Cheonan, Korea

Abstract: ERS-0788

Session: Rhinitis Basic

Session Time: 23-06-14, 11:24

Location: Hall J

Chair person: L. Kalogjera

Presenting author: J. Mo

Objectives

We planned to evaluate the role of TRPV1 using TRPV1 antagonist and TRPV1 knockout mice in allergic rhinitis mouse model and to evaluate the underlying mechanism of anti-allergic effects of TRPV1 antagonist using in vitro study.

Methods

TRPV1 antagonist (BCTC, theobromine) and agonist (capsaicin) were administered to OVA-challenged BALB/C mice. TRPV1 knockout mice were sensitized and allergic parameters were compared with those of wild type mice. TRPV1 expression was measured in CD4 T cell membrane and cytokine analysis was performed in BCTC pretreated CD4+T cell after anti-CD3/CD28 stimulation. Finally, T cell receptor signaling molecule such as JNK, ERK1/2, NFAT, p65 was evaluated in BCTC pretreated T cell line.

Results

TRPV1 antagonist (BCTC and theobromine) reduced allergic parameters in mouse model of allergic rhinitis, however, TRPV1 agonist (capsaicin) did not reduce allergic parameters and partially increased some of allergic parameters. In TRPV1 knockout mice, nasal eosinophil infiltration and nasal mucosal cytokine (IL-4, IL-5, IL-6, IL-17) transcriptional activities were decreased, when compared OVA-challenged wild-type mice. TRPV1 expression was localized in CD4 T cell membrane and BCTC pretreated CD4+ T cells produced less Th2 cytokines in vitro after with co-stimulation of aCD3/CD28. BCTC pretreatment inhibited phosphorylation of p65, p38, and JNK activation but did not alter the NFAT1 and ERK1/2 activation in T cell line.

Conclusion

In conclusion, this study supports the important role of TRPV1 in allergic rhinitis mouse model in vitro and in vivo and showed that TRPV1 antagonist inhibited allergic inflammation through MAPK pathway of T cell receptor signaling.

Chronic isolated sphenoiditis

J. Fejza Bulaj¹, R. Sinani¹, A. Kuci²

¹ ENT, UHC Mother Teresa, Tirana, Albania

² ENT, Luis medical center, Tirana, Albania

Abstract: ERS-0789

Objectives

Isolated sphenoiditis is an uncommon disorder which can present serious complications. It accounts for 2.7% of all sinus infections. The early diagnosis and treatment are important for the resolution of the disease and prevention of complications.

Methods

A 32 year old woman with severe headache on the right side, which persisted for more than 18 months was presented at our department. She had no nasal or ocular symptoms. The computed tomography and magnetic resonance imaging studies showed right sphenoiditis. She was treated with antibiotics (Cefuroxime 500 mg bid) for 4 weeks with no results. After the failure of the drug treatment she underwent endoscopic transnasal sphenoid sinus surgery.

Results

After the surgery the headache was disappeared and the patient was healed

Conclusion

In patients with atypical headache should be consider the diagnosis of sphenoiditis. The combination of antibiotics and sphenoid sinus surgery is the best treatment for patients with this pathology.

EMERGENCY MANAGEMENT OF STROKE AFTER SELECTIVE ARTERIAL EMBOLISATION FOR EPISTAXIS – A MULTIDISCIPLINARY EVIDENCE BASED PATHWAY

V. VARADARAJAN¹, L. WARNER¹, A. PUNNUSAMY², H. SOMWALKER³, J. DE CARPENTIER⁴

¹ OTOLARYNGOLOGY HEAD AND NECK SURGERY, NORTH WEST HIGHER SURGICAL TRAINING SCHEME, MANCHESTER, UNITED KINGDOM

² DEPARTMENT OF MEDICINE, ROYAL PRESTON HOSPITAL, PRESTON, UNITED KINGDOM

³ DEPARTMENT OF INTERVENTIONAL RADIOLOGY, ROYAL PRESTON HOSPITAL, PRESTON, UNITED KINGDOM

⁴ OTOLARYNGOLOGY, ROYAL PRESTON HOSPITAL, PRESTON, UNITED KINGDOM

Abstract: ERS-0790

Objectives

Many indications exist for selective arterial embolisation for difficult to treat epistaxis. Complications of this procedure include stroke / cerebrovascular accidents and death. To our knowledge, no evidence based management pathway has ever been presented or published outlining the best strategy to manage patients with these devastating complications.

Methods

After treating a young lady with Osler-Weber-Rendu syndrome, who had a neurological deficit post selective arterial embolisation, it was decided that a literature review and management pathway should be formally produced in order to best manage these patients in the future. The patient had an excellent neurological outcome due to the management instituted using a multi-disciplinary team approach. We therefore stress this in our pathway.

Results

To summarise, salient steps include:

1. Initial diagnosis and resuscitation (spaced with regular five minute neurological observations to monitor clinical progression of a worsening neurological defect)
2. Urgent on call medical review with decision to be made to give high dose aspirin orally or rectally
3. Urgent CT scan of head with contrast
4. Liason with oncall neuroradiologist to assess whether guided intra-arterial abciximab or thromboaspiration can provide real-time recanalisation
5. Liason with on call thrombolysis stroke team (if patient deficit deemed life threatening and epistaxis able to be controlled)
6. Transfer to a specialist neurological stroke unit

Conclusion

Neurological deficit after selective arterial embolization can be devastating and life threatening. We hereby present, to our knowledge, the first evidence based management pathway to guide the Rhinologist to provide the best end outcome for their patients in this situation.

Perioperative image-adapted brachytherapy (iabt) after surgery for the treatment of paranasal sinus and nasal cavity malignancies

J. Meyer¹, I.U. Teudt², B. Wollenberg³, G. Kovàcs⁴

¹ AK St. Georg, Dept. of Otorhinolaryngology Head Neck and Plastic Surgery, Hamburg, Germany

² AK Altona, Dept. of Otorhinolaryngology Head Neck and Plastic Surgery, Hamburg, Germany

³ University of Luebeck, Dept. of Otorhinolaryngology Head Neck and Plastic Surgery, Hamburg, Germany

⁴ University of Luebeck, Interdisciplinary Brachytherapy Unit, Luebeck, Germany

Abstract: ERS-0791

Session: Skull base surgery 4

Location: Hall G

Time: 26-06-14 11:15

Chair person: E. Wright

Presenting author: J. Meyer

Objectives

Sinonasal malignancies are often associated with late presentation and poor prognosis. Only little progress has recently been made in terms of oncologic results for sinonasal cancer. Often a multimodal treatment regimen is required. Aim of this study was to evaluate the clinical outcome of perioperative image-adapted brachytherapy (IABT) as part of a multidisciplinary treatment regimen for the therapy of sinonasal cancer.

Methods

Since 2006 patients with sinonasal cancer at the University Hospital of Schleswig-Holstein Campus Luebeck are offered a multimodal treatment concept including surgery, perioperative IABT +/- EBRT. In a retrospective study all patients receiving such a treatment were analyzed for survival and tumor control. All treatment regimens were reviewed for acute and late toxicities of this interdisciplinary treatment.

Results

35 consecutive patients were included into the study with a median age of 60 years. The median follow-up time was 28 months. Overall survival was estimated with 72% after 5 years. Disease-specific survival, disease-free survival, and local control were 83%, 63% and 67% respectively. On univariate analysis a significant better disease-free survival was found in patients treated for primary, but not recurrent sinonasal cancer ($p=0.006$). The overall complication rate of the treatment was 57%. 68% of toxicities were classified grade I and mainly included sinonasal crusting.

Conclusion

Multimodal treatment regimens including IABT are associated with excellent locoregional control and survival rates. IABT is well tolerated and shows low toxicity, while preserving visual acuity in all cases. The implementation of perioperative IABT improves the treatment results also in early stages of sinonasal cancer.

A case report of chondromyxoid fibroma in a perforated septum and literature review

K. Wong¹, S.A. Chan², D. Skinner³

¹ ENT, New Cross Hospital, wolverhampton, United Kingdom

² Medicine, Russel's Hall, Dudley, United Kingdom

³ ENT, Princess Royal Hospital, telford, United Kingdom

Abstract: ERS-0792

Objectives

Chondromyxoid fibroma is an extremely rare primary tumour in the head and neck region, especially when it involves the nasal septum. Only a few cases have been reported in the literature. We presented a case of a man who previously has had septoplasty presented with an incidental finding of a large chondromyxoid fibroma.

Methods

A 67 years old gentleman presented with right sided hearing loss, vertigo and tinnitus. MRI scan was performed to rule out acoustic neuroma. However, it revealed an incidental finding of a midline lesion arising from the hard palate. Biopsy of the lesion showed chondromyxoid fibroma. He underwent an endoscopic resection of the tumour. One year follow up in the clinic did not reveal any recurrence.

Results

Literature review

Conclusion

Despite successful endoscopic resection of the tumour, the role of previous septoplasty with the formation of the tumour remains unclear.

Retrospective and descriptive study about the evolution of anosmia according to its etiology

V. Amarillo Espitia¹, G. Eisenberg Plaza¹, E. Hernandez García¹, J. Alvarez López¹,
G. Plaza Mayor¹

¹ Madrid, Hospital Universitario de Fuenlabrada, Fuenlabrada, Spain

Abstract: ERS-0793

Session: Smell & Taste and trigeminal function

Location: Hall G

Time: 25-06-14, 14:40

Chair person: B. Landis

Presenting author: G. Plaza Mayor

Objectives

The Smell disorders, produces important quality life detriment. Our goal is to describe the evolution of anosmias considering its etiology and treatment prescribed.

Methods

66 patients with olfactory loss from 2009 to 2013 were studied. Olfactory function was assessed using the Connecticut Chemosensory Clinical Research Center test, registering the results at diagnostic and during the evolution.

Other data was registered such as sex, age, and exposure to snuff. We have also analyzed the evolution of the cases by etiology of suspicion (idiopathic, postviral, postraumatic, inflammatory) and by treatment received with topical and/or oral corticosteroid therapy and therapeutic abstention, comparing the recovery obtained in each one.

Results

The mean age was 53,8. There were 74,2% females(49/66) and 25,8% males. The most frequent etiology was postviral(51.5%), followed in frequency by idiopathic(25/66). At diagnosis the mean of the combined olfactometry (threshold test + identification test / 2) was 2.75, being the mean of olfactometry combined at the end of the track 4.70; Patients diagnosed as postviral anosmia had a better statistically significant end olfactometry(p0.001) compared to those with idiopathic anosmia, the same way we found a statistically significant difference between smokers and nonsmokers in relation to the recovery obtained being higher in those nonsmokers (p0.006). However no difference between the improvement obtained was found with corticosteroid therapy and therapeutic abstention.

Conclusion

Anosmia occurs most often in women. Viral infection is the most common etiology, Olfactory recovery is similar in patients who received corticosteroid therapy in relation to those patients whom treatment has not been established.

Comparison of olfactory function measured by sniffin' sticks test and subjective evaluation of smell impairment in patients with chronic rhinosinusitis

A. Minovi¹, S. Dazert¹, F. Minwegen¹

¹ Ruhr-University Bochum, Department of Otorhinolaryngology, Bochum, Germany

Abstract: ERS-0794

Session: Olfaction

Location: Hall G

Time: 25-06-14, 15:00

Chair person: B. Landis

Presenting author: A. Minovi

Objectives

This study compares the results of olfactory testing and patient's subjective evaluation of olfactory function in patients with chronic rhinosinusitis. We further investigated the relation between subjective evaluation of smell impairment and disease specific quality of life.

Methods

Adults suffering from chronic rhinosinusitis (n=90) were asked to assess their olfactory function by means of a Lickert Scale. We performed Sniffin' Sticks test. To evaluate disease specific quality of life we handed out the specific health-related quality of life questionnaire SNOT-20. On the basis of Sniffin' Sticks test's results the collective was divided into two groups. Group A included subjects with Hyposmia or Anosmia (n=56), group B included patients without smell impairment (n=34).

Results

The mean differences of self-rating of olfactory function differed significantly between both groups (1.08; \pm 3.74; 95%-CI 0.34, 1.82; p=0.005). Further there was a significant negative correlation of mean results obtained in sniffin' sticks test and self-evaluation (r=-4.17; P<0.001). Regarding quality of life there were no statistically significant differences between both groups. However, dividing the collective in two groups on the basis of self-evaluated olfactory function we could state a significant difference of 14.39 points respective the mean quality of life (\pm 2.78; 95%-CI 8.88, 19.89; p<0.001).

Conclusion

Our study states a significant correlation between results obtained in olfactory testing and self-evaluation of olfactory function. Smell impairment as measured by Sniffin' sticks test doesn't seem to have an influence on quality of life. Patients with subjectively reduced olfactory function have a worse quality of life.

Role of IL-22/IL-22 receptor expression in the pathogenesis of chronic rhinosinusitis: association with asthma and aspirin sensitivity

Y. Noyama¹, M. Okano¹, T. Fujiwara¹, S. Kariya¹, T. Haruna¹, A. Torigoe¹, K. Uraguchi¹, K. Nishizaki¹

¹ Otolaryngology-Head & Neck Surgery, Okayama University Graduate School of Medicine Dentistry and Pharmaceutical Sciences, Okayama, Japan

Abstract: ERS-0795

Session: CRS Basic 3

Session Time: 24-06-14, 16:25

Location: Hall E

Chair person: S. Vlamincx

Presenting author: Y. Noyama

Objectives

Chronic rhinosinusitis (CRS) is often associated with asthma and aspirin intolerance. It is reported that IL-22 receptor 1 (IL-22R1) is associated with refractoriness of CRS. We examined the role of IL-22 and IL-22 receptor expression in the pathogenesis of CRS, especially the association with concomitant asthma and aspirin intolerance.

Methods

Levels of IL-22 and IL-22R1 mRNA were determined in three groups of nasal polyps (patients with aspirin intolerant asthma; AIA, patients with aspirin tolerant asthma; ATA, and patients without asthma) and two groups of the uncinate process (patients with CRS, and patients without CRS) by real-time PCR.

Results

Levels of IL-22 mRNA were significantly higher in nasal polyps, especially in patients with both AIA and ATA, as compared to uncinate process without CRS. Conversely, levels of IL-22R1 mRNA were significantly lower in nasal polyps compared to uncinate process without CRS. Among nasal polyps, IL-22R1 levels were lower in patients with AIA compared to other two groups.

Conclusion

These results suggest that the imbalanced expression of IL-22/IL-22R1 is associated with the pathogenesis of CRS, especially in patients with AIA.

Intrathecal fluorescein in surgical treatment of cephalorachidean fistulae

V. Amarillo Espitia¹, E. Hernandez García¹, J. Alvarez López¹, G. Eisenberg Plaza¹, V. Garcia Peces¹, G. Plaza Mayor¹

¹ Otolaryngology (ENT), Hospital Universitario de Fuenlabrada, Fuenlabrada, Spain

Abstract: ERS-0796

Session: Skull base surgery 3

Session Time: 26-06-14, 09:30

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: V. Amarillo Espitia

Objectives

The spontaneous cephalorachidian fistulae is caused by communication between the subarachnoid space of the anterior or middle cranial fossa and nasal fossas. It causes persistent rhinorrhea/ rhinoliqorrhoea and often recurrent episodes of meningitis which can cause significant neurological sequelae and even death.

Methods

Male 61 years old, with persistent right nasal fossa rhinorrhea that refers like "water", and increases by tilting the head forward. No history of head trauma or nasal surgery. The fibroscopy evidences output of clear liquid in the high zone between middle turbinate and septum. The presence of CRL was confirmed for the presence of abnormal levels of beta-trace protein in the nasal liquid obtained. The computerized tomography and magnetic resonance imaging not evidenced any disturbances. In order to find definitive localization of the fistula, we have infiltrated intrathecal fluorescein, and then a nasal endoscopic exploration and ethmoidectomy was performed. Once identified the defect of 3 mm, in the area of the cribriform lamina, we proceeded to the application of fibrine glue and then to the free graft placement of inferior turbinate mucosa to close the defect.

Results

The evolution has been satisfactory, with complete closure of the fistula without complications.

Conclusion

In the surgical treatment of spontaneous cephalorachidian fistulae the infiltration of intrathecal fluorescein promotes proper identification of the area of cerebrospinal fluid fistula allowing more precise surgical approach and therefore infiltration of intrathecal fluorescein promotes proper identification of the area of cerebrospinal fluid fistula surgical approach allowing more accurate and therefore could promote best clinical results.

Heidelberg scalp acupuncture as a potential therapy in obstructive sleep apnea. A prospective clinical pre-study

M.J. Santos¹, N. Correia², T. Efferth³, J. Vent⁴, J. Machado⁵, M. Sá⁶, J.C. Wick⁷, H.J. Greten⁵

¹ Applied Physiology Lab, Abel Salazar Institute for Biomedical Science of University of Porto, porto, Portugal

² Acupuncture, Heidelberg School of Chinese Medicine, porto, Portugal

³ Pharmaceutical Biology, Institute of Pharmacy and Biochemistry University of Mainz, Mainz, Germany

⁴ University Medicine Mannheim, Heidelberg University, Mannheim, Germany

⁵ Applied Physiology Lab, Abel Salazar Institute for Biomedical Science of University of Porto, Porto, Portugal

⁶ Health Family Unit, ACeS Grande IV Maia, Maia, Portugal

⁷ Pulmonology, University Hospital of S. João Faculty of Medicine University of Porto, Porto, Portugal

Abstract: ERS-0797

Session: OSAS

Location: Hall H

Time: 25-06-14, 14:00

Chair person: N. de Vries

Presenting author: M.J. Santos

Objectives

Continuous positive airway pressure (cPAP) is widely considered the ‘gold standard’ in Obstructive Sleep Apnea (OSA). Two clinical studies reported a possible positive effect of conventional body acupuncture in this condition. A potential obstacle for this therapy may be the high number of body acupoints to be treated for 10 weeks, to obtain lasting effects. We were interested in possible clinical effects of a new type of scalp acupuncture on OSA, which allows the usage of implantable permanent needles in one single session.

Methods

N= 30 patients met the inclusion/exclusion criteria (i.e. AHI > 5, age 18-70, written consent, no usage of cPAP) and received acupuncture microneedles in specific points on the head. On day 1, a baseline home cardiorespiratory polygraphy was performed to evaluate the AHI. A second polygraphy measurement was performed on day 2 or 3 after receiving HSA on the same day.

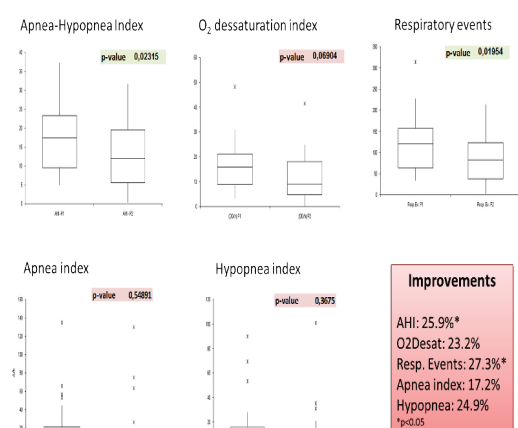
Results

The overall improvement of AHI was 27.3% (p= 0.0231). Respiratory events improved by 27.5% (p= 0.0195). Hypopnea Index (49.3%), Oxygen Desaturation (29.2%) and Apnea Index (18.2%) had improvement with a tendency for statistically signficancy. Patients with moderate OSA showed, tendencially, better improvements. No negative side effects were observed.

Conclusion

These preliminary results suggest that a prospective RCT may be planned to investigate the value of HSA on the basis of our preliminary data. This should focus on moderate OSA cases and should include 33 patients in verum and control group in a parallel study design based on the calculated sample size. Pharmacological test can be used to predict the changes in sleep apnea after nasal surgery. Elimination of nasal obstruction causes deterioration of sleep apnea syndrome in a part of cases.

Outcomes: baseline PSG (P1) versus post-HSA PSG (P2) n=30



Anterior ethmoidal artery septal flap for the management of septal perforation

E. Ferreli¹, A. Karligkiotis¹, L. Volpi¹, A. Pistochini¹, P. Palma¹, P. Castelnuovo¹

¹ Otorhinolaryngology, Ospedale di Circolo-Fondazione Macchi, Varese, Italy

Abstract: ERS-0798

Session: Closure of septal perforation

Session Time: 26-06-14, 11:30

Location: Hall K

Chair person: S. Carrie

Presenting author: E. Ferreli

Objectives

Achieving long-term closure of nasal septal perforations remains as one of the most challenging goals in nasal surgery. The aim of this study was to describe our surgical technique to repair septal defect.

Methods

We present eleven patients who underwent an endoscopic repair of anterior septal perforations with unilateral septal flap pedicled by anterior ethmoidal artery. The patients were followed for a period of 24-146 months (median, 63 months).

Results

There were no complications after the operation. All cases of septal perforation remained closed for the duration of follow-up.

Conclusion

Closing a perforated nasal septum through an endonasal technique can be achieved with a unilateral mucosal flap based on the anterior ethmoidal artery.

RELATION BETWEEN NASAL PATENCY AND SLEEP DISORDERED BRAETHING

K. VOGT¹, K. PEKŠIS², L. SPERLA², T. CAULINS²

¹ CENTER OF EXPERIMENTAL SURGERY, UNIVERSITY OF LATVIA FACULTY OF MEDICINE, RIGA, LATVIA

² KLINIKA HEADLINE, UNIVERSITY OF LATVIA FACULTY OF MEDICINE, RIGA, LATVIA

Abstract: ERS-0799

Objectives

The goal of this study is to analyze the relationship between objective nasal air flow parameters by 4-Phase-Rhinomanometry (4PR) and typical polysomnographic (PSG) indicators of SDB to include nasal function tests in the evidence based diagnostic.

Methods

Materials: 20 Patients with SDB with and without disturbances of nasal breathing and after nasal surgery have been included.

Methods: all patients underwent an overnight in-patient PSG, and 4PR before and after decongestion of the nasal mucosa. The rhinomanometers HRR3 and 4RHINO (Rhinolab, Germany) have been used including a VAS scale for the determination of subjective feeling of obstruction. Data were analyzed with Microsoft Excel and SPSS.

Results

Most SDB patients have significant nasal air flow abnormalities. There is a difference between objective and subjective assessment of nasal breathing, indicating that the patient's feeling is not diagnostically reliable. After nasal surgery reduced incidence of severe sleep apnoea was found, nasal breathing is improved. No statistic correlation between 4PR and incidence or duration of apnea was found. (small number). The highest diagnostic meaning of 4PR data in patients with SDB bilateral has Effective Resistance (LogReff) before nasal decongestion. Data obtained from thermistors or nasal cannula in PSG are not identical. Neither sensor shows a correlation with 4PR, which means that nasal breathing cannot be evaluated with PSG.

Conclusion

4-Phase-Rhinomanometry should be included in the basic diagnostic of obstructive sleep apnea. Reliable methods for the long-term analysis of the nasal airflow have to be developed.

Endoscopic endonasal approach with pedicled nasoseptal flap for cholesterol granulomas of the petrous apex

A. Karligkiotis¹, F. Ferreli², A. Pistochini², L. Volpi¹, P. Terranova², C. Pigni², F. Meloni¹, M. Ciniglio Appiani³, P. Herman⁴, P. Castelnuovo²

¹ Department of Otorhinolaryngology, University of Sassari, Sassari, Italy

² Department of Otorhinolaryngology, University of Insubria, Varese, Italy

³ Department of Otorhinolaryngology, Sapienza University, Rome, Italy

⁴ Department of Otorhinolaryngology, University Diderot AP-HP Hopital Lariboisière, Paris, France

Abstract: ERS-0800

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:00

Location: Hall H

Chair person: P. Nicolai

Presenting author: A. Karligkiotis

Objectives

Cholesterol granulomas of the petrous apex are rare expansile lesions that have traditionally been managed through lateral approaches with significant morbidity. Nowadays, the endoscopic approach represents a useful alternative. The aim of the present study is to report the results of the endoscopic endonasal approach for drainage of the cyst and using the nasoseptal flap to maintain patent the cavity.

Methods

A retrospective analysis was carried out on patients with cholesterol granuloma of the petrous apex, endoscopically managed using the nasoseptal flap, at two university centres following a uniform policy.

Results

Ten patients were treated between June 2008 and December 2013. 6 patients were males, whereas 4 were females. Three patients had been previously treated through an external lateral approach. The lesions were equally distributed between the left and the right side (1:1). All patients underwent an exclusive endoscopic endonasal approach using the nasoseptal flap. In 8 cases the flap was ipsilateral to the lesion while in 2 cases was contralateral. No intraoperative complications were observed. The mean follow-up period was 26 months. Surgery was successful in all cases but one.

Conclusion

In correctly selected patients, the endoscopic endonasal approach, represents a safe surgical procedure, minimally invasive and with excellent surgical outcomes. The use of the pedicled nasoseptal flap avoids the concentric growth of the granulomatous cyst epithelium, assuring ventilation and drainage of the cystic cavity.

Radiofrequency adenoidectomy – advantages in chronic otitis media with effusion with a low degree of pneumatisation of the mastoid air cells - our experience

V. Postelnicu¹, O. Constantinescu¹, C. Manea², C. Sarafoleanu²

¹ Otolaryngology, Medlife Baneasa, Bucharest, Romania

² Otolaryngology, "Sfanta Maria" Clinical Hospital, Bucharest, Romania

Abstract: ERS-0801

Session: Pediatric rhinology

Session Time: 24-06-14, 12:25

Location: Hall H

Chair person: JB Watelet

Presenting author: V. Postelnicu

Objectives

Evaluate efficacy of radiofrequency (RF) versus classic adenoidectomy in children with repeated otitis media with effusion (OME) with a low degree of pneumatisation of the mastoid air cells.

Methods

Retrospective study on 64 children with adenoids and OME or history of OME prior to surgery. 42.2% patients benefited RF adenoidectomy; all benefited endoscopic guidance. 25.8% suffered adenoidectomy and ear tubes fixation.

Results

RF vs. Classic adenoidectomy: postoperative bleeding – none vs. 2.7%; postoperative recurrence of OME (first 2-3 days) - 7.4% vs. 16.2%; postoperative pain at onset of OME – none vs. mild to moderate; remission of postoperative OME – 7 vs. 13 days; recurrence/duration of remission of OME in the first 12 months – 11.1%/1-10 days vs. 21.6%/10-21 days; further referral to ear tube fixation – none vs. 5.4%. In 3.1% cases posterior partial membranous imperforations were found - resolved with monopolar RF.

Conclusion

RF adenoidectomy guided by nasal endoscopy offers the possibility to remove better the small adenoids, hypertrophic peritubal and nasopharyngeal dome mucosa and also posterior partial membranous imperforations of the nasal choanae. It provides a lower incidence of OME recurrence both postoperative and on a long time basis, reducing the persistence of ear disease and future need for implantation of ear tubes, a faster evolution to healing, less postoperative bleeding and pain. It also prevents the damage the torus tubaris, which is more likely to be injured in classic adenoidectomy and is of good advantage in vaporizing the posterior partial membranous imperforations of the nasal choanae.

Respiratory epithelial adenomatoid hamartoma and olfactory function

L. De Gabory¹, C. Nagouas¹, P. Bastier¹, A. Lechot¹

¹ ORL, Chu Bordeaux, Bordeaux, France

Abstract: ERS-0802

Session: Skull base surgery 4

Session Time: 26-06-14, 11:55

Location: Hall G

Chair person: E. Wright

Presenting author: L. De Gabory

Objectives

Respiratory Epithelial Adenomatoid Hamartoma (REAH) is frequently associated with nasal polyposis. Sometimes, it observes without polyp or associated with several another diseases. The aim of this study was to understand the natural history of sinonasal REAH.

Methods

We retrospectively reviewed 31 patients with REAH. We studied epidemiological, imaging and pathologic data, olfactory function, corticosteroid consumption and disease course.

Results

The mean age was 58.5 years. Pre-operative status showed 22 nasal polyposis, 12 asthma, 10 aspirin-exacerbated respiratory diseases which 8 Fernand-Vidal diseases and 11 allergic rhinitis. Three patients had REAH without polyps. All patients had local corticotherapy and 61% of them have been received one or several short oral corticosteroid treatment with mean efficient delay of 13.8 ± 36 days. On CT-scan, the mean olfactory cleft width was 12.4 ± 3.8 and 11.3 ± 2.4 mm in coronal and axial plan, respectively. REAH were bilateral in 18 cases. All cases were implanted in the anterior part of olfactory cleft. All patients were operated by endoscopic approach with or without ethmoidectomy. Histologic results showed REAH associated with 7 true nasal polyposis diseases, 1 Churg-Strauss disease and 23 cases with or without inflammatory polyps. The mean follow-up was 34.2 ± 43 months without any recurrence of REAH. Olfactory function was improved in 16 cases ($p < 10^{-2}$) and 9 patients did not received local corticosteroid medication after surgery ($p < 0.02$).

Conclusion

REAH were alone or associated with several diseases which have very different physiopathologic processes and tend to decrease olfactory function. It could be considered as a defense process of the olfactory cleft.

Frontal recess and osteomeatal complex anatomy variations: identification and prevalence in patients with sinonasal symptoms

C. Durao¹, I. Moura¹, M. Soares¹, J.P. Leandro¹, F. Freire¹

¹ Otolaryngology Head and Neck Surgery, Hospital Fernando Fonseca, Lisbon, Portugal

Abstract: ERS-0803

Session: Imaging

Session Time: 24-06-14, 11:51

Location: Hall F

Chair person: SJ. Zinreich

Presenting author: C. Durao

Objectives

The frontal recess and the osteomeatal complex anatomy depend on a variety of cells and lamellae with high degree of individual variation.

The purpose of this study is to describe the pneumatization pattern of frontal recess and osteomeatal complex in a Portuguese population with sinonasal symptoms.

Methods

All computed tomography scans of the paranasal sinuses performed at Hospital Prof. Doutor Fernando Fonseca in 2013 were reviewed. Coronal and sagittal reformats were obtained. Scans were assessed to evaluate variants of the uncinate process, middle turbinate and bulla ethmoidalis. It was also determined the prevalence of septal deviation located in the middle meatus, Haller cell, Agger Nasi, Frontoethmoidal cells, Suprabullar cell, Frontal bulla, Interfrontal septal cell and supraorbital cell. Exclusion criteria included children, previous surgery, complicated sinusitis, benign, and malignant tumours.

Results

810 patients with nasosinusal symptoms performed sinus CT scans in the year of 2013. From those, 300 patients were included in the present study. The sex ratio was equal to 1,6 (male: female= 1,6:1). The median age was 63 (range, 18-78y). Mucosal abnormalities were present in at least one paranasal sinus in 62,3% of patients. The most affected paranasal sinuses were maxillary and ethmoid sinus. The most prevalent cells were Bulla ethmoidallis (100%) and Agger Nasi (91%). Concha bullosa and nasal septal deviation located in middle meatus were the most common anatomic variations.

Conclusion

The prevalence of frontal accessory sinus cells is different from previously published literature. The results of other anatomical variations were similar to those found in other studies.

External drainage of orbital superior subperiosteal abscesses - a safe and reproducible technique

V. Varadarajan¹, T. Moors², J. De Carpentier²

¹ Otolaryngology, North West Higher Surgical Training Scheme, Manchester, United Kingdom

² Otolaryngology, Royal Preston Hospital, Preston, United Kingdom

Abstract: ERS-0804

Session: Complications in rhinology

Session Time: 25-06-14, 12:00

Location: Hall J

Chair person: N. Otori

Presenting author: V. Varadarajan

Objectives

The majority of subperiosteal abscesses occur in the medial compartment of the orbit. As such, the Rhinologist is comfortable draining these endoscopically or via an external Lynch Howarth incision. However, instances occur when there is a coexisting or singular subperiosteal abscess in the superior compartment of the orbit. Some claim that these can be drained endoscopically. However, sometimes this is neither practical nor technically easy. We present an easy to follow, reproducible method of accessing the superior orbit safely using an external approach.

Methods

Using a photographic case study of a patient with an abscess, we show a step by step surgical technique to access the superior subperiosteal orbital space safely. The approach also results in good long-term cosmetic outcomes.

Results

The technique is described in detail in the presentation with accompanying images. Salient steps include:

1. Palpation and marking of the lateral third of the superior orbital rim
2. Injection of vasoconstrictor and use of a size fifteen scalpel to incise directly onto the bony rim
3. Blunt dissection with scissors and Freer's elevator on the underside of the bony superior orbital rim, sticking closely to bone
4. Drainage of the abscess, washout and insertion of a corrugated drain

Conclusion

The technique described gives a stepwise method of accessing the superior subperiosteal space safely via an external approach. The approach described is simple and easily taught to juniors. In addition, the technique is designed to minimize damage to vasculature, periorbital, rectus muscles and the optic nerve.

Evidence based review of antibiotic prescribing in orbital cellulitis

N. Amin¹, I. Syed¹, A. Toma¹

¹ Otolaryngology/Head & Neck Surgery, St George's Healthcare NHS Trust, London, United Kingdom

Abstract: ERS-0805

Session: Complications in rhinology

Session Time: 25-06-14, 11:15

Location: Hall J

Chair person: N. Otori

Presenting author: N. Amin

Objectives

Orbital cellulitis is a medical emergency requiring multi-disciplinary team involvement. Early diagnosis and intervention is imperative to avoid serious complications including blindness and intracerebral involvement. Intravenous antibiotic therapy is the mainstay of medical treatment although surgical intervention may be required to prevent serious complications.

Methods

Literature review on 10th December 2013 using Medline and search terms: 'Orbital cellulitis' or 'peri-orbital cellulitis' AND 'treatment' or 'management' AND 'antibiotics'. Search was limited to articles published in English.

Results

106 papers were identified and 25 studies or review articles were selected. Sinonasal disease is the most common cause of this peri-orbital complication. Consequently, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Staphylococcus aureus* and anaerobic bacteria such as Gram-negative bacilli and *Fusobacterium* are the most common causative pathogens. Antibiotic overuse in certain European countries has lead directly to increased antibiotic resistance. Current common practice includes initial broad-spectrum antibiotics with more focused narrow-spectrum antibiotics to likely organisms in the case of treatment failure.

Conclusion

Antimicrobial agents that provide coverage for Methicillin-sensitive *Staphylococcus aureus*, aerobic and anaerobic species are covered by antibiotics including cephalosporins, carbapenems and the combination of a penicillin with a beta-lactamase inhibitor (e.g. amoxicillin-clavulanate). Close consideration must be paid for the need for anaerobic cover with addition of antibiotics such as metronidazole or clindamycin. In suspected methicillin-resistant *S. aureus* (MRSA) case a glycopeptide (e.g. vancomycin) should be considered. In treatment failure be aware of rare organisms. All antibiotics used must have good penetrance of the blood-brain barrier.

The experiences of anosmia sufferers in the UK: a qualitative study rhinosinusitis with polyps

T. Bradshaw¹, S. Erskine¹, D. Boak², C. Philpott¹

¹ Norwich Medical School, University of East Anglia, Norwich, United Kingdom

² Fifth Sense, -, Norwich, United Kingdom

Abstract: ERS-0806

Session: Olfaction

Location: Hall G

Time: 23-06-14, 15:21

Chair person: P. Rombaux

Presenting author: T. Bradshaw

Objectives

There are large numbers of patients with olfactory disturbance in the UK and shortfalls in assessment and support amongst main-stream ENT practice. This qualitative analysis of written patient accounts aims to identify the main concerns for such patients.

Methods

This qualitative study uses written accounts received by the smell and taste clinic of a tertiary referral centre in the UK, from consenting patients experiencing olfactory disturbances (hyposmia/anosmia/parosmia/phantosmia). Framework analysis was performed using NVivo 10 software.

Results

Participants – age range 34-70 years, 62 females, 39 males.

Emotional impact – feelings of embarrassment, sadness, depression, worry and bereavement.

Relationships – several participants believed symptoms impaired feelings of closeness and intimacy.

Daily functioning – unpleasant perception of everyday odours led to avoidance of common areas such as public transport. Several participants reported difficulty assessing personal hygiene.

Physical health – loss of interest in food and difficulty identifying expired food products. Some felt endangered by being unable to detect smoke or gas.

Financial burden – cost of private referral, alternative treatments and lost income for consultations.

Attitudes of healthcare workers – several participants had been met with disinterest or refused referral. Some were told there was no treatment.

Conclusion

These results demonstrate that olfactory disturbances have a wide-ranging impact on the lives of sufferers, compounded by a lack of knowledge of the disorder amongst clinicians. Consequently, there may be a role for further support and education for both sufferers and clinicians as well as a need to improve understanding of olfactory disturbance.

Squamous cell carcinoma arising on sinonasal inverted papilloma: survival outcomes of 27 patients treated with endoscopic endonasal resection

A. Pistochini¹, A. Karligiotis², D. Lepera¹, L. Volpi², F. Ferreli¹, G. Zocco¹, F. Meloni², M. Bignami¹, P. Nicolai³, P. Castelnovo¹

¹ Department of Otorhinolaryngology, University of Insubria, Varese, Italy

² Department of Otorhinolaryngology, University of Sassari, Sassari, Italy

³ Department of Otorhinolaryngology, University of Brescia, Brescia, Italy

Abstract: ERS-0807

Session: Malignant tumours

Session Time: 24-06-14, 09:30

Location: Hall H

Chair person: M. Bernal-Sprekelsen

Presenting author: A. Pistochini

Objectives

Inverted papillomas can be associated synchronously or metachronously to invasive squamous cell carcinoma in 5-10% of cases. The mortality rate has been reported to be around 40%. The aim of the present study is to analyzing the clinical features, treatment modalities and survival outcomes in this specific subgroup of patients.

Methods

A retrospective analysis was carried out on patients with inverted papilloma associated to squamous cell carcinoma endoscopically managed over the past 22 years, at two university centres following a uniform policy.

Results

Twenty-seven patients were treated between November 1991 and August 2013. The tumors were staged as T1 (5/27), T2 (7/27), T3 (8/27), T4a (2/27) and T4b (5/27). All patients underwent surgery with an exclusive endoscopic endonasal resection (23 cases), a cranio-endoscopic resection (3 cases), a combined endoscopic-osteoplastic flap procedure (1 case). Subsequently, 11 patients underwent adjuvant radiotherapy, 1 adjuvant chemotherapy and 2 concomitant radio-chemotherapy. The follow-up ranged from 130 to 5 months (mean: 46.9 months). 21 patients had no evidence of disease, 1 patient was alive with disease, while 5 patients developed distant metastases and died of disease. The 5-years overall survival in our series was 66.8% (22/27).

Conclusion

In correctly selected patients, the endoscopic endonasal approach offers a less invasive alternative than resection by an open approach, with acceptable morbidity. Adjuvant radiotherapy with or without chemotherapy should be indicated in advanced disease or in presence of close or positive margins. Recurrent disease can develop after prolonged period of time, thus long term follow-up, is recommended.

Primary mucosal melanoma of the sinonasal tract: report of 24 patients and literature review

C. Durao¹, A. Hebe², R. Pacheco², P. Montalvão², M. Magalhães²

¹ Otolaryngology Head and Neck Surgery, Hospital Fernando Fonseca, Lisbon, Portugal

² Otolaryngology Head and Neck Surgery, Instituto Português de Oncologia Francisco Gentil Lisboa, Lisbon, Portugal

Abstract: ERS-0808

Session: Balloon sinuplasty

Time: 24-06-14, 10:15

Location: Hall G

Chair person: A. Leunig

Presenting author: C. Durao

Objectives

Primary mucosal melanomas of the sinonasal tract (MMSN) are rare and aggressive tumors. We aim to review the experience of the Portuguese Institute of Oncology in Lisbon in managing MMSN patients over a 14-year period.

Methods

Twenty four patients treated from 1998 to 2012 at a tertiary referral center were retrospectively reviewed.

Results

The sex ratio was equal to 0,7 (male: female= 0,7:1). Median age at diagnosis was 71 years (range, 59-85 y). The presenting symptoms were nasal obstruction (66,6%) and epistaxis (53,3%). The disease was too extensive to determine the exact site of origin in 22 cases. In 2 cases the primary site was the nasal septum. At presentation, 63% cases were Ballantyne stage I, 8% stage II and 29% stage III. Surgery was performed with curative intent in 18 cases. Postoperative radiation therapy was delivered in 13 cases. In the majority of patients (77,8%) the surgery was performed by an open approach. 22,2% of cases were treated with endoscopic endonasal approach. Neck dissections were performed in one case. The recurrence rate was 72%. The five-year overall survival rate was 18%.

Conclusion

In the majority of patients the disease was locally extensive, but confined to the primary site. The prognosis of MMST remains poor. Current evidence supports surgery as the best chance of cure. Role of adjuvant radiotherapy or neck dissection remains controversial.

Olfactory training is helpful in patients with post-traumatic olfactory dysfunction: a randomized, controlled study

E. Lehrer¹, F. Mariño-Sánchez¹, I. Alobid¹, J. Berenguer², M. Bernabeu³, S. Centellas¹, S. Laxe³, C. Marín⁴, J. Mullol¹

¹ Rhinology Unit and Smell Clinic, Otorhinolaryngology Department, Hospital Clinic of Barcelona, Barcelona, Spain

² Radiology Department, Hospital Clinic of Barcelona, Barcelona, Spain

³ Rehabilitation Department, Institut Guttmann, Barcelona, Spain

⁴ IRCE Clinical Experimental Respiratory Immunoallergy, IDIBAPS August Pi i Sunyer Biomedical Research Institute, Barcelona, Spain

Abstract: ERS-0809

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:18

Chair person: P. Rombaux

Presenting author: E. Lehrer

Objectives

Traumatic Brain Injury (TBI) may be associated with different levels of smell loss. Recent studies have suggested that olfaction may be modulated by olfactory training (repeated exposure to odours). The objectives of this study were to assess the frequency of smell dysfunction in patients suffering from TBI and their potential smell recovery after olfactory training.

Methods

In a prospective, controlled study, TBI patients with post-traumatic olfactory dysfunction were randomized into an experimental group (n=11), undergoing olfactory training during 3 months, or a control group (n=13) without training. Patients with smell loss due to sinonasal, neurologic, or idiopathic diseases were excluded. Training was performed once daily with a 6-odour smell training set: rose, eucaliptus, lemon, clove, and vinegar. Olfactory function was assessed by subjective olfactometry (BAST-24) and visual analogue scale (VAS) before and 1, 3, and 6 months after smell training.

Results

From the TBI analyzed patients (N=58), 24 (41.3%) presented a subjective partial or total loss of smell. At initial MRI (N=22), 14 (63.6%) presented bulbo-malacia with bleeding signs while 16 (72%) frontal and 3 (13.6%) medio-temporal encephalomalacia. Compared to controls, trained TBI patients showed a significant improvement of smell perception measured by VAS (77.8% vs 56.4%, p<0.05), after 3 months of training. This improvement was not sustained after the cessation of olfactory training. No significant changes were observed in BAST-24 scores (smell detection, recognition, or identification).

Conclusion

The present study suggests that a 3-month olfactory training improves subjective olfactory perception in TBI patients with post-traumatic olfactory dysfunction.

Metastatic melanoma of sphenoid sinus

T. Carvalho¹, M. Canas Marques¹, P. Pereira¹, S. Agostinho¹, A.R. Santos¹, M. Simão¹, O. Dias¹

¹ ORL, Hospital de Santa Maria, Lisboa, Portugal

Abstract: ERS-0810

Objectives

Metastasis to the paranasal sinus are extremely rare, with only a few more than one hundred cases reported in the literature. The commonest site of the primary tumor is the kidney and the maxillary sinus is the most often involved. Sphenoid sinus is one of the most uncommon site of metastasis. Melanoma is an aggressive and highly metastatic disease, but despite its propensity for spread to the brain and bones, metastatic disease as rarely been described in the sphenoid sinus, clivus or within the sella.

Methods

The authors describe a case of a 57-years old man, heavy smoker, with a past history of skin melanoma of the 1st finger of his left hand who presented with a nasopharynx mass and a CT_scan revealing a mass inside the sphenoidal sinus with extension to the nasopharynx and the sella, associated with lytic lesions of the clivus.

Results

The transsphenoidal biopsy revealed metastatic melanoma.

Conclusion

Although metastasis to the sphenoid sinus is an uncommon entity, when present, signs and symptoms relating to this metastasis are frequently the first presentation of disease. As such, patients with symptoms suggestive of sphenoid sinus malignancy should be vigorously evaluated for the possibility of a primary as well as metastatic tumor of the sinus.

Olfactory dysfunction induced by excitotoxicity in rats as a model for secondary neuronal degeneration in traumatic brain injury

I. Tejero¹, J. Mullol², I. Alobid², J. Berenguer³, M. Bernabeu⁴, S. Centellas², S. Laxe⁴, E. Lehrer², F. Mariño-Sánchez², C. Marín¹

¹ IRCE Clinical Experimental Respiratory Immunoallergy, IDIBAPS August Pi i Sunyer Biomedical Research Institute, Barcelona, Spain

² Rhinology Unit and Smell Clinic. Otorhinolaryngology Department, Hospital Clinic of Barcelona, Barcelona, Spain

³ Radiology Department, Hospital Clinic of Barcelona, Barcelona, Spain

⁴ Rehabilitation Department, Institut Guttmann, Barcelona, Spain

Abstract: ERS-0811

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:36

Chair person: P. Rombaux

Presenting author: I. Tejero

Objectives

Traumatic Brain Injury (TBI) constitutes one of the main causes of olfactory dysfunction. One event related to TBI is the secondary neuronal degeneration (SND), a downstream cascade of events promoting further damage. Excitotoxicity is a key factor in SND since during the TBI acute phase, a massive release of glutamate occurs. The role of excitotoxicity on TBI olfactory dysfunction is still unknown. The goal was to examine the olfactory dysfunction induced by bilateral administration of the glutamate agonist N-methyl-D-aspartate (NMDA) in the olfactory bulbs (OB) in a rat experimental model of SND.

Methods

Sprague-Dawley rats were maintained in a food-deprivation schedule. Olfactory discrimination tests were performed before, 1 and 2 weeks after NMDA-lesion. The dish in which rats dug first and the spent time were recorded. NMDA or vehicle was bilaterally injected into OB (1, 2, or 3 injections of 1.5 µl). Nissl staining, NeuN, tyrosine hydroxylase, and glial fibrillary acidic protein (GFAP) immunohistochemistry were performed.

Results

One week after NMDA lesions animals showed a significant 70% ($p < 0.01$) decrease in correct trials when 3, but not 1 and 2, injections were administered ($p < 0.01$). The time spent to achieve the correct odour increased ($p < 0.05$). A recovery of olfactory function was observed two weeks after lesion ($p < 0.01$). NMDA lesions resulted in neural injury through all bulb layers.

Conclusion

These results indicate that bilateral OB NMDA lesion is a useful tool to investigate excitotoxicity in the SND after TBI and to study the pathophysiology and repair mechanisms of the olfactory dysfunction.

Radiological study of the anatomy of the keystone area of the nasal septum using computed tomography

S. Carr¹, S. Sinha², S. Mirza¹

¹ Otolaryngology-Head and Neck Surgery, Royal Hallamshire Hospital, Sheffield, United Kingdom

² Neurosurgery, Royal Hallamshire Hospital, Sheffield, United Kingdom

Abstract: ERS-0812

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:40

Chair person: S. Carrie

Presenting author: S. Carr

Objectives

An optimum septoplasty result may require complete detachment of the superior osseocartilaginous junction but this may lead to disruption of the keystone area with loss of nasal support and consequent supratip depression deformity. Our aim was to analyse normal keystone area anatomy using CT scan images.

Methods

We retrospectively reviewed paranasal sinus CT scans performed prior to transphenoidal hypophysectomy. Measurements were taken including the length of the keystone area which is the length from the osseocartilaginous junction of the septum at the nasal bone level to the distal nasal bone edge.

Results

The CT scans of 91 patients was analysed. The mean keystone length was 6.8mm (range 0-13.7 mm). Considering a keystone length of less than 5 mm as significant and including certain shapes of osseocartilaginous junction it was deemed that 26% of patients had anatomy predisposing the patient to supratip depression if there was a complete detachment at the osseocartilaginous junction.

Conclusion

Twenty-six per cent of patients have keystone anatomy on radiology that would predispose them to a supratip depression if there was complete detachment of the osseocartilaginous nasal septum. Relatively shorter nasal bones are associated with a shorter keystone area. In cases with a high septal deviation undergoing a septoplasty a preoperative CT scan may allow the surgeon to assess the keystone area and determine whether it is safe to completely detach the osseocartilaginous junction.

Endoscopic sphenopalatine artery ligation in a teaching hospital setting: outcome and recommendations

S.Y. Hey¹, N.K.F. Koo Ng¹, G.W. McGarry¹

¹ Department of Otolaryngology-Head and Neck Surgery, Glasgow Royal Infirmary, Glasgow, United Kingdom

Abstract: ERS-0813

Session: Epistaxis

Session Time: 26-06-14 09:48

Location: Hall J

Chair person: T. Van Zele

Presenting author: S.Y. Hey

Objectives

Endoscopic sphenopalatine artery ligation (ESPAL) is now the intervention of choice for refractory epistaxis in specialist ENT units. We studied the efficacy and application of ESPAL in our regional teaching hospital.

Methods

Retrospective, structured review of ESPAL performed between December 2005 and November 2012 was conducted. All patients who underwent ESPAL for epistaxis were included. The techniques of ligation, operative timing, operator grade, and outcome were studied.

Results

59 patients (37M: 22F) were identified, in whom 61 artery ligations were performed (57 unilateral: 2 bilateral). The average age was 57.6 years (range 21 – 87).

Techniques: 16 (27.1%) underwent “clipping”, 23 (39.0%) had diathermy ligation, 16 (27.1%) had both clipping and diathermy, and in 4 (6.8%) the ligation techniques were not recorded. In 27 (45.8%) cases, a consultant was the principal operating surgeon. The remaining 32 (54.2%) cases were performed by senior trainees with (22, 69%) or without (10, 31.3%) supervision. The success rate of ESPAL was 84.7% (50/59). A total of 9 cases re-bleed and were re-admitted. The treatment failures occurred within 24 hours (2), within 30 days (3), after 30 days (4) of operation. No correlation of recurrence was observed between operators’ grade or ligation techniques.

Conclusion

Our series reveals ESPAL as an efficient and safe procedure for refractory epistaxis. The overall success rate was 85%. This is achieved by varying grades of operators without significant reduction in outcome. The patterns of failure and technique variations are discussed along with recommendations for optimal timing of this intervention.

Antrochoanal polyp with stromal atypia: paediatric case report and review

C. Duro¹, I. Moura¹, J.P. Leandro¹, F. Freire¹

¹ Otolaryngology Head and Neck Surgery, Hospital Fernando Fonseca, Lisbon, Portugal

Abstract: ERS-0814

Objectives

Nasal midline masses of ectodermal origin include nasal dermoids (ND) and nasal dermal sinus cysts (NDSC). Those group of lesions Chronic rhinosinusitis with nasal polyps (CRSwNP) is rare in children and has a major impact on Quality of Life (QoL). Functional endoscopic sinus surgery (FESS) has proven to be an effective treatment, but it is still unclear what long term outcomes are in children with CRSwNP. The objective of this study was to assess long term results of FESS in children with CRSwNP.

Methods

We performed a combined prospective and retrospective study. A QoL questionnaire was send to all children who received FESS because of CRSwNP between the year 2000 and 2010. Almost half of these children also filled in this questionnaire preoperatively. Primary outcome was R-SOM score.

Results

44 Children underwent FESS. From 18 patients we also prospectively collected preoperative QoL questionnaires. The response rate was 82% (36/44) and mean follow-up period was 4.0 years (± 2.9). The mean age at surgery was 13 years (± 2.9). Of these children 9 had CF (25%) and 10 children asthma (28%). R-SOM scores showed a significant improvement both in general symptoms as well as several different domains when comparing pre- and postoperative questionnaires ($p=0.04$). Only 14% (5) of the patients needed a subsequent intervention. In children with CF this was 33% (3/9).

Conclusion

This study demonstrates that long term results of FESS in children with CRSwNP are good. Overall QoL has improved significantly for the whole group, especially in nasal symptoms, showing that FESS is a good treatment in children with CRSwNP. Furthermore even children with CF show good results.

FESSKEPSIS

M.A. Penttilä¹

¹ Hospital, Terveystalo, Tampere, Finland

Abstract: ERS-0815

Objectives

Many common operations have been shown to be no better than placebo surgery or even harmful. FESS was a great development leaving open surgery unnecessary in CRS. Patients usually get better after FESS, but destruction of appropriate anatomy may lead to problems later on associated with bacterial biofilms, poor MCC and empty nose-like conditions. Similar to change in septum surgery, unnecessary and harmful removal of bony walls and mucous membranes in sinuses should be stopped. Already Cottle and Meserklinger, taught that less is more in nasal surgery.

Methods

Having started FESS 1986 the author stopped bone removal 2007 when balloons were taken into routine use in all CRS patients. Polyp or difficult cases were not excluded. Hybrid surgery, like turbinate resections or ethmoidectomies, were not done. During 6 years 600 patients were operated on and followed.

Results

"FESS what to avoid": Avoid bone removal. Antrostomy, ethmoidectomy and concha resection inevitably leave too much space affecting nasal and sinus functions. Avoid inferior turbinate procedures.

"FESS how to do it": Pressure dilation of maxillary, frontal and sphenoid outflow tracts does not leave too wide spaces. Only polyps and cysts are removed. Obstructing concha bullosa turbinates are treated with bilateral compression. Maxillary fontanel perforations should be closed.

Conclusion

If we replace FESS with minimally invasive endoscopic approach using pressure tools in all patients with CRS we don't need to speak about "Complications of FESS and how to avoid them" or "Postoperative care in FESS".

Evidence linking chronic rhinosinusitis and middle ear inflammation in adult

S. Azrial¹, R. Wardani¹, A. Hafil¹, W. Alviandi¹, S. Bardosono²

¹ ENT, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

² Medical Research Unit, Faculty of Medicine University of Indonesia-Dr Cipto Mangunkusumo General Hospit, Jakarta, Indonesia

Abstract: ERS-0816

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 17:27

Chair person: R. Kamel

Presenting author: S. Azrial

Objectives

United airway concept highlight the integration of middle ear cavity as an adnexa of the main airway as well as the integrity of upper and lower airway tracts. Middle ear inflammation (MEI) in adult are rarely found in relationship to hypertrophic adenoid; while nasopharyngeal carcinoma (NPC) generally considered as the etiologic factor of MEI especially in the regions with high prevalence of NPC. The study aims to calculate proportion and risk of MEI in CRS population.

Methods

The operational – cross sectional research consecutively included 96 patients with nasal symptoms of EP3OS criteria or ear complaints of ear fullness, autophonia, tinnitus and decreased of hearing ability, who came to Rhinology, Otology and Neurotology clinic of our tertiary-based hospital. Diagnostic procedure performed to identify CRS and MEI cases by nasoendoscopy, skin prick test, microscopy examination and tympanometry. Tympanic membrane perforation was an exclusion criteria for MEI.

Results

CRS diagnosed in 77 patients, MEI in 18 patients, either CRS and MEI diagnosis was not established in 15 patients. Proportion of CRS with MEI was 18.2% (14/77) and CRS without MEI was 81.8% (63/77). In vice versa perspective, of 18 patients with MEI, 14 had CRS (14/18 = 77.8%). Significant risk factor to subgroup of CRS with MEI was smoking (OR = 5,31, 95% CI 1.59 – 17.69, p=0.004).

Conclusion

Collaborative works in ENT subspecialties offer a better approach for CRS with MEI. It highlights the importance of performing nasoendoscopy and CRS management for that subgroup in adult.

The influence of body position on nasal ventilation in healthy subjects. A study by 4-phase-rhinomanometry

K. Vogt¹, K. Peksis², A. Gramatniece¹, L. Sperla³

¹ Center of Experimental Surgery, University of Latvia Faculty of Medicine, Riga, Latvia

² Klinika Headline, University of Latvia Faculty of Medicine, Riga, Latvia

³ Klinka Headline, University of Latvia Faculty of Medicine, Riga, Latvia

Abstract: ERS-0817

Session: OSAS

Location: Hall H

Time: 25-06-14 14:45

Chair person: N. de Vries

Presenting author: K. Peksis

Objectives

Changing of body position from supine to elevation was several times described as being helpful in OSA. Guilleminaut et al. found, that the nasal ventilation improves after changing from supine to 30° elevation. This confirmatory study was carried out to determine the statistic differences of nasal ventilation in healthy volunteers.

Methods

44 healthy volunteers (16 male, 28 female), aged between 14 and 27 years without a history of nasal blockage have been investigated by 4-Phase-Rhinomanometry (4RHINO, Rhinolab GmbH, Freiburg/Germany). Active Anterior Rhinomanometry has been carried out on both sides in sitting position, after 15 min in supine position and 15 min later in a 30° elevated position. Total nasal resistance was calculated to exclude the influence of the nasal cycle. Statistic evaluation of the obtained data was done by using MS Excel and SPSS.

Results

The results confirmed previous statistical findings. The detailed analysis of the individual reaction towards changing body position shows big differences. Compared with a clinical scale of severity of obstruction as given by Vogt et al. 2010 and used for the clinical evaluation of 4PR-findings, the positional changes may correspond to the transition from a slight to a moderate or from a moderate to a severe obstruction.

Conclusion

It is not only of great importance to include 4PR in the basic diagnostic of sleep related breathing disorders, but also to test the individual reaction on changed body position. With this respect, also the changes sideways have to be considered and finally the diurnal variations of the here confirmed reaction.

Still no reliable consensus in management of blow-out fracture

B. Alinasab¹, M. Ryott¹, P. Stjärne¹

¹ Department of Clinical Sciences Intervention and Technology Division of Otorhinolaryngology Karolinska Institutet Karolinska University Hospital Stockholm Sweden, Karolinska Institutet, Stockholm, Sweden

Abstract: ERS-0818

Session: Orbit and lacrimal system

Session Time: 26-06-14 11:25

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: B. Alinasab

Objectives

In this study we wanted to: i. evaluate the differences in opinions between the specialties that manage BOF and also whether there was a difference between surgeons from different countries, ii. evaluate if surgeons handle these cases based upon their own individual criteria, iii. evaluate the correlation between the management of patients with orbital floor fractures and any late sequelae detected upon eye examination.

Methods

Eleven patients with BOF were selected. The cases were presented with a case history and CT scans to 46 surgeons from different countries and specialties and they were asked to give their opinions regarding the need for surgery, timing of surgery and the risk for late enophthalmus. We considered a group of surgeons to be in agreement if there was $\geq 75\%$ agreement on whether or not to operate, when to operate and on the risk for late enophthalmus.

Results

The surgeons agreed on the choice of management for the patients (whether or not to operate) in only 5 of the 11 cases. Similarly, in only 5 of the 11 cases did the surgeons agree upon the risk for late enophthalmus. There was a greater difference between specialties than between physicians from the participating countries.

Conclusion

There are considerable differences in opinions regarding the management of BOF due to a lack of a reliable consensus. The management of BOF appears to be based on both individual and local traditions. Guidelines based on a randomized prospective study in BOF are required.

Assessment of monolayer abdominal fat graft to repair skull base by endoscopic approach

P.L. Bastier¹, D. Fonmarty¹, A. Lechot¹, E. Gimbert², L. de Gabory¹

¹ ENT and Head and Neck surgery, CHU Bordeaux, Bordeaux, France

² Neurosurgery, CHU Bordeaux, Bordeaux, France

Abstract: ERS-0819

Session: CSF leak and skull base

Session Time: 24-06-14, 11:15

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: P.L. Bastier

Objectives

Numerous methods have been described in the literature to repair anterior skull base defects after endoscopic removal of sino-nasal malignant tumors. The aim of our study was to assess the efficacy and safety of anterior skull base repair using a monolayer abdominal fat graft.

Methods

Patients undergoing endoscopic removal of sino-nasal malignant tumor with anterior skull base resection were consecutively included in this prospective observational study. Skull base defects were closed using a monolayer autologous abdominal fat graft. These grafts were placed in an onlay fashion and maintained using fibrin glue and packing. Defect area was measured on post operative CT-scan. Main follow-up criterions were hospitalization duration, apparition of CSF leak and complications of surgery.

Results

Twenty-nine patients were included from July 2009 to January 2014. Mean age was 64 ± 11 years. Adenocarcinoma of the olfactory cleft (18 cases) and esthesioneuroblastoma (7 cases) were the more common tumors. Mean defect area was $4,4\pm 2,9\text{cm}^2$. Hospitalization duration was 8.3 ± 3.8 days. Mean follow-up was 15 ± 12 months and only one patient out of 29 presented CSF leak on day four after surgery, without need of surgical reintervention. Two meningitis were diagnosed in the early postoperative period and received medical treatment. No CSF leak was detected at the end of the follow-up.

Conclusion

Skull base repair using monolayer autologous abdominal fat graft seem to be an effective and safe method to close wide defects after endoscopic resection of sino-nasal malignant tumors.

Resorbable challenges non-resorbable sutures for transcolumellar incisions in rhinoplasty

B. Alinasab¹, P.O. Haraldsson²

¹Department of Clinical Sciences Intervention and Technology Division of Otorhinolaryngology Karolinska Institutet Karolinska University Hospital Stockholm Sweden, Karolinska Institutet, Stockholm, Sweden

²Astoria Clinic Stockholm Sweden, Karolinska Institutet, Stockholm, Sweden

Abstract: ERS-0820

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 10:06

Location: Hall G

Chair person: C. Wever

Presenting author: B. Alinasab

Objectives

The open approach using inverted v-incisions has gained popularity in both primary and revision rhinoplasty during the last years. The risk of a visible columella scar has shown to be low when closed with thin non-resorbable sutures. However, the suture extractions are usually painful and time consuming.

Methods

A total of 41 consecutive patients subjected to open rhinoplasty by the same surgeon using mid-columellar inverted-V incisions were investigated retrospectively. The first 21 patients were sutured with non-resorbable suture material (polypropylene; Prolene 5/0 = PP), and the subsequent 20 patients with a rapidly absorbable suture material (polygalactic acid; Vicryl Rapid 5/0 = PGA). At a minimum of 6 months follow-up, discomfort from the suture extraction 1 week postoperatively and visibility of the columellar scars were evaluated by the patients on a self report questionnaire.

Results

7/21 (38%) of the patients sutured with PP and 13/20 (65%) of the patients sutured with PGA considered their scars to be invisible. 12 (57%) vs 15 (75%) reported no-discomfort with the sutures, but 6 (29%) of the PP patients found the suture extraction very painful. No postoperative infections were found in any group

Conclusion

Suturing inverted-V transcolumellar incisions with absorbable suture material resulted in less visible scarring, less suture-discomfort, no extraction pain and no increased risk for postoperative infection compared to the traditionally used and extracted non-absorbable sutures.

Management of Draf III stenosis with balloon dilatation and Mitomycin-C

I. Konstantinidis¹, A. Chatziavramidis¹, J. Constantinidis¹

¹ 2nd ORL Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract: ERS-0821

Objectives

A significant percentage of patients who undergo a Draf III procedure will ultimately require additional frontal sinus surgery. Balloon dilatation combined with local application of Mitomycin-C may reduce the need for revision surgery.

Methods

We present the case of a 35-year-old male patient who underwent a Draf III procedure for resistant frontal sinusitis. Six months post-operatively he presented with severe stenosis of the Draf III drainage and symptoms of frontal sinusitis due to extensive fibrosis. We dilated the stenosed area under local anesthesia at an outpatient setting with a sinus balloon (Ventura sinus dilation system, ENT intrigue surgical INC, San Antonio, USA) followed by local application of 2 ml Mitomycin-C solution (0,5mg/ ml). The same session was repeated three weeks later.

Results

The patient six months later is free of symptoms and the Draf III area although stenosed after our intervention remains patent.

Conclusion

The proposed combination may be a useful alternative option instead of surgery.

Design and validation of the mcgill simulator for endoscopic sinus surgery (MSESS): a novel high fidelity surgical simulator

M. Tewfik¹, R. Varshney¹, S. Frenkiel¹, L. Nguyen¹, A. Zeitouni¹, R. Del Maestro², R. DiRaddo³

¹Otolaryngology - Head & Neck Surgery, McGill University Health Centre, Montreal, Canada

²Neurosurgery, Montreal Neurological Institute, Montreal, Canada

³Simulation - Life Sciences Division, National Research Council of Canada, Montreal, Canada

Abstract: ERS-0822

Session: Simulation and training

Time: 24-06-14, 09:39

Location: Hall J

Chair person: S. Carney

Presenting author: M. Tewfik

Objectives

The technical challenges of endoscopic sinus surgery (ESS) and the high risk of complications support the development of alternative modalities to train surgeons in these procedures. Virtual reality simulation is becoming a useful tool for training in the skills necessary for minimally invasive surgery, however there are currently no FESS virtual reality simulators available with validity evidence supporting their use in otolaryngology training programs. Our aim was to develop a new ESS simulator, as well as to define potential performance metrics for trainee assessment.

Methods

The McGill Simulator for Endoscopic Surgery Simulator (MSESS), a new sinus surgery virtual reality simulator with bimanual haptic tool manipulators, was developed with the National Research Council of Canada. A panel of experts in education, performance assessment, rhinology and skull base surgery convened to identify core technical abilities that would need to be incorporated in the simulator tasks, as well as performance metrics to be recorded. Subjects from varying levels of experience, including medical students, residents, and consultant surgeons, were recruited for validation assessment.

Results

MSESS allows the user to perform basic sinus surgery skills, such as an ethmoidectomy and sphenoidotomy, through the use of endoscopic tools in a virtual nasal model. The performance metrics were developed include measurements of safety, quality and efficiency of the simulated procedure.

Conclusion

The MSESS creates a realistic platform for surgical trainees. It incorporates novel tools such as endoscope soiling and scrubbing, it recreates anatomical deformability, and uses advanced performance metrics for FESS. A summary of preliminary validation work will be presented.

Sinonasal papillomas: our experience over 10 years

B. Jones¹, A. Swift¹

¹ Otorhinolaryngology Head and Neck Surgery, University Hospital Aintree, Liverpool, United Kingdom

Abstract: ERS-0823

Session: Benign tumours

Session Time: 25-06-14, 11:15

Location: Hall H

Chair person: R. Harvey

Presenting author: B. Jones

Objectives

Sinonasal papillomas are rare, benign tumours that can be locally invasive. They have two distinct features: tendency to recur and the potential for malignant transformation. The main challenge is complete surgical excision, which has progressed to an endoscopic approach. To ensure microscopic clearance, histological mapping is of benefit. We aim to review all cases over a ten year period.

Methods

All sinonasal papillomas diagnosed between 2003-2013 were identified. Electronic case records were examined. Presenting features, surgical management, rate of recurrent disease and malignant transformation were studied.

Results

A total of 44 patients were identified. The median age at presentation was 55.8 years (range 28-81 years), with a male to female ratio of 6:3. Preoperative imaging was as follows:CT 48% (n21);CT and MRI 50% (n22). All patients were treated with endoscopic surgery. Inverted papilloma was the commonest histological subtype (75%, n33), followed by Exophytic papillomas in 11% (n5) and a mixed pattern in 5%(n5) of patients. Dysplasia was within 9%(n4) of samples, with malignant transformation seen in 1 patient. 70% of inverted papillomas were mapped histologically. Recurrence after definitive excision occurred in 10 patients with a mean of 20 months between treatment and diagnosis (range 4 months-5 years 11 months). Concurrent sinonasal inflammatory polyps were present in 11 patients.

Conclusion

Endoscopic resection of sinonasal papillomas is an effective treatment. Dysplasia is uncommon; The risk of malignant transformation is rare. Long-term follow up is recommended to identify recurrent disease at an early stage as patients often remain asymptomatic until the tumour has progressed sufficiently to cause nasal obstruction.

Is there a link between vitamin D3 deficiency and nasal polyposis?

I. Konstantinidis¹, E. Tsakiropoulou¹, A. Chatziavramidis¹, J. Constantinidis¹

¹ 2nd ORL Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract: ERS-0824

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:45

Location: Hall J

Chair person: P. Lekakis

Presenting author: I. Konstantinidis

Objectives

Vitamin D3 is considered as a steroid hormone that regulates bone metabolism and numerous aspects of immune function and respiratory health. We hypothesized that its deficiency is associated with T helper type 2 disorders as nasal polyposis.

Methods

We conducted a prospective study examining 25 (OH) D3 levels in 3 groups of patients- CRS with nasal polyps (18pts), Cystic fibrosis with nasal polyps (24pts), cystic fibrosis without nasal polyps (17pts) - and healthy controls (21 pts). All groups had similar age and gender distribution. Patients with Samter's triad and allergic fungal sinusitis were excluded. Blood 25 (OH) D3 levels were measured in all participants. Serum levels <20ng/mL were considered as deficiency, 21-29 ng/mL as insufficiency and >30 ng/mL as sufficiency of vitamin D3. In cystic fibrosis patients the genotype and the colonization with pseudomonas aeruginosa were also recorded.

Results

Vitamin D3 deficiency presented in 76% of cystic fibrosis patients with nasal polyps, followed by CRS with nasal polyps (44,6%), cystic fibrosis without nasal polyps (40,5%) and healthy subjects (24,1%). In cystic fibrosis groups, genotype and pseudomonas colonization were not correlated with Vitamin D3 levels and the presence of nasal polyps. In all groups males presented slightly higher incidence of vitamin D3 deficiency compared with females.

Conclusion

Although nasal polyposis is a multifactorial disorder vitamin D3 deficiency seems to be related with higher incidence of nasal polyps.

Long-term rhinoflowmetry: physiologic variety and high-resolution data

A. Beule¹, C. Bandt², W. Hosemann¹

¹ University Medicine of Greifswald, Department of Otorhinolaryngology Head and Neck Surgery, Greifswald, Germany

² University of Greifswald, Department of Mathematics and Computer Science, Greifswald, Germany

Abstract: ERS-0825

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:36

Location: Hall H

Chair person: G. Ottaviano

Presenting author: A. Beule

Objectives

Long-term rhinoflowmetry is a new objective diagnostic procedure to evaluate nasal respiratory function during activities of daily living. To define physiologic values and develop a refined way to analyze the data obtained, we used this technique in healthy subjects and patients.

Methods

25 healthy patients and selected patients with a variety of well-defined medical conditions were subjected to long-term rhinoflowmetry, as well as nasendoscopy, acoustic rhinometry and rhinoresistometry. Data obtained were analyzed in the current standard analysis and using high resolution data (50 Hz).

Results

Using high-resolution data, technical failures such as deflection of the nasal cannula during sleep and back ground noise could be well identified. Moreover, a detailed analysis of the reaction of the nasal respiratory function is possible. This technical refinement is extremely helpful to distinguish technical irregularities e.g. during sleep from pathological findings and thereby increase the value of this new diagnostic procedure. As a consequence, open source software was developed to allow detailed analysis of data provided by long-term rhinoflowmetry.

Conclusion

Long-term rhinoflowmetry allows the reliable evaluation of nasal respiratory function. By using high-resolution data, its clinical value is increased to allow standardized evaluation.

Concomitant hidden skull base defects in patients with Sternberg's canal CSF fistulas

C. Meco¹, H. Basak², S. Beton², S. Mulazimoglu², B. Kucuk², I. Yorulmaz²

¹ Department of Otolaryngology Head & Neck Surgery, Ankara University and Salzburg Paracelsus University, Ankara, Turkey

² Department of Otolaryngology Head & Neck Surgery, Ankara University, Ankara, Turkey

Abstract: ERS-0826

Session: CSF leak and skull base

Session Time: 24-06-14, 11:51

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: C. Meco

Objectives

The aim of the study was to identify concomitant hidden skull base defects in patients with a persistent lateral craniopharyngeal canal (Sternberg's canal) CSF fistula.

Methods

We retrospectively reviewed all patients who were operated for a Sternberg's canal CSF fistula between 2007 and 2013 at Ankara University. All patients had a computed tomography, magnetic resonance cisternography and preoperatively received intratechal 5% Sodium Fluorescein. Endonasal endoscopic approach was used in all for the repair. Furthermore, a bilateral diagnostic endoscopy with fluorescein filter was performed to search for concomitant defects. All diagnostic and operative data as well as outcomes were analyzed.

Results

There were 4 Sternberg's canal CSF fistula patients operated. Other than the easily identified defects at expected locations on sphenoid sinus lateral walls, we identified a second hidden skull base defect as a small meningocele without CSF leakage in two patients. Both defects were around olfactory fibers, one located at the contralateral anterior cribriform plate and other at the ipsilateral posterior cribriform plate according to the side of Sternberg's canal defects. In all patients, watertight closure of all CSF fistulas and all identified skull base defects were achieved and no recurrences were observed in a mean follow-up time of 30 months.

Conclusion

In our caseload patients who were diagnosed for a Sternberg's canal CSF fistula had a second skull base defect with a high percentage. Surgeons should be aware of this fact and repair these as well, in order to entirely protect patients from the risk of ascending meningitis.

The role of DHMEQ (a NF-kappaB inhibitor) in CRSwNP – an ex-vivo study

F.C.P. Valera¹, F. Santos¹, K. Umezawa², M.S. Brassesco³, A. Murashima³, L.E. Costa³, D.M. Garcia³, L.G. Tone³, E. Tamashiro³, W.T. Anselmo-Lima³

¹ Otorhinolaryngology, Ribeirão Preto Medical School, Ribeirão Preto, Brazil

² Medical School, Aichi Medical University, Ribeirão Preto, Brazil

³ Medical School, Ribeirão Preto Medical School, Ribeirão Preto, Brazil

Abstract: ERS-0827

Session: Rhinitis basic

Session Time: 24-06-14, 12:15

Location: Hall G

Chair person: TBC

Presenting author: F.C.P. Valera

Objectives

DHMEQ, a NF-kappaB inhibitor, has been clinically studied for selected inflammatory diseases, including asthma and chronic rhinosinusitis with nasal polyps (CRSwNP). This study aims to evaluate the anti-inflammatory effect of DHMEQ in nasal polyps.

Methods

Specimens were collected from 8 patients with bilateral disease prior to clinical treatment with steroids. They were divided into 12 fragments, 4 of each placed in Marlex and resuspended into 3 different cultured wells (HAM-F10 + antibiotics) for 48 hours: one with no additional treatment; one with DHMEQ 5 mcg/mL; and one with DHMEQ 10 mcg/mL. Following culture, the fragments were submitted to RTQ-PCR and immunohistochemistry (IHC) studies for TGF-beta, FOXP3 (T-reg profile molecules), IL-5 and ECP (Th2 cytokines). For IHC, images were digitalized and separated into epithelium and stromal region.

Results

RTQ-PCR: only TGF-beta and FOXP3 showed significant amplification: TGF-beta expression did not differ between drugs concentrations; and FOXP3 significantly increased after DHMEQ exposure ($P < 0.05$ for controls vs. both concentrations). IHC: at the epithelium, no significant difference of protein presence was observed for any of the studied proteins; in stromal region, a significant increase in FOXP3 was observed with 5 and 10 mcg/mL of DHMEQ ($P < 0.05$ for controls vs. DHMEQ5 and DHMEQ10), while a significant decrease was observed for IL-5, TGF-beta and ECP ($P < 0.05$ for controls vs. DHMEQ5 and DHMEQ10).

Conclusion

DHMEQ was able to decrease Th2 cytokines and to increase Treg response in CRSwNP. These results may point to a rationale for testing DHMEQ in future in vivo studies.

Efficacy and prognostic value of systemic steroid therapy of olfactory disorders in patients with chronic rhinosinusitis with polyps

V. Bogdanov¹

¹ ENT, Crimean State Medical University named after S.I. Georgievsky, Simferopol, Ukraine

Abstract: ERS-0828

Session: Olfaction

Location: Hall G

Time: 25-06-14, 14:10

Chair person: Baile Landis

Presenting author: V. Bogdanov

Objectives

Course of systemic steroid therapy (CSST) is used worldwide to diagnose and treat sinonasal dysosmias. Objective of this study was to investigate its effectiveness in revealing residual olfactory function and prognostic value for the effect of surgical treatment of chronic rhinosinusitis with polyps (CRSwP).

Methods

20 patients (10 males, 10 females, middle age – $49,2 \pm 14,1$ years) with CRSwP and olfactory deficit received CSST during 16 days beginning with 40 mg prednisolon daily per os. The dose was lowered by 5 mg every 2 days. After the CSST in all the patients an endoscopic polypectomy was performed. Postoperatively they received standard treatment including mometasone furoate nasal spray 100 mg in each nostril once a day. Olfactometry was performed using adapted version of "Sniffin' Sticks" test before and after the CSST and 3 months after surgery.

Results

Average TDI-score before the CSST was $16,6 \pm 6,8$. It significantly increased after CSST ($p < 0,01$). Individually TDI-score significantly increased in 12 (57,14%) patients (on average by $10,35 \pm 3,52$ points), for other 9 (42,86%) CSST didn't give significant results (average increase - $1,33 \pm 2,49$ points). TDI-scores after CSST and 3 months after surgery didn't significantly differ ($p > 0,05$) and 85% of patients showed no clinically significant (> 6 points) changes in TDI-scores (neither the patients, who benefited from CSST, nor the ones, who didn't). Thus, change of TDI-score after CSST can be used to predict the effect of surgical treatment.

Conclusion

CSST is an effective method to treat olfactory dysfunction in patients with CRSwP and to predict the effect of its surgical treatment on olfaction.

Prospective evaluation of the effects of endoscopic polypectomy performed in clinic on nasal airflow and sinus symptomatology for patients with chronic rhinosinusitis with polyps

S. Kilty¹

¹ Otolaryngology-Head and Neck Surgery, The Ottawa Hospital, Ottawa, Canada

Abstract: ERS-0829

Session: Management of CRS

Session Time: 26-06-14 11:40

Location: Hall J

Chair person: TBC

Presenting author: S. Kilty

Objectives

The effects of endoscopic sinus surgery (ESS) on nasal airflow and patient self-reports of symptom improvement have been well documented for patients with chronic rhinosinusitis with polyps (CRSwNP). However, the literature is deficient as to the potential benefits of endoscopic polypectomy performed in clinic (EPIC). The purpose of this study was to provide an initial evaluation of the clinical treatment effects of EPIC for patients with CRSwNP and the primary symptom of nasal obstruction.

Methods

A prospective pilot study using ten consecutive consenting patients with CRSwNP was performed. The outcome measures utilized were the Sinonasal Outcome Test 22 (SNOT-22) and peak nasal inspiratory flow (PNIF) measured prior to the procedure, then immediately and 3 months following treatment. A 10 cm visual analog scale was used to measure procedure-associated discomfort.

Results

Enrolled patients had a mean CT Lund-Mackay score of 19 (range 15-23). The mean SNOT-22 score improved from 46.3 to 18.90 ($p < 0.001$) at 3 months following treatment. The median nasal obstruction rating decreased significantly from 5.0 at baseline to 0.50 ($p = 0.004$) at 3 months. The median PNIF increased significantly from 30.00 L/min at baseline to 80.00 L/min ($p = 0.005$) at 3 months. There was no significant difference between the median post-operative and 3 month follow-up PNIF values ($p = 0.114$). There was minimal discomfort associated with the EPIC procedure (mean=1.93, range 0-3.9) and no complications occurred.

Conclusion

The EPIC procedure provided effective short-term clinical symptom control in the CRSwNP patients studied. The effects of EPIC require further evaluation for the duration of effect and comparison to ESS.

Septum hematoma and abscess outcome of long-term follow-up

S. Gade¹, A. Kjeldsen²

¹ ENT department SVS, Esbjerg, Denmark

² Department of Otorhinolaryngology head and neck surgery, Odense University Hospital, Odense, Denmark

Abstract: ERS-0830

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 15:00

Chair person: K. Patel

Presenting author: S. Gade

Objectives

To evaluate and To identify long term complications to Septum Hematoma and abscesses.

Methods

All patients records with the diagnose code DS003A and DJ340A – ICD10 codes – in the period 01/01/2000 to 31/12/2010 were reviewed retrospectively. The patients were invited for a standard ENT examination. At this occasion fulfilled 3 questionnaires.

- Nose and sinus VAS (Visual Analoge Scale)
- Self-evaluations pre- and post trauma - VAS
- SNOT 22

Results

18 patients where identified. 10 patients included – 6 excluded and 2 lost to follow up. Of the 10 patients 7 hade SH and 3 hade SA. In our data it has not been possible to evaluate how many that developed stenosis or deviation immediately after the trauma.

7 patients had significant larger score the 7 in total in there SNOT22 score. The answers in their SNOT22, which they scored high, ware all regarding nose stenosis problems. When we compare this to the result from the other questionnaires the also have high scores in questions regarding nose stenosis problems. In their self-evaluations it is also nose deviation that comes out significant higher post-traumatic, when we calculate with fisher exact test. Fishers exact test is a Chi-squared test that can be used on small numbers. So in all there is a god correlation between the results of the questionnaires.

Conclusion

Septum haematoma and abscess is a rear condition often caused by trauma. Immediate surgical treatment is crucial. These patients may have long-term complications especially regarding symptoms related to deviation of nose and septum. The nasal symptoms may cause reduced quality of life.

Would you always perform a sinus surgery in severe chronic rhinosinusitis with nasal polyps?

C. Morales Minovi¹

¹ Otorhinolaryngology, Marienhospital Gelsenkirchen, Gelsenkirchen, Germany

Abstract: ERS-0831

Objectives

When the medical therapy of a chronic rhinosinusitis (CRS) with and without nasal polyps fails, surgery is the treatment of choice. The most appropriate treatment of CRS continues to be unclear. A 53 years old female patient was referred to our allergy consultation at the ENT Department to repeat an Acetylsalicylic Acid desensitization. Unfortunately she suffered of a nonallergic anaphylaxis with severe involvement of the respiratory system after trying an intravenous desensitization in another center. She complained about completely obstruction of the nose, anosmia, headache, postnasal drip and impossibility of training any sports after been operated twice. Asthma and intolerance against analgesic were known. Her last surgery was 3 months before she came to our consultation. The Lund-Kennedy score was 12 and the Lund-Mackay score was 24. The topical corticoid sprays and the use of sporadic systemic corticoids were not helping any more. The patient refused another revision operation of the sinuses.

Methods

We admit her to our hospital and made a slowly oral Acetylsalicylic Acid desensitization until 500 mg/day. She remained with 100 mg /day.

Results

After 3 Months she did not have anymore complains; the nose and sinuses were totally free of polyps. The same findings persist in two years of controls.

Conclusion

Desensitization is an effective treatment option especially in patients with a Samter's triad. This therapy might be considered in patients with a severe CRS with nasal polyps before performing a revision Surgery.

Septorhinoplasty and functional endoscopic sinus surgery: improving day case rates

N. Ranga¹, P. Glossop¹, N. Bhalla¹

¹ Otolaryngology, New Cross Hospital The Royal Wolverhampton Hospitals NHS Trust, Birmingham, United Kingdom

Abstract: ERS-0832

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 09:48

Location: Hall G

Chair person: C. Wever

Presenting author: N. Ranga

Objectives

In 2000, the National Health Service (NHS) stated in the NHS plan that 75% was the target for day case surgery. The Audit Commission basket of procedures lists 25 procedures that can be performed as day case. Rhinology day case surgery is variable across NHS trusts and dependent on each surgeon's own practice. Rhinoplasty, septoplasty and functional endoscopic sinus surgery (FESS) in suitable patients are often day case procedures.

Methods

We carried out a 2-cycle retrospective notes audit. All patients who underwent FESS, septoplasty, rhinoplasty and setorhinoplasty and were listed as day case procedures were included. A standard pro-forma was used for each patient to document patient demographics, co-morbidities, length of stay, reason for overnight stay, post-op complications and readmissions.

Results

100 patients were included in each cycle. The first cycle revealed an overall day case rate of 84%. In 50% of patients who stayed overnight, a reason was not documented in the notes to explain the overnight stay. The remaining 50% stayed secondary to bleeding. 1% of patients had a readmission with infected haematoma, which required draining under general anaesthetic.

The results of the first cycle were presented locally and an action plan.

The second cycle revealed a 91% day case surgery rate with 0% readmissions.

Conclusion

With clear instructions for discharge and education of all staff on how to carry out a safe discharge, we improved our day case rate. We conclude that FESS, rhinoplasty, septoplasty and septorhinoplasty in the right patient are appropriate day case procedures.

Indications for neck dissection in nasal cavity and paranasal sinuses malignant neoplasia

B. Popescu¹, S.V.G. Bertesteanu¹, R. Grigore¹, A. Nicolaescu¹, C.R. Popescu¹

¹ Coltea Clinical Hospital, Coltea Clinical Hospital, Bucharest, Romania

Abstract: ERS-0833

Objectives

The prognosis for patients with malignant neoplasia of the head and neck region has the main and single risk factor the involvement of the cervical lymph node system. The loco-regional extension of the malignant tumors of the nasal cavity and the paranasal sinuses, especially squamous cell carcinoma, lead to a decrease in the global survival rates of 50%.

Methods

The TNM system offers information on the stage of the disease at the moment of the diagnosis but this world wide used instrument has the disadvantage of being a static one. The evaluation of the lymph node levels preoperative and during surgery is mandatory in order to stage, treat and follow-up cancer patients.

Results

The authors perform medical and surgical therapy for selected cases.

Conclusion

This approach should close the gap between the necessity of the neck dissection for selected patients and the comorbidity that derives from the actual procedures, which may lead to functional impairments with great implications on the quality of life for nasal cavity and paranasal sinuses cancer patients.

Endonasal endoscopic treatment of esthesioneuroblastoma with intracranial invasion

J. Pimentel¹, P. Escada¹, G. Neto D'Almeida², L. Marques², J. Ruivo³

¹ Otorhinolaryngology, Egas Moniz Hospital, Lisboa, Portugal

² Neurosurgery, Egas Moniz Hospital, Lisboa, Portugal

³ Neuroradiology, Egas Moniz Hospital, Lisboa, Portugal

Abstract: ERS-0834

Session: Malignant tumours

Session Time: 24-06-14, 10:06

Location: Hall H

Chair person: M. Bernal-Sprekelsen

Presenting author: J. Pimentel

Objectives

Esthesioneuroblastoma or olfactory neuroblastoma is an uncommon malignant neoplasm that arises from the olfactory epithelium. In cases of intracranial extension, surgical treatment by craniofacial resection has, in selected cases, been replaced by endonasal endoscopic resection with overlapping survival and limited morbidity. The authors present a case treated purely with an endonasal endoscopic approach.

Methods

An 80-year-old woman with the diagnosis of esthesioneuroblastoma with intracranial invasion (stage Kadish C) was surgically treated with an endonasal endoscopic approach. Imaging, surgery details and results are discussed.

Results

The patient was operated by a neurorhinology team. Firstly, the tumor was reduced to its insertion pedicle at the cribriform lamina by piecemeal resection with microdebrider. After a Draf 3 procedure, healthy dura circumferential to the tumor was incised allowing the intradural tumor to be dissected from the frontal lobes. Anterior skull base was reconstructed in a multilayer fashion. Intracranially (underlay) was used DuraGen® and autogenous fascia lata, and extracranially (overlay) a nasal septal flap. To intraoperatively confirm skull base reconstruction sealing, the intrathecal fluorescein protocol was used. No complications occurred during surgery or post-operatively and the patient was discharged 8 days after surgery. One year postoperative, magnetic resonance imaging shows no tumor recurrence.

Conclusion

Judicious use of endonasal endoscopic resections, by multidisciplinary trained teams, in the treatment of esthesioneuroblastomas that extend beyond nasal sinuses is safe and oncologically sound but especially associated with minimal morbidity.

The correlation between SNOT-22 score and visual analogue score in CRS

S. Fishpool¹, S. Kumar¹, E. Conlan², D. Owens¹

¹ ENT Department, University Hospital of Wales, Cardiff, United Kingdom

² Short Stay Surgical Unit, University Hospital of Wales, Cardiff, United Kingdom

Abstract: ERS-0835

Session: Management of CRS

Session Time: 26-06-14 12:20

Location: Hall J

Chair person: TBC

Presenting author: S. Fishpool

Objectives

To assess the correlation between two commonly used scoring systems that assess CRS symptom severity: the visual analogue scale (on which the EPOS 2012 guidelines are based) and the SNOT-22 (commended by the EPOS 2012 guidelines as a health-related quality of life instrument).

Methods

Patients attending our general ENT clinic in a Teaching Hospital with symptoms and signs that were compatible with a diagnosis of CRS (with or without nasal polyposis), according to the EPOS 2012 document, were given a SNOT-22 questionnaire to fill out. In addition, they were asked to grade the severity of their CRS symptoms using the 100mm VAS scale as used in the EPOS 2012 guidelines.

Results

The results were analysed from 37 patients. The mean SNOT-22 score, out of 110, was 51.1 (range 15-91). The mean VAS score, out of 100, was 68.9 (range 18-95). Spearman's rank correlation coefficient was 0.69 ($p < 0.05$).

Conclusion

The VAS score remains the best way to differentiate between mild, moderate and severe CRS. However, the SNOT-22 score correlates well with it and may be used to both stratify disease severity and monitor response to therapeutic interventions.

Olfactory functions after transsphenoidal pituitary surgery: endoscopic versus microscopic approach

C. Meco¹, G. Kahilogullari², S. Beton³, E.S.M. Al-Beyati², E.O. Kantarcioglu³, M. Bozkurt², E. Kantarcioglu², A. Comert⁴, A. Unlu²

¹ Department of Otolaryngology Head & Neck Surgery, Ankara University and Salzburg Paracelsus University, Ankara, Turkey

² Department of Neurosurgery, Ankara University, Ankara, Turkey

³ Department of Otolaryngology Head & Neck Surgery, Ankara University, Ankara, Turkey

⁴ Department of Anatomy, Ankara University, Ankara, Turkey

Abstract: ERS-0836

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14 09:38

Chair person: R. Weber

Presenting author: C. Meco

Objectives

Olfactory disturbances could be observed following transsphenoidal pituitary surgeries. To our knowledge, no previous comparative studies on olfactory functions after transsphenoidal endoscopic and microscopic approaches have been performed.

Methods

Prospectively 25 patients operated on with the endoscopic approach and 25 patients operated on with the microscopic transsphenoidal approach have been evaluated. The Smell Diskettes Olfaction Test was used during the preoperative period, 1 month after the operation, and 6 months after the operation. In addition, the relationship between intraoperative cerebrospinal fluid leakage from the pituitary and postoperative synechiae formation with olfaction system was evaluated.

Results

In the endoscopic group, there were two hyposmic patients and no anosmic patients. In the microscopic group, there were 13 hyposmic patients and five anosmic patients. The data was statistically different between both groups ($P < 0.05$). Cerebrospinal fluid leakage was observed in nine patients in the endoscopic group and in 10 patients in the microscopic group. There was no statistically significant difference between cerebrospinal fluid leakage and olfactory disturbances in both groups ($P > 0.05$). Synechia was observed in nine patients in the microscopic group and in only one patient in the endoscopic group. There was a statistically significant difference between the presence of synechia and olfactory disturbances ($P < 0.05$).

Conclusion

This is the first study to seek the difference between the endoscopic and microscopic transsphenoidal approaches on the olfactory system during pituitary surgery. The obtained results indicate that an endoscopic approach seems to be more advantageous than a microscopic approach for protecting olfactory system and function.

Endoscopic assisted debridement of acute invasive fungal rhinosinusitis in immunocompromised patient under local anesthesia - case report

V. Oliveira¹, P. Vale¹, D. Silva¹, P. Escada¹

¹ ENT, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal

Abstract: ERS-0837

Objectives

The invasive presentation of fungal disease of paranasal sinuses albeit rare, has high morbidity and mortality rates. Early diagnosis is critical, especially in aged individuals who are immunocompromised. We report a clinical case of a 69-year-old man with unilateral acute invasive fungal rhinosinusitis following chemoradiotherapy for metastatic lung cancer.

Methods

The biopsy pathology reports and histopathologic slides were reviewed, and based on known clinical and histologic criteria of fungal disease of the paranasal sinuses the diagnosis of acute invasive fungal rhinosinusitis was achieved.

Results

Histologically the samples showed necrotic sinonasal mucosa with the presence angioinvasive fungal forms of *Aspergillus niger*. Clinical status of the patient resolved following complete debridement procedure using local anesthesia by direct endoscopic guidance.

Conclusion

In the setting of acute invasive behavior, local debridement is critical for local control of the disease. In particular, immunocompromised patients are high-risk patients concerning all aspects of anesthesia and postoperative recovery. Extensive surgical resection in patients with these poor prognostic signs should be considered carefully in light of their poor survival. As a result, topical anesthesia can be safely and effectively achieved and can be used in office settings for local debridement using direct transnasal endoscopic control.

Open, prospective, multicentric study to evaluate the efficacy of postoperative intranasal phototherapy in the prevention of recurrence of nasal polyps

Z. Bella¹, A. Kiricsi¹, Z.S. Szabó², L. Kemény³, J. Jóri⁴, L. Rovó⁴, E. Kadocsa⁴

¹ ENT Department, University of Szeged, Szeged, Hungary

² ENT Department, Central Hospital Of BAZ County, Szeged, Hungary

³ Allergology and Dermatology Department, University Of Szeged, Szeged, Hungary

⁴ ENT Department, University Of Szeged, Szeged, Hungary

Abstract: ERS-0838

Session: Management of CRS

Session Time: 26-06-14 11:45

Location: Hall J

Chair person: TBC

Presenting author: Z. Bella

Objectives

The therapeutic effect of UV light is generally attributed to its immunosuppressive and immunomodulative effect. We have successfully used phototherapy for the treatment of seasonal allergic rhinitis and we found that UV phototherapy induced a dose-dependent increase of eosinophil and T-cell apoptosis. Preliminary open clinical study proved the effect of narrow-band UVB monotherapy on the reduction of nasal obstruction and quality of life by the end of 12-week treatment. The objective of this study was to evaluate the clinical effect of mixed UV light (Rhinolight®) on the recurrence of nasal polyps during a long (12-week) treatment period with a follow up of 12 months.

Methods

We have included 30 patients with bilateral recurrent polyposis of age ≥ 18 and ≤ 65 years, taking local steroids regularly. They were divided in two groups: Group A they received only intranasal steroid (mometason furoate, 2x200 ug). In Group B they received mixed UV light 3 times per week for 12 weeks and intranasal steroid. We recorded total nasal score, NOSE quality of life, smell threshold test, nasal inspiratory peak flow, acoustic rhinometry and nasal endoscopy images.

Results

15 patient finished the 12 months procedure completely. 4 of 8 patients in the Group B had recurrent polyps 6 months after the phototherapy, in group A instead all of the 7 patients had recurrent polyps. After 12 months in Group B 4 of 8 patients had recurrent polyps, in Group A 6 of 7 patients had recurrent polyps.

Conclusion

Rhinophototherapy may have a supportive role in the treatment of nasal polyposis.

Predictive ability of CT scan to determine inverted papilloma site of attachment

T.S. Santos¹, P. Gonçalves¹, B. Moreira², A. Correia¹, M.G. Valente¹, C. Carvalho¹

¹ Otolaryngology, Centro Hospitalar de Entre o Douro e o Vouga, SANTA MARIA DA FEIRA, Portugal

² Neuroradiology, Instituto de Radiologia Dr. Campos Costa, SANTA MARIA DA FEIRA, Portugal

Abstract: ERS-0839

Session: Skull base surgery 3

Session Time: 26-06-14 10:25

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: T.S. Santos

Objectives

Sinonasal Inverted Papilloma (IP) is a rare but locally aggressive benign tumor. Usually, these tumors only present a single site of attachment. Being surgery the treatment of choice, it's important to identify the attachment site to predict the most accurate approach. The aim of this study was to determine the ability of patients' CT preoperative findings to determine IP site of attachment.

Methods

Paranasal sinus and nasal cavity CT scans of 21 patients were retrospectively reviewed by a Neuroradiologist that had never seen the images before. The assessed parameters were: determination of attachment site and the presence and kind of bone involvement and its correlation with the attachment site. The actual site of attachment as documented in the operative note was then compared with the predicted CT site.

Results

A correlation between the determined and the predicted site of attachment was found in 17/21 (80,9%) patients. The presence of bone erosion was found in 9/21 patients and focal hyperostosis in 6/21. In our cases none of the errors in identifying the site of attachment would apparently lead to a different surgical approach.

Conclusion

In this study, a good correlation between the determined and predicted sites of attachment was found and misinterpretation errors were minor. We conclude, as others before, that a watchful evaluation of preoperative CT scan is important to a correct surgical planning.

Sinonasal morbidity after endoscopic endonasal pituitary surgery with middle turbinate resection

S. Fishpool¹, A. Amato-Watkins², C. Hayhurst²

¹ ENT Department, University Hospital of Wales, Cardiff, United Kingdom

² Neurosurgery Department, University Hospital of Wales, Cardiff, United Kingdom

Abstract: ERS-0840

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14, 10:23

Chair person: R. Weber

Presenting author: S. Fishpool

Objectives

Endoscopic endonasal pituitary surgery is becoming the standard approach. The need for unilateral middle turbinate resection during the endonasal approach remains controversial and the long term implications for sinonasal function are unknown. This study aims to quantify sinonasal morbidity after endoscopic pituitary surgery using the validated SinoNasal Outcome Test (SNOT-22).

Methods

A prospective study of 32 consecutive patients undergoing endoscopic endonasal pituitary surgery for pituitary adenoma. Patients undergoing revision surgery or those patients with giant macroadenomas requiring naso-septal flap reconstruction were excluded. In all cases the right middle turbinate was resected at the beginning of the procedure and the harvested free turbinate mucosal graft used to close the sella defect. Patients were assessed at 6 weeks and 6 months post-operatively using the SNOT-22 questionnaire and the use of nasal rinses and antibiotics recorded.

Results

The mean SNOT score was 32 at 6 weeks and 23 at 6 months ($p=0.001$). No patients had CSF leak post-operatively. 4 (12.5%) patients required antibiotics at 6 weeks and 4 patients required nasal saline rinses beyond 6 weeks. SNOT scores above 4 occurred mainly in the domain related to sleep function and persisted at 6 months in 9 (28%) patients. No patients reported persistent nasal symptoms at 6 months.

Conclusion

Middle turbinate resection has minimal adverse effect on sinonasal function with most patients reporting minimal nasal symptoms beyond 6 weeks. Questions related to sleep function may reflect other underlying medical factors and may not be impacted by surgical intervention.

Endoscopic surgery for treatment of sinonasal inverted papilloma: our experience

T.S. Santos¹, P. Gonçalves¹, A. Correia¹, M.G. Valente¹, C. Carvalho¹

¹ Otolaryngology, Centro Hospitalar de Entre o Douro e o Vouga, SANTA MARIA DA FEIRA, Portugal

Abstract: ERS-0841

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:55

Location: Hall H

Chair person: P. Nicolai

Presenting author: T.S. Santos

Objectives

Sinonasal inverted Papilloma (IP) is a benign epithelial tumor which displays aggressive local behavior. It's primary treatment is surgery, with endoscopic approaches being nowadays the gold standard for most cases. The aim of this study was to review our experience with endoscopic treatment of sinonasal inverted papilloma.

Methods

Retrospective review of patients with IP who underwent endoscopic or combined approaches between 2002 and 2013. A chart review was done with several variables evaluating sex, age, Krouse staging system, MRI evaluation, surgical approaches, attachment site, surgical complications, recurrence rate and follow-up. The recurrence rate was calculated considering, in the cases of no recurrence, only patients with more than 24 months of follow-up.

Results

Twenty three patients were treated within the period of time. 17 were males (73,9%), being nasal obstruction the major presentation symptom (17/20 patients). Four patients presented Krouse type I tumors, 13 type II, type III was seen in 6 cases and no patient presented malignancy. Only once a canine fossa opening was combined with the endoscopic procedure, as a first approach. That combined approach was used twice in recurrences; in these cases the IP affected the anterior wall or anterolateral corner of the maxillary sinus. Recurrence rate was 16,6% (3/19 patients). The mean follow-up was 43,2 months.

Conclusion

Our experience confirms that endoscopic nasal surgery is an effective method for most cases of IP. Nonetheless, combined approaches are sometimes needed, namely when IP affects the anterior and/or lateral surfaces of the maxillary sinuses or the frontal sinuses.

What kind of role does endoscopic surgery have on the management of fibroosseous lesions at difficult locations?

H. Basak¹, S. Beton¹, B. Kucuk¹, I. Yorulmaz¹, C. Meco²

¹ Department of Otolaryngology Head Neck Surgery, Ankara University Faculty of Medicine, Ankara, Turkey

² Department of Otolaryngology Head Neck Surgery, Ankara University Faculty of Medicine & Salzburg Paracelsus University, Ankara, Turkey

Abstract: ERS-0842

Session: Skull base surgery 4

Session Time: 26-06-14, 11:45

Location: Hall G

Chair person: E. Wright

Presenting author: H. Basak

Objectives

To evaluate the success of endonasal endoscopic surgery in removing fibroosseous lesions (FOLS) at areas close to important structures and in the management of possible complications.

Methods

We retrospectively analyzed all operated FOLS patients between 2007 and 2013 at Ankara University, including only endoscopic approaches. Difficult locations for endoscopic surgery were defined as lesions involving frontal sinuses, skull base, orbit and optic nerves. Treatment outcomes were evaluated.

Results

From 52 patients the pathology was osteoma in 39(75%), fibrous dysplasia in 10(19,2%) and ossifying fibroma in 3(5,8%) patients. Lesions were causing frontal sinus aeration problems in 18(%34,6) cases. There were skull base involvement in 10(19,2%), optic nerve compression in 4(7,6%) and intraorbital extension in another 4(7,6%) patients. During FOLS removal along the skull base, in 3(%5,8) cases a CSF leakage was not inevitable, which were recognized and repaired immediately. For lesions involving frontal recess and sinus, Draf procedures (2 Draf I, 8 Draf IIa, 6 Draf IIb, 2 Draf III) were utilized. Nevertheless, 6 patients developed inflammatory frontal sinus complications and needed to be revised to Draf III median drainage. In lesions involving the orbit and optic nerves, no patients had postoperative visual deficit. In a mean follow-up time of 37 months no recurrences in FOLS were detected.

Conclusion

For the removal of sinonasal FOLS at difficult locations, endonasal endoscopic approach reveals a viable technique with acceptable morbidity. Extreme caution should be taken to recognize and repair possible CSF leaks. Long follow-ups are necessary to observe frontal sinuses, if surgery involves the frontal recess.

Review article: occupational rhinosinusitis

I. Picoli Dantas¹, R. Araújo Rêgo², R.U.F. Teixeira³, R.M. Knoll², J.E. Baptistella⁴, W.T.A. Lima⁵

¹ Preceptor in Otorhinolaryngology, Hospital Complex Ouro Verde, Campinas, Brazil

² Resident physician in otorhinolaryngology, Hospital Complex Ouro Verde, Campinas, Brazil

³ Preceptor in Otorhinolaryngology, Hospital Complex Ouro Verde, Campinas, Brazil

⁴ preceptor and chief of otorhinolaryngology, Hospital Complex Ouro Verde, Campinas, Brazil

⁵ Professor of ophthalmology and otolaryngology surgery department head and neck, University of sao paulo - Ribeirão Preto, Campinas, Brazil

Abstract: ERS-0843

Session: CRS miscellaneous

Session Time: 25-06-14, 14:40

Location: Hall J

Chair person: G. Adriaensen

Presenting author: I. Picoli Dantas

Objectives

Background: Occupational rhinosinusitis (RSO) occurs when inflammation of the sinus mucosa is a result of the exercise of labor activity. The Occupational rhinosinusitis is an important but unappreciated and vastly unexplored field of rhinosinusitis, as demonstrated by the lack of literature available on the subject.

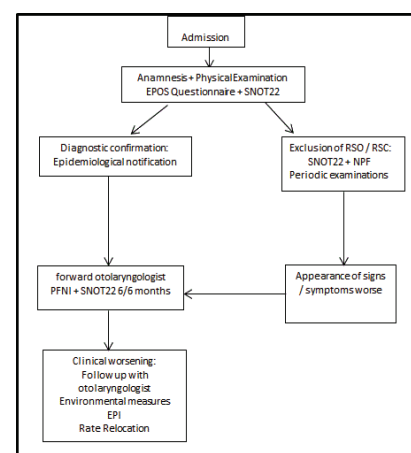
Objectives: The purpose of this article is to establish epidemiological and pathophysiological parameters of the RSO through a literature review on the subject at national and international levels, in order to propose an algorithm for management of RSO in our country.

Methods

PubMed, SciELO and LILACS: a review of published articles using descriptors occupational rhinosinusitis, AND rhinosinusitis related Work, Occupational Rhinitis. 07 articles were found, including 11 related to the subject by authors active search.

Results

Workers are exposed to a range of allergens and chemicals with the potential to cause diverse respiratory diseases, including the RSO. The pathophysiological mechanism of occupational rhinosinusitis shows similar to occupational rhinitis, in which he admits the immunologic, infectious (virus, bacteria or fungi) and irritative. RSO lacks a gold standard examination. However, it is assumed that the test is still better by nasal challenge for evaluation of rhinitis. We propose a practical guide for the management of RSO by occupational physicians and otolaryngologists approach. Initially, all workplace exposure which provides for the development of RSO is



Conclusion

Based on the proposed algorithm for the management RSO we aim to systematize the care, diagnosis, treatment and follow-up of workers and the promotion of new research.

Hidden unilateral frontal sinus aplasia - a radioanatomic study

T. Gotlib¹, M. Held-Ziółkowska¹, K. Niemczyk¹

¹ Department of Otolaryngology, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-0844

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:18

Chair person: S. Reinartz

Presenting author: T. Gotlib

Objectives

Hidden unilateral aplasia of the frontal sinus is unilateral aplasia of the frontal sinus with increased pneumatization of contralateral sinus. The prevalence of this anatomical variant is unknown. The aim of this study was to evaluate this anatomical variation using multiplanar CT reconstruction (MPR).

Methods

305 CT examinations were evaluated using MPR. Hidden unilateral frontal sinus aplasia was defined as lack of pneumatization of one frontal sinus beyond the level of the orbital roof, with increased pneumatization of contralateral sinus extending to the lamina papyracea on the side of aplasic sinus.

Results

11 patients with hidden unilateral frontal sinus aplasia were identified, 5 on the left and 6 on the right side, in 5 female and 6 male patients. Incomplete intersinus septum within hyperplastic frontal sinus with a narrow passage between the compartments was observed in two of these subjects.

23 patients with 'regular' frontal sinus aplasia (patients who did not meet the criteria of hidden aplasia) were found, four with bilateral aplasia and 19 with unilateral aplasia (13 on the right side and 6 on the left side, 14 female and 5 male patients).

Conclusion

Hidden unilateral aplasia of the frontal sinus can be observed in about 4% of individuals. The presence of this anatomical variant should be considered in patients undergoing endoscopic sinus surgery as it can be a potential source of intracranial complications.



SNOT 22 in a control population

S.E. Erskine¹, C.M. Philpott¹

¹ Norwich Medical School, University of East Anglia, Norwich, United Kingdom

Abstract: ERS-0845

Session: Epidemiology

Session Time: 25-06-14, 10:06

Location: Hall J

Chair person: R. Harvey

Presenting author: S.E. Erskine

Objectives

This analysis uses data from the Chronic Rhinosinusitis Epidemiology Study (CRES). The overarching aim of CRES is to determine factors which influence the onset and severity of chronic rhinosinusitis (CRS). SNOT-22 is a widely used score for nasal symptoms in many ENT clinics internationally, although there are few data characterizing SNOT-22 scores for a normal population. The aim of this analysis is to establish a data set of normal values for SNOT-22 in a British population.

Methods

Study-specific questionnaires including demographic and socio-economic factors and past medical history as well as SNOT-22 and SF-36 were distributed to patients with CRS attending ENT clinics and to a control population across several centres in the United Kingdom. This analysis considers just the control population. Controls had no self-reported nasal problems in the past, no chronic conditions undergoing active treatment and no hospital admissions in the preceding 12 months.

Results

1,529 participants were recruited; 57 with AFRS (allergic fungal rhinosinusitis), 659 CRSwNP (with nasal polyps), 577 CRSsNP (without nasal polyps), 236 controls. Age range 18-98 years. 213 controls included sufficient information to calculate SNOT-22 score. Score range was 0-85; median 9, mean 13.4.

Conclusion

SNOT-22 is an important tool for measuring the impact of nasal symptoms and evaluating effectiveness of treatments. Data for a large population without nasal problems will be invaluable in both clinical and academic settings. Further analysis will characterize SNOT scores for different types of CRS and subgroup analysis of different elements of SNOT-22.

Choanal atresia an endoscopic approach - case report

P. Rocha Pereira¹, M. Canas Marques¹, T. Carvalho¹, J. Deus¹, A.R. Santos¹, M. Simão¹, O. Dias¹

¹Otolaryngology, Hospital Santa Maria, Lisbon, Portugal

Abstract: ERS-0846

Objectives

Choanal atresia is a rare congenital abnormality with an incidence of 1:7000-8000 births. It is usually unilateral with a female:male ratio of 2 to 1. The presenting symptoms vary from a mild airway obstruction in unilateral disease to acute respiratory distress in bilateral atresia, which is a medical emergency that requires surgical treatment during the first days of life.

Diagnosis is suspected in the absence of airflow in the nasal cavity and the inability to advance a nasogastric tube, and it is established by endoscopic examination and computed tomography.

The definite treatment is surgical and there are different techniques and approaches. The use of stents is still controversial.

Methods

The authors present 2 cases of bilateral choanal atresia with a membranous and osseous obstruction, which were submitted to a transnasal endoscopic repair with a drill and cold instruments without any stents.

Results

One of the cases needed reintervention and after a detailed analysis of the CT images the authors found that the distance between the nasal floor and the sphenoidal rostrum was minimal and that this could be a risk factor for restenosis and an indication for the use of stents.

Conclusion

Based on the case reports the authors review the literature analysing the risk factors for restenosis and the indications for the use of stents.

Paediatric nasal foreign body removal: maintain the chain of communication

G. Tharmagajan¹, P. McLean¹, T. Valsamakis¹, S. Keh¹, M. Shakeel¹

¹ Otolaryngology, NHS Tayside, Dundee, United Kingdom

Abstract: ERS-0847

Session: Pediatric rhinology

Session Time: 24-06-14, 11:55

Location: Hall H

Chair person: JB Watelet

Presenting author: G. Tharmagajan

Objectives

Nasal foreign body (FB) is a rhinological emergency commonly occurring in younger children. In our unit, these patients could be reviewed in our emergency clinic or in the treatment room if referred out of hours. It is required to electronically update the family doctors (FDs) about these patients. We aim to investigate if the FDs were informed about these patients and chain of communication was maintained by the relevant doctors.

Methods

A 4 year (2010-2013) retrospective review of all patients attending our unit with a suspected nasal FB. The patients were identified from the ward attendance book and from the hospital patient electronic record. Information collected includes demographics, type of FB, type of intervention for FB removal; and hospital record systems were checked for an electronic correspondence to the FDs.

Results

A total of 134 patients were identified. Only one patient was an adult; there were more boys (70) than girls (52). The common FBs included lego; plastic bead; sponge; piece of a toy; stone and paper. Half of the children were taken to theatre to remove the FB and rest were managed in the emergency clinic and in the ward treatment room. The electronic letter was sent to the GP for only 70 (52%) patients.

Conclusion

There was no electronic communication record for nearly half of the children seen out of hours for a suspected nasal foreign body. We have introduced measures to improve the situation and have raised awareness among colleagues to dictate letters for every patient's consultation.

How often does isolated sphenoid sinus disease turn out to be a neoplasm?

S. Beton¹, H. Basak¹, E. Ocak¹, B. Kucuk¹, I. Yorulmaz¹, C. Mecoc¹

¹ Department of Otolaryngology Head & Neck Surgery, Ankara University Faculty of Medicine, Ankara, Turkey

Abstract: ERS-0848

Session: Malignant tumours

Session Time: 24-06-14, 09:57

Location: Hall H

Chair person: M. Bernal-Sprekelsen

Presenting author: S. Beton

Objectives

The aim of this study was to assess the frequency of diagnosing a neoplastic process as an isolated sphenoid sinus disease (ISSD) and our management strategy in ISSD patients.

Methods

We retrospectively analyzed all ISSD patients operated between 2006 and 2013 at Ankara University. Tumors arising from adjacent structure and sphenoidal polyps were excluded. Radiological studies, operative findings, surgical techniques, pathology results and treatment outcomes were analyzed.

Results

Thirty-six patients (26 female/10 male) were included in this study. All patients had preoperative computer tomography (CT) imaging but in only 19 (52,7%) patients there was a need for Magnetic Resonance Imaging (MRI). All ISSD patients were operated either with transnasal or transthemoidal endoscopic approaches. According to pathology 18 (20%) patients had mucocoeles, 7 (19,4%) had fungal disease, 6 (16,6%) had cerebrospinal fluid leakage (CSF) and 5 (13,8%) had a neoplasm. From all neoplastic disease 3 were benign (1 inverted papilloma, 1 osteoma and 1 fibrous dysplasia) and 2 were malignant (both plasmacytoma) tumors. All were removed completely and no local recurrences were observed during a mean follow-up time of 42 months.

Conclusion

In our caseload more than a tenth of the ISSD patients revealed a neoplastic disease. In the preoperative workout CT and MRI are the best imaging tools for diagnosis. Endonasal endoscopic approaches help us to perform effective and adequate management of all ISSD lesions, including neoplastic diseases. In order to avoid unexpected situations and complications which may put surgeons in tricky situations during surgery, pre-cautious preoperative planning is imperative.

Inverted papillomas: retrospective review

I.M. Moura¹, M.T. Soares¹, I.P. Delgado¹, T. Gabriel¹, M. Cardoso¹, J.P. Leandro¹, G. Veiga¹

¹ Otorhinolaryngology, Hospital Prof. Doutor Fernando Fonseca EPE, Lisbon, Portugal

Abstract: ERS-0849

Session: Skull base surgery 4

Session Time: 26-06-14 12:15

Location: Hall G

Chair person: E. Wright

Presenting author: I.M. Moura

Objectives

Inverted papillomas are benign sinonasal tumors arising from schneiderian mucosa. The inverted papillomas represent 0,5-4% of all sinonasal tumors. The purpose of this review was to analyze the patients with inverted papilloma, treated in Hospital Prof. Doutor Fernando Fonseca, Portugal.

Methods

A retrospective review was performed of patients with inverted papilloma over 10-year period.

Results

The authors found 12 cases of inverted Papilloma, with mean age of 63 years old with male predominance. In collaboration with the Neuroradiology department, the authors found 1 case in Stage I, 4 cases in stage II, 5 cases in stage III and 2 cases in stage IV of the Krouse's Staging System. The endoscopic surgical approach was used in 11 cases (combined with external approach in 7 cases) and isolated external approach in 1 case. The meantime of follow-up was 28 months, there was recurrence in 4 cases and 1 had malignant transformation.

Conclusion

The treatment of inverted papilloma is surgical, with the endoscopic approach being the choice in the majority of the cases. A follow-up for a long period is necessary. A larger number of cases for analysis would be necessary to confirm the review's results.

Lipopolysaccharide modulates glucocorticoid receptor function in nasal mucosa and polyp fibroblasts

L. Fernández-Bertolín¹, J. Mullol¹, M. Fuentes-Prado¹, J. Roca-Ferrer¹, I. Alobid², C. Picado³, L. Pujols¹

¹ Clinical and Experimental Respiratory Immunology CELLEX 2B, Idibaps, Barcelona, Spain

² Rhinology and Smell Unit ENT Department, Hospital Clínic, Barcelona, Spain

³ Pneumology Department University of Barcelona, Hospital Clínic, Barcelona, Spain

Abstract: ERS-0850

Session: Pathophysiology CRSwNP

Session Time: 23-06-14, 11:24

Location: Hall H

Chair person: P. Gevaert

Presenting author: L. Fernández-Bertolín

Objectives

Viral and bacterial-related chronic airway disease exacerbations may contribute to disease deterioration by inducing glucocorticoid resistance. We aimed investigating the effects of the bacterial product lipopolysaccharide (LPS) on glucocorticoid receptor (GR) function.

Methods

Cultured fibroblasts from nasal polyp asthmatic patients (N=12) or control nasal mucosa (N=10) were stimulated in vitro with LPS (10 µg/ml, 24h) prior to dexamethasone addition. Cytokine/chemokine secretion was measured by ELISA and Cytometric Bead Array. p38 MAPK (SB203580), JNK (SP600125), and NFκB (BMS-345541) inhibitors were used to study the signalling pathways involved in LPS-induced IL-6 and CXCL8 secretion. GRα, GRβ, mitogen-activated protein-kinase phosphatase-1 (MKP-1) and glucocorticoid-induced leucine zipper (GILZ) expression was measured by RT-PCR and immunoblotting, GRα nuclear translocation by immunocytochemistry, and GRβ localisation by immunoblotting. The role of MKP-1 and GILZ on dexamethasone-mediated cytokine inhibition was analysed by small interfering RNA silencing.

Results

LPS increased IL-6, CXCL8, GM-CSF, and RANTES release by nasal mucosa and polyp fibroblasts. Both SB203580 and BMS-34554 partially suppressed LPS-induced IL-6 and CXCL8 secretion. LPS partially abrogated dexamethasone-mediated inhibition of IL-6, CXCL8 and RANTES. LPS did not alter GRα or GRβ expression or GRα nuclear translocation. LPS increased dexamethasone-induced MKP-1 expression and reduced dexamethasone-induced GILZ expression. MKP-1 knockdown reduced dexamethasone capacity to suppress LPS-induced CXCL8 release.

Conclusion

LPS reduced glucocorticoid inhibitory effects on proinflammatory mediator release while modulating antiinflammatory gene transactivation in human nasal fibroblasts. Repression of GR signalling by bacterial products such as LPS may account for the reduced effectiveness of glucocorticoids in the treatment of infectious-related inflammatory diseases.

Comparison of quality of life and Lund-Mackay score in subgroups of rhinosinusitis

P. Catalano¹, D. Carlson¹

¹ Otolaryngology, Tufts Medical Center, Boston, USA

Abstract: ERS-0851

Session: Imaging

Session Time: 25-06-14, 12:00

Location: Hall G

Chair person: N. Freling

Presenting author: P. Catalano

Objectives

Rhinosinusitis (RS) can significantly impact quality of life (QoL) for the millions of patients affected each year. The major recognized subtypes of RS are Recurrent Acute RhinoSinusitis (RARS), Chronic Rhinosinusitis with nasal polyps (CRSwNP) and without (CRSsNP), Sampter's triad, and Allergic Fungal Sinusitis. To our knowledge, there is no published comparison between QoL and CT grading among the various subtypes. The aim of this study is to explore the relationship between Lund-Mackay (LM) CT scores and QoL assessments in each subtype of RS.

Methods

A prospective study was undertaken evaluating patients diagnosed with RARS, CRSsNP, CRSwNP, and Sampters/Fungal disease, incorporating a pre-treatment Sinonasal Outcome Test-20 (SNOT 20) questionnaire, and a CT of the paranasal sinuses graded by the Lund-Mackay (LMS) system. Statistical analysis was performed using GraphPad Prism 6.

Results

Ninety patients were enrolled into the following subtypes: RARS n=25; CRSsNP n=25; CRSwNP n=19; Sampter's/Fungal n=21. The mean pre-operative SNOT-20 scores were 35.6, 45.5, 48, and 54.3, respectively, and the mean LM scores were 6.6, 5.0, 12.6 and 17.6, respectively. Overall, the mean SNOT-20 and LMS scores differed significantly between each subtype. However, there was no statistical relationship between QoL and LM scores within a given subtype.

Conclusion

Our results show that QoL and LM scores are significantly different between the major subtypes of RS, and do not correlate within each subtype. Thus, QoL and CT scores may provide different information regarding the burden of disease in a given patient, casting further doubt on conventional indicators for sinus surgery.

Ocular and orbital complications in a 16 year old patient with sinusitis without comorbidities

B. Popescu¹, R. Grigore¹, S.V.G. Bertesteanu¹, I. Briceag¹, A. Nicolaescu¹, C.R. Popescu¹

¹ E.N.T. Department, Coltea Clinical Hospital, Bucharest, Romania

Abstract: ERS-0852

Objectives

Ocular and orbital complications of sinusitis are the most frequent due to the fact that 3 out of the 4 walls of the orbit are in direct relation to the paranasal sinuses, and because of the small thickness of the bone in this particular region. Imaging studies are commonly used in the diagnosis of acute sinusitis especially in life-threatening situations such as oculo-orbital complications.

Methods

The authors present the case of a 16 year old patient from the urban environment who presents to the emergency room with mucopurulent rhinoreea, persistent headache, diplopia, a decreased visual acuity and a supurated purulent collection of both eyelids.

Results

Clinical diagnosis was right pansinusitis with oculo-orbital complications with a surgical intent of incision and drainage of the retro-orbital abscess along with radical surgery for the right frontal paranasal sinus and right ethmoidectomy.

Conclusion

Acute rhinosinusitis with oculo-orbital complications is thought to be a medical and surgical emergency which requires a multimodal approach. The morbidity the patient suffers due to the lack of oculo-orbital infectious process control are extremely important.

Management of sinonasal papillomas. Recurrence related to surgical approach

A. Bilde¹, A. Nygren¹, M.H. Therkildsen², C. von Buchwald¹

¹ Dept. of ORL - H&N Surgery, Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark

² Dept. of Pathology, Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark

Abstract: ERS-0853

Session: Benign tumours

Session Time: 25-06-14, 12:09

Location: Hall H

Chair person: R. Harvey

Presenting author: A. Bilde

Objectives

The recurrence of inverted papilloma (IP) is the result of either incomplete removal of the original tumor or disease developing from predisposed mucosa. The primary objective was to evaluate recurrence rate of IP and to relate it to surgical approach. The secondary objective was to determine the rate of malignant transformation in patients with IP.

Methods

A retrospective study based on data from patients with IP referred to and treated at the Department of Otorhinolaryngology – Head and Neck Surgery between January 1st 1998 to December 31th 2008 was performed.

Results

98 patients with IP were identified. Mean follow up was 4,5 years (range 6 months to 11 years). Eight patients had malignant transformation and two had CIS and were excluded. 12,5 % had a T1 stage, 46,5 % had a T2 stage and 42,0 % had a T3 stage tumor. 27,3 % of IP cases had recurrence. The recurrence rate following surgery using the endoscopic approach combined by an open approach with involvement primarily of the maxillary sinus was 10,0 %. The recurrence rate using the endoscopic approach with involvement primarily of the nasal cavity, maxillary sinus and ethmoid sinus was 23,3 %. The rate of malignant transformation was 8,9 %.

Conclusion

In order to avoid recurrence preoperative planning using CT/MRI, sufficient visibility and accessibility is critical. The endoscopic approach in the management for IP gives an acceptable recurrence rate. The endoscopic approach combined by open approach offers the best method to obtain a low recurrence rate for IP involving the maxillary sinus.

Differences in long-term quality of life outcomes in patients with recurrent acute rhinosinusitis and chronic rhinosinusitis without nasal polyps

P. Catalano¹

¹ Otolaryngology, Tufts Medical Center, Boston, USA

Abstract: ERS-0854

Session: Management of CRS

Session Time: 26-06-14 12:00

Location: Hall J

Chair person: TBC

Presenting author: P. Catalano

Objectives

Improvements in quality of life (QoL) after surgical management of chronic sinusitis without nasal polyps (CRSsNP) is well defined and universally accepted as a rationale for surgical intervention, whereas the similar management of recurrent acute rhinosinusitis (RARS) remains controversial. The aim of this study is to compare the changes in QoL before and one year after surgical intervention between patients with RARS and CRSsNP.

Methods

A prospective cohort of 32 patients with RARS (defined by the Rhinosinusitis Task force) and 25 patients with CRSsNP were enrolled in the study upon failing medical management. CT scan findings were reported using the Lund Mackay (LMS) scoring system. A SNOT-20 QoL assessment was completed both preoperatively and one year postoperatively. Patient data was collected, scored and transferred for analysis using Prism6 Graph Pad software.

Results

Fifty-seven patients enrolled in this prospective study exhibited a mean age of 39 years. The mean pre-operative LM scores were similar between subgroups: RARS=7.5; CRSsNP=6.3 ($p>.05$). Pre-operative SNOT-20 scores were slightly higher for the CRSsNP vs RARS group: 44.3 vs 32.3, respectively ($p=.0092$). However, the magnitude of QoL improvement between pre-operative and post-operative SNOT-20 scores were identical ($\Delta=-21$) and statistically significant in both RARS and CRSsNP groups.

Conclusion

These results show statistically significant, similar and durable improvements in QoL outcomes following endoscopic sinus surgery in patients with RARS and CRSsNP, providing further evidence that targeted surgical intervention is as appropriate for medically refractory patients with RARS as it is for those with CRSsNP.

The role of the pedicle lateral nasal wall flap in the reconstruction of the nasal septum after extended endonasal surgery. A radiological study

E. Mason¹, C.A. Solares¹, D. Prevedello², M. Bernal-Sprekelsen³, R. Carrau⁴

¹ Otorhinolaryngology depart, Georgia Regents University, Augusta, USA

² Neurosurgery depart, Ohio State University, Columbus, USA

³ Otorhinolaryngology depart, Hospital Clinic, Barcelona, Spain

⁴ Otorhinolaryngology depart, Ohio State University, Columbus, USA

Abstract: ERS-0855

Session: Septal and turbinate surgery including septal perforations

Location: Hall E

Time: 23-06-14, 09:30

Chair person: N. Keles

Presenting author: E. Mason

Objectives

During the past two decades, we have witnessed the evolution of endoscopic endonasal approaches resulting in larger and more complex defects of the skull base and of the nasal septum. Complete anatomic closure of symptomatic total septal perforations is still challenging. The aim of the current radiological study is to ensure that the area and the length of a posterior pedicled lateral nasal wall flap (PLNW) are adequate to reconstruct large nasal perforation.

Methods

CT scan analysis was conducted on 40 de-identified CT angiographies obtained from adult patients. The area (cm²) and length (cm) of the PLNW, the septum, and the nasal floor were measured.

Results

The CT scan study demonstrated an average PLNW area of 10.80 ± 1.13 cm² and nasal floor area of 3.78 ± 0.58 cm². The septal area (22.54 ± 21.32 cm², p2). The average length of the flap was 5.58 ± 0.39 cm while the septum was 6.66 ± 0.42 cm and subsequently the PLNW flap is insufficient to reconstruct the entire anterior-posterior aspect of the septum.

Conclusion

The main findings of our study were: 1) The PLNW flap is not rendering enough tissue to reconstruct a total septum perforation; 2) Up to 75% of anterior or posterior nasal perforation could be repaired with PLNW; and 3) Combined anterior and posterior PLNW flaps could be an alternative method in case of symptomatic patients.

This study was support partially by European Rhinologic Society in cooperation with the Foundation of Rhinology and Facial Surgery (RHiPla-Stifung Ulm, Germany).

CD8⁺ lymphocyte immune deficiency is frequent in CRS patients

S. Alromaih¹, F. Lariviere², M. Desrosiers¹

¹ Otolaryngology Head and Neck Surgery, Centre Hospitalier de l'Université de Montreal, Montreal, Canada

² Department of Biochemistry, Centre Hospitalier de l'Université de Montreal, Montreal, Canada

Abstract: ERS-0856

Session: CRS Basic 2

Session Time: 24-06-14, 14:10

Location: Hall G

Chair person: R. Moesges

Presenting author: S. Alromaih

Objectives

CD8⁺ lymphocyte immune deficiency is associated with purulent chronic rhinosinusitis and airway disease. While severe presentations are mostly seen in children, we have previously identified that variations in the CD8a gene (Alromaih, 2013) are associated with CRS, and that low levels of circulating CD8⁺ lymphocytes are present in a subpopulation of patients with CRS (Gabra, 2014).

Objective: We wished to determine the frequency of CD8⁺ lymphocyte deficiency in a population with severe CRS.

Methods

Lymphocyte immunotyping has been routinely used in our tertiary institution as part of the assessment of CRS patients for the past two years. All CRS patients assessed in our tertiary, referral-based rhinology clinic between November 2011 and November 2013 who underwent lymphotyping as part of their assessment were identified and the CD8⁺ lymphocyte level determined. All patients with absolute counts below normal values were identified as low-CD8⁺. All duplicate tests were removed.

Results

During the study period, 424 CRS patients were screened for CD8 levels. 72 individuals (17.0 %) had absolute CD8⁺ lymphocyte counts below reported normal values ($<0.20 \times 10^9/L$), with an average count of $0.142 \times 10^9/L$ and a range of $0.06-0.19 \times 10^9/L$.

Conclusion

Low CD8⁺ lymphocyte levels are a frequent feature of CRS, suggesting that low levels of immune deficiencies may contribute to development of CRS. Immunotyping of lymphocyte populations should be integrated into the assessment of immune function in of CRS patients.

Comparing surgical results of different uvulopalatopharyngoplasties in obstructive sleep apnea hipopnea patients

M. Carrasco¹, V. Zerpa¹, G. Agostini¹, J. Dalmau¹

¹ ENT, Dr Peset University Hospital, Valencia, Spain

Abstract: ERS-0857

Session: OSAS

Location: Hall H

Time: 25-06-14, 14:20

Chair person: N. de Vries

Presenting author: M. Carrasco

Objectives

Patients with OSAHS who do not tolerate gold standard CPAP therapy have need of alternative treatment possibilities like surgery. Uvulopalatopharyngoplasty (UPPP) is the procedure most frequently performed; new UPPP modalities have been described. Our aim is to evaluate if there are differences in surgical results obtained with each of the 5 techniques used.

Methods

A retrospective study was conducted. Surgery of the soft palate was indicated after DISE. Inclusion criteria: adults over 18 years old, BMI < 35, AHI > 15 and a PSG at least 3 months after surgery. From 2001 to 2013, 5 different types of surgery in the soft palate were performed: uvulopalatal flap (UF), UPPP in which the palatopharyngeus muscle was cut and the pillars were sutured, Cahali's lateral pharyngoplasty, Pang's expansion pharyngoplasty and Friedman's Z-palatoplasty. Tonsillectomy was also performed if tonsils were present. Surgical success was achieved if AHI was 10 or less.

Results

65 patients (59 men), mean age: 43.54 (9.38) years, BMI 27.46 (3.24) kg/m², AHI 40.96 (23.37). After surgery the mean AHI was 15.8 (16.91)/h, mean reduction in the AHI was 25.16 (22.36) p<0.0001. Pre and post AHI with the different techniques are shown in table 1. Surgical success was achieved in 48%; no differences were found when comparing surgical success between the UPPP techniques (p=0.11).

Conclusion

We were unable to find differences in our results. Nevertheless, we believe that the result is biased because patients with Pang's technique were not as severe as the ones with UF, UPPP or Cahali's.

Type of surgery	Number of patients	Age	BMI	AHI pre	AHI post
Uvulopalatal Flap	23	46.4 (11.0)	28.0 (3.0)	49.6 (20.7)	21.7 (22.2)
UPPP	9	40.5 (6.6)	27.9 (3.9)	44.9 (24.7)	15.0 (8.7)
Cahali	12	43.5 (9.2)	27.5 (3.5)	44.2 (33.7)	18.7 (19.2)
Pang	14	38.5 (6.3)	26.5 (3.2)	26.9 (8.0)	5.8 (3.9)
Friedman	5	46.2 (10.2)	27.4 (4.2)	22.0 (3.9)	13.7 (7.8)

Table 1: Main features of the patients in the different techniques studied. All data are mean and standard deviation. BMI: body mass index, AHI: apnea hipopnea index, UPPP: uvulopalatopharyngoplasty cutting the palatopharyngeus muscle.

Endonasal endoscopic surgical treatment of inverted papilloma of posterior ethmoid and sphenoid sinus: a multicenter study

YA. Varini¹, M. Spanio¹, G. Tirelli², M. Renco³

¹ ENT Department, Casa di Cura Salus, Trieste, Italy

² ENT Clinic, University of Trieste, Trieste, Italy

³ ENT Department, Monfalcone Hospital, Gorizia, Italy

Abstract: ERS-0858

Session: Skull base surgery 4

Location: Hall G

Time: 26-06-14 12:05

Chair person: E. Wright

Presenting author: A. Varini

Objectives

Sphenoid sinus (SS) and posterior ethmoid (PE) inverted papilloma (IP) are rare. Moreover, PE and SS share a close relationship to surrounding vital neurovascular structures. This study was carried out in order to contribute to the knowledge of these rare tumors.

Methods

We retrospectively analyzed the cases of IP of the sinuses endonasally and endoscopically treated between 2005 and 2009 in three different departments. Out from 52 cases, we identified two cases originating in the PE and two in the SS.

Results

The presenting symptoms were nasal obstruction and rhinorrhoea. Two cases were already operated more times elsewhere. The tumor was endoscopically removed by subperiosteal dissection. In the two SS cases, the site of attachment was single but not limited, on the intersphenoid septum and the posterior wall. The subsite of attachment in PE was the superior turbinate. The underlying bone was drilled. We had no associated carcinoma and no minor or major complications. Four years follow-up was completed. Recurrence rate was 0%.

Conclusion

In case of SS involvement, we recommend a wide surgical exposure, considering the likelihood of a wide attachment of the tumor. Therefore, we suggest to perform a bilateral sphenoidotomy, removing the SS anterior wall almost completely. The septal branch of the sphenopalatine artery should be preserved if a nasoseptal flap is planned. If the IP arises from the PE, the strategy can be more origin oriented, since the superior turbinate can represent the subsite of origin.

Inverted papilloma with exophytic and endophytic growth pattern

I.M. Moura¹, C. Durao¹, S.D. Mota¹, M. Cardoso¹, J.P. Leandro¹, F. Freire¹

¹ Otorhinolaryngology, Hospital Prof. Doutor Fernando Fonseca EPE, Lisbon, Portugal

Abstract: ERS-0859

Objectives

The authors expose a case report and a literature review of schneider's papilloma with mixed exophytic and endophytic growth pattern, and try to understand if this nasal lesions need a different management that the one used for inverted papillomas.

Methods

A case report of inverted papilloma with exophytic and endophytic growth pattern.

Results

APG, female, 49 years old, without relevant medical history, presented with a 1-year history of left unilateral nasal obstruction. The ENT examination revealed a left nasal mass with granular mulberry appearance. In the paranasal CT-scan it was possible to differentiate the opacification of the left ethmoid and maxillary sinus and a lobulated mass with apparent origin in ostiomeatal unit. The chosen treatment was removal of the nasal mass and bone's drilling of the possible origin area by endoscopic sinus surgery. Histopathological analysis was compatible with sinonasal papilloma with endophytic pattern with a minor exophytic component.

Conclusion

Inverted papilloma represents 0,5-4% of the nasal tumors, and its mixed hystologic pattern is the least common. In this specific case, the authors have chosen to follow the management and follow-up algorithms defined for inverted papillomas by the International and European Rhinologic Societies. A larger follow-up is advised for more accurate conclusions. Due to mixed sinonasal papilloma's lack of cases and, therefore, anedoctical reports, it's impossible to assume if we are in presence of a distinct lesion, which needs specifics algorithms. Randomized studies to compare evolution and management of endophytic pattern and mixed pattern are necessary.

Patient reported outcome measures (PROMS) in patients with non-apnoeic snoring undergoing snoring surgery - how does injection snoreplasty compare?

M.M. Khan¹, R. Kumar², D.J. Willatt³

¹ Core Surgical Trainee in ENT, North West Deanery, Manchester, United Kingdom

² Specialist Registrar in ENT, North West Deanery, Manchester, United Kingdom

³ Consultant ENT Surgeon, Salford Royal Hospitals NHS Foundation Trust, Salford, United Kingdom

Abstract: ERS-0860

Session: OSAS

Location: Hall G

Time: 23-06-14, 16:09

Chair person: M. Ravesloot

Presenting author: M.M. Khan

Objectives

Injection snoreplasty (IS) is a procedure where a sclerosing agent, sodium tetradecyl sulphate, is injected under topical anaesthesia to the soft palate. This causes tissue stiffening thereby decreasing palatal flutter snoring. We aim to identify patients' subjective success of intervention for simple snoring, and compare patient reported outcome measures (PROMs) for different surgeries.

Methods

A questionnaire designed to assess patients' perspectives after snoring surgery was adapted from current literature. Responses were on a Likert scale. Inclusion criteria: BMI <30; >6 months since intervention. Exclusion criteria: Obstructive sleep apnoea; coexisting sleep/upper airways disorder; prior treatment; oral appliance/sedative use.

Results

79 patients were treated over 3 years. 69 responses (87.3%) were obtained. 33 patients underwent IS, 17 had palatopharyngeal surgery (UPPP, tonsillectomy) and 19 had nasal surgery for snoring (septoplasty, turbinoplasty). The IS group demonstrated temporary improvement in 57% and permanent improvement in 38%. 94% of the palatopharyngeal group experienced permanent improvement. The greatest degree of permanent improvement on Likert scale scores was demonstrated in the IS group. There was no significant difference in overall improvement rates between IS and palatopharyngeal groups ($p < 0.05$ ANOVA).

Conclusion

IS is a well-tolerated procedure and diagnostic tool in treating palatal snoring. It can be performed in short time in office settings, confers lower costs and morbidity risks, and is associated with significantly higher patient comfort scores (pain, recovery) as compared with palatopharyngeal surgery. This study highlights the necessity for accurate pre-procedural identification of the snoring site. We intend to recruit more patients to investigate further.

For patients with chronic rhinosinusitis: does time to endoscopic sinus surgery impact outcomes? Retrospective analysis using the UK clinical practice research data

C. Hopkins¹, P. Andrews², R. Levine³, C. Holy³

¹ ENT, Guy's & St Thomas' Hospital, London, United Kingdom

² ENT, Royal National Throat Nose and Ear Hospital, London, United Kingdom

³ Menlo Park, United Kingdom

Abstract: ERS-0861

Session: Outcomes in CRS

Session Time: 24-06-14, 14:09

Location: Hall E

Chair person: TBC

Presenting author: C. Hopkins

Objectives

Patients with chronic rhinosinusitis refractory to medical management may elect surgery. Recent data has shown that clinical outcomes of patients treated earlier outperformed those of patients treated later in the disease continuum. In this study, healthcare utilisation of patients treated early versus late for CRS was analysed using the UK-based Clinical Practice Research Data (CPRD).

Methods

Patients with endoscopic sinus surgery (ESS) were identified and grouped based on timing of first CRS diagnosis to date of surgery (< 12 months: "Early Cohort"; ≥ 5 years: "Late Cohort"). Cohorts were matched for age and gender. Medical and prescription history for all patients was analyzed post-operatively each year, for 5 years.

Results

Each cohort included 1,545 patients (57% male, age = 51.37). Asthma was significantly more prevalent in the Late cohort (Early: 28.2% (95%CI: 25.9%-30.4%); Late: 34.2% (95%CI: 31.8%-36.5%)) whereas polyps were more prevalent in the Early cohort (Early: 51.2% (95%CI: 48.7%-53.7%); Late: (95%CI: 43.2%-48.2%). Post-operatively from years 2 to 5, the number of patients required medical care for CRS was significantly lower in the Early versus Late cohort (Year 4-5: Early : 26.8% (95%CI: 24.%-29.3%); Late : 36.3% (95%CI: 33.5%-39.0%)). Consequently, the frequency of post-operative CRS-related visits and prescriptions was significantly lower in the Early versus Late cohort, for each post-operative time point.

Conclusion

Patients in the Early cohorts had significantly better outcome than patients in the Late cohort, with fewer patients requiring CRS-related care up to 5 years post-operatively. Once it is clear that medical treatment has been unsuccessful, delaying surgical intervention appears to be detrimental to long-term outcomes.

Endoscopic nasal dacryocystorhinostomy: results of a district hospital's experience

L. Barbosa¹, M. Soares¹, A. Guimarães¹, F. Freire¹

¹ Serviço de Otorrinolaringologia, Hospital Fernando Fonseca, Lisbon, Portugal

Abstract: ERS-0862

Session: Orbit lacrimal system

Session Time: 26-06-14 11:45

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: L. Barbosa

Objectives

Analyze the results of a district hospital's experience in endoscopic dacryocystorhinostomy and state the current role of this technique in the treatment of distal nasolacrimal pathway obstruction.

Methods

The clinical records of 67 consecutive endoscopic dacryocystorhinostomies performed in Hospital Professor Doutor Fernando Fonseca between January 1997 and December 2012 were reviewed. The clinical presentation, level of stenosis detected in the dacryocystography, intraoperative and postoperative complications and functional and anatomical results were analyzed.

Results

Of the 51 patients, 12 were male and 34 female, with an age-average of 57 years. Epyphora was the main symptom. With the exception of two cases, all surgeries were performed with powered tools. Four of the procedures were revision surgeries. The silicon tubes used to keep the patency of the lacrimal pathways were removed after an average of four months. The dacryocystorhinostomy success rate was 82,1%.

Conclusion

Endoscopic dacryocystorhinostomy is a simple, safe and effective technique for the treatment of distal obstructions of the nasolacrimal pathway.

Table 1 – Surgical outcomes^a

		Functional success – number of cases (%)		
		Complete	Incomplete	None
Level of the obstruction	High obstruction ^a	3(4.7)	1(1.5)	3 (4.7)
	Low obstruction ^a	39(61)	7(11)	11(17.1)
Surgery	Primary	39	7	13
	Revision	3(4.7)	1(1.5)	1(1.5)
Age	<18 years	1 (1.5)	0	0
	18-65 years	27(42.2)	6(9.4)	8(12.5)
	> 65 years	14(21.9)	2(3.1)	6(9.4)

^a - For this category, 64 was considered the total number of cases (number of lacrimal sacs operated) instead of 56 (number of procedures) because there were 8 cases of bilateral procedures. a – in one of the procedures both sides were operated.

Aerodynamics in animal model of obstructive sleep apnea

J. Kim¹, W. Lee¹, S.A.M. Cho¹

¹ ENT, Seoul National University College of Medicine SNUBH, Seongnam, Korea

Abstract: ERS-0863

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:18

Chair person: M. Ravesloot

Presenting author: J. Kim

Objectives

An animal model of OSA can be helpful for evaluating the pathophysiology of OSA and application of novel treatment modalities. This study was aimed to establish new OSA animal model simulating real upper airway conditions during sleep and identify aerodynamics in animal model of obstructive sleep apnea.

Methods

Fourteen rabbits were divided into a 2.5 unit (Group A, n = 7) and a control group (Group B, n = 7). All rabbits underwent respiratory parameters measurement at 0 day (pre-injection), 1, 2, 3, 4, 6, 8 weeks post-injection and dynamic CT (modification of perfusion scan) at pre-injection, 1 week and 2week post-injection. Airway dimensions including transverse and anterior to posterior (AP) airway lengths at palate and tongue base level were measured.

Results

Of seven rabbits in the 2.5 unit group (Group A), 5 rabbits showed OSA. On the other hand, of seven rabbits in the control group (Group B), OSA was not induced in any rabbit. The success rate of OSA induction was statistically higher in the 2.5 unit group (5/7 vs. 0/7; P = 0.02). In the 2.5 unit group (Group A), all three variables (transverse and AP diameters at the palate level, AP diameters at the tongue base level) except transverse diameters at the tongue base level showed a significant decrease at 2 weeks post-injection. In the control group (Group B), all four variables significantly increased at 2 weeks post-injection.

Conclusion

Our study showed that OSA animal model was able to simulate the obstruction of the upper airway by using the dynamic CT scan.

Pneumatization of the inferior turbinate vs pneumatization of the maxillary sinus - diagnostic and surgical implications

J. Deus¹, M. Pereira¹, M. Marques¹, M. Simão¹, O. Dias²

¹ Department of Otorhinolaryngology Voice and Communication Disorders, Hospital Santa Maria, Lisboa, Portugal

² University of Medicine of Lisbon, Hospital Santa Maria, Lisboa, Portugal

Abstract: ERS-0864

Objectives

To present a case report of pneumatization of the inferior turbinate and literature review, highlighting, the importance of CT scan of paranasal sinuses for every surgery of the nasal cavity; the possible surgical complications when this anatomical variant is underdiagnosed; and the possible and appropriate surgical approaches for this diagnosis.

Methods

Case report and literature review

Results

The pneumatization of the inferior turbinate remains an extremely rare anatomical variant and the underlying mechanisms of this process are not yet understood.

The CT scan of paranasal sinuses is essential for diagnosis and the possible and appropriate surgical approaches for this condition are not defined.

Conclusion

The pneumatization of the inferior turbinate is a rare anatomical variant with few cases reported in the literature. Even more rare is the communication between the inferior turbinate and ipsilateral maxillary sinus due to this pneumatization. In such cases a question arises, whether it is a pneumatization of the inferior turbinate or a pneumatization of the maxillary sinus. The nasal endoscopy only revealed the mucosal surface of the inferior turbinate therefore the CT scan of paranasal sinuses is essential for diagnosis. The turbinectomy may cause an inferior meatal antrostomy leading to mucociliary recirculation problems. The authors present a clinical case of pneumatization of the inferior turbinate and literature review, highlighting, the importance of CT scan of paranasal sinuses for every surgery of the nasal cavity; the possible surgical complications when this anatomical variant is underdiagnosed; and the possible and appropriate surgical approaches for this diagnosis.

Endoscopic sinus surgery in nasal tumours - the IPOLFG experience

S. Decq Mota¹, A. Hebe², P. Montalvao², R. Fino², H. Estibeiro², M. Magalhes²

¹ ENT, Hospital Prof Dr Fernando Fonseca, Lisbon, Portugal

² ENT, IPOLFG, Lisbon, Portugal

Abstract: ERS-0865

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:25

Location: Hall H

Chair person: P. Nicolai

Presenting author: S. Decq Mota

Objectives

The nasal tumors are classically addressed by external but, recently, also by endoscopy. However, in locally advanced tumors, it may not be possible to achieve complete removal.

Methods

We analyzed the medical records of 14 patients with nasal fossa tumor removed endoscopically in IPOLFG between 2005 and 2012.

Results

Of the 14 patients, 8 had malignant tumor and 5 benign. There was no preponderance of any histological type. 7 patients underwent adjuvant RT and 1 underwent ipsilateral cervical lymph node dissection. 3 surgical complications were recorded: 1 CSF fistula and 2 minor complications. Only 2 patients relapsed, with the need to use the external approach in 1.

Conclusion

The approach to nasal tumors by endoscopy is an effective option but it requires an accurate assessment of tumor extension to decide the approach for complete removal and clear margins.

Congenital dacryocystocele: case report and literature review

C. Duarte¹, L. Dores¹, M. Marques¹, M. Alveirinho Simão¹, O. Dias¹

¹ Department of otolaryngology voice and disorders of communication, CHLN- Hospital de Santa Maria, Lisboa, Portugal

Abstract: ERS-0866

Objectives

To report the case of a congenital dacryocystocele, not only because of its rarity but also due to the success of the medical treatment alone.

Methods

The authors describe the clinical case of a female full term newborn that presented, three days after birth, a bluish cystic and tense mass over the region of the right lacrimal sac, accompanied by epiphora.

Results

The mass revealed to be a congenital dacryocystocele in the Magnetic Resonance Imaging (MRI) and it was successfully managed with conservative treatment alone, which included topical antibiotics, warm compresses and local massage. After four weeks it completely regressed, the child was symptom free and no recurrence was observed in the follow-up.

Conclusion

Congenital dacryocystoceles, also known as congenital amniotocetes, are benign cystic swellings of the lacrimal sac, causing an uncommon variant of the very common newborn nasolacrimal duct obstruction. They occur when the epithelial cord fails to canalize distally causing a blockage at the Hasner valve which leads to distension of the lacrimal sac. Clinical findings occur at birth or shortly after and diagnosis can be made by ultrasound, computed tomography and/or MRI. There is some variability in their natural course so there is still controversy concerning the management of this condition. In this case, the authors report successful conservative medical treatment.

Does time to endoscopic sinus surgery impact outcomes in chronic rhinosinusitis? prospective findings from the UK audit of sinus surgery

C. Hopkins¹, J. Rimmer¹, V. Lund²

¹ ENT, Guy's & St Thomas' Hospital, London, United Kingdom

² ENT, Royal National Throat Nose and Ear Hospital, London, United Kingdom

Abstract: ERS-0867

Session: Outcomes in CRS

Session Time: 24-06-14, 14:18

Location: Hall E

Chair person: TBC

Presenting author: C. Hopkins

Objectives

Patients with chronic rhinosinusitis refractory to medical management undergo elective surgery. The time from initial diagnosis to surgery varies considerably. The impact of this delay on surgical success has never previously been evaluated.

Methods

First-time patients within the UK Audit of Surgery for Chronic Rhinosinusitis were grouped based on time to surgery: 1) Early cohort: < 12 months (n=172); 2) Mid cohort: 12-60 months (n=750); and 3) Late cohort: > 60 months (n=571). Co-morbidities and preoperative CT scores were analysed for all patients.

Results

Asthma and allergies were significantly more prevalent in the Late versus the Early and Mid-cohorts (asthma: Late 36.6% - Early 20.1%, $p=0.02$; allergies: Late 39.2% - Early 23.1%, $p<0.001$). Patients in the Late cohort had greater symptom burden (Early SNOT-22 35.3, Late 40.8, $p=0.006$) and more extensive preoperative radiographic disease (Early Lund-Mackay 9.6, Late 11.1, $p=0.05$). SNOT-22 scores demonstrated greater percentage improvements in the Early versus the Mid- and Late cohorts, at all time points after surgery. At 12 and 60 months after surgery, significantly more patients in the Early group achieved a clinically important change in SNOT-22 scores compared with the other groups (12months $p=0.05$, 60 months $p=0.03$). These differences were maintained when cohorts were matched for preoperative co-morbidities.

Conclusion

Patients with asthma and/or allergies are more likely to experience delayed surgical intervention versus other patients. Overall, patients with delayed surgery reported less improvement in SNOT-22 scores than patients treated at earlier time points, regardless of co-morbid status. Delaying surgical intervention may worsen long term clinical outcomes.

Association of allergic rhinitis and sinusitis in libyan patients

S. Hawisa¹, R. Aoun²

¹ Pathology and Immunology, Dental School, Tripoli, Libya

² Paediatrics, Sabratha Teaching Hospital, Sabratha, Libya

Abstract: ERS-0868

Objectives

Allergic rhinitis (AR) affects children and adults and its incidence has dramatically increased over recent decades worldwide; it affects quality of life and productivity at work or school. Rhinitis has been associated with major illness affecting social life, sleep, school and work performance such as asthma and sinusitis. The aim of this study was to investigate the association of allergic rhinitis and sinusitis in patients in the northeastern provenance in Libya.

Methods

1888 patients aged examined at allergy and asthma clinic with or without allergic rhinitis were examined for the presence sinusitis. All patients underwent medical history and x-ray examination.

Results

28% of patients examined in this series found to have allergic rhinitis alone; and allergic rhinitis sinusitis were seen in about 72% of cases. Sinusitis was diagnosed by clinical examination and x-ray.

Conclusion

The prevalence of allergic rhinitis and the frequency of its association with sinusitis in Libya is not exactly known, present work showed that allergic rhinitis and sinusitis were seen in about 72%. This confirms that sinusitis is common among allergic rhinitis patients and should be treated properly if suspected in order to prevent worsening of patient's symptoms.

Should we trust results obtained during drug induced sleep endoscopy?

M. Blumen¹, V. Latournerie¹, E. Bequignon¹, L. Guillere¹, F. Chabolle¹

¹ ENT department, Foch Hospital, Suresnes, France

Abstract: ERS-0869

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:27

Chair person: M. Ravesloot

Presenting author: M. Blumen

Objectives

Drug induced sleep endoscopy (DISE) has been a subject of publication showing that it is reliable and effective enough to improve success of surgery for obstructive sleep apnea syndrome (OSA). The aim of this study was to evaluate if all the sites of obstruction seen during DISE needed to be treated.

Methods

We conducted a retrospective study involving 24 OSA patients, who were operated following awake clinical examination. We performed a DISE using Propofol, prior to surgery. A sleep night recording was done before and after surgery. Two groups of patients were obtained, success (postoperative apnea hypopnea index (AHI) <10 and a reduction of >50% of the preoperative AHI) and failure. We compared the obstruction sites found during DISE and the ones operated/or left present after surgery.

Results

Mean AHI went from $30.9 \pm 12.4/h$ to $13.7 \pm 14.2/h$ after surgery.

Ten patients were in the failure group (42%). For six (60%) patients, DISE showed at least one site which was not involved in the surgical procedure and could explain the failure. Among the 14 patients in the success group (58%), DISE showed an obstruction site which was not treated by surgery in 8 patients (57%). Treatment of this site would not have changed results of surgery.

Conclusion

DISE could in some cases explain surgical failure. On the opposite, it seems to show extra obstruction sites which do not need to be treated. The proper knowledge of pharyngeal fluid dynamics and mastering of DISE technique would help us understand some of DISE findings.

Post-operative outcome and clinical implication of palatal advancement pharyngoplasty using drug induced sleep endoscopy (DISE) in moderate and severe obstructive sleep apnea patient

H. Lee¹, Y. YIM²

¹ Otorhinolaryngology, Trinity ENT cosmetic & sleep center, Seong-nam si Gyeonggi-do, Korea

² Radiology, Center for Health Promotion Samsung Medical Center, Seoul, Korea

Abstract: ERS-0870

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:00

Chair person: M. Ravesloot

Presenting author: H. Lee

Objectives

The purpose of this study was to introduce the overview of clinical course for treatment of moderate and severe OSA including patient selection and operation methods.

Methods

From January 2010 to December 2011, among 90 patients underwent palatal advancement pharyngoplasty(PAPhx) at TRINITY sleep center, 55 patients underwent post-operative polysomnography were included. PAPhx was performed to secure posterior airway space of soft palate(SP-PAS). Pre-operative and post-operative follow-up at 6 months, all analysis were performed for Friedman staging, ESS, snoring questionnaire, OSA associated index at polysomnography.

Results

In pre-operative polysomnography, mean AHI was 32.1(4-111.5), mean RDI was 45.6(13.1-111.5), mean minimum O2 saturation rate was 81.9%(66-94), snoring 56.2%(3-88.7), there was included 5 mild patients(RDI<20), 22 moderate patients(20<RDI<40), and 28 severe patients(RDI>40). In pre-operative polysomnography, mean AHI was 32.1(4-111.5), mean RDI was 45.6(13.1-111.5), mean minimum O2 saturation rate was 81.9%(66-94), snoring 56.2%(3-88.7), there was included 5 mild patients(RDI<20), 22 moderate patients(20<RDI<40), and 28 severe patients(RDI>40). From the view of success criteria for operation, success rate was 74.5%, in the case of Friedman stage I, success rate was 80%(12/15), stage II 70.4%(19/27), stage III 69.2%(9/13), in the case of mild patients, success rate was 100%(5/5), moderate 72.7%(16/22), severe 67.9%(19/28)

Conclusion

Among moderate and severe OSA and snoring patients, the cases of pharyngeal area obstruction considering as the main cause of OSA and snoring were selectively performed with PAPhx, and successful post-operative results were demonstrated with 75% patients. Logical patient selection and operation methods might be useful in establishing the standard therapy for OSA operation.

Endoscopic endonasal transphenoidal resection as mainstay treatment of clival chordomas

C. A. Cheang¹, P. Bennett¹, H. Al-Reefy², D. Roberts³, N. Thomas³

¹ Medical School, King's College London, London, United Kingdom

² Rhinology and Facial Plastic Surgery, King's College London, London, United Kingdom

³ ENT, King's College London, London, United Kingdom

Abstract: ERS-0971

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:50

Location: Hall H

Chair person: P. Nicolai

Presenting author: C.A. Cheang

Objectives

Clival chordomas are benign locally invasive tumours located deep in the cranium. They have poor prognosis if left untreated and traditionally presented a surgical challenge. This study aims to review the current practice of endonasal resection and compare it to traditional external approach for removal of clival chordomas.

Methods

A literature review was carried out and a comparison of external vs endoscopic nasal approach was carried out with four main studies, using parameters such as tumour resection volume, rate of gross total resection, peri- and post- operative complications and recurrence rate to measure outcome. We also included our experience of endonasal resection of eleven clival chordoma cases in a tertiary neurosurgical unit.

Results

The goal of surgical resection is total tumour removal. From our clinical experience, as well as from literature review, the endonasal approach is the safest and most successful method of resection. The main limitations for this approach is the size of the tumour – if they tumour is >4cm in diameter or if it extends laterally past the carotid arteries, the risk of surgery may outweigh the benefits. In those cases, a transcranial approach may achieve a higher rate of resection.

Conclusion

Endoscopic endonasal approach to resection of clival chordomas is better for the patient as there are less post-operative complications, lower rate of recurrence and reduced mortality and post-operative morbidity.

A medical student authored virtual patient with epistaxis

R.S. Thorley¹, H. Khalil²

¹ Fourth year medical student, Peninsula College of Medicine & Dentistry, Plymouth, United Kingdom

² Consultant ENT surgeon, Derriford Hospital, Plymouth, United Kingdom

Abstract: ERS-0872

Session: Simulation and training

Time: 24-06-14, 09:48

Location: Hall J

Chair person: S. Carney

Presenting author: R.S. Thorley

Objectives

Virtual patients (VPs) are computer based educational resources that simulate clinical encounters. Learners take on the role of healthcare professionals, to investigate, diagnose, and treat patients. VPs are effective at improving students' medical knowledge, clinical reasoning and skills, and have several advantages over traditional teaching methods. Although VPs are widely used in medical education, there are few that have been authored by students.

The aims of this resource development study were to create a medical student authored VP, and conduct a student evaluation of the resource to use for production of further VPs.

Methods

The VP (a 19 year old girl presenting with persistent epistaxis) was authored using Open Labyrinth software. Peer evaluation was carried out using the eVIP (Electronic Virtual Patients) questionnaire, which was sent to all fourth year medical students in Plymouth (n=76).

Results

11 students evaluated the VP (response rate 14%). 91% agreed that the virtual patient was a 'worthwhile learning experience'. After completing the case, 73% (8) felt 'better prepared to care for a real life patient with [epistaxis]'. However, many students (45%) did not feel that they were, 'actively engaged in creating a short summary of the patient's problem using medical terms'.

Conclusion

VPs authored by medical students can be worthwhile learning resources. One of their strengths is that it is easy for the author to pitch the resource at the correct level. An evaluation of student authored virtual patients' effects on knowledge outcomes was beyond the scope of this project, but would be valuable.

Data collection of patients with CRS; the FESS booklet

C. Cheang¹, H. Al-Reefy², N. Salama²

¹ Medical School, King's College London, London, United Kingdom

² Rhinology and Facial Plastic Surgery, King's College London, London, United Kingdom

Abstract: ERS-0873

Session: Management of CRS

Session Time: 26-06-14 12:10

Location: Hall J

Chair person: TBC

Presenting author: C. Cheang

Objectives

Capturing outcome data for any surgical intervention is important for several good reasons. It has also become a political issue with the department of health keen on publishing individual surgeons results based on standardized outcome measures. CRS is a common ENT presentation, We propose a concise booklet that covers the patient's journey from the first clinical assessment until being discharged back to primary health care. The FESS booklet was developed by the senior author and in it's current form has been used for several years.

Methods

We reviewed the current FESS booklet for patients listed for surgery for CRS , the data collected include ; Patients demographics, SNOT22 scores, LM score, pre-operative medications, surgical technique, complications and post operative findings. The FESS booklet has allowed meaningful data collection which can be used as a tool for surgical outcome measure and enhancing multi-centre collaboration.

Results

The current format of the FESS booklet provides a sound system with evidence of clinical progression and surgical outcome for patients referred with CRS in our practice. This reliable system for data collection proves to be of considerable value for health service commissioners when making funding decisions.

Conclusion

The presentation will cover all aspects of the FESS booklet and copies would be distributed at the meeting if asked for. We recommend the use of this booklet to all rhinologists for use in patients undergoing sinus surgery.

Nasal septal perforations: an etiological analysis

M. Lavor¹, P. Leite da Silveira¹, C. Izaac Alfredo¹, M. Aliperti Ferreira¹, V. Gonçalves Silva¹, L. Mohana Araújo Pinheiro¹, E. Ortiz¹, E. Sakano¹

¹ Department of Otorhinolaryngology Head and Neck, University of Campinas, Campinas, Brazil

Abstract: ERS-0875

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:50

Chair person: S. Carrie

Presenting author: M. Lavor

Objectives

The perforation of the nasal septum is frequently an occasional finding in ENT examination. Assintomatic forms are frequent and related to the size and location of the nasal perforation. Clinical manifestations are numerous: epistaxis, postnasal discharge, obstruction, crustling. The most common etiologies involved are: iatrogenic, trauma, granulomatous diseases, use of inalatory drugs or vasoconstrictors. The aim of this study is to analyze the etiology of septal perforation in selected patients correlating with their clinical manifestations.

Methods

A retrospective analysis of twenty selected patients from the ENT service of the University of Campinas. All patients underwent a complete ENT examination, nasal endoscopy, biopsy of septal perforation, and specific laboratory tests for the main infeccious causes.

Results

The prevalence of 30% for leishmaniosis, 20% for iatrogenic causes and 15% for leprosy was observed. Only one patient was considered as idiopathic causes. The size of the perforations ranged from 0.5 to 2.5 cm, with an average size of 1.64 cm. The most frequent manifestations were nasal obstruction and nasal crusts, and five patients were asymptomatic.

Conclusion

The etiology of septal perforation can not always be defined, despite the clinical investigation. For elucidation is necessary detailed anamnesis, physical examination and specific serology for major systemic causes. The biopsy does not always define diagnosis, especially on high clinical suspicion.

The evaluation of the etiology of septal perforations provides the proper planning of the specific treatment and management of symptoms. The find of a accidental septal perforation makes mandatory the research of a systemic disease.

Asian experience of central skull base osteomyelitis

S.J. Mun¹, S.N. Hong², J.C. Ahn², D.H. Han², T.B. Won², C.S. Rhee³

¹ Otorhinolaryngology-Head and Neck Surgery, Pusan National University Yangsan Hospital, Yangsan, Korea

² Otorhinolaryngology-Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea

³ Otorhinolaryngology-Head and Neck Surgery, Seoul National University Bundang Hospital, Seongnam, Korea

Abstract: ERS-0876

Session: Skull base surgery 3

Location: Hall G

Time: 26-06-14 10:05

Chair person: M. Bernal-Sprekelsen

Presenting author: S.J. Mun

Objectives

Skull base osteomyelitis (SBO) is a serious, life threatening condition seen in elderly diabetic patients. SBO is divided into peripheral and central type, according to the presence of ear infection. Being a rare disease, not much is known about central SBO. The purpose of this study is to share our clinical experience of central SBO.

Methods

This study retrospectively reviews clinical charts, and imaging findings of 5 patients who were diagnosed as central SBO. No patient had predisposing external otitis or osteomyelitis of the temporal bone.

Results

Four of 5 patients presented with headache and cranial neuropathy. Diabetes mellitus was found in only 2 patients and 3 had no underlying disease. The erythrocyte sedimentation rate (ESR) was elevated in all patients and decreased after appropriate antibiotic and surgical treatment. In each case, MR imaging demonstrated clival bone marrow T1 hypointensity and preclival soft tissue infiltration. Endoscopic transnasal approach was performed on 4 patients for tissue sampling. *Pseudomonas aeruginosa*, and Methicillin resistant *Staphyococcus aureus* was found in each case. In our hospital, surgical debridement was performed simultaneously to decompress the lesion and enhance vascular supply. Antibiotic treatment more than 6 months followed by surgical treatment improved all cases. They were all cured with no recurrence over 1- 4 year follow-up.

Conclusion

In the setting of headache, cranial neuropathy, elevated ESR, and abnormal clival imaging findings, central SBO should be considered as the likely diagnosis. Early tissue sampling and appropriate antibiotic and surgical debridement may limit further complication.

Silent sinus syndrome; a case presentation

S. Johari¹, J. Lee¹

¹ Otorhinolaryngology, Tan Tock Seng Hospital, Singapore, Singapore

Abstract: ERS-0878

Objectives

We present a case of silent sinus syndrome.

Methods

Review of case records of a patient who underwent FESS for silent sinus syndrome.

Results

A 31 years old healthy lady presented with progressive enophthalmos. CT scan of the orbits showed an ethmoid mucocele obstructing the antral ostium resulting in maxillary sinus contracture with resultant lowering of orbital floor. She underwent endoscopic sinus surgery to drain the mucocele and was subsequently referred to the oculoplastic surgeon for fat implantation.

Conclusion

Silent sinus syndrome is a known but uncommon condition. Asymptomatic occlusion to sinus drainage pathway causing negative intrasinus pressure with resultant atelectasis and bony remodelling leads to sinus contracture and cosmetic implications. Awareness of the condition may help with early diagnosis and accurate management. Functional endoscopic sinus surgery is a safe and effective way to correct the causative factor. Cosmetic surgery may be necessary for significant enophthalmos.

The indoor sport: is it a risk factor for allergic rhinitis in athletes?

M. Denguezli¹, J.F. Dessanges², Z. Tabka¹

¹ Physiology, Faculty of Medicine, Sousse, Tunisia

² Service de physiologie-explorations fonctionnelles, Hôpital Cochin, Paris, France

Abstract: ERS-0879

Session: Rhinitis clinical

Session Time: 25-06-14, 15:05

Location: Hall E

Chair person: A. Swift

Presenting author: M. Denguezli

Objectives

The high prevalence of allergic rhinitis that occurs in elite athletes has been extensively investigated. However, data among recreational athletes practicing indoor activities remain contradictory. The aim of the present study was to determine whether taking part in gym based sporting activities constitutes a risk factor for allergic rhinitis in recreational athletes.

Methods

50 recreational athletes were examined. A specific questionnaire for the screening of allergic rhinitis and a battery of skin prick-tests to aeroallergens were administered to each participant. Measurements of nasal symptoms, peak nasal inspiratory flow and lung function were also obtained before and after a training session.

Results

32% of the participants were atopic, 18% suffered from allergic rhinitis. This prevalence is similar to that of the general population (16.9%). After exercise, nasal symptoms prevalence did not change significantly. However, an improvement in nasal inspiratory flow was observed in 70% of the participants. No statistically significant change in lung function was noticed.

Conclusion

Our results showed that the occasional practice of sport in the gyms does not constitute a risk factor for atopy or allergic rhinitis. However, this kind of activity induces an increase in the nasal patency of both the healthy and the rhinitic subjects.

Differentiating groups of rhinitis patients based on molecular markers in nasal secretions

C.L. Segboer¹, C.T. Holland¹, S.M. Reinartz¹, D. van Egmond¹, I. Terreehorst¹, W.J. Fokkens¹, C.M. Drunen¹

¹ Otolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-0880

Session: NAR

Location: Hall G

Time: 23-06-14, 11:24

Chair person: L. Van Gerven

Presenting author: C.L. Segboer

Objectives

Assessment of multiple molecular biological parameters in nasal secretions to further define and refine rhinitis patients groups.

Methods

A cross-sectional study was performed on 23 NAR, 22 AR, 21 mixed rhinitis patients, and 23 healthy controls. Nasal secretions were obtained outside the pollen season and all patients had negative SPTs for perennial allergens. All rhinitis patients had moderate-severe rhinitis symptoms for at least one year with AR patients having a positive SPT for pollen. Idiopathic rhinitis patients had a negative SPT and no other identifiable causes of rhinitis symptoms. Mixed rhinitis patients had rhinitis symptoms for most of the year and only a positive SPT for pollen allergens. A healthy control group had no symptoms of rhinitis and a negative SPT. Nasal secretions were collected from the inferior meatus and levels for 30 mediators was determined using multiplex ELISA.

Results

Significant differences between groups were detected for IL-12 ($p = 0.001$) and HGF ($p = 0.02$), with a trend for VEGF ($p = 0.065$) and INF- α (0.108). For these mediators the mixed rhinitis group showed statistically significant lower levels than healthy controls. In AR, IL-12, HGF, and INF- α median levels were also reduced to the level of mixed rhinitis but still had expression in some individuals.

Conclusion

The lower levels IL-12 and HGF in mixed rhinitis patients compared to AR suggest an interaction between the NAR phenotype and AR in these patients despite normal expression of these mediators in NAR.

Quality of life and use of medication in chronic allergic and non-allergic rhinitis patients

C.L. Segboer¹, CC.T. Holland¹, S.M. Reinartz¹, I. Terreehorst¹, A. Gevorgyan¹, P.W. Hellings², C.M. van Drunen¹, W.J. Fokkens¹

¹ Otolaryngology, Academic Medical Center, Amsterdam, Netherlands

² Otolaryngology, University Hospital Leuven, Leuven, Belgium

Abstract: ERS-0881

Session: NAR

Location: Hall G

Time: 23-06-14, 11:15

Chair person: L. Van Gerven

Presenting author: C.L. Segboer

Objectives

We assessed QoL in NAR compared to healthy controls and AR patients as positive controls and investigated whether the use of treatment in patients with NAR and AR had effect on QoL.

Methods

An observational cohort study with 585 AR and 408 NAR patients was performed. Patients filled in the mini-RQLQ, assessing QoL related to symptoms of rhino-conjunctivitis. Both AR and NAR were defined as two or more of the following symptoms for > 1 hour on most days: watery, anterior rhinorrhea, sneezing, nasal obstruction, nasal pruritus and/or conjunctivitis. For AR, these clinical findings had to be combined with one or more positive results on skin prick testing, relevant to the symptoms of rhinitis and/or conjunctivitis. For NAR, these clinical findings had to be combined with negative skin prick test results. A factor analysis assessing influence of age, gender, ARIA and use of medication on QoL was performed.

Results

Analysis of a total of 111 NAR patients compared to 167 AR patients, showed a significant higher impairment of QoL in NAR compared to AR patients, both on overall symptom score as on different sub domains. The mean overall symptom score (2.45) of NAR patients was significantly higher ($p = 0.002$) compared to the overall symptom score of AR patients (1.94). A factor analysis showed no influence of any factors assessed on QoL, including use of medication.

Conclusion

NAR patients had a significant higher impairment of QoL compared to AR patients. Use of medication did not influence QoL in AR and NAR.

Pseudomonas aeruginosa elastase causes transient disruption of tight junctions and downregulation of PAR-2 in human nasal epithelial cells

K. Nomura¹, T. Kojima², K. Takano³, T. Okuni³, K. Obata³, T. Keira³, R. Miyata³, S. Hirakawa⁴, N. Sawada⁵, T. Himi³

¹ Departments of Otolaryngology, Sapporo Medical University, Sapporo, Japan

² Department of Cell Science Research Institute for Frontier Medicine, Sapporo Medical University, Sapporo, Japan

³ Department of Otolaryngology, Sapporo Medical University, Sapporo, Japan

⁴ Department of Pediatrics, Sapporo Medical University, Sapporo, Japan

⁵ Department of Pathology, Sapporo Medical University, Sapporo, Japan

Abstract: ERS-0882

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:05

Location: Hall J

Chair person: C. Hopkins

Presenting author: K. Nomura

Objectives

Pseudomonas aeruginosa causes chronic respiratory disease, and the elastase enzyme that it produces increases the permeability of airway epithelial cells owing to the disruption of tight junctions. *P. aeruginosa* is also implicated in prolonged chronic rhinosinusitis. However, the effects of *P. aeruginosa* elastase (PE) against the barrier formed by human nasal epithelial cells (HNECs) remain unknown.

Methods

To investigate the mechanisms involved in the disruption of tight junctions by PE in HNECs, primary cultures of HNECs transfected with human telomerase reverse transcriptase (hTERT-HNECs) were treated with PE.

Results

PE treatment transiently disrupted the epithelial barrier and downregulated the transmembrane proteins claudin-1 and -4, occludin, and tricellulin, but not the scaffold PDZ-expression proteins ZO-1 and -2 and adherens junction proteins E-cadherin and β -catenin. The transient downregulation of tight junction proteins was controlled via distinct signal transduction pathways. Furthermore, treatment with PE transiently decreased PAR-2 expression, which also regulated the expression of the tight junction proteins. Treatment with a PAR-2 agonist prevented the downregulation of the tight junction proteins after PE treatment in HNECs.

Conclusion

PE transiently disrupts tight junctions in HNECs and downregulates PAR-2. The transient disruption of tight junctions by PE might occur repeatedly during chronic rhinosinusitis.

An audit of skin prick testing in chronic rhinosinusitis

A. Millington¹, C. Philpott¹

¹Department of Otorhinolaryngology, James Paget University Hospital, Great Yarmouth, United Kingdom

Abstract: ERS-0883

Objectives

There is a wide variety in reported rates of positive skin prick tests (SPT) in patients with CRS, from 10% to 84%. There are contrary reports as to the prevalence of atopy in CRS with (CRSwNPs) and without nasal polyps (CRSsNPs). Furthermore, current EPOS guidelines suggest that CRSsNPs patients with an elevated IgE level may be less responsive to long-term macrolide therapy. Currently local practice is to perform SPT in all patients with CRS. Our aim is to help clarify the incidence of allergy in patients with CRS, and to determine if universal SPT is warranted.

Methods

Retrospective analysis of clinical notes and investigations of 126 patients attending a tertiary clinic over a twelve month period. All had a confirmed diagnosis of CRS as per EPOS guidelines. SPT results for 15 common allergens were available.

Results

CRSsNP patients (n=84) showed positive SPT in 33% of cases, of which 39% had multiple allergy (counted as >3 positives on SPT). CRSwNP patients (n=42) were twice as likely (62%) to be positive with 42% (n=11) having multiple allergies.

Conclusion

There is a significant difference in prevalence of atopy in patients with CRSwNP compared to CRSsNP (p=0.02). Results for multiple sensitivities are lower than in previous studies. SPT should be part of the initial work up for CRSwNPs but for patients with CRSsNPs a selected total serum IgE level may be more useful initially at indicating the need for further investigation of atopy.

New endonasal flaps for reconstruction of large mucosa defects in frontal sinus surgery

T. Kühnel¹

¹ ENT University Hospital Regensburg, University Hospital Regensburg, Regensburg, Germany

Abstract: ERS-0884

Session: CRS surgical techniques

Session Time: 26-06-14 09:35

Location: Hall H

Chair person: V. Lund

Presenting author: T. Kühnel

Objectives

Wound healing in modified Lothrop drill out procedure is left with a huge area of bare bone. Epithelialization takes weeks to months and frequently results in restenosis of the frontal drainage. To overcome this specific problem, we designed a novel pedicled flap long enough to cover the bony borders of the drainage pathway.

Methods

The frontal sinus floor is resected to a maximal extent. The cranial septum caudal to the frontal sinus is resected additionally. Rather than discarding the mucosa of this area we dissect a mucoperiosteal flap that may be developed bilaterally. No additional donor site defects result from this manoeuvre. When all drilling work is accomplished the flap is rotated upwards and fanned out. As two flaps are at disposal, all bare bone may be covered for best wound healing results.

Results

Results from 15 patients are demonstrated. Length and shape of the flap can be adjusted to the individual. It is possible to completely cover the bone in case of utilizing the septum mucosa. For its length the flap is suitable to cover the anterior border with the flap of one side and to cover the „frontal-t“ with the flap of the opposite side.

Conclusion

The main issue of drill out procedures is recurrent stenosis with a shrinkage of about 60% at an average. These problems may be overcome by use of the hereby introduced flap. Wound healing is shortened remarkable and we are confident that recurrence of stenosis will be reduced. Long time results are not available yet though.

Complications after radiotherapy in nasopharyngeal carcinomas

C.M. Chiesa Estomba¹, A.S. Araujo da Costa¹, T. Rivera Schmitz¹, J.M. Melendez Melgar¹,
M. Hamdam Zavarce¹

¹ Otorhinolaryngology - Head & Neck surgery, Complejo Hospitalario Universitario de Vigo, Vigo, Spain

Abstract: ERS-0885

Session: Skull base surgery 4

Session Time: 26-06-14, 11:20

Location: Hall G

Chair person: E. Wright

Presenting author: C.M. Chiesa Estomba

Objectives

The complex treatment that is necessary in nasopharyngeal tumors includes radiation therapy as a key pillar. This has proven to be useful as therapeutic or complementary strategy, and may be associated with chemotherapeutic or radiosensitizing to increase its effectiveness, in addition to be able to use radiation protection measures to avoid overexposure of healthy tissues. However, despite all this there are multiple potential complications secondary to the use of radiotherapy.

Methods

Here we present a series of complications that occurred in the late phase of radiotherapy in 3 patients with undifferentiated nasopharyngeal epidermoid carcinoma.

Results

These patients had complications such as: critical stenosis of the left carotid artery, radiation necrosis of the nasopharynx, pre-vertebral muscles and C1-C2 vertebrae and left carotid artery pseudoaneurysm. The treatment in each patient concerned was: anticoagulant treatment in critical stenosis of the left carotid artery, hyperbaric chamber which favored the improvement in terms of tissue necrosis in the nasopharyngeal area, and embolization by interventional radiology in the pseudoaneurysm left carotid artery.

Conclusion

It is unquestionable the therapeutic effect of radiotherapy in the field of head and neck oncology, specifically nasopharyngeal level, but the complications of this should be taken into account when assessing the patient successively.

Periorbital cellulitis secondary to acute ethmoiditis. (Conservative treatment)

C.M. Chiesa Estomba¹, A.S. Araujo da Costa¹, T. Rivera Schmitz¹, J.M. Melendez Melgar¹,
C. Ossa Echeverri¹, M. Hamdam Zavarce¹

¹ Otorhinolaryngology - Head & Neck Surgery, Complejo Hospitalario Universitario de Vigo, Vigo, Spain

Abstract: ERS-0886

Objectives

We report a case of periorbital cellulitis secondary to acute ethmoiditis, treated conservatively.

Methods

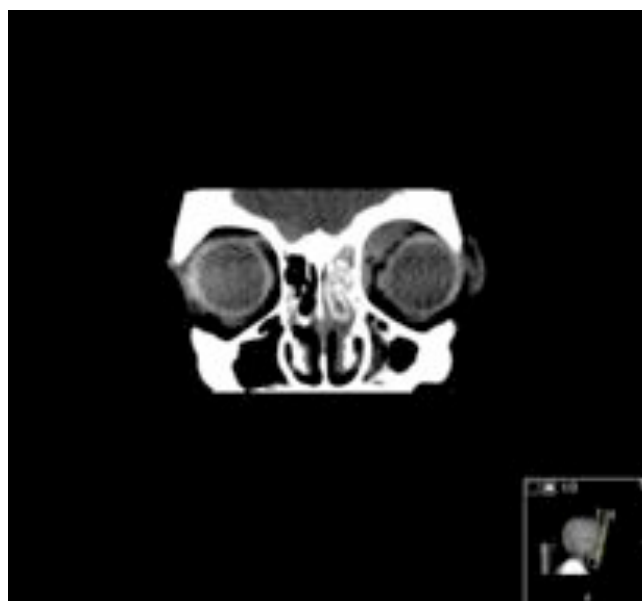
Case report.

Results

A 6-year-old patient with no relevant medical history, which goes to the emergency room for acute rhinosinusitis, episode of 1 week evolution, accompanied by fever (38.5 °). Prior to admission, begins to submit diplopia, exophthalmos and left eyelid edema, accompanied by pain on the inner corner of the eye with difficulty to ipsilateral eyelid elevation. CT was performed which affords retro-orbital abscess occupation of ethmoid cells, maxillary's sinus and left frontal sinus. Clinically objectifying mucopurulent drainage by ipsilateral middle meatus. The patient was treated conservatively evolving satisfactorily.

Conclusion

Periorbital cellulitis is usually a condition often associated with childhood, approximately 83% of cases occurs in children. The risk of orbital or cerebral complications and rapid evolution of these warrants a correct approach to the patient, with a good history which may be sufficient when there is no suspicion of complications or must be accompanied by an imaging study that supports our suspected diagnosis, if you have evidence of ocular or intracranial involvement. Initial treatment is with pharmacologic therapy (Amoxicillin/Ac. Clavulanate or Cephalosporins 3rd. Generation) if there is no evidence of clinical improvement after 24-48 hours or if there are warning signs, needs to proceed to surgical drainage.



Long term results of frontal sinus obliteration procedure in 40 patients

F.S. Hansen¹, G.F.J.P.M. Adriaensen¹, S.M. Reinartz¹, C. Georgalas¹, N.J.M. Freling², W.J. Fokkens¹

¹ Otorhinolaryngology, AMC, Amsterdam, Netherlands

² Radiology, AMC, Amsterdam, Netherlands

Abstract: ERS-0887

Session: Management of CRS

Session Time: 24-06-14, 16:18

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: F.S. Hansen

Objectives

To assess the effectiveness of frontal sinus obliteration and the incidence of postoperative mucoceles.

Methods

Retrospective case review. Forty consecutive patients undergoing frontal sinus obliteration from September 1995 to February 2012 for chronic rhinosinusitis without nasal polyps (16), chronic rhinosinusitis with nasal polyps (9), frontal mucocele (12), frontal osteoma (2) and cystic fibrosis with CRS (1) were followed up for an average of 73 months. Outcome measures Symptom burden (Visual Analogue Scale and Rhinosinusitis Outcome Measure – RSOM 31), radiological abnormalities on MRI, revision surgery.

Results

Headache resolved in 83% of patients. Mean VAS score for sinonasal symptoms decreased from 73 preoperatively to 51 postoperatively ($p=0.012$). Total RSOM-31 scores changed from 71 preoperatively to 46 postoperatively ($p=0.002$). On postoperative MRI-scans abnormalities suspected to be mucoceles were found in 6 patients (15%). In 3 cases a wait-and-scan policy was adopted. In the other 3 patients a revision operation was performed, revealing mucoceles in two cases. There were no major complications.

Conclusion

Frontal sinus obliteration is a safe and effective procedure for patients who have failed conventional frontal sinus procedures, Draf III and/or external frontal sinus surgery or for frontal tumours which cannot be removed endonasally. We found an incidence of potential postoperative mucoceles of 15% and a 7,5% revision rate.

Frontal sinus balloon sinuplasty: pitfalls and limitations

P. Tomazic¹, H. Stammberger¹

¹ Medical University of Graz, Dept. of General ORL, H&NS, Graz, Austria

Abstract: ERS-0888

Session: Balloon sinuplasty

Time: 24-06-14, 09:30

Location: Hall G

Chair person: A. Leunig

Presenting author: P. Tomazic

Objectives

Balloon sinuplasty has been a controversial topic in rhinology ever since its introduction. Great enthusiasm has especially been focused on frontal sinus drainage as this is the most challenging paranasal sinus to reach endoscopically.

Methods

Patients with CRS refractory to medical therapy who had been scheduled for endoscopic sinus surgery between 2009 and 2011 were included in this study. Success rates of patients who eventually underwent frontal sinus balloon sinuplasty ("Balloon-Only" and "Hybrid" procedures) were elaborated. Furthermore complications, possible technical problems and pitfalls are analyzed.

Results

In total 45 patients were planned for balloon sinuplasty. In a "Balloon-Only" procedure 38 frontal sinuses were planned with a success rate of 42%. In a "Hybrid" procedure 35 frontal sinuses were planned with a success rate of 43%. Success rates did not significantly correlate to CT-scores, osteitic bone changes or previous surgery. Frontal recess configuration was found out to be a limiting factor of success. No intraoperative complications occurred.

Conclusion

Our initial success rate was low and dissatisfying especially for frontal sinus balloon sinuplasty. Frontal recess anatomy was found out to be a major cause for failures and will be elucidated. Despite the fact that no intraoperative complications occurred we encountered a CSF-leak after attempted frontal sinus balloon sinuplasty. Another problem for "Balloon-Only" approach in routine could be lacking histologic work-up.

What is the length deficiency of the medial cleft lip element?

J.K. Bulger¹, S. Colbert¹, D. Drake¹

¹ Oral and Maxillofacial Surgery, Morriston Hospital, Swansea, United Kingdom

Abstract: ERS-0889

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 10:24

Location: Hall G

Chair person: C. Wever

Presenting author: J.K. Bulger

Objectives

To establish the length deficiency of the medial cleft lip element in our population of patients with unilateral cleft lip or unilateral cleft lip and palate (UCLP), thus determining how much length we need to gain in order to restore the lip to its full length.

Methods

We audited all cleft lip repair operations performed by a single operator in our cleft unit, South Wales, between 20/12/2005 and 05/04/2012. Bilateral cleft lip repairs and cleft lips revisions were excluded. 135 operations were recorded in total - 79 had cleft lip only and 56 had UCLP.

Results

The range of height of cleft lips in patients with cleft lip only was 4-9mm (Non-cleft side 6-14mm). On the cleft side the average height was 6.17mm, on the non-cleft side it was 9.68mm. The cleft:non-cleft proportion ranged from 0.421 to 0.833 (average 0.643). The range of height of cleft lips in UCLP patients was 4-8mm (Non-cleft side 7-14mm). On the cleft side the average height was 6.44mm, on the non-cleft side it was 10.85mm. The cleft:non-cleft proportions ranged from 0.4 to 0.8 (average 0.597).

Conclusion

Babies with isolated cleft lip tend to have shorter lengths of both cleft and non-cleft lip than babies with UCLP. The cleft lip of babies with UCLP, however, is shorter in comparison with the non-cleft side than in isolated cleft lip babies. The average length deficiency in the vertical length of the medial cleft lip element was 3.51mm in cleft lip only and 4.41mm in UCLP.

To estimate the rate of recurrence on the contralateral side in operated cases of unilateral allergic fungal sinusitis

O. Marglani¹, A. Shaikh¹

¹ Otolaryngology, King Abdullah Medical City Makkah, Makkah, Saudi Arabia

Abstract: ERS-0890

Session: Fungal sinusitis

Session Time: 26-06-14 12:00

Location: Hall E

Chair person: S. Reinartz

Presenting author: A. Shaikh

Objectives

To estimate the the percentage of patients developing the disease on the contralateral side after the surgery in unilateral cases of allergic fungal sinusitis and to formulate a hypothesis for further study about role of prophylactic treatment on the uninvolved site, based on results.

Methods

We conducted a retrospective observational study from 2011 to 2013. Out of 134 patients we operated during this period we have 14 patients of AFS with unilateral disease, with the contralateral side free of any disease, we followed the patients for development of any recurrences, the median follow up period was 11 months. We used bent and kuhn's criterial for diagnosis of AFS.

Results

Out of 14 patients of unilateral disease, 5 patients developed recurrences to the contralateral side, exactly the mirror image of the previous disease, with the operated side completely free of disease; the average period for development of recurrence was 7 months after the first surgery.

Conclusion

The high rate of recurrence (35.77%) in patients with operated unilateral AFS, with the disease completely controlled on the operated side suggest that prophylactic treatment on uninvolved side may have a role in decreasing the recurrence rate, but further studies are needed .

The Serpina1 gene as an example of protease-antiprotease imbalance in CRS

S. Kilty¹, L. Mfuna², M. Desrosiers²

¹ Otolaryngology Head and Neck Surgery, The Ottawa Hospital, Ottawa, Canada

² Otolaryngology, Centre Hospitalier de l'Université de Montréal, Montreal, Canada

Abstract: ERS-0891

Session: CRS basic 1

Session Time: 23-06-14, 09.30

Location: Hall G

Chair person: H. Saleh

Presenting author: S. Kilty

Objectives

Endogenous and exogenous proteases are counteracted by secreted antiproteases. Imbalance of this fragile equilibrium can lead to tissue injury and chronic inflammation. The SERPINA1 gene codes for alpha-1-antitrypsin (AAT) protein, an endogenous protease inhibitor. We performed a series of studies of the SERPINA1 gene and its protein product to determine whether altered levels of AAT could be a factor in CRS.

Methods

i) A genetic association study for SERPINA1 gene was performed in a cohort of 206 CRS patients and 196 controls, ii) Serum AAT levels in 199 refractory CRS patients were compared with a cohort of non-CRS patients. iii) AAT immunohistochemistry was performed on CRS and control mucosal biopsies.

Results

i) Two single nucleotide polymorphisms (SNP) were associated with CRS with nasal polyps. Homozygotes had an increased genotype-specific increase of CRS with an odds ratio (OR) of 5.95 ($p < 0.001$). These individuals were also less likely to be responsive to medical therapy ($p < 0.001$). ii) Serum AAT levels revealed 4% of the screened CRS patients to be deficient. Overall mean serum levels were significantly lower in patients with CRS versus controls ($p < 0.001$). iii) Immunohistochemistry staining for AAT revealed weak staining compared to controls.

Conclusion

Polymorphisms in the SERPINA1 gene are strongly associated with severe CRS and patients with CRS have both lower serum and mucosal levels of AAT in comparison to controls. As endogenous anti-proteases are critical to preventing chronic inflammation, this study suggests that lower levels of endogenous proteases, such as AAT, may contribute to the pathogenesis of CRS.

Does the endoscopic modified lothrop procedure reduce systemic steroid requirement in chronic rhinosinusitis with nasal polyposis?

M. Aloulah¹, R.Y.A.N. Matthew², P.E.T.E. Batra², B. Marple²

¹ ORL H and N surgery, King Abdulaziz University Hospital, Riyadh, Saudi Arabia

² Department of Otolaryngology-Head and Neck Surgery, University of Texas Southwestern Medical Center, Dallas, USA

Abstract: ERS-0892

Session: Management of CRS

Session Time: 24-06-14, 16:09

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: M. Aloulah

Objectives

The frontal recess is a common site of recurrence in chronic rhinosinusitis with nasal polyposis. We hypothesized that the use of the endoscopic modified Lothrop procedure would reduce polyp recurrence rates and the need for additional systemic steroid treatment.

Methods

Retrospective chart review. A cohort of 58 patients with chronic rhinosinusitis with polyposis who underwent modified Lothrop procedure between 2006 and 2011 was compared to a control group of 66 patients who underwent standard endoscopic frontal surgery (Draf 1-2A&B) over the same time frame.

Results

The Lothrop and control group were comparable in demographics and prevalence of atopic disease. The average follow up for the Lothrop group was 15.44 months and 16.29 months for the control group. Patients who underwent endoscopic modified Lothrop procedure and the group who underwent a standard endoscopic frontal sinusotomy have almost the same reduction of yearly courses of systemic steroid after surgery compared to yearly courses of systemic steroid needed before surgery (2.17 course per year before surgery in EMLP group reduced to 0.72 course per year (56%) with $p < 0.0001$. And 2.99 course per year before surgery in the control group reduced to 1.25 course per year (52%) with $p < 0.0001$). The group who underwent endoscopic modified Lothrop procedure more likely to have a patent frontal out flow tract at last follow up (95% VS 64%, $p < 0.0001$).

Conclusion

For patients with previous sinus surgery and recurrent polyps in the frontal recess, the Lothrop procedure may be used to create a durable frontonasal connection to facilitate topical medication use.

Sinonasal manifestations of sarcoidosis: A single institution experience with 38 cases

M. Aloulah¹, R. Matthew², P. Batra², B. Marple²

¹ Department of Otolaryngology – Head and Neck Surgery, King Abdulaziz University Hospital, Riyadh, Saudi Arabia

² Department of Otolaryngology – Head and Neck Surgery, University of Texas Southwestern Medical Center, Dallas, USA

Abstract: ERS-0893

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 16:15

Chair person: R. Kamel

Presenting author: M. Aloulah

Objectives

Sarcoidosis is a chronic disease process characterized by non-caseating granulomatous inflammation, usually involving the lower respiratory tract. Given the rarity of rhinologic involvement, the objectives of the present study were: (1) to describe clinical features; and (2) to review outcomes of rhinologic surgery for sinonasal sarcoidosis.

Methods

Retrospective analysis was performed of 113 patients evaluated at a tertiary care referral center between January 2006 and July 2011.

Results

The mean age of the 38 patients with sinonasal sarcoidosis was 52 years with female:male ratio of 2.8:1. The most common presenting symptoms included nasal obstruction (65.8%), crusting (29.9%), and epistaxis (18.4%). Most frequent endoscopic findings included crusting (55.3%), mucosal thickening (44.7%), and subcutaneous nodules (21%). CT imaging demonstrated turbinate or septal nodularity (21%), osteoneogenesis (15.8%), and bone erosion (10.5%). Medical management was typically comprised of saline irrigations (73.3%), topical nasal steroids (68.4%), and oral steroids (63.2%). Refractory sinus symptoms required sinonasal surgery in 4 cases. Overall subjective symptom improvement was noted in 39.5% at mean follow-up of 16.2 months.

Conclusion

Sinonasal involvement was noted in approximately 30% of patients with known sarcoidosis evaluated in the otolaryngology clinic. Patients typically present with nasal obstruction and endoscopic evidence of crusting and mucosal thickening. Medical therapy with irrigations and topical/oral steroids suffices in majority of patients, with surgery for refractory symptoms being required in a small subset of cases.

Tricellular junction in human nasal mucosa

T. Okuni¹, K. Nomura¹, R. Miyata¹, T. Kakuki¹, N. Ogasawara¹, A. Kondo¹, M. Kurose¹,
T. Ninomiya², K. Takano¹, T. Kojima³, T. Himi¹

¹ Otolaryngology, Sapporo Medical University, Sapporo, Japan

² Pathology and Anatomy, Sapporo Medical University, Sapporo, Japan

³ Cell Science Research Institute for Frontier Medicine, Sapporo Medical University, Sapporo, Japan

Abstract: ERS-0894

Session: Rhinitis basic

Session Time: 24-06-14, 12:00

Location: Hall G

Chair person: TBC

Presenting author: T. Okuni

Objectives

Tricellulin was identified as the first marker of the tricellular tight junction, which forms at the meeting points of three cells, and it is required for the maintenance of the transepithelial barrier. Tricellulin binds other tight junction proteins, and its expression and distribution are affected by the bicellular tight junction protein occludin and lipolysis-stimulated lipoprotein receptor (LSR) which is expressed at tricellular contacts. Tricellulin is recruited to tricellular contacts via its interaction with LSR. Although they are also considered to be important for the mucosal barrier of the upper respiratory tract, little is known about its expression and localization. In the present study, we examined the expression and localization of tricellulin and LSR in normal human nasal epithelial cells in vivo and in vitro.

Methods

In human nasal epithelial cells in vivo and in vitro, mRNA and protein of tricellulin were detected.

Results

It was localized not only at tricellular contacts but also at bicellular borders, and in part colocalized with occludin. In the epithelium of the nasal mucosa with allergic rhinitis and CD11c-positive dendritic cells (DCs), the DCs penetrated beyond tricellulin and LSR, which were expressed in the epithelium. By treatment with 10% FBS, expression of tricellulin mRNA was weakly increased, whereas that of bicellular tight junction molecules was strongly increased in real-time PCR.

Conclusion

These results suggest that tricellulin is stably expressed in human nasal epithelial cells and may play an important role for the sealing of the corner at tricellular contacts to prevent infiltration by various inhaled virus and antigens.

Concentration of pro-inflammatory cytokines in nasal lavage and plasma in patients with postoperative rhinitis with use of IL-1 beta receptor antagonist

O.O. Mashinets¹, H.T. Abdulkerimov¹

¹ ENT-department, Ural State Medical University, Ekaterinburg, Russia

Abstract: ERS-0895

Session: Rhinitis clinical

Session Time: 25-06-14, 14:00

Location: Hall E

Chair person: A. Swift

Presenting author: O.O. Mashinets

Objectives

Although, involvement of cytokines in the pathogenesis of inflammatory reactions today has been completely proved, there is a little evidence that they have any effect on the outcomes of endonasal surgeries. The aim of this study was to investigate the cytokines involved in the postoperative rhinitis and possibility of using local anticytokine therapy.

Methods

Plasma and nasal lavage concentrations of interleukin-1beta (IL-1 β), interleukin-6 (IL-6), interleukin-8(IL-8) were measured in 29 patients with traditional postoperative management and in 33 patients using the IL-1beta receptor antagonist (IL-1 RA) - containing wound dressing.

Results

Nasal lavage levels of pro-inflammatory cytokines were increased in both groups and it was significantly higher than cytokines levels studied in plasma ($p < 0.001$). The control group showed significant decrease in levels of IL-1 β and IL-8 in the nasal mucus on the 7th day after the surgery, compared to the third day. On the day 3, average levels of IL-8 were higher in IL-1 RA patients than in control groups ($p < 0.05$). On the day 7, average levels of IL-1 β were higher in IL-1 RA patients than in control groups ($p < 0.05$). Nasal lavage levels of IL-6 were slightly lower in control group on the 3d and 7th day, but differences were not statistically significant.

Conclusion

Results of the study confirmed the possibility of local anticytokine therapy with IL-1 RA - containing wound dressing for the correction of inflammatory changes during the postoperative period.

Unilateral chronic rhinosinusitis: a 20-year-old iatrogenic rhinolith

L. Samarà Piñol¹, Y. Escamilla Carpintero¹, A. Cardesin Revilla¹, J.J. Díaz Argüello¹, J.M. Sáiz Arnáiz¹, A. Martínez Arias¹, R. Bargaés Cardelús¹, M. Campos Motamayor¹, A. Aguilà Artal¹, R. Rosell Ferrer¹

¹ ENT - department, Hospital Universitari Parc Tauli, Sabadell, Spain

Abstract: ERS-0896

Objectives

Introduction

Rhinoliths in adults are an unusual finding, and can be found as an iatrogenic oblivion years after endonasal surgery. Rhinoliths are the result of a long-time calcified foreign body; and we have to think of them in patients with unilateral nasal obstruction and unilateral rhinorrhea. Functional endoscopic sinus surgery (FESS) has become the gold standard treatment for some nasal foreign body.

Methods

CASE REPORT

Results

A 78-year old male was referred to our Otorhinolaryngologic outpatient clinic for a longstanding right nasal obstruction and bloody rhinorrhea. The patient denied any other relevant symptoms, but referred endonasal surgery for polyposis 20 years ago. In the ENT examination, nasal endoscopy showed a polypoid uncinated process, polyps in middle meatus, bloody rhinorrhea and a foreign body appearing from the back of the inferior turbinate and continued until the nasopharynx. A CT-scan was performed, and revealed right-maxillary sinus occupation with sclerosis of its bone margins, bone defect in the middle wall and a calcification extending from the maxillary sinus through the nostril to the posterior wall of the nasopharynx. FESS was carried out, finding a completely calcified drainage tube, which from the maxillary sinus via the inferior turbinate reached the rear wall of the cavum, causing an ulcer, which healed ten days after surgery. In later tests, the patient had good clinical course and was discharged.

Conclusion

Although it is rare, unilateral chronic rhinosinusitis in a patient with history of endonasal surgery, we have to rule out the presence of a foreign body.

Unusual presentation of an asymptomatic pseudomeningocele within the sphenoid sinus

K. McNamara¹, R. Exley¹, S. Khwaja², R.K. Bhalla²

¹ Otolaryngology, Tameside General Hospital, Manchester, United Kingdom

² Otolaryngology, Central Manchester Hospitals, Manchester, United Kingdom

Abstract: ERS-0897

Objectives

We report the rare case of a 55-year-old woman with an asymptomatic left sphenoid sinus pseudomeningocele mimicking a mucocele.

Methods

We conducted a literature search using the Medline, EMBASE, CINAHL and AMED databases and the Cochrane Database of Systematic Reviews using the Ovid Collection, to identify scientific publications relevant to pseudomeningocele.

Results

A 55-year-old woman was found to have an incidental mass in the left sphenoid sinus on computed tomography. Magnetic resonance imaging confirmed the presence of a mucocele. A left endoscopic sphenoidotomy was performed to drain the mucocele. Despite an anatomical puncture through a stenosed sphenoid ostium, alarmingly, the opening leaked cerebrospinal fluid. A dehiscent lateral wall was identified with a dural opening communicating with the sphenoid sinus. This was immediately repaired with a free nasal septal mucosal graft. Six months post-operatively, the patient remained free from cerebrospinal fluid leakage.

Conclusion

Pseudomeningoceles are extremely rare in the absence of trauma or iatrogenic injury. Surgeons should be alert to their presence as they can mimic a unilateral mucocele or nasal polyp. Endoscopic management lends itself to a single-stage repair.

ISOLATED OLFACTORY DISORDERS AS FIBROUS DYSPLASIA DEBUT

L. SAMARÀ¹, X. GALINDO¹, P. BELLERA¹

¹ ENT UNIT, CENTRE AVANTMEDIC LLEIDA, LLEIDA, SPAIN

Abstract: ERS-0898

Objectives

Fibrous dysplasia (FB) is a rare benign bone disorder with unknown aetiology; consists in replacement of normal medullary bone by fibro-osseous tissue, causing distortion and overgrowth of the bones involved.

Entity with nonspecific clinical presentation (whose symptoms may include olfactory disorders - due to involvement of the cribriform plate or surrounding areas); whose suspected diagnosis is established by test-imaging and definitive diagnosis requires histological confirmation.

Treatment depends on symptoms' severity, location and impact on patient quality of life, and it goes from conservative treatment (in asymptomatic or mild cases) till surgical excision (in severe ones).

It has a 0.4% malignancy incidence rate and a capacity for local recurrence of up to 25%.

Therefore, requires a long-term follow-up.

Methods

CASE REPORT

Results

CASE REPORT

A 78-year-old woman was referred for evaluation of an olfactory disorder that began six months earlier, with no other neurological or ENT associated symptoms. After a detailed anamnesis and a complete physical examination, which turned out to be normal, test-imaging was requested reporting an altered signal in the right sphenoid-ethmoidal junction, with no apparent intracranial extension, associated with a pattern consistent with FB.

Due to mild patient symptomatology's (only parosmias), medical treatment was proposed -with improvement thereof-, and later controls.

Conclusion

FB is a low-incidence benign bone disorder with non-specific symptoms which entails a high rate of misdiagnosis

As far as we know, smell disorders as a unique manifestation of FB are not yet been described, and therefore we emphasize the importance of this case.

Benzaldehyde has an excellent anti-allergic effect in a murine model of allergic asthma and rhinitis

Y.H. Kim¹, C.S. Park², M.J. Heo¹, T.Y. Jang¹

¹ Inha University College of Medicine, Department of Otorhinolaryngology Head and Neck Surgery, Incheon, Korea

² Inha University College of Medicine, Department of Pharmacology, Incheon, Korea

Abstract: ERS-0899

Session: Rhinitis Basic

Session Time: 23-06-14, 11:42

Location: Hall J

Chair person: L. Kalogjera

Presenting author: Y.H. Kim

Objectives

Benzaldehyde is a natural substance obtained from cherry oil extract. We aimed to evaluate the anti-allergic effect of benzaldehyde in a murine model of allergic asthma and rhinitis.

Methods

Twenty BALB/c mice were used. Mice in Group A (n=5, control group) were sensitized and challenged with normal saline only. In Group B (n=5, allergic group), we performed intra-peritoneal ovalbumin (OVA) injection and intra-nasal OVA instillation for induction of allergic asthma and rhinitis. In Groups C (n=5, 0.2 mg/kg treatment group) and D (n=5, 0.4 mg/kg group), benzaldehyde were given by oral gavage before each intra-nasal OVA challenge. We compared the number of nose-scratching events, titers of serum total and OVA-specific IgE, number of inflammatory cells in broncho-alveolar lavage (BAL) fluid, titers of cytokines (IL-1, IL-4, IL-5, IL-10, IL-13) in BAL fluid, and the number of inflammatory cells in lung and nasal cavity tissue between groups.

Results

Compared to Group A, Group B showed significantly increased nose-scratching behavior, serum total and OVA-specific IgE. After benzaldehyde treatment, Groups C and D showed significantly decreased nose-scratching. Groups C and D also showed significantly decreased number of eosinophils, neutrophils and lymphocytes in BAL fluid compared to Group B. The titers of IL-1, IL-4, IL-5, IL-10, and IL-13 in BAL fluid were also significantly decreased after benzaldehyde treatment. Histopathologic examination revealed significantly less infiltration of inflammatory cells around bronchioles and mucosa of nasal cavity.

Conclusion

Benzaldehyde has an excellent anti-allergic effect in a murine model of allergic inflammation of the upper and lower airway.

Phosphorylcholine suppressed the allergic rhinitis in mice

K. Miyashita¹, Y. Kurono¹

¹ Otolaryngology Head and Neck Surgery, Kagoshima University Graduate School of Medical and Dental Science, Kagoshima, Japan

Abstract: ERS-0900

Session: Rhinitis basic

Session Time: 24-06-14, 11:50

Location: Hall G

Chair person: TBC

Presenting author: K. Miyashita

Objectives

Phosphorylcholine (PC) is a structural component of wide variety of bacteria. However immunomodulatory properties of PC in the upper respiratory tract have not yet been characterized. We sought to elucidate the effects of PC on the regulation of allergic response in the upper respiratory tract.

Methods

Allergic rhinitis model established by ovalbumin (OVA) sensitization was pretreated by intranasal or peritoneal administration of PC-bovine serum albumin (PC-BSA). Allergic responses were compared with non-pretreated mice. IL-12p40 production by DCs stimulated with PC was measured to evaluate the effect of PC on the TH2 responses mediated by DCs.

Results

PC-pretreated mice showed mild allergic nasal symptoms compared to the mice without PC-pretreatment. The levels of total IgE and OVA-specific IgE were significantly lower in PC-pretreated mice. The IL-4 production by splenic CD4+ T cells was down-regulated by PC-pretreatment. Further, PC induced IL-12p40 production by DCs.

Conclusion

These findings indicate that PC inhibits the allergic response in the upper respiratory tract mediated by the induction of IL-12p40 production by DCs. Thus, PC might be useful as an immunotherapeutic agent for allergic diseases.

Hemodynamic effects of topical adrenalin to during septoplasty

C. Günel¹, S. Sari², H. Basak¹

¹ ENT head&Neck Surgery, Coltea Clinical Hospital, Bucharest, Romania

² ENT head&Neck Surgery, Elias Emergency Hospital, Bucharest, Romania

Abstract: ERS-0901

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:25

Chair person: S. Carrie

Presenting author: C. Günel

Objectives

Vasoconstrictors agents is used in septal surgery, in attempt to improve haemostasis and thereby improve the surgical field. We aimed to compare the effect of lignocaine with epinephrine and alone lignocaine with topical adrenalin on peroperative hemodinamic effect, hemorrhage and postoperative pain.

Methods

Patients undergoing surgery were randomised into two groups: group I in whom infiltration was performed with lignocaine (2%) with adrenaline (1:40,000), group II in whom infiltration was performed with lignocaine (2%) with topical adrenalin (1:40.000). The two groups were matched by age, sex, body weight, pre-anesthesia blood pressure, heart rate, oxygen pressure and hemorrhage. The hemostatic effects postoperative pain in each group were analyzed.

Results

No statistically significant differences in operation time and intraoperative blood loss were reached between the two groups of patients (Table 1 and 2.). But also group II had significantly better pain scores versus control group in the 2nd, 4th, 6th postoperative hours.

Conclusion

We suggest that the use of epinephrine infiltration during septal surgery is unnecessary and may subject the patient to the risk of cardiogenic side-effects of systemic absorption.

	GroupI	GroupII	P
Age	22 (20-31)	22,5 (21-28)	0,531
Sex	34 (70.8%)	29 (72.5%)	1,000
male	14 (29.2%)	11 (27.5%)	
female			
Body weight	70 (60-78)	70,50 (60,00-79,75)	0,883
Pre- anesthetic systolic blood pressure(SBP)	120,38±16,16	119,30±16,33	0,758
1 st SBP	110 (97,25-118)	104,50 (96,25-110)	0,133
5 th SBP	99,96±15,446	107,23±15,049	0,029
10 th SBP	99,54±16,243	108,35±14,878	0,010
1 st median blood pressure(MBP)	81 (71,75-91)	77 (72-85)	0,146
5 th MBP	77,31±11,454	83,40±11,397	0,015
10 th MBP	74 (66-80,75)	81,50 (76,50-89)	0,001

	GroupI	GroupII	P
Operation time	75 (30-150)	45 (35-105)	0,724
Partial oxygen pressure	99 (98-100)	99 (98-99,75)	0,638
Blood loss	50 (30-83,75)	75 (50-100)	0,075
Surgery field	6,50(5-7)	4,50 (3-6)	<0,001

Diagnostic and therapeutic consequences of mucosal lymphoid aggregates and local IgE in chronic rhinosinusitis with nasal polyposis

L. Calus¹, T. Van Zele¹, P. Gevaert¹

¹ Upper Airways Research Laboratory, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-0902

Session: Prognostic factors in CRS

Session Time: 24-06-14, 14:09

Location: Hall J

Chair person: P. Lekakis

Presenting author: L. Calus

Objectives

Chronic rhinosinusitis with nasal polyposis is a prevalent and difficult to treat disease. The goal was to investigate the importance of the local inflammation in the diagnosis, prognosis and treatment of CRSwNP.

Methods

The first major aim was to investigate the local inflammation in CRSwNP that drives the production of nasal IgE. T follicular helper cells, a specialized T helper cell subset present in lymphoid aggregates, and the concentration of IL-21 are significantly increased in CRSwNP compared to control tissue. This close relationship of Tfh and B cells in lymphoid aggregates is believed to drive the local polyclonal IgE production. We also found that free light chains may provide an additional non-IgE mediated pathway to augment or replace IgE mediated mast cell degranulation in CRSwNP.

Results

The treatment of CRSwNP remains a challenge for ENT-specialists. Therefore the clinical role of IgE and of local inflammation in surgery for CRSwNP was explored. A 12-year prospective cohort study after endoscopic sinus surgery showed that surgery might significantly alleviate nasal symptoms. However, the study identified a considerable group of patients that developed CRSwNP recurrence (78.9%), of which 36.8% underwent revision surgery. The presence of tissue IL-5 and comorbid allergy were identified as risk factors for a poor outcome and the need for revision surgery.

Conclusion

In conclusion, the local inflammation and local IgE in CRSwNP are relevant in disease outcome. Therefore, diversification of CRSwNP based on clinical and local inflammatory characteristics should lead to the development of individual strategies to prevent, diagnose and treat CRSwNP.

Maxillary and sphenoid sinus fungus ball: a retrospective and comparative study - about 66 patients

A.L. Poirrier¹, C. Marlair², B. Weynand², B. Bertrand², P.H. Eloy²

¹ Otolaryngology, University Hospital of Liege, Liege, Belgium

² Otolaryngology, University Hospital of Dinant-Godinne UCL, Yvoir, Belgium

Abstract: ERS-0903

Session: Fungal sinusitis

Session Time: 24-06-14, 09:40

Location: Hall E

Chair person: R. Kamel

Presenting author: A.L. Poirrier

Objectives

Fungus balls are a dense conglomerate of fungal hyphae deposited on the sinus mucosa without invasion of the bone, the blood vessels and the sinus mucosa. Our goal was to review the management and the outcome of sinus fungus balls in our institution.

Methods

We reviewed the notes of 66 patients treated for sinus fungus ball in our ENT department during the last 15 years. Clinical presentation, imaging, modality of treatment, outcome and complications were recorded. Our cohort was divided into 2 groups: maxillary sinus fungus ball (n = 50 patients) and sphenoid sinus fungus ball (n = 16 patients). The definitive diagnosis was made in all the cases by the pathologist.

Results

When positive (n = 12/55), *Aspergillus fumigatus* grew on culture. Fungus balls were successfully treated by endonasal approach (our success rate after surgery was 91%). Surgery consisted of a complete extirpation of the fungal hyphae, with preservation of the healthy mucosa.

Conclusion

The clinician must be aware of this entity in case of a unilateral symptomatic rhinosinusitis persisting despite appropriate medical treatment. A biopsy of the mucosa adjacent to the fungus ball is mandatory to rule out any invasion within the tissue.

Excessive fibrin deposition in nasal polyps caused by increased expression of coagulation factor XIII-A

T. Takabayashi¹, A. Kato², A. Peters², K. Hulse², L. Suh², R. Carter², J. Norton², L. Grammer², B. Tan³, R. Chandra³, D. Conley³, R. Kern³, S. Fujieda¹, R. Schleimer²

¹The Division of Otorhinolaryngology Head and Neck Surgery Department of Sensory and Locomotor Medicine, University of Fukui, Fukui, Japan

²The Division of Allergy and Immunology Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, USA

³The Department of Otolaryngology, Northwestern University Feinberg School of Medicine, Chicago, USA

Abstract: ERS-0904

Session: Pathophysiology of CRS

Session Time:

Location:

Chair person:

Presenting author: T. Takabayashi

Objectives

Nasal polyps (NPs) are characterized by intense edema or pseudocyst formation with a high content of plasma proteins, mainly albumin. However, the mechanisms underlying NP retention of plasma proteins in submucosa remain unclear. We hypothesized that formation of fibrin mesh retains plasma proteins in NP. We assessed the fibrin deposition and expression of the coagulation factors in patients with chronic rhinosinusitis (CRS).

Methods

Sinonasal tissues were collected from patients with CRS and control subjects. We assessed fibrin deposition by means of immunofluorescence. We assayed mRNA for factor XIII-A (FXIII-A) by using real time PCR and measured FXIII-A protein by means of ELISA, immunohistochemistry, and immunofluorescence.

Results

Immunofluorescence data showed profound fibrin deposition in NPs compared with UT from CRS and control subjects. FXIII-A mRNA levels were significantly increased in NP from patients with CRS with nasal polyps (CRSwNP; $P < .001$) compared with uncinata tissue from patients with CRS or control subjects. Similarly, FXIII-A protein levels were increased in NP. Immunofluorescence analysis revealed FXIII-A expression in inflammatory cells, and FXIII-A+ cell numbers were significantly increased in NP. Most FXIII-A staining was observed within CD68+/CD163+ M2 macrophages in NP. Levels of FXIII-A correlated with markers of M2 macrophages, suggesting that M2 macrophages are major FXIII-A producing cells in NP.

Conclusion

Overproduction of FXIII-A by M2 macrophages might contribute to the excessive fibrin deposition in the submucosa of NP, which might contribute to the tissue remodeling and pathogenesis of CRSwNP.

Inferior turbinate choristoma: a case report

Y. Tang¹, J. An¹, C. Zhao¹

¹ Department of Otorhinolaryngology, West China Hospital of Sichuan University, Chengdu, China

Abstract: ERS-0905

Objectives

Choristoma in nasal cavity is very rare and its location in inferior turbinate has not been reported yet. Here we report a case of an inferior turbinate choristoma.

Methods

A 2-year-old boy presented with right nasal obstruction. Physical examination showed occlusion of the right nasal cavity by the smooth, hard neoplasm on the right inferior nasal concha. Both CT scan and magnetic resonance imaging (MRI) revealed the right nasal cavity neoplasm and teratoma or choristoma is suggested. The neoplasm ($\sim 1.5 \times 1.0 \times 1.0 \text{ cm}^3$) was removed by endoscopic surgery.

Results

The pathology diagnosis is the right nasal cavity benign lesions and choristoma is considered. At present, three months after surgical removal, the patient remains asymptomatic without recurrence.

Conclusion

Although it is rare, a combination of medical history, physical examination, CT, MRI, and pathologic examination is helpful for diagnosis.

Unilateral frontal fungal rhinosinusitis

R.C. Monsanto¹, R.S. Orem¹, F.T.M. Lorenzetti¹

¹ Otolaryngology, Banco de Olhos de Sorocaba Hospital, Sorocaba, Brazil

Abstract: ERS-0906

Objectives

To present a case of frontal rhinosinusitis in which the follow-up revealed a fungal etiology.

Methods

A 'Case Report' study was performed. Data from the medical records of the patient was extracted, and we performed a literature search on the Cochrane, PubMed and Medline databases.

Results

Case report: A 46 year-old male complains of frontal and periorbital headache on the left side that began 1 year before, that did not respond to analgesic medication. He denied having any nasal symptoms. Physical examination was positive for retro-nasal discharge on the oroscopy. When treated with oral levofloxacin for 14 days, nasal irrigation and mometasone, the patient did not report any improvement. A computerized tomography showed opacity on the left frontal sinus with calcifications, and nasal endoscopy revealed no pathological findings. The patient underwent a functional endoscopic sinus surgery, and when the left frontal recess was approached, a thick secretion drained from the left frontal sinus. The patient referred that the headache disappeared as soon as he woke up from the surgery. The outpatient follow-up was uneventful. Histopatology material collected in the left frontal sinus was compatible with *Aspergillus* species.

Conclusion

A significant increase in the reported cases of fungal rhinosinusitis has been seen in the last two decades. This case report describes a patient with a type of fungal rhinosinusitis named 'fungal ball', characterized by a tangle of hyphae in the sinuses without tissue invasion. The treatment includes surgical removal of the fungal infectious process with aeration of the affected sinus, procedure performed successfully in our patient.

Fungal rhinosinusitis with an atypical presentation

R.C. Monsanto¹, R.S. Orem¹, F.R. Silva¹, F.T.M. Lorenzetti¹

¹ Otolaryngology, Banco de Olhos de Sorocaba Hospital, Sorocaba, Brazil

Abstract: ERS-0907

Objectives

To present a case of atypical frontal sinus disease in which the follow-up revealed a fungal etiology.

Methods

A 'Case Report' study was performed. Data from the medical records of the patient was extracted, and we performed a literature search on the Cochrane, PubMed and Medline databases.

Results

A 77 year old female patient with no previous medical history presents with pain and left peri-orbital edema that began 20 days before the consult, with cacosmia, nasal obstruction, and rhinorrhea associated with frontal headache. Physical examination showed eyelid ptosis, without visual impairment. Rhinoscopy had pus in the left nasal cavity, and nasal endoscopy showed pus on the middle meatus and sphenoid-ethmoid. When treated with oral amoxicilin for 14 days, nasal irrigation and mometasone, the patient did not report any improvement. Tomography of the paranasal sinuses showed opacification of the frontal, ethmoid and maxillary sinuses bilaterally, with bone erosion of the left frontal sinus. Magnetic resonance detailed a mass with regular contours in the left frontal sinus, measuring 2,0x1,2x1,5cm, along with a second image of similar appearance in the left supra-orbital region. Surgical approach was performed by modified lynch plus endonasal techniques, and the removal of the entire frontal lesion was achieved; the outpatient follow-up was uneventful. The histopathological examination revealed *Aspergillus* species.

Conclusion

Isolated fungal sinusitis of frontal sinus accounts for only 5% of all fungal rhinosinusitis. The treatment of the non-invasive fungal rhinosinusitis includes surgical removal of the fungal infectious process with aeration of the affected sinus, procedure performed successfully in our patient.



Sphenoidal glomangiopericytoma

A.S. Araujo Da Costa¹, T. Rivera Schmitz¹, C. Chiesa Estomba¹, D. Alonso Parraga¹, J.M. Melendez Garcia¹

¹ Ent, Hospital Xeral Cies, Vigo, Spain

Abstract: ERS-0908

Objectives

The sinonasal glomangiopericytoma is a rare tumor that emerges from the pericytes surrounding capillaries. Representing the 0,5 % of all sinonasal tumours, the glomangiopericytoma as its peak incidence during the seventh decade and it's slightly more frequent in females. Our objective is to report a case of a 73 year old male diagnosed of glomangiopericytoma arising from the right nasal fosa and sphenoid sinus.

Methods

A 73 year old man was presented to our service with severe epistaxis, during office examination we found a vascular mass occupying areas III-IV of the right nasal fosa and descending towards the rinopharynx. A computed tomography scan (CT) was performed putting in evidence the presence of a soft tissue mass of about 5,3 cm x 4,0 cm occupying the right sphenoidal sinus, nasal cavity and choana, without bone destruction. Inverted papiloma, nasopharyngeal carcinoma, nasal fossa carcinoma, lymphoma and esthesioneuroblastoma were all considered as possible diagnoses.

Results

Endoscopic surgery was performed with intraoperative biopsies which suggested myoepithelial differentiation of low malignancy and discarded the hypothesis of malignant epithelial neoplasia and esthesioneuroblastoma. The complete debulking of the mass

TREATMENT APPROACH IN CASES OF SNORING AND OSA WITH LIGHT AIRWAY RESISTANCE

M. MILKOV¹, P. NEDEV², D. VICHEVA³, T.C. TONCHEV¹, L. MATEV¹

¹ ORL, MEDICAL UNIVERSITY OF VARNA FACULTY OF DENTAL MEDICINE, VARNA, BULGARIA

² ORL, MEDICAL UNIVERSITY OF VARNA FACULTY, VARNA, BULGARIA

³ ORL, MEDICAL UNIVERSITY OF PLOVDIV, PLOVDIV, BULGARIA

Abstract: ERS-0909

Objectives

The severity of sleep-disordered breathing is crucial in deciding which therapy is most suitable for which patient. The simple snorer is not ill. In the case upper airway resistance syndrome and OSA, the goal of treatment is complete elimination of all apneas, hypopneas, desaturations, arousals, snoring at all sleep stages.

Methods

Examination of the nose, oral cavity, oropharynx, bony structure of the head and neck and a fiberoptic examination should be undertaken. Structural causes may include septal deviation, hypertrophy of the inferior or middle turbinats and fixed and inspiratory nasal valve collapse. With so many different oral appliances available, selection of a specific appliance may appear somewhat difficult but they are designed around a few major themes.

Results

In all cases standard ENT-examination was undertaken, as well as fiberoptic examination, rhinomanometry and in 48 cases - somnographic examination. From the group with heavy snoring (55 cases), 35 patients underwent surgical septoplasty with conchoplasty and they were equipped with oral appliances after surgery. In the rest of the group - 25 patients - only conchoplasty was done, together with radio-frequent surgery of the soft palate. In all patients of the two groups the snoring was significantly decreased.

Conclusion

The complex approach in the treatment of snoring includes exact diagnosis and combination of surgical methods with oral appliances. The radio-frequent thermotherapy also showed good results in all our cases.

Clinical profile of patients with chronic rhinosinusitis

C.M. Chiesa Estomba¹, A.S. Araujo da Costa¹, T. Rivera Schmitz¹, C.C. Ossa Echeverri¹,
D. Alonso Parraga¹

¹Otorhinolaryngology - Head & Neck Department, University Hospital of Vigo, Vigo, Spain

Abstract: ERS-0910

Session: CRS miscellaneous

Session Time: 25-06-14, 14:05

Location: Hall J

Chair person: G. Adriaensen

Presenting author: C.M. Chiesa Estomba

Objectives

Chronic rhinosinusitis is a clinical syndrome characterized by persistent inflammation of the mucosa of the nasal cavity and sinuses. Multiple symptoms are forcing the patient to consult an specialist in rhinology frequently, generating a major economic impact, and negatively affecting the quality of life of patients.

Methods

A cross-sectional study, conducted between January 2013 and July 2013 in the Rhinology area of a tertiary center.

Results

72 patients met the inclusion criteria, 54(75%) were male and 18(25%) female (M/F ratio 3:1). The mean age was 51.85 ± 16.82 years (age range between 13-87 years), 67(93.1%) patients reported nasal respiratory failure, 41(56.9%) patients reported anosmia, 15(20.8%) had allergy to aspirin, 25(34.7%) patients had asthma, 11(12.5%) patients had rhinitis, 14(19.4%) patients met criteria for ASA triad, 26(36.1%) patients had septal deviation, 68(94.4%) patients had undergone previous surgery for resection of sinonasal polyps and mean re-interventions was 1.46. The mean levels of IgE were $177.6 \text{ IU/ml} \pm 117.49$ (Minimum: 122, Maximum 1134).

Conclusion

This study sought to determine the clinical profile of patients who often consult the rhinology area of our center. Regarding the epidemiology, our results are comparable to most of those reported in the literature, except for gender distribution, which was found being higher in males.

	Yes	%
Nasal Respiratory failure	67	93.1
Anosmia	41	56.9
Asthma	25	34.7
Rinitis	11	12.5
Septal deviation	26	36.1
Re-intervention	68	94.4

Asthma & Allergy to Aspirin.		Sex		
		Male	Female	
Asthma	Allergy to aspirin	Yes	12	2
		No	9	2
	No Allergy to aspirin	Yes	0	1
		No	33	13

Diagnostic features of Kirlian's method with different forms of rhinosinusitis

D. Toguzbayeva¹

¹Otorhinolaryngology, Almaty State Institute of advanced medical education, Almaty, Kazakhstan

Abstract: ERS-0911

Objectives

The objective of the work is in giving clinical-instrumental basing of diagnostically opportunities of the Kirlian method. This method based on the effect of luminescence registration, which is made by photons, electrons and other particles near biological objects placed in the electromagnetic brim with high voltage.

Methods

Research on 183 (100%) patients, which had an aggravation of chronic rhinosinusites or acute rhinosinusites:

- acute purulent rhinosinusites – 56 (33,5%)
- aggravation of chronic purulent rhinosinusites – 111 (66,5%).

During a single research of one patient they took 2 kirlianogramms of big fingers. Processing of received pictures has been made with the help of diagnostic tables of Mandel. We have distributed rhinosinusits by the character and spreading of the pathological process according to knowledge and skills we had got during our own experience and researching, which are presented like diagnostic table.

During the research we have set up that kirlianogramms of patients, who suffer from sharp and chronic types of sinusitis, have trustworthy differences.

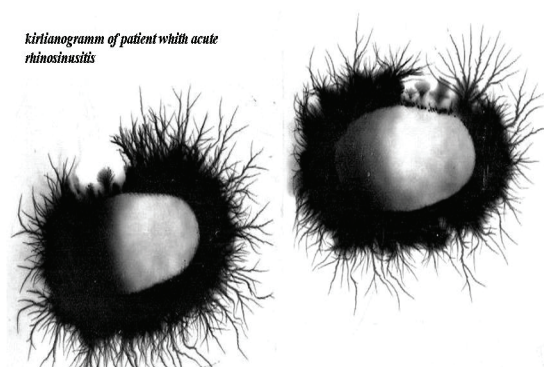
Results

During the research we have set up that kirlianogramms of patients, who suffer from sharp and chronic types of sinusitis, have trustworthy differences.

Conclusion

- method of high-frequency photographing of Kirlian effect can be as additional way of diagnostics of rhinosinusits because of its availability, simplicity, radiological safety. Taking in consideration all these advantages the method can be used in conditions of any technical equipment.

- method of rhinosinusites' diagnostics by peculiarities of kirlianogramm's shining can be used like an alternative to X-ray researching of patients with prohibitions (pregnant women) because of its high reliability and safety.



Response of nasal mucosa to cholinergic stimulation in subjects with and without rhinitis

D. Milosevic¹

¹ ENT Department, Clinical Hospital Center "Zvezdara", Belgrade, Serbia

Abstract: ERS-0913

Session: Rhinitis clinical

Session Time: 25-06-14, 14:40

Location: Hall E

Chair person: A. Swift

Presenting author: D. Milosevic

Objectives

The parasympathetic nervous system plays an important role in the nasal response to external stimuli. The nasal provocation test with metacholine has been used primarily as a research tool for the investigation of idiopathic nonallergic rhinitis with a wide variety of techniques depending on the specific scientific purposes. The aim of the study was to examine effect of intranasal application of metacholine on nasal secretion in idiopathic rhinitis patients and healthy people and make comparisons between secretory responses of the two groups.

Methods

The secretory response to nasal provocation with metacholine was measured in subjects with and without rhinitis and the volume of nasal secretion was recorded.

Results

The frequency of pathological secretory response to nasal provocation test with metacholine in patients with idiopathic rhinitis was significantly greater than in healthy people.

Conclusion

The nasal provocation testing with metacholine will continue to provide useful information about the pathogenesis of airway diseases and has the potential to become a more frequently used clinical test in the diagnosis of idiopathic rhinitis and for determination of the appropriate and focused therapy.

Expression of chemokine receptor 7 (CXCR7) in otorhinolaryngologic neoplasms

T. Tang¹, Q. Xia², X. Qiao³, M. Xi⁴

¹ West China Medical School Department of Gynecology and Obstetrics West China Second University Hospital Sichuan University, West China Medical School Department of Gynecology and Obstetrics West China S, Chengdu, China

² West China Laboratory of Molecular Genetics, West China Laboratory of Molecular Genetics Sichuan University Chengdu China, Chengdu, China

³ Department of Otorhinolaryngology ShuGuang hospital. ShangHai University of Traditional Chinese Medicine., Department of Otorhinolaryngology Shu-Guang hospital. ShangHai University of Traditional Chinese Medicine., Shanghai, China

⁴ Department of Gynecology and Obstetrics West China Second University Hospital Sichuan University, Department of Gynecology and Obstetrics West China Second University Hospital Sichuan University Chengdu China, Chengdu, China

Abstract: ERS-0914

Session: CRS basic 3

Session Time: 24-06-14, 17:20

Location: Hall E

Chair person: S. Vlamincx

Presenting author: T. Tang

Objectives

Chemokine receptor 7 (CXCR7) has recently been characterized as a novel receptor for CXCL12/SDF-1 (stromal cell derived factor-1) and plays an important role in the pathogenesis of chronic rhinosinusitis, angiogenesis, and tumour metastasis. The current study aims to examine the expression of CXCR7 in laryngeal cancer and maxillary sinus carcinoma to determine the potential contribution of CXCR7 in the development of otorhinolaryngologic neoplasms.

Methods

Samples of otorhinolaryngologic neoplasms were obtained from 15 patients with nasal polyposis (7 patients), laryngeal cancer (5 patients), or of maxillary sinus carcinoma (5 patients) underwent surgical resection in the West China Hospital of Sichuan University. Total RNA was isolated and mRNA expression of CXCR7 was examined and quantified by quantitative real-time RT-PCR. The one-way analysis of variance (ANOVA) was performed using SPSS 11.0 statistical software to compare the mRNA levels of CXCR7 among three groups.

Results

CXCR7 mRNA was detected to be positive in all samples. The quantitative results showed that the levels of CXCR7 mRNA were the highest in laryngeal cancer and the lowest in maxillary sinus cancer. But there were no significant differences among the three groups.

Conclusion

CXCL12 and its receptor CXCR7 may account for an increased presence of B cells and their products, contributing to eosinophilic inflammation in patients with chronic sinusitis and polyps. Our results also suggest that CXCR7 may play a role in progression, metastasis and angiogenesis of otorhinolaryngologic tumour.

Allergic fungal sinusitis infratemporal fossa involvement, Saudi experience

S. Al Dousary¹

¹ Rhinology research chair, King Saud University, Riyadh, Saudi Arabia

Abstract: ERS-0915

Objectives

Allergic fungal rhinosinusitis (AFRS) is well known to expand and to extend to the surrounding structure like the orbit and the brain however it has not been reported to extend to the Infratemporal fossa (ITF) Due to the difficulty accessing the itf we report our experience over 5 years.

Methods

One hundred and one patients with AFRS operated by the author between 2008 and 2013. Twelve had expansion or extension of the disease in to the ITF. All of these patients had preoperative and post-operative computerized tomogram of the Paranasal sinus but two had no post-operative one.

Results

Eight male and 4 female, their age ranged from 10 to 34. Four of them are children below 15 years of age. Three patients had bilateral disease and nine had unilateral sinus involvement. Seven cases had expansion of the posterior wall of maxillary sinus into the ITF which is unilateral and mild, however extension from the sphenoid sinus, more extensive in most of the cases; bilateral in two and unilateral in the others.

Conclusion

ITF extension from the sphenoid sinus is more extensive than maxillary sinus. In pediatric population due to the non-complete fusion of the suture line the disease expanded and eroded into the ITF. In adult the optical carotid is the weakest area and the disease can expand through it into the ITF. Posterior wall of maxillary sinus expansion into the itf is mild in all the cases. All the ITF extension Cured endoscopically.

Sinonasal exophytic papilloma, a clinical case and review of six consecutive cases

R. Estêvão¹, S. Caselhos¹, R. Teles¹, A. Sousa¹, V. Henriques¹, J. Rodrigues¹, F. Fernandes¹

¹ Otolaryngology, Alto Ave Hospital Center, Guimarães, Portugal

Abstract: ERS-0916

Session: Rhinology miscellaneous

Session Time:

Location:

Chair person:

Presenting author: R. Estêvão

Objectives

- Present a clinical case of an exophytic papiloma.
- Review of 6 consecutive cases of exophytic papillomas treated at our hospital.

Methods

A retrospective review was performed to patients with exophytic papillomas over a 10-year period.

Results

The authors describe a clinical case of a 44 year old male with an exophytic schneiderian papilloma originated in the nasal septum, with involvement of the sphenoid sinus and posterior ethmoid cells which was removed endoscopically by the nasalization technic described by Jankowski.

The remaining cases correspond to 4 males and 2 females with an age average of 56 ± 12 years. The most common complaint was nasal obstruction, followed by epistaxis.

When analyzing CT scans performed prior to surgery approach, none showed phenomenon of bone erosion or thinning. All cases were treated by endoscopic resection. The average of the follow-up was 5 years, being the cases with longer follow-up 10 years and the lowest 2 years. In one case (14%) of all cases, the disease recurred 6 years after the first surgery.

Conclusion

Exophytic papillomas present good prognosis when compared with other types of schneiderian papillomas. Complete surgical removal is essential for the treatment of the disease.

A clinical case of respiratory epithelial adenomatoid hamartoma

R. Estêvão¹, S. Caselhos¹, J. Rodrigues¹, R. Teles¹, A. Sousa¹, V. Henriques¹, F. Fernandes¹

¹ Otolaryngology, Alto Ave Hospital Center, Guimarães, Portugal

Abstract: ERS-0917

Session: Rhinology miscellaneous

Session Time:

Location:

Chair person:

Presenting author: R. Estêvão

Objectives

Respiratory epithelial adenomatoid hamartoma is a rare and benign entity characterized by abnormal glandular proliferation of the surface ciliated respiratory epithelium. Its etiology is still unknown.

Methods

Clinical case presentation and review of literature related to this pathology.

Results

We report a case of a 63-year-old male complaining of nasal obstruction that was diagnosed with a bilateral nasal mass found to be a respiratory epithelial adenomatoid hamartoma upon pathologic examination. This patient was treated with surgical resection with endoscopic sinus surgery. Until this moment the patient doesn't show signs of the disease recurrence.

Conclusion

Respiratory epithelial adenomatoid hamartoma can be confused with a variety of benign and malignant entities. Surgery seems to be curative.

The effectiveness of fexofenadine versus levocetirizine in persistent allergic rhinitis, a randomized controlled study

K. Snidvongs¹, C. Rotjanasiriphong², C. Phannaso³, S. Chusakul¹, S. Aeumjaturapat¹

¹ Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

² Otolaryngology, Maharat Maharat Nakhon Ratchasima Hospital Hospital, Maharat Nakhon Ratchasima Hospital, Thailand

³ Otolaryngology, King Chulalongkorn Memorial Hospital, Bangkok, Thailand

Abstract: ERS-0918

Session: Rhinitis clinical

Session Time: 25-06-14, 14:10

Location: Hall E

Chair person: A. Swift

Presenting author: K. Snidvongs

Objectives

Antihistamines are mainly used in treating allergic rhinitis. Various types of H1 receptor antagonists have various pharmacokinetic and pharmacodynamics properties. We aimed to compare the effectiveness of fexofenadine versus levocetirizine in treating patients with persistent allergic rhinitis. Additionally, the effectiveness was compared between local made and original drugs.

Methods

Patients with persistent allergic rhinitis were enrolled during June 2010 to December 2013. Patients were randomized to receive local-made fexofenadine, original fexofenadine or levocetirizine for one week. Daily symptoms were self assessed. Disease specific quality of life, allergen induced wheal and flare size, peak nasal inspiratory flow and adverse events were reported at one week.

Results

Seventy patients were enrolled. There was no significant difference in reduction of mean total symptom score between local-made fexofenadine, original fexofenadine and levocetirizine (0.15, 0.18, 0.16 respectively; $P=0.55$). Improvement in otolaryngic symptoms ($p=0.51$), non-otolaryngic symptoms ($p=0.59$), work and study performance ($p=0.42$), exertion ($p=0.81$), sleep disturbance ($p=0.76$), social performance ($p=0.16$), emotional disturbance ($p=0.66$), overall general health ($p=0.55$), number of days per month absent from work or study ($p=0.21$), allergen induced wheal ($p=0.44$) and flare size ($p=0.90$) and peak nasal inspiratory flow ($p=0.85$) were not significantly different among three groups. All groups similarly reported minor adverse events.

Conclusion

There is no difference in effectiveness between fexofenadine and levocetirizine in treating persistent allergic rhinitis. Local-made and original fexofenadine similarly improve symptoms, nasal flow and quality of life. There are no major adverse events reported.

Effective nasal airflow-inducing maneuver for olfaction acquisition after total laryngectomy - include result of taste examination

N. Katayama¹, Y. Fujimoto², M. Hiramatsu², T. Maruo², N. Nishio², K. Suga², M. Shimono², T. Nakada², M. Sone², T. Nakashima²

¹ Food Science and Nutrition, Nagoya Women's University, Nagoya, Japan

²Oto-Rhin-Laryngology, Nagoya University Graduate School of Medicine, Nagoya, Japan

Abstract: ERS-0919

Session: Olfaction

Location: Hall G

Time: 25-06-14, 14:50

Chair person: Baile Landis

Presenting author: N. Katayama

Objectives

Rehabilitation of olfaction is important for laryngectomees. Nasal airflow-inducing maneuver (NAIM) method has been used to obtain olfaction but there are large individual differences in the olfaction acquisition. In this study, we tested the olfactory and taste. And we tested the patients olfactory by using NAIM method. We would like to report our results.

Methods

The subjects for this investigation included 24 laryngectomees having no or scanty olfaction. They were 22 male and 2 female the average age was 69.0 ± 6.6 years old. In rehabilitation, glass with water and straw were used to evaluate the degree of the negative pressure inside the nasal cavity. Observing the movement of the water of the straw, nurses sent encourage and applause directly to the men performing the NAIM method. Odor stick identification test-Japanese(OSIT-J) kit. We used a taste disk made in Sanwa Kagaku Kenkyusho Corporation. It includes four different kind of taste, sweetness, saltiness, acidity and bitterness.

Results

Rehabilitation was effective to improve smell ability. During 6 months after NAIM method rehabilitation of the smell ability, in 14 patients, smell recognition level of smell is getting increase. And in 2 patients, smell detection level is not changing. Furthermore, 8 patients detect a smell, but cannot recognize the smell. The taste is getting better as same as smell.

Conclusion

Occasional NAIM method is recommended to keep the smell ability. It is necessary for the patient to be conscious of taste in the daily food habits. Eating food will be wonderful rehabilitation of patient taste and smell.

Closure of nasal septal perforation via endonasal approach

I. Tasca¹, G. Ceroni¹, C. Di Lieto¹, F. Sorace¹

¹ ENT, Imola Hoospital, Imola (BO), Italy

Abstract: ERS-0920

Session: Septal surgery and turbinate reduction

Location: Hall E

Time: 23-06-14, 10:24

Chair person: N. Keles

Presenting author: I. Tasca

Objectives

Repair of nasal septal perforation is one of the most challenging procedures in nasal surgery. Although many different surgical techniques have been proposed, no standard protocol has yet been universally accepted. In this study, we report our experience in nasal septum perforation surgery using an endoscopic assisted endonasal approach.

Methods

We reviewed a sample of 30 patients, operated on in our ENT department for small- and middle-sized septal perforations. Patients (19 males, 11 females) had a mean age of 42 years (range, 32 to 65 years). The most recurrent patient complaints were nasal obstruction in 65% of cases and crusting in 43% of cases followed by nasal discharge (13%), whistling (8%), and bleeding (5%). Patients were all treated using the endoscopically assisted backwards extraction-reposition of nasal septum and inverted sliding flap suture technique.

Results

After a mean follow-up of 28 months, the closure rate for patients presenting small perforations was 94% (17 of 18 cases), whereas for patients with a middle perforation a complete closure was accomplished in 75% (9 of 12 cases). The closure rate calculated for all patients was 86.6% (26 of 30 cases). In the 4 cases of failure, the residual perforation was found to be smaller and more posterior and patients referred fewer symptoms.

Conclusion

The reported technique has demonstrated to be a viable procedure for the closure of small- and middle-sized perforations. Unlike other surgical procedures, this technique does not require further supporting implants and allows the perforation to be closed without any associated morbidity.

Is there a real indication for type III frontal sinus drainage?

U. Bockmühl¹

¹ Dpt. of Otorhinolaryngology Head and Neck and Facial Plastic Surgery, Klinikum Kassel, Kassel, Germany

Abstract: ERS-0921

Session: Management of CRS surgically

Session Time:

Location:

Chair person:

Presenting author: U. Bockmühl

Objectives

During the last decades the endonasal approach using endoscope and/or microscope emerged as most favourable management in surgery of chronic sinusitis, with minimal morbidity and low recurrence rates.

Methods

The management of the frontal sinus presents a special quality. Preservation of mucosa and thus of mucociliary transport are preconditions, especially in the frontoethmoidal transition as a bottleneck.

Results

The goal is to restore ventilation and drainage which can be achieved at the best by recanalization of the frontal sinus infundibulum (type I drainage according to Draf). According to the extent and pathophysiology of the disease process, we recommend a concept of stepwise endonasal procedures from type I drainage to partial removal of the frontal sinus floor (type II drainage according to Draf) to bilateral removal of the sinus floor and frontal septum as well as of 1.5cm of the upper nasal septum (type III drainage according to Draf). However, there are still contraindications for endonasal approach.

Conclusion

Based on our surgical experience comprising a long-term postoperative follow-up of patients with difficult frontal sinus surgery, in this lecture the efficacy of endonasal frontal sinus surgery as well as its limits and the indication for an external approach will be defined.

No evidence of autoreactivity in nasal polyposis

E. De Schryver¹, L. Calus¹, H. Bonte¹, E. Donovan², D. Elewaut², R. Valenta³, I. Mitterman³,
T. Van Zele¹, P. Gevaert¹

¹ Otorhinolaryngology, University Hospital Ghent, Ghent, Belgium

² Rheumatology, University Hospital Ghent, Ghent, Belgium

³ Infectology and Immunology, Medical University of Vienna, Vienna, Austria

Abstract: ERS-0922

Session: CRS Basic 2

Session Time: 24-06-14, 14:00

Location: Hall G

Chair person: R. Moesges

Presenting author: E. De Schryver

Objectives

Chronic rhinosinusitis with nasal polyps is an invalidating disease of the sinonasal mucosa. Medical treatment is often insufficient and recurrence after surgery often occurs. Inflammation is characterized by edema, local hyperglobulinemia and the presence of mucosal lymphoid accumulations. The hypothesis that autoimmunity is a contributing factor in pathogenesis is based on the chronic and severe inflammation and the typical recurrence after surgical resection. This might be a result of autoreactivity.

Methods

We performed an autologous serum skin test (ASST) in 32 subjects to identify anti-IgE or anti-FcεRI autoantibodies. We included 15 controls and 17 CRSwNP patients. In 34 CRSwNP samples and 9 controls we tested for anti-IgE autoantibodies by an immunoprecipitation assay and for autoantibodies against RNP70k, RNPA, RNPC, SmD, SSA/Ro52, SSA/Ro60, SSB/La, CenpB, Topo1_Scl7, ribosomalP, histones and SmB by line immunoassay (LIA).

Results

After intradermal injection of 0.05 ml of undiluted autologous serum in ASST, no serum-induced wheal was 1.5 mm larger compared to control at 30 min, thus no in vivo autoreactivity could be demonstrated. The immunoprecipitation assay did not show any IgE autoreactivity in nasal tissue samples and serum to nitrocellulose-blotted protein extracts of a human epithelial cell line (A-431). The LIA was performed by adding tissue homogenates, sera and nasal secretions to strips coated with the previously mentioned antigens, but no autoimmune factors could be detected.

Conclusion

Based on our results from the ASST test, immunoprecipitation assay and LIA, there is no evidence for involvement of autoreactivity in pathogenesis of nasal polyposis.

Endonasal endoscopic tumor surgery at the anterior skull base

U. Bockmühl¹

¹ Dept. of Otorhinolaryngology Head and Neck and Facial Plastic Surgery, Klinikum Kassel, Kassel, Germany

Abstract: ERS-0923

Objectives

Malignant sinonasal and anterior skull base tumors account for approximately 3 to 6% of all head and neck malignancies. In this lecture, our experience with the endonasal endoscopic and/or microscopic approach to anterior skull base lesions is described and long term results will be presented.

Methods

Retrospectively, 151 sinonasal malignancies were evaluated, 61 were removed purely endonasally whereas 90 tumors were resected via conventional external approaches. Demographic data, histopathology, extent of tumor involvement, and type of surgical approach were determined. Disease-specific survival, recurrence free and metastases free survival were calculated using Kaplan-Meier analysis. Multivariate Cox proportional hazards regression models were used to identify independent prognostic markers.

Results

The 5-year disease-specific survival rate of the entire study cohort was 67%. In the group of patients whose lesions were removed endonasally the 5-year disease-specific survival rate was 72% compared to 60% in the group of external tumor resection. Concerning the entire tumor group pT stage, histological tumor type, type of disease, status of surgical margins as well as infiltration of the orbit, brain and/or sphenoid sinus have been shown to be of statistical significance for patient prognosis.

Conclusion

Our data show that endonasal surgery offers an effective treatment modality for sinonasal malignancies with insignificant morbidity yielding survival rates that are comparable with traditional external approaches.

Antiadhesive effect of hyaluronic acid/ carboxymethylcellulose sheath in an animal adhesion model

E. Lee¹, J. Kim¹, K. Kim¹

¹ Department of Otorhinolaryngology, Gangnam Severance Hospital Yonsei University College of Medicine, Seoul, Korea

Abstract: ERS-0924

Session: CRS Basic 2

Session Time: 24-06-14, 14:25

Location: Hall G

Chair person: R. Moesges

Presenting author: E. Lee

Objectives

After the endoscopic sinus surgery, the most frequent complication is an adhesion occurring at 7.6%-38% of the surgery. Therefore, we were to determine the antiadhesive effect of hyaluronic acid/carboxymethylcellulose (HA/CMC) sheath in a rat model imitating adhesion after surgery.

Methods

Iatrogenic adhesion was induced on bilateral nasal cavity of 20 male Sprague-Dawley rats. They were applied with HA/CMC sheath within unilateral nasal cavity, and no measure was taken on the contralateral side for the control. The rats were killed at 1, 2, and 4 weeks after the procedure, and were examined under light microscope for histological evidence of adhesion such as hematoxylin & eosin staining and Masson's trichrome staining.

Results

Number of adhesion formation in experimental group with HA/CMC sheath was significantly less than control group ($p=0.013$). The longest cross-section length of adhesion was measured to compare the degree of adhesion in HA/CMC group with that of control group. HA/CMC group showed shorter cross-section length of adhesion than control group ($p=0.044$). The period between the procedure and histological examination showed no statistical significant effect on adhesion formation and degree of adhesion.

Conclusion

Present study demonstrates that HA/CMC sheath has antiadhesive effect on sinonasal animal model, and suggests its potential clinical appliance in endoscopic sinus surgery patients.

Clinical study of 56 cases of sinonasal inverted papilloma

S. Ito¹, K. Ikeda¹

¹ Otorhinolaryngology, Juntendo University, Tokyo, Japan

Abstract: ERS-0925

Session: Skull base surgery 4

Session Time: 26-06-14 11:30

Location: Hall G

Chair person: E. Wright

Presenting author: S. Ito

Objectives

Inverted papilloma (IP) is the most common benign epithelial tumor in the sinonasal region and represents 0.5 % to 4% of all sinonasal tumors. IP is known for local aggressiveness, associated malignancy, high rate of recurrence and tendency to multicentricity. Surgery is the gold standard in the management of IP. In the past decade there especially has been a trend toward the use of endoscopic surgical techniques in the management of these tumors, in contrast to the extensive open procedures recommended previously. Now a number of institutions used the concept of including the attachment site in the endoscopic resection. We analysed surgical data from 56 cases of IP.

Methods

This study provides a retrospective evaluation 56 cases of IP from 2004 to 2013 at our institution. There were 47 males and 9 females, with an age ranging between 25 and 81 years.

Results

All patients had been treated by surgical procedure. 44 patients had a first treatment and 12 patients had a history of previous nasal surgery. According to Krouse's staging system 44 new treatment patients were classified as T1 in 3 cases, T2 in 27 cases, T3 14 cases. Recurrences were noted in 3 cases. Of the 56 cases, 52 patients were resected with purely endoscopic technique included endoscopic medial maxillectomy, and 3 patients were resected with open procedure included medial maxillectomy.

Conclusion

In this group of patients, the overall recurrence rate was 5%. This recurrence rate was lower than another institutions. Our experience suggests the importance of first surgery for complete tumor resection.

Long-term experiences in the therapy of nasal sinus plasma cells tumors

G. De Bonnecaze¹, S. Vergez¹, B. Vairel¹, E. Uro-Coste², E. Serrano²

¹ ENT Head and Neck Surgery, CHU Toulouse Rangueil-Larrey, Toulouse, France

² Pathology Department, CHU Toulouse Rangueil-Larrey, Toulouse, France

Abstract: ERS-0926

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:40

Location: Hall H

Chair person: P. Nicolai

Presenting author: G. De Bonnecaze

Objectives

Extramedullary plasmacytoma (EMP) are rare tumors that can arise in the paranasal sinus cavities. They can be associated with the presence or the future development of multiple myeloma.

Methods

We retrospectively reviewed 12 cases of nasosinusal plasmacytoma from 1999 to 2011. We discussed about the diagnosis and classification of these tumors, the different options of treatment and evolution of these cases.

Results

Our clinical data included 8 males and 4 females with a mean age of 68 years old. The diagnosis was first made by a clinical and a radiological suspicion of a malignant nasosinusal tumor. The investigation was always completed by a biopsy. Eight patients had a local disease at the time of diagnostic: In five cases, a complete surgical removal of the mass followed, two patients benefited of a "debulking" surgery and the last patient had only a biopsy. Radiotherapy has been used in seven of these patients. Four patients had a systemic diffuse disease at the time of diagnosis and chemotherapy has been used. The mean follow up time was 45 months (12-112 months). There were two local recurrences of the disease. Both patients were treated with radiation therapy. There was one regional recurrence in lymph nodes and two death related to a disseminated disease.

Conclusion

A complete biological and radiological assessment is essential to distinguish an EMP with a multiple myeloma. Radiotherapy is the treatment of choice of EMP, reserving surgery in cases of larges, symptomatic tumors or in small ones that can be managed with free margins.

Endoscopic removal of a huge keratocystic odontogenic tumor in maxillary sinus

J.H. Jung¹, Y.I. Chun², H.J. Roh¹, K.S. Cho²

¹ Otorhinolaryngology, Pusan National University Yangsan Hospital, Yangsan-si Gyeongnam, Korea

² Otorhinolaryngology, Pusan National University Hospital, Busan, Korea

Abstract: ERS-0927

Objectives

Keratocystic odontogenic tumor is derived from the proliferation of residues of the dental lamina. Keratocystic odontogenic tumors have high recurrence rate from 0% to 62%, depending on the locations and types of treatment. The controversy still exists about treatment methods ranging from simple curettage to highly invasive en bloc resection. Furthermore, there is no consensus on the most effective surgical technique. We report the first case of removal via endonasal endoscopic approach for a huge, expansile keratocystic odontogenic tumor in the maxillary sinus extending to contralateral central incisor.

Methods

A 28-year-old woman presented with slow-growing hard palate mass and left-sided toothache for 8 months. CT scan revealed a large expansile unilocular cystic mass with a thin bony septum in the left maxillary sinus extending to contralateral central incisor and bony defect on the hard palate. Considering patient's age and postoperative morbidity, surgical access for removal of the cystic mass was gained via an endonasal endoscopic approach under general anesthesia.

Results

An endoscopic examination and CT performed 5 years postoperatively showed no evidence of recurrence.

Conclusion

An endonasal endoscopic surgery for KCOTs (keratocystic odontogenic tumor) appears to be a simple and highly effective surgical technique with low morbidity for the treatment of patients with KCOTs in the maxillary sinus extending to contralateral central incisor.

Epidemiological, clinical diagnostic and treatment aspects of fungal rhinosinusitis: a 5-year retrospective analysis

J. Semjonova¹, K. Peksis²

¹ Department of Otorhinolaryngology, The University of Latvia, Rezekne, Latvia

² Department of Otorhinolaryngology, The University of Latvia, Riga, Latvia

Abstract: ERS-0928

Session: Fungal sinusitis

Session Time: 24-06-14, 10:10

Location: Hall G

Chair person: R. Kamel

Presenting author: J. Semjonova

Objectives

To investigate the incidence, epidemiology, clinical status, diagnosis and treatment of fungal rhinosinusitis in the clinic "Headline".

Methods

Research is based on a retrospective study. Information was taken from the archive medical records and questionnaire of patients who were made functional endonasal or radical sinus surgery during the period from 2009 to 2013 year due to fungal rhinosinusitis.

Results

Totally 109 sinus surgery were performed. 16.5% were made because of fungal rhinosinusitis. Average age - 41 years. 72% - female, 28% - male. Patients complaints: nasal obstruction (67%), nasal discharge (50%), facial pressure/headache (28%), olfactory disorders (28%). In all cases the disease was localized in one sinus. 61% of cases involved the left, 39% right maxillary sinus. 14 patients had nasal septum deviation, eleven had polyps. 5 patients previously had teeth extraction, three a radical sinus surgery, two long-term corticosteroid therapy, one had endodontic procedure. Computer tomography data: total non-homogeneous obliteration of nasal sinus in all patients, obliteration of osteomeatal complex in 9 patients, metallic density areas in 3 patients, calcifications in 2 patients. 72% of patients received functional endonasal and 23% radical sinus surgery. None of the patients within 5 years had a recurrence.

Conclusion

The highest incidence of fungal rhinosinusitis was observed in 2013 year (26.7%). The main potential risk factor was previously done dental surgery. The clinical presentation of fungal rhinosinusitis is non-specific. Typical radiological findings are complete obliteration of nasal sinus with non-homogeneous mass, obliteration of osteomeatal complex, metallic density areas. The main method of therapy is surgical treatment.

Nasal mucosa biopsy in severe asthma patients as a tool for the prediction of the inflammatory changes in lower airways

V. Hrabé¹, O. Ruzickova-Kirchnerova², I. Malkusova³, M. Terl², P. Panzner⁴, J. Kuntscherova⁵

¹ Dept.of Otorhinolaryngology, University Hospital, Plzen, Czech Republic

² Dept.of Pneumology, University Hospital, Plzen, Czech Republic

³ Dept. of Allergology and Clinical Immunology, University Hospital, Plzen, Czech Republic

⁴ Dept.of Allergology and Clinical Immunology, University Hospital, Plzen, Czech Republic

⁵ Dept of Pathology, University Hospital, Plzen, Czech Republic

Abstract: ERS-0929

Session: United airways

Location: Hall D

Time: 26-06-14 11:24

Chair person: I. Terreehorst

Presenting author: V. Hrabé

Objectives

The aim of this study was to determine the clinical usefulness of the possible relation between (semi)invasive inflammatory parameters in upper and lower airways.

Methods

30 patients with partially controlled severe persistent asthma treated by high doses of ICS combined with LABA were included for evaluation. Before and after 4 weeks of OCS treatment induced sputum (IS) and bronchoalveolar lavage fluid (BALF) cell profile were evaluated by routine staining with Hemacolor (DCC) and by immunocytochemistry (ICC), ECP concentrations in supernatant were assessed. At the same time, FENO measurement and biopsy of nasal mucosa was performed.

Results

Significant correlation was found in eosinophil counts in NM biopsy and in IS by DCC and ICC staining ($p=0.0005$, $p=0.01$ resp.). No significant correlations between eosinophil counts in NM biopsy and BALF ($p=0.06$, $p=0.26$ resp.) were observed. Significant correlation was found between eosinophil counts in NM biopsy and ECP levels in IS ($p=0.01$) and BALF ($p=0.006$). After 4 weeks of OCS treatment, decrease in eosinophil counts in IS and BALF ($p<0.0003$, $p<0.0002$) and ECP levels ($p<0.003$, $p<0.007$) and FENO ($p<0.0054$) were detected. No significant correlations between eosinophil counts in NM biopsy and FENO levels before OCS were observed.

Conclusion

The results of our study show a close correlation of the presence of eosinophilic inflammation in the nasal mucosa and (residual) eosinophilic inflammation in the bronchi which is not possible to be reliably verified by routine noninvasive methods. Combination of IS, NM biopsy, BALF and FENO examination is useful for more sensitive monitoring of inflammatory changes.

Patient outcome and mucosal histopathology after endoscopic sinus surgery and balloon sinuplasty

M. Rautiainen¹, A.J. Bizaki¹, J. Numminen¹, R. Taulu¹

¹ Otorhinolaryngology, Tampere University Hospital, Tampere, Finland

Abstract: ERS-0930

Session: Balloon sinuplasty

Time: 24-06-14, 10:06

Location: Hall G

Chair person: A. Leunig

Presenting author: M. Rautiainen

Objectives

To conduct a prospective randomized controlled trial that evaluates the effects and results of balloon sinuplasty and endoscopic sinus surgery (ESS).

Methods

Adult patients with symptomatic chronic rhinosinusitis, as documented in the sinus Computer Tomography scan and clinical exam, were randomized in 2 groups: ESS and Balloon Sinuplasty. The main variables in our study are the Sinonasal Outcome Test-22 (SNOT22), rhinomanometry and histopathology of nasal mucosa. These parameters were analysed preoperatively and at 3 months and 6 months, postoperatively.

Results

We noticed an objective improvement in the quality of life of our patients seen as a decrease in the total SNOT22 score. Both balloon sinuplasty and ESS significantly improved almost all the parameters of SNOT22 ($p < 0.05$), with no significant difference being found between these two groups ($p > 0.05$). Based on anterior rhinomanometry, nasal resistance was clearly decreased after treatment in both groups. Thickened epithelium, absence of cilia, metaplasia of epithelium, hyperplasia of mucosal glands, hyperplasia of blood vessels and increased inflammatory cells were observed in about 50% of samples. There was clear association of patients' symptoms to mucosal histopathology.

Conclusion

Both treatment methods improve the quality of life of patients and decrease nasal resistance. However, the remarkably higher material cost of balloon sinuplasty compared to ESS sets limits on its broad use. There is an obvious need for further studies to find out if, as an office procedure, balloon sinuplasty could deliver cost-savings high enough to cover the higher material cost of balloon sinuplasty.

Prevalence of inhalant allergic rhinitis in Qatari children admitted for adenoidectomy- a prospective radio allergo sorbent test (RAST) study

S. Ganesan¹, H. Al Saey¹, A. Al Bouainain², A. Larem¹, M. Magdi Hussain³

¹ ORL-HNS Section Department of Surgery, Hamad Medical Corporation, Doha, Qatar

² Immunology Section Department of Lab. Medicine & Pathology, Hamad Medical Corporation, Doha, Qatar

³ Department of Anesthesia, Hamad Medical Corporation, Doha, Qatar

Abstract: ERS-0931

Session: Pediatric rhinology

Session Time: 24-06-14, 11:50

Location: Hall H

Chair person: JB Watelet

Presenting author: S. Ganesan

Objectives

Literature evidence suggests allergic rhinitis children are more susceptible to adenoidal hypertrophy than non allergic children. The aim of the study was to determine the inhalant allergic rhinitis among Qatari children, aged 2 to 10 years, who were admitted for adenoidectomy by performing Radio Allergo Sorbent Test (RAST).

Methods

75 children, who underwent adenoidectomy operation from June 2007 to December 2010 at Hamad Medical Corporation, Doha, Qatar, were recruited prospectively. Of whom 41 (54.7%) were males and 34 (45.3%) were females, with mean age of 4.9 ± 4.5 years. Parents signed an informed consent and completed a data collection sheet. The study was approved by the ethical and research committee of the hospital. Blood samples were collected for total serum IgE and specific IgE antibodies to inhalant allergens at the time of preoperative assessment or during intravenous induction for General Anesthesia.

Results

34 (45.3%) out of 75 children had increased total serum IgE, 19 (25.3%) had positive RAST and 7 (9.3%) had both, total serum IgE and RAST positive. snoring (97.3%) was the most common symptom, followed by mouth breathing (96%), nasal blockage (81.5%), rhinorrhea (45.3%) and sneezing (14.7%). Association of nasal symptoms with total IgE and RAST results showed no statistical significance. Association of asthma (38.7%), eczema (13.3%) and family history of allergic rhinitis, asthma and eczema (41.3%) were also found not to be statistically significant.

Conclusion

Study results suggest high prevalence of allergy among Qatari children admitted for adenoidectomy to have no association with nasal symptoms.

Fungal ball within Onodi cell mucocele causing visual loss: a rare clinical entity

Y.I. Cheon¹, S.L. Hong¹, H.J. Roh¹, K.S. Cho¹

¹ Otorhinolaryngology, Pusan National University Hospital, Busan, Korea

Abstract: ERS-0932

Objectives

Mucocele is a benign, expansile, cyst-like lesion of the paranasal sinuses that is filled with mucoid secretions and lined by respiratory epithelium. Mucoceles involving Onodi cell, the most posterior ethmoid cell, are rare. We report the first case of fungal ball within Onodi cell mucocele causing visual loss, which was completely removed via transnasal endoscopic approach.

Methods

A 60-year-old male case study. Endoscopic examination of the nasal cavity was unremarkable. A computed tomography (CT) of the paranasal sinuses showed a dense homogenous, oval-shaped mass in the posterior ethmoid cell.

Results

A transnasal endoscopic sphenoidectomy was performed. After widening of the mucocele wall, a large amount of a yellow, purulent secretion, together with a cheesy, clay-like material suggestive of a fungal ball were found surrounding the optic nerve in an Onodi cell. Histopathological examination of the cheesy, clay-like material was consistent with an aspergilloma.

Conclusion

Although an association between a fungal ball and a mucocele is extremely rare in an Onodi cell, superimposed fungal infection of Onodi cell mucocele should be considered in the differential diagnosis of optic neuropathy caused by mucocele. Furthermore, immediate endoscopic decompression of the optic nerve and complete removal of the fungal ball should be attempted to ensure the return of normal visual function.

Assessment of epithelial innate antimicrobial factors in sinus tissue from patients with and without chronic rhinosinusitis

J. Lee¹, O. Escobar², R. Anouseyan², A. Janisiewicz¹, E. Porter²

¹ Otolaryngology-Head & Neck Surgery, Orange County Sinus Institute SCPMG, Irvine, USA

² Department of Microbiology & Immunology, California State University Los Angeles, Los Angeles, USA

Abstract: ERS-0933

Session: CRS Basic 3

Session Time: 24-06-14, 16:20

Location: Hall E

Chair person: S. Vlamincck

Presenting author: J. Lee

Objectives

Airway secretions contain endogenous antimicrobial factors which contribute to the innate host defense of the respiratory tract. Antibacterial peptides as well as host-derived lipids including cholesteryl esters have been previously detected in maxillary sinus lavage fluid. The purpose of this study is to provide evidence that such intrinsic microbicidal molecules are acutely expressed within sinus epithelia and to compare the levels of expression between patients with and without chronic rhinosinusitis (CRS).

Methods

Sinus mucosa was obtained from subjects with (19) and without (4) a history of CRS. Immunofluorescent tissue staining and RT-PCR following RNA extraction from embedded tissues were used to analyze sinus mucosa for the presence of epithelial beta-defensins (HBD-2,3,5), cathelicidin (LL-37), sterol O-acyltransferase (SOAT-1), a key enzyme in generation of cholesteryl esters, and their corresponding mRNA. Staining for human neutrophil peptide (HNP) was included as a marker for inflammation. Relative mRNA expression was determined with SYBR GREEN using ribosomal protein RPLP0 as the housekeeping gene, and specificity of PCR amplification confirmed by melt curve analysis and agarose gel electrophoresis.

Results

Immunofluorescence showed a significant increase in HNP staining between CRS versus nonCRS specimens in agreement with clinical inflammation status. HBD-3 mRNA expression, and less prominently, LL-37 and SOAT1 mRNA expression, were also elevated in CRS samples compared to controls.

Conclusion

An upregulation of multiple antimicrobial factors including increased biosynthesis of antimicrobial lipids was observed in the sinus mucosa of CRS patients. Further study is necessary to delineate whether different subtypes of CRS exhibit unique signatures of antimicrobial factors.

Respiratory syncytial virus infection of human nasal epithelial cells

K. Takano¹, T. Okuni¹, N. Ogasawara¹, K. Obata², K. Nomura¹, T. Kojima³, T. Himi¹

¹ Department of Otolaryngology, Sapporo Medical University School of Medicine, Sapporo, Japan

² Otolaryngology, Obihiro Kyokai Hospital, Obihiro, Japan

³ Department of Cell Science Research Institute of Frontier Medicine, Sapporo Medical University School of Medicine, Sapporo, Japan

Abstract: ERS-0934

Session: Pediatric rhinology

Session Time: 24-06-14, 11:35

Location: Hall H

Chair person: JB Watelet

Presenting author: K. Takano

Objectives

Respiratory syncytial virus (RSV) is the major cause of bronchitis, asthma, and severe lower respiratory tract disease in infants and young children, and primarily infects upper respiratory tract cells, mainly nasal epithelial cells. The nasal epithelium, which has a well-developed barrier regulated by tight junctions, is the first line of defense during respiratory virus infection. In this study, we investigated the detailed mechanisms of replication and budding of RSV in human nasal epithelial cells (HNECs) and the epithelial cell responses including tight junctions.

Methods

We established an RSV-infected model using hTERT-transfected HNECs.

Results

The expression, structure and barrier function of tight junction molecules claudin-4 and occludin were markedly induced together with production of proinflammatory cytokines after RSV infection. The replication and budding of RSV and the epithelial responses were in part regulated via an NF- κ B pathway. We next investigated the effect of humulone, which is the main constituent of hop bitter acids, and curcumin, which is the active ingredient of turmeric, on the replication of RSV and the nasal epithelial responses. Humulone prevented the replication of RSV and release of IL-8 and RANTES, and curcumin prevented the replication and budding of RSV and the epithelial responses in RSV-infected HNECs.

Conclusion

These findings suggest that the induction of tight junction molecules possibly contributed to budding of RSV, and that humulone and curcumin have protective effects against the replication of RSV, the virus assembly and the inflammatory responses in HNECs and may be useful biological products for the prevention and therapy for RSV infection.

Severe idiopathic epistaxis: retrospective study in a tertiary ENT center

E. Marin¹, T. Van Zele¹, J.B. Watelet¹

¹ ENT-department, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-0935

Session: Epistaxis

Session Time: 23-06-14, 11:24

Location: Hall E

Chair person: A. Swift

Presenting author: E. Marin

Objectives

Epistaxis may have many local and systemic etiological factors, but 85% of the cases are considered as idiopathic. Although epistaxis is a very important cause for emergency admission to ENT services, there are no strict clinical recommendations to guide management decisions.

The aims of this study were to define the clinical profile of patients suffering from severe idiopathic epistaxis, to provide an overview on the corresponding therapeutic options and on the clinical outcomes after intervention.

Methods

In this retrospective analysis of hospitalization files, all consecutive patients presenting spontaneous severe epistaxis and hospitalized in the University hospital of Ghent between 2005 and 2012 were included in this study. The data were collected from the Hospital Electronic Patient Database and from the patient files of their respective general practitioner.

Results

In total 125 patients were hospitalized for severe epistaxis. The number of hospitalization episodes for these patients was 158. The average age was 63,2 years with 63 % males and 37 % females. The most prevalent comorbidities were arterial hypertension (45%), myocardial ischemia (25%) and cardiac arrhythmia (19%). Of the total number of patients 52% underwent surgical intervention to control the epistaxis. The overall mortality over 5 years in this group was 18%.

Conclusion

This study confirms the high prevalence of cardio-vascular comorbidities in patients suffering from severe idiopathic epistaxis. The 5-years clinical evolution was fatal in nearly one patient on five.

Airway inflammation in nonallergic rhinitis patients without asthma

Y. Xie¹, B. Liu¹, R. Huang², J. Xie¹, W. Luo¹, R. Chen¹, D. Xu³, Q. Chen¹, N. Zhong¹, K. Lai¹

¹ China Clinical Research Center of Respiratory Disease, State Key Laboratory of Respiratory Disease, Guangzhou, China

² Department of Pathology, Guangzhou Medical University, Guangzhou, China

³ Department of Respiratory Disease, Fourth Affiliated Hospital of Guangzhou Medical University, Guangzhou, China

Abstract: ERS-0936

Session: Rhinitis basic

Session Time: 24-06-14, 12:25

Location: Hall G

Chair person: TBC

Presenting author: Y. Xie

Objectives

Whether patients with nonallergic rhinitis (NAR) has the airway inflammation resembling allergic rhinitis is uncertain. Our aim is to investigate the characteristics of airway inflammation and the impact of upper airway inflammation on lower airway in nonallergic rhinitis patients.

Methods

Peripheral blood routine, fractional exhaled nitric oxide (FeNO), nasal lavage, lung function test, methacholine challenge test and induced sputum test were performed in 146 patients with nonallergic rhinitis, 252 patients with allergic rhinitis (AR) and 123 non-atopic healthy controls (HC).

Results

Eosinophilia in induced sputum samples was observed in 0.83% of HC group, however, was observed in as high as 31.25% of AR group and 10.64% of NAR group (all $P < 0.01$). FeNO value was increased in 36.27% of AR group, 15.56% of NAR group and 5.81% of HC group (all $P < 0.05$). The percentage of eosinophilia in nasal lavage is highest in AR group, followed by NAR group and HC group (47.37% vs 17.36% vs 5.69%, all $p < 0.01$). Eosinophilia in peripheral blood existed in 2.78% of patients with NAR, 6.12% of patients with AR and 0.81% of HC (AR vs HC, $P < 0.05$). In NAR group, 3.42% of subjects showed BHR, which is significantly lower than that of AR group (10.32%) and is markedly higher than that of HC group (0%). Eosinophilia in nasal lavage and induced sputum sample tended to coexist in subjects with rhinitis.

Conclusion

Nonallergic rhinitis patients without asthma can also have airway inflammation resembling to allergic rhinitis. It may be the main cause of some nonallergic rhinitis patients will develop into asthma.

Retrospective analysis of revision cases in endoscopic sinus surgery

F.M. Egro¹, L. Masterson¹, J. Bewick¹, C. Philpott¹

¹ Department of Ear Nose & Throat, James Paget University Hospital, Gorleston-on-Sea, United Kingdom

Abstract: ERS-0937

Session: Management of CRS

Session Time: 24-06-14, 16:45

Location: Hall J

Chair person: A. Kjeldsen

Presenting author: F.M. Egro

Objectives

The national Sinonasal Audit demonstrated that up to 20% of patients undergoing endoscopic nasal polypectomy with or without sinus surgery, underwent revision surgery within 5 years. This presents a burden of revision surgery to the health care system. The aim of this study was to reflect on the common findings and causes of failure in patients with CRSwNPs undergoing revision endoscopic sinus surgery at a tertiary centre.

Methods

A retrospective review of all patients who underwent revision ESS between January 2011 and December 2013 was performed.

Results

A total of 75 patients underwent revision sinus surgery using image guidance. Only one of the patients had had a frontal sinusotomy, 64% (n=48) had residual uncinat process(es), 47% (n=35) had a maxillary antrostomy not based on the natural ostium of the maxillary sinus, 29% (n=22) had an oversized antrostomy, 35% (n=26) had middle turbinates resected, 15% (n=11) had middle meatal stenosis, 29% (n=22) had synechiae, 13% (n=10) had osteitic bone requiring drilling, and 17% (n=13) had septal perforation. The percentage of revision cases of all sinus surgery was 28% (75 out of 272).

Conclusion

This study demonstrated a number of frequent errors encountered in revision surgery and may suggest a need for improvement in training in ESS as well as highlighting the burden that surgical failures present to the health care system.

Comparison between multidetector computed tomography and drug-induced sleep endoscopy for the evaluation of upper airway obstruction

S. Heo¹, H. Jo¹, C. Park¹, J. Kim¹

¹ Otorhinolaryngology, Kyungpook National University, Daegu, Korea

Abstract: ERS-0938

Session: Snoring and OSAS

Location: Hall G

Time: 23-06-14, 16:36

Chair person: M. Ravestloot

Presenting author: S. Heo

Objectives

Dynamic multidetector computed tomography (MD-CT) and drug-induced sleep endoscopy (DISE) are valuable methods to determine the obstruction site of the upper airway in patients with obstructive sleep apnea (OSA). The aim of the present study was to compare MD-CT and DISE for the evaluation of upper airway obstruction.

Methods

Thirty-eight patients diagnosed with OSA were prospectively enrolled for this study. They underwent both MD-CT and DISE to identify the pattern of upper airway obstruction. Midazolam was used to induce sleep for both tests. MD-CT was performed for about 3 min and DISE for 20 min. The findings were compared to determine the level of agreement between the tests.

Results

MD-CT and DISE showed a fair agreement in the obstruction of velum anteroposterior and epiglottis (weighted κ values, 0.25 and 0.37, respectively), moderate agreement in the obstruction of velum lateral and lateral wall of oropharynx (weighted κ values, 0.41 and 0.56, respectively), and good agreement in the obstruction of tongue base (weighted κ values, 0.80). The agreement increased when MD-CT was compared to the DISE findings observed for an initial 3 minute.

Conclusion

We observed a favorable agreement between MD-CT and DISE. Since MD-CT cannot be performed for a long duration due to radiation exposure, difference of evaluation time inevitably exists and it decreased the level of agreement between the tests. Therefore, DISE is competitive method to MD-CT for determining obstruction site in obstructive sleep apnea patients.

Use of paper filter discs for measurement of local biomarkers of nasal mucosal inflammation

M. Berings¹, L. Calus¹, L. Devuyst¹, T. Van Zele¹, N. De Ruyck¹, C. Bachert¹, P. Gevaert¹

¹ Upper Airway Research Laboratory, Ghent University, Ghent, Belgium

Abstract: ERS-0939

Session: Rhinitis basic

Session Time: 24-06-14, 11:45

Location: Hall G

Chair person: TBC

Presenting author: M. Berings

Objectives

Allergic rhinitis (AR) is characterized by an important local mucosal inflammation. Therefore, we aimed to measure different biomarkers of inflammation in nasal secretions collected by means of paper filter discs in AR patients in comparison to controls. The purpose of this study was to evaluate the suitability of this approach for use in future clinical trials.

Methods

Nasal secretions from 12 patients with AR to grass pollen and 12 healthy controls were collected. Two pre-weighed filter discs were placed bilaterally on the anterior third of the nasal septum. Five minutes later, they were removed and weighted again. After adding 2 ml 0,9% NaCl solution and centrifugation, the nasal secretions were stored at -20°C until analysis. Total IgE, grass pollen specific (gx3) IgE, total IgG, IgG4 and tryptase were measured.

Results

In nasal secretions of AR patients, significant higher levels of total IgE (43.13[2.83-75.36] vs 1.66[1.66-3.21] kU/l; P=0.006), gx3 IgE (14.11[2.30-24.56] vs 1.66[1.66-1.66] kU/l; P=0.001) and tryptase (33.67[8.28-85.07] vs 8.28[8.28- 8.28] µg/l; P=0.032) were found compared to controls. Total IgG levels (182.62[86.04-314.56] vs 256.17[192.67-457.25] mg/l; P=0.288) and levels of IgG4 were rather similar in both groups (12.87[4.79-53.48] vs 16.75[3.36-33.26] mg/l; P=0.833).

Conclusion

We were able to measure different biomarkers of mucosal inflammation in nasal secretions collected by means of paper filter discs. As this approach is non-invasive, and as –in this small sample– patients with AR had higher levels of total IgE, specific IgE and tryptase compared to healthy controls, this method seems to be suitable for monitoring local mucosal inflammation in allergic rhinitis.

In human nasal epithelial cells after respiratory syncytial virus infection, matrix metalloproteinase-10 is markedly induced

S. Hirakawa¹, T. Kojima², K. Obata³, T. Okabayashi⁴, S. Yokota⁵, K. Nomura³, O. Toshimasa⁶, J. Fuchimoto⁷, T. Himi³, H. Tsutsumi⁸, N. Sawada⁷

¹ Department of Pediatrics, Urakawa Red Cross Hospital, Urakawa-gun'urakawachou, Japan

² Department of Cell Science, Research Institute of Frontier Medicine Sapporo Medical University School of Medicine, Sapporo, Japan

³ Department of Otolaryngology, Sapporo Medical University School of Medicine, Sapporo, Japan

⁴ Research Institute for Microbial Diseases, Osaka University, Suita, Japan

⁵ Department of Microbiology, Sapporo Medical University School of Medicine, Sapporo, Japan

⁶ Department of Pediatrics, Tama-Hokubu Medical Center, Higashimurayama, Japan

⁷ Department of Pathology, Sapporo Medical University School of Medicine, Sapporo, Japan

⁸ Department of Pediatrics, Sapporo Medical University School of Medicine, Sapporo, Japan

Abstract: ERS-0940

Session: Pediatric rhinology

Session Time: 24-06-14, 11:20

Location: Hall H

Chair person: JB Watelet

Presenting author: S. Hirakawa

Objectives

Respiratory syncytial virus (RSV) is an important pathogen of rhinitis, acute otitis media and severe lower airway disease in children. Matrix metalloproteinases (MMPs) play key roles in viral infection, inflammation and remodeling of the airway. The nasal epithelium is the first line of defense against respiratory virus infection. However, the roles and regulation of MMPs in human nasal epithelial cells (HNECs) after RSV infection remain unclear.

Methods

An RSV-infected model of HNECs in vitro was used and microarray analysis was performed. Expression of MMPs was confirmed by PCR and ELISA. Some cells were pretreated with various inhibitors of signaling pathways before RSV infection.

Results

It was found that mRNA of MMP-10 was markedly increased in HNECs after RSV infection, together with induction of mRNAs of MMP-1, -7, -9, and -19. The amount of MMP-10 released from HNECs was also increased in a time-dependent manner after RSV infection as was that of chemokine RANTES. The upregulation of MMP-10 in HNECs after RSV infection was prevented by inhibitors of NF- κ B and pan-PKC with inhibition of RSV replication, whereas it was prevented by inhibitors of JAK/STAT, MAPK and EGF receptors without inhibition of RSV replication. In lung tissue of an infant with severe RSV infection, MMP-10 was expressed at the apical side of the bronchial epithelial cells and alveolar epithelial cells.

Conclusion

In conclusion, MMP-10 was markedly induced and released in HNECs after RSV infection and was regulated via distinct signal transduction pathways. MMP-10 may play an important role in the pathogenesis of RSV diseases.

Questionable effect of a cross-hatching incision in septoplasty

J. Kim¹, S. Heo¹, C. Park¹

¹Otorhinolaryngology-Head and Neck surgery, Kyungpook National University Hospital, Daegu, Korea

Abstract: ERS-0941

Session: Septal Surgery and Turbinate Reduction

Session Time: 26-06-14 11:20

Location: Hall F

Chair person: S. Carrie

Presenting author: J. Kim

Objectives

Cross-hatching incision has been considered a useful method for correcting cartilaginous septal deviation. The aim of this study was to determine the usefulness and limitations of cross-hatching incision in septoplasty.

Methods

The study included 353 patients who underwent septoplasty performed by a senior surgeon between January 2004 and December 2010. Patients were classified into 2 groups according to whether cross-hatching incision was performed (n = 151) or not (n = 202) during septoplasty. Techniques of septoplasty, except for the cross-hatching incision, were identical. The parameters of surgical success (improvement of nasal obstruction, correction of deviation, and acoustic rhinometry results) and adverse effects were compared between the groups.

Results

There were no significant differences in the parameters of surgical success between the groups (improvement of nasal obstruction, $P = 0.333$; correction of deviation, $P = 0.608$; acoustic rhinometry results, $P = 0.322$ for difference in minimal cross-sectional area, $P = 0.919$ for difference in volume). Patients who underwent cross-hatching incision showed a significantly higher incidence of saddle nose (4/151 vs 0/202 cases, $P = 0.033$) and overcorrection (5/151 vs 0/202 cases, $P = 0.014$) compared to patients who did not undergo the technique.

Conclusion

Cross-hatching incision during septoplasty did not produce better surgical outcomes; however, it caused adverse effects such as saddle nose and overcorrection. Therefore, the use of cross-hatching incision should be reevaluated.

The association between bacterial colonization and cytokine profile in Belgian patients with chronic rhinosinusitis with nasal polyps

I. Sintobin¹, G. Holtappels¹, K. Van Crombruggen¹, C. Bachert¹

¹ URL, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-0943

Session: Microbiology in rhinosinusitis 2

Time: 23-06-14, 14:00

Location: Hall J

Chair person: C. Hopkins

Presenting author: I. Sintobin

Objectives

Staphylococcus aureus (*S. aureus*) has been implicated in the development and aggravation of chronic rhinosinusitis with nasal polyps (CRSwNP). We aimed to determine whether the cytokine profile in nasal polyp tissue was associated with the presence of *S. aureus* and other frequently cultured bacteria.

Methods

We included 77 samples nasal polyp tissue, harvested during routine surgery for CRSwNP (according to EPOS 2012-criteria). Bacteria present in the tissue were identified by matrix-assisted laser desorption – time of flight (MALDI-TOF). Different cytokines were determined in the tissue by Luminex. Group comparisons were performed by Mann-Whitney and Kruskal-Wallis tests.

Results

In the majority of nasal polyp samples (56.6%), exclusively gram-positive bacteria were detected. *Staphylococcus epidermidis* (48.1%) and *S. aureus* (40.3%) were the most common species, being present simultaneously in 10 samples. Unique presence of gram-negative bacteria is seen in 19.7% of the samples, with *Escherichia coli* as the most common gram-negative species (11.3%). The presence of *S. aureus* was associated with a significantly higher IL17-concentration in comparison with *S. aureus*-negative samples (19.4 pg/ml vs. 4.6 pg/ml, $P < 0.001$). The presence of specific IgE to *staphylococcal* enterotoxins, in contrast, was associated with significantly higher IL5- and ECP-concentrations (270.4 pg/ml vs. 64.7 pg/ml, $P = 0.007$ and 13185.6 mg/l vs. 5460.1.6 mg/l, $P = 0.008$, respectively).

Conclusion

The majority of bacteria typically found in Belgian nasal polyps is gram-positive. The presence of *S. aureus* is associated with an IL17-response. However, when there is an immune reaction against staphylococcal enterotoxins the cytokine profile changes and is dominated by the Th2-specific cytokines IL5 and ECP.

Outcomes after surgery in respiratory epithelial adenomatoid hamartomas of the olfactory cleft

E. Mouchon¹, A. Al Hawat¹, G. De Bonnecaze¹, S. Vergez¹, E. Serrano¹

¹ ORL department, Larrey University Hospital, Toulouse, France

Abstract: ERS-0944

Session: Benign tumours

Session Time: 25-06-14, 11:42

Location: Hall H

Chair person: R. Harvey

Presenting author: E. Mouchon

Objectives

Respiratory Epithelial Adenomatoid Hamartomas (REAH) is an entity that has been recently described in the literature. This lesion is located in the olfactory cleft. REAH may be isolated or associated with sinonasal polyposis. The combination of CT Scan and the endoscopic appearance allow to suspect the diagnosis.

The objective is to report the functional outcomes of respiratory epithelial adenomatoid hamartoma surgery.

Methods

This is a retrospective study, performed in a single tertiary referral center. Twenty-seven patients who underwent functional endoscopic sinus surgery for nasal polyps between 2006 and 2013 with a definitive histological diagnosis of REAH of the olfactory cleft were included. Clinical, demographic, operative and postoperative data were collected. Functional impairment was assessed by questionnaires for olfactory disorders and nasal obstruction (NOSE survey).

Results

The Male to Female ratio was 2.8 with a mean age of 55.9 years. Half of the patients had a history of previous sinus surgery. The most common symptom was olfactory disorder. When hamartomas were associated with sinonasal polyposis, the main complaint was nasal obstruction followed by hyposmia. Postoperatively only two patients still complained of nasal obstruction (7%) while thirteen (48%) of olfactory disorders. Of these thirteen patients, eleven mentioned an improvement in their olfactory symptoms and two remained anosmic (7%).

Conclusion

Awareness of REAH of the olfactory cleft and histopathological recognition are fundamental. When there is a strong clinical suspicion, surgery of the olfactory cleft can be very effective in limiting their recurrence, but is accompanied by an imperfect resolution of odor complaints in almost half of cases.

Nasal histoplasmosis: a case report

T. Thanasumpun¹, K. Loharamtaweethong², P. Batra³

¹ Otolaryngology-Head and Neck Surgery, Faculty of Medicine Vajira Hospital, Bangkok, Thailand

² Anatomical Pathology, Faculty of Medicine Vajira Hospital, Bangkok, Thailand

³ Otorhinolaryngology-Head and Neck Surgery, Rush University Medical Center, Illinois, USA

Abstract: ERS-0945

Objectives

To report the rare case.

Methods

Describe one case report.

Results

A 53 year old female Thai patient noticed a small ulcer arising on the base of left nasal ala in August 2011. The ulcer disappeared within a few days without taking any medications. In November 2011, the mega big flood happened throughout the most region of Thailand, she had to help her relatives by moving many household gadgets. Unfortunately, the dirty water splashed on her face. Afterward, the mass returned in the same location of her previous ulcer and had significant growth resulting in nasal obstruction and intermittent bleeding. The patient presented at Otolaryngology clinic with intense local pain, redness, and crusting over the lesion. The whole mass was immediately excised in the ambulatory clinic and sent for pathologic analysis. GMS stained revealed colony of small budding yeasts consistent with histoplasma. The patient came back to the ENT clinic in two weeks; the surgical site still inflamed with mild tenderness. Oral and topical antibiotics plus NSAIDs were prescribed for 2 weeks but the symptoms did not improve. The second opinion was obtained from infectious disease doctor who initiated therapy with intraconazole 200 mg twice daily. The appearance of nasal lesion rapidly improved after utilizing the oral antifungal for a few weeks. A total of 3-month course was completed with no elevation of liver enzymes. Eventually, the patient responded well with complete resolution of lesion and overall symptoms over 12 months follow-up period.

Conclusion

Histoplasmosis is a rare condition that need specific treatment.

A SINGLE INCISION FOR HARVESTING CONCHAL CARTILAGE AND TEMPORAL FASCIA IN DCF GRAFTS

S. VASANI¹, R. ANMOLSINGH¹, N. FODEN¹, C. EAST¹

¹ENT, ROYAL NATIONAL THROAT NOSE AND EAR HOSPITAL, LONDON, UNITED KINGDOM

Abstract: ERS-0946

Objectives

Rhinoplasty surgery using diced cartilage grafts has been modified several times since its inception. Erol's Turkish delight technique describes insertion of diced cartilage wrapped in Surgicel. However Daniel and Calvert reported that graft absorption frequently ensued. Daniel et al therefore recommended the use of a deep temporal fascia wrapper instead of Surgicel. We discuss this technique in further detail.

Methods

We illustrate the technique of DCF grafts with pictures and video, and add to the presentation our new single postauricular incision technique for harvesting both conchal cartilage and temporalis fascia.

Results

We illustrate the beneficial results obtained with pre operative and post operative photographs of patients who have undergone the procedure with our technique. We demonstrate a video of the technique.

Conclusion

We wish to add to the current practice of diced cartilage with fascial grafting by offering this modified incision technique. We believe this is a useful and worthwhile adaptation.

5 years experience with ZX8 polydioxone plate in reconstructive septorhinoplasty

C.A. East¹, V. Sarju¹, [R. Anmolsingh](#)¹

¹ENT, Royal National Throat Nose and Ear Hospital, London, United Kingdom

Abstract: ERS-0947

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:00

Chair person: K. Patel

Presenting author: R. Anmolsingh

Objectives

Synthetic materials are an alternative to autologous tissue when reconstructing the nasal septum. We have found the use of perforated polydioxanone foils (ZX8) particularly useful in the correction of complex septal deformity.

Methods

We present the results of an audit of the past 5 years use of ZX8 foil, analysing both its uses and results.

Results

33 cases in total.

Mean follow up 18 months (range 12-37 months)

Average age 34.8 (range 17 - 80 years)

6 patients also had conchal cartilage grafting and 1 patient had concomitant costal cartilage graft insertion.

10 patients had septal perforation repair. Perforations ranged from 5mm to 25mm in maximum diameter.

15 cases were revision procedures with 14 having had failed primary surgery at other centres. Nine primary cases were traumatic and 3 had previous history of cocaine use.

1 septal perforation repair failed and elected not to have further surgery. The other 9 cases of perforation repair were successful.

Of the remaining 23 cases, 21 had successful cosmetic and functional outcomes as assessed by patient satisfaction and comparison of pre and post operative photographic evidence. 2 required further minor revisions.

Conclusion

The use of ZX8 PDS foil is safe and effective in cases of complex nasal reconstruction. Rates of infection are low and longevity and acceptability of results is high. We thoroughly recommend its use.

Correlation of preoperative computerised tomography of paranasal sinuses findings versus intraoperative endoscopic findings in chronic rhinosinusitis

J. Chaturvedi¹, R.C. Nayar¹

¹ Otorhinolaryngology, St. John's Medical College Hospital, Bangalore, India

Abstract: ERS-0948

Session: Imaging

Session Time: 25-06-14, 11:35

Location: Hall G

Chair person: N. Freling

Presenting author: J. Chaturvedi

Objectives

The options available for preoperative disease delineation

prior to Functional Endoscopic Sinus Surgery (FESS) are X-Ray of the paranasal sinuses (PNS), Computerised Tomography of the PNS or MRI. Computerised Tomography (CT) of the Para Nasal Sinuses is the modality of choice for pre operative evaluation as it provides an accurate display of the anatomy of the sinonasal system. However CT scans are less reliable with respect to soft tissue lesions. This study aims to evaluate the correlation between preoperative CT PNS and postoperative endoscopic findings with reference to soft tissue details in order to determine the ideal time for advising a CT scan of the PNS prior to endoscopic surgery.

Methods

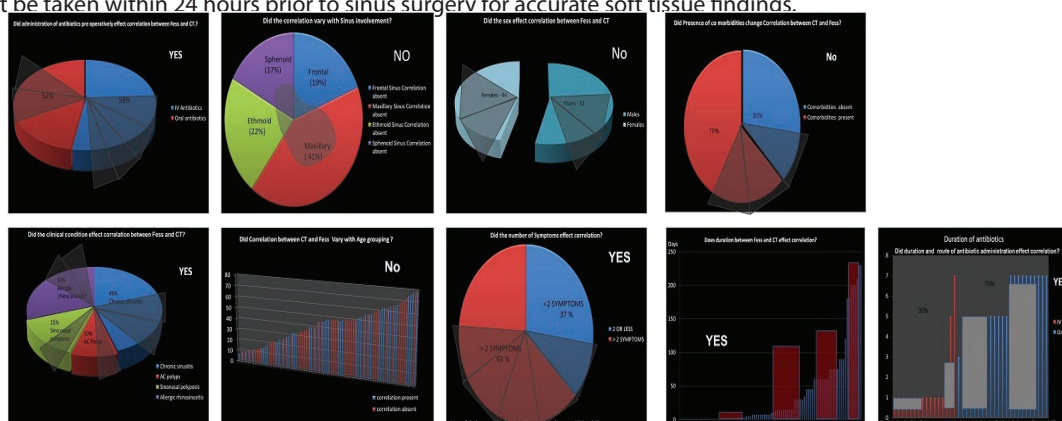
95 patients with chronic sinusitis undergoing endoscopic sinus surgery were selected over a 9 month duration from May 2013 to December 2013 for a prospective observational study. CT scans were independently assessed by radiologists who were blinded to the endoscopic findings. At the end of the surgery, endoscopic findings were compared with CT findings with reference to soft tissue lesions.

Results

Patients were aged between 7 and 79 years, mean age being 41 years. The correlation between CT findings and endoscopic findings did not vary in 62% of cases due to age, sex, sinus involved or comorbidities but varied in 38% because of number of presenting symptoms (>2), clinical condition, duration between scan and surgery, route and duration of preoperative antibiotics.

Conclusion

CT scan must be taken within 24 hours prior to sinus surgery for accurate soft tissue findings.



The differential diagnostics of hypertrophic and vasomotor rhinitis

S. Reshetnikov¹, O. Reshetnikova², V. Reshetnikov¹

¹ ENT, Clinic Of JSC Gazprom, Moscow, Russia

² Department of otorhinolaryngology, Russian Medical Academy For Postgradual Education, Moscow, Russia

Abstract: ERS-0949

Objectives

To improve the accuracy of diagnosis of hypertrophic and vasomotor rhinitis.

Methods

40 patients with nasal obstruction were examined. Questionnaire, nasal endoscopy, rhinomanometry in the vertical and horizontal positions were conducted. Rhinomanometry with decongestants was held next day again. We calculated the following indicators: functional insolvency - the difference between the results of rhinomanometry in the vertical and horizontal positions. It determines the ability of the inferior turbinate to growth. Functional reserve is the difference between the results of rhinomanometry in the upright position and after decongestants. It determines the ability of the inferior turbinate to reduction. The sum of functional insolvency and functional reserve is a functional component.

Results

19 patients with functional component less than 300 ml/sec were diagnosed "Hypertrophic rhinitis". They were underwent lateralization of inferior turbinate, osteoconchotomy. 5 patients with functional component 300-500 ml/sec had "Vasomotor rhinitis with hypertrophic phenomena". They were underwent submucous vasotomy of inferior turbinate, ultrasound or radio wave disintegration. 16 patients with functional component 500 ml/sec were diagnosed "Vasomotor rhinitis" and conducted medical therapy: topical intranasal steroids. The results were evaluated after 6 months. Only 5 patients had insufficient nasal breath.

Conclusion

The representing method may be used for hypertrophic and vasomotor rhinitis diagnostics.

The role of nasal obstruction in OSA

S. Reshetnikov¹, O. Reshetnikova², V. Reshetnikov¹

¹ ENT, Clinic Of JSC Gazprom, Moscow, Russia

² Department of otorhinolaryngology, Russian Medical Academy For Postgradual Education, Moscow, Russia

Abstract: ERS-0950

Session: OSAS

Location: Hall H

Time: 25-06-14 14:10

Chair person: N. de Vries

Presenting author: S. Reshetnikov

Objectives

To study the influence of nasal breath improvement on sleep apnea.

Methods

Respiratory monitoring with pulseoxymetry using monitor ApneaLink (ResMed, Australia) was carried out in 181 patients with snoring during the sleep in two nights before and after using pharmacological test with 0,1% solution of oxymetazoline for 30 minutes before bedtime. Improvement of nasal breath was confirmed by rhinomanometry and acoustic rhinometry. Change of intensity of sleep apnea was regarded when apnea/hypopnea index changed for 4 and more episodes per hour.

Results

Into the first night mild sleep apnea was found in 68 patients, moderate in 43, severe in 23, snoring without apnea in 47. Intensity of sleep apnea syndrome grew up in 33,1%, did not change in 34,3% and reduced in 32,6% cases after pharmacological test. 60 patients were operated for improvement of nasal breath. After 6 month respiratory monitoring with pulseoxymetry was carried out again. In all cases we got a result of improvement of nasal breath. But intensity of sleep apnea syndrome grew up in 35%, did not change in 25% and reduced in 40% cases. The change of sleep apnea after pharmacological test corresponded to the change of sleep apnea after surgery in 86,7% of cases.

Conclusion

Pharmacological test can be used to predict the changes in sleep apnea after nasal surgery. Elimination of nasal obstruction causes deterioration of sleep apnea syndrome in a part of cases.

Geriatric endoscopic skull base surgery

T. Beech¹, S. Ahmed¹, J. Matteucci¹, Z. Wyrko², A. Shad³, A. Paluzzi⁴, R. Mitchell⁴

¹ ENT, Queen Elizabeth Hospital, Birmingham, United Kingdom

² Geriatric medicine, Queen Elizabeth Hospital, Birmingham, United Kingdom

³ Neurosurgery, University Hospital Coventry and Warwickshire, Coventry, United Kingdom

⁴ Neurosurgery, Queen Elizabeth Hospital, Birmingham, United Kingdom

Abstract: ERS-0951

Session: Skull base surgery 3

Session Time: 26-06-14, 10:10

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: S. Ahmed

Objectives

The World Health Organisation (WHO) defines the “aged” population as 75 years and older. As the population’s age increases so will the number of patients in the over 75 category with skull base pathology. As age alone is not a contraindication to surgery, we aimed to assess the outcome of patients in this category.

Methods

A retrospective study of patient over the age of 75 who underwent endonasal skull base surgery since 2011 at two university centres in the Midlands. The outcomes assessed were co-morbidities, length of stay, surgical outcome and complications.

Results

There were a total of 18 patients with an age range of 75 to 86 years. Nine hypophysectomies (one for apoplexy and eight for macroadenoma affecting visual fields), two endoscopic craniofacial resection (one nasal/intracerebral sarcoma and one olfactory neuroblastoma), two Draf III procedures for mucocoeles, two extensive sphenoidotomies (one for a mucocoele and one for cholesterol granuloma of clivus), two CSF leak repairs and one clivectomy for a chordoma. There were multiple co-morbidities. The length of stay ranged from zero to fifteen days (average length of stay of five days). 17 patients have been disease free (follow up 4–38 months). There were only two post operative complications (a CSF leak and diabetes insipidus both following hypophysectomy).

Conclusion

Age itself is no longer a contraindication when offering skull base surgery. This case series shows that quite extensive skull base surgery can be performed in the older, multi-morbid population with good outcomes, minimal post-operative morbidity and a short length of stay.

Efficient utilization of skin prick test facility – 4 years review

M. Shakeel¹, I. Khan², Y.W. Chang¹, S. Keh¹, P. Ross¹

¹ Otolaryngology-head and neck surgery, Ninewells hospital University of Dundee, Dundee, United Kingdom

² Otolaryngology-head and neck surgery, Royal hospital for children Glasgow, Glasgow, United Kingdom

Abstract: ERS-0952

Session: Rhinitis clinical

Session Time: 25-06-14, 14:30

Location: Hall E

Chair person: A. Swift

Presenting author: M. Shakeel

Objectives

Aeroallergen sensitisation can be confirmed with skin prick testing (SPT) but it is a relatively time consuming and costly investigation. It is prudent that carefully selected patients are subjected to SPT and clinical acumen should help reduce inappropriate referrals for SPT. Our aims are to investigate the outcome of SPTs over 4 years period (2009-2012) in Ninewells & Stracathro hospitals. To explore any correlation between the requester and the outcome of the SPT focusing on grade of the practitioner and subspecialty interest of the consultants.

Methods

Retrospective analysis of a prospectively maintained departmental database including all patients attending for skin prick testing. Information was collected on patients' demographics and test results. We also collected information on the grade and subspecialty interest of the requester.

Results

Consecutive patients (n=692) were identified, 89.5% were adults and 10.5% were children (<15 years), with a slight female preponderance (53%). The mean age was 40 years in both males and females (range 15-83). Skin prick testing was positive in 53% (365/692) patients. The positive SPT were 54% when requested by the Rhinologists compared to 48% when requested by non-rhinologists. Also, the consultants had a slightly higher positive SPT results compared to the registrars (51% vs. 48%).

Conclusion

In our cohort, around 50% of patients subjected to SPT failed to reveal any aeroallergen sensitization. The grade and sub specialty experience of the physicians do not appear to impact the selection of patients sent for SPT. To enhance efficient utilization of Skin prick testing a better selection of patients is required.

Birmingham experience with optic nerve decompression

T. Beech¹, S. Ahmed¹, T. Matthews², A. Paluzzi³, R. Mitchell³

¹ ENT, Queen Elizabeth Hospital, Birmingham, United Kingdom

² Ophthalmology, Queen Elizabeth Hospital, Birmingham, United Kingdom

³ Neurosurgery, Queen Elizabeth Hospital, Birmingham, United Kingdom

Abstract: ERS-0953

Session: Skull base surgery 3

Session Time: 26-06-14, 10:15

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: S. Ahmed

Objectives

The aim of this case series is to examine the indication and outcome of patients treated with endoscopic endonasal optic nerve decompression in its bony canal anterior to the chiasm. There are only a small number of case series reported in the literature of this procedure being used for non-traumatic optic nerve compression.

Methods

This is a retrospective case series of patients having optic nerve decompression of the bony canal anterior to the optic chiasm at two university hospitals in the Midlands during the past 3 years. Collecting information on the indication for surgery, the pre-operative and post-operative visual acuity and any complications.

Results

There are seven cases. Three patients with skull base meningiomas, one with a sphenoid cholesterol granuloma, one with an optic nerve glioma, one with an orbital osteoma and one with angiocentric eosinophilic fibrosis. All had visual compromise prior to surgery (at best 6/18 at worst 6/60) and all had improvement of vision following surgery (at best 6/6 at worst 6/24). There was only one complication, which was an intraoperative CSF leak that was repaired endoscopically at the time of the initial surgery.

Conclusion

Optic nerve decompression in its bony canal anterior to the optic chiasm is a useful procedure for patients with optic nerve compression secondary to many causes. The risk of complications is low when performed through an endoscopic endonasal route.

Turbinoplasty for inferior turbinate hypertrophy due to craniometaphyseal dysplasia

S. Carr¹, S. Mirza¹

¹ Otolaryngology-Head and Neck Surgery, Sheffield Teaching Hospitals, Sheffield, United Kingdom

Abstract: ERS-0954

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 12:25

Chair person: S. Carrie

Presenting author: S. Carr

Objectives

Craniometaphyseal dysplasia is a rare genetic condition characterized by progressive thickening of the bones of the skull, which can lead to hypertelorism, a widened nasal dorsum and nasal obstruction. In its most severe form, it can cause cranial nerve palsies, blindness or deafness. We present the case of a child with nasal obstruction secondary to craniometaphyseal dysplasia.

Methods

A 14-year old Asian male with craniometaphyseal dysplasia was referred for upper airway congestion and loud snoring. Overnight oximetry was normal. He underwent nasendoscopy with cautery to inferior turbinates and coblation tonsillectomy for grade 4 tonsils. Nasendoscopy proved difficult, despite using a 2.7mm diameter scope. He had large bony turbinates, which could not be outfractured. No adenoids were palpable. Post-operatively, there was no improvement in his nasal obstruction. CT scan demonstrated marked hypertrophy of the inferior turbinate bones, occluding the nasal airway. Endoscopic inferior turbinoplasty was performed on the right side initially due to the potential risk of severe epistaxis, reduced morbidity and on the patient's request. Prominent turbinate bone was removed with scissors and a microdebrider.

Results

Post-operatively, he had a significantly improved nasal airway. Histopathology demonstrated pieces of bone with thick bone trabeculae and evidence of increased modeling and the marrow spaces contained loose connective tissue, characteristic of craniometaphyseal dysplasia. He subsequently underwent a left turbinoplasty with a further improvement in his nasal airway.

Conclusion

Patients with nasal congestion and craniometaphyseal dysplasia may require more aggressive treatments such as bony turbinoplasties in order to improve their nasal airway.

THE MIRZA CURVED TURBINECTOMY SCISSORS

S. CARR¹, S. MIRZA¹

¹ OTOLARYNGOLOGY-HEAD AND NECK SURGERY, SHEFFIELD TEACHING HOSPITALS, SHEFFIELD, UNITED KINGDOM

Abstract: ERS-0955

Objectives

Trimming of turbinates and turbinoplasty are performed for the treatment of turbinate hypertrophy. Complete excision of the inferior turbinate is not recommended due to the risk of haemorrhage from a branch of the sphenopalatine artery in the posterior part of the turbinate. Removal of the anterior third is usually adequate. Straight turbinectomy scissors tend to cut further posteriorly and remove more tissue than required with a resultant increase in the bleeding risk. In addition, they may also produce a poor contour to the turbinate.

Methods

We have developed a curved left and right turbinectomy scissor that achieves greater control in removing the anterior aspect of the turbinate.

Results

The anterior piece of turbinate to be removed can be more easily detached with this scissor. The procedure is therefore made more efficient and a satisfactory shape to the residual turbinate is achieved.

Conclusion

The curved turbinectomy scissor is a useful instrument for inferior turbinate procedures. It may also be employed in other nasal surgeries such as septal surgery, reducing middle turbinates and when raising a nasoseptal flap in anterior skull base reconstruction.

The burden of revision surgery in chronic rhinosinusitis with nasal polyposis – data from the UK chronic rhinosinusitis epidemiology study (CRES)

L. Masterson¹, F. Egro¹, J. Bewick¹, C. Hopkins², C. Phillpot³

¹ ENT, James Paget University Hospital, Gorleston-On-Sea, United Kingdom

² ENT, Guy's & St Thomas Hospital, London, United Kingdom

³ ENT, The University of East Anglia, Norwich, United Kingdom

Abstract: ERS-0596

Session: Epidemiology

Session Time: 25-06-14, 09:39

Location: Hall J

Chair person: R. Harvey

Presenting author: L. Masterson

Objectives

Long-term follow up of 1045 patients with Chronic Rhinosinusitis with nasal polyposis (CRSwNPs) in the national Sinonasal Audit demonstrated that at 5 years 20.6% of patients with had undergone revision surgery.

Aims: The aim of this study was to see if the CRES data reflected a continued burden of revision surgery in patients with CRSwNPs.

Methods

A prospective questionnaire based study at 30 sites around the UK of patients with CRS presenting to secondary care between October 2007 and September 2013. This paper presents a specific analysis of patients with CRS who reported undergoing sinus surgery.

Results

A total of 651 patients with CRSwNPs, 553 with CRSsNPs and 45 with AFRS, were included in the CRES. 365 (57%) of patients with CRSwNPs/AFRS reported undergoing endoscopic nasal polypectomy (ENP) in which 175 (25% or 48% of surgical cases) reported having received more than one ENP. The mean number of ENPs per patient in the revision group was 3.3 with a range of 2 to 30. Only 27.9% of patients reported concurrent endoscopic sinus surgery (n=102). For comparison, patients with CRSsNPs reported ESS in 13% of cases with only 17% of those surgical cases reporting multiple procedures (chi squared <0.001).

Conclusion

This study demonstrated a significantly higher burden of both primary and revision surgery to the health care system for patients with CRSwNPs. Extrapolation of these findings to the HES data for 2011/2 would suggest a bill of approximately £5.3 million per year spent on revision surgery.

Lobular capillary haemangioma of the inferior turbinate: a rare cause of paediatric nasal obstruction

F. Mariño Sánchez¹, O. Haag¹, M. Lopez-Chacón¹, P. Wienberg¹, S. Cardelús¹, A. Díaz¹, M.A. Clavería¹, J. Lacima¹, J. Rodriguez-Jorge¹

¹ Paediatric ENT, Hospital Sant Joan de Déu, Barcelona, Spain

Abstract: ERS-0957

Objectives

Lobular capillary haemangioma is an acquired benign vascular tumour of unknown origin. It usually affects skin or mucosa of the oropharynx. In the rare case of nasal cavity involvement it most commonly manifests as chronic obstruction of the nose with recurrent epistaxis.

Methods

We describe a case of a 13-year-old male child presenting obstruction of the right nasal cavity, on a 2 months background of recurrent anterior epistaxis and purulent discharge, after digital nasal trauma.

Results

Nasal endoscopy revealed a big red tumour attached to the anterior and middle wall of the right inferior turbinate with abundant purulent rhinorrhoea. CT scan showed an extense vascular lesion with a hipodense interior area, compatible with liquid. The differential diagnosis in this population and age group included an abscess of the inferior turbinate, a hemangiopericytoma, a turbinal hematoma, and a juvenile nasopharyngeal angiofibroma. The lesion was resected endoscopically without complications. Histological analysis confirmed the diagnosis of lobular capillary haemangioma with surgical margins free of disease. The patient had an uneventful recovery, is asymptomatic since the operation and shows no signs of recurrence during the follow-up of 8 month so far.

Conclusion

Nasal lobular capillary haemangioma should be considered in the differential diagnosis of all paediatric endonasal masses with bleeding. The treatment of choice is endoscopic surgery.

Matrix metalloproteinase-9 (MMP-9) profile in chronic rhinosinusitis with nasal polyps at ENT departement Dr. Sardjito Hospital, Yogyakarta - Indonesia

L. Lusy Indrawati¹

¹ Ear Nose and Throat, Sardjito General Hospital/ Gajah Mada University School of Medicine, Yogyakarta, Indonesia

Abstract: ERS-0958

Session: Olfaction

Location: Hall G

Time: 25-06-14, 14:00

Chair person: Baile Landis

Presenting author: L. Lusy Indrawati

Objectives

The aim of this study is to investigate matrix metalloproteinase-9's profile in chronic rhinosinusitis with nasal polyps.

Methods

This study was conducted with observational descriptive research design and consecutive sampling. The specimens of nasal polyps mucosa were obtained from 20 patients by Endoscopic Sinus Surgery. Specimens were processed for determinations of protein expression levels by immunohistochemical staining. Clinical characteristic of the patients were obtained from medical records.

Results

Sixteen samples (80%) of 20 spesimens show the profile of MMP-9 were strong positive (+++), 4 samples (20%) were mild positive (+). Patients are majority male, age 41-60 years old. Most of them did not have history of allergy or asthma.

Conclusion

Majority samples of chronic rhinosinusitis patients with nasal polyps had strong positive MMP-9 protein exprssion. Matrix Metalloproteinase-9 has significant role at many stages of nasal polyps formation and it also determines disease's severity.

Small colony variants and phenotype switching of intracellular *Staphylococcus aureus* in chronic rhinosinusitis

N. Tan¹, C. Cooksley¹, E. Roscioli¹, A. Drilling¹, R. Douglas², P.J. Wormald¹

¹ Department of Otolaryngology, University of Adelaide, Adelaide, Australia

² Department of Otolaryngology, University of Auckland, Auckland, New Zealand

Abstract: ERS-0959

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 10:24

Location: Hall J

Chair person: A. Lane

Presenting author: N. Tan

Objectives

Chronic rhinosinusitis (CRS) has been linked to the gram-negative bacteria *Staphylococcus aureus* in its biofilm or intracellular forms. Recent evidence suggests that *S. aureus* also exists in a small colony variant (SCV) form as a mechanism of altering its virulence capabilities. The aim of this study was to investigate the presence of SCVs in sinonasal mucosa of CRS patients and whether the phenomenon of phenotype switching can be applied to intracellular epithelial infections.

Methods

Sinonasal specimens were examined for the presence of intramucosal *Staphylococcus aureus* and characterised to the strain level. An airway epithelial cell culture infection model was utilised to investigate whether bacteria were capable of alterations in virulence phenotype.

Results

Intramucosal organisms harvested from sinonasal biopsies demonstrate phenotypic growth patterns and lack of coagulase activity consistent with SCVs. Intracellular infection of airway epithelial cell cultures with *S. aureus* led to decreased secretion of enterotoxins and phenotypic growth alterations consistent with SCVs

Conclusion

Regulation of *S. aureus* virulence factors is a dynamic process and exposure to the intracellular environment appears to provide the necessary conditions to enable these alterations in an attempt for the bacterium to survive and persist within host tissues. Further work is required to ascertain whether SCVs in CRS hold a clinically relevant pathogenic role in recalcitrant disease.

Intracellular *Staphylococcus aureus*: the Trojan horse of recalcitrant chronic rhinosinusitis?

N. Tan¹, A. Foreman¹, C. Jardeleza¹, R. Douglas², S. Vreugde¹, P.J. Wormald¹

¹ Department of Otolaryngology, University of Adelaide, Adelaide, Australia

² Department of Otolaryngology, Loma Linda University Medical Centre, Loma Linda, USA

Abstract: ERS-0960

Session: Microbiology in rhinosinusitis 1

Session Time: 23-06-14, 09:30

Location: Hall J

Chair person: A. Lane

Presenting author: N. Tan

Objectives

Despite recent evidence suggesting that *Staphylococcus aureus* exists within the sinonasal epithelium of chronic rhinosinusitis (CRS) patients, certain questions remain. The intracellular environment may provide a protective niche for pathogenic bacteria to evade host immunity and yet provide a reservoir for reinfection. To date, no studies have examined the impact of this bacterial phenotype; therefore this study was designed to evaluate the role of intracellular *S. aureus* on postsurgical outcomes.

Methods

This study included 51 patients undergoing endoscopic sinus surgery (ESS) for medically-recalcitrant CRS. Sinonasal mucosa harvested at the time of surgery was dually stained with fluorescent molecular probes and imaged using confocal scanning laser microscopy for biofilm and intracellular status. Patients were followed in their early and late postoperative course for evidence of ongoing disease and signs of clinical relapse.

Results

Intracellular *S. aureus* was identified in 20 of 51 (39%) patients, and all were associated with surface biofilm. Biofilm alone was found in 16 of 51 (31%) patients and 15 of 51 (29%) patients had no evidence of *S. aureus*. Intracellular positive patients had a significantly higher risk of late clinical and microbiological relapse ($p = 0.014$). In this study, biofilm status without coexisting intracellular bacteria did not appear to impact on outcomes.

Conclusion

Clinical and microbiological relapse of disease following ESS is significantly associated with intracellular *S. aureus*. Evidence suggests that this disease association is independent to surface biofilm status. Intracellular bacteria should be taken into consideration when designing novel treatment strategies to lessen the chance of reinfection.

Nose biopsy- a comparison between two sampling techniques

N. Segal¹, J. Olchowski², S. Kordeliok³, I. Plackt⁴

¹ Otolaryngology, Soroka University Medical Center, Shima, Israel

² none, Soroka University Medical Center, Beer Sheva, Israel

³ Otolaryngology, Soroka University Medical Center, Beer Sheva, Israel

⁴ Unit of Nursing Research, Soroka University Medical Center, Beer Sheva, Israel

Abstract: ERS-0961

Session: CRS miscellaneous

Session Time: 25-06-14, 14:30

Location: Hall J

Chair person: G. Adriaensen

Presenting author: N. Segal

Objectives

Intranasal lesions may represent benign as well as malignant pathologies. Several methods have been used to evaluate nasal masses like imaging and biopsy. Pre operative biopsy is important in obtaining preliminary information although was found to represent the true nature of the lesion in about 80% of the patients. The aim of the study was compare two techniques of obtaining nasal biopsy- forceps and scissors in terms of pathological results.

Methods

A prospective single blinded study. Nasal biopsies were taken from patients undergoing nasal surgery by two sampling techniques- forceps and scissors. The tissue was examined by a single senior pathologist that was blinded to the sampling method. A grading system was used to rate the crush artifact in every sample (none, mild, moderate, severe). A comparison was made between the severity of the crush artifact and the pathological results of the two techniques.

Results

Sixty samples were taken from 35 patients. 27 males, 8 females, mean age 48.6 years. The final pathological result was nasal polyps in 40 patients, chronic inflammation in 7, lymphoid hyperplasia in 3, capillary hemangioma in 1, inverted papilloma in 1. Samples taken by forceps had significantly higher grades of crush artifacts compared to those taken by scissors. The sensitivity and specificity of forceps biopsy was 82.9% and 90% respectively and for scissors 92.6% and 81.8% respectively.

Conclusion

Biopsy technique is important in evaluating patients with nasal lesions. Forceps cause significant amount of crush artifacts compared to scissors.

Active anterior rhinomanometry in detecting the patients suffering from rhinitis medicamentosa

L.J. Janosevic¹, J. Dotlic¹

¹ Clinical Center of Serbia, Medical Faculty University of Belgrade, Belgrade, Serbia

Abstract: ERS-0962

Session: Rhinitis clinical

Session Time: 25-06-14, 15:15

Location: Hall E

Chair person: A. Swift

Presenting author: L. J. Janosevic

Objectives

The goal of the study was to examine the competency of active anterior rhinomanometry in detecting the patients suffering from rhinitis medicamentosa.

Methods

The three groups of subjects were selected clinically: the first group subjects used vasoconstrictor nasal drops or spray regularly, more than once a day, more than three days per a week and longer than 3 months in a row; the second group subjects used nasal vasoconstrictors irregularly, only once a day, three days or less per a week, during a period of one to three months; the third group was a control with subjects used no vasoconstrictors for more than a year.

Air flow and resistance parameters were measured by computerized active anterior rhinomanometry in the three step procedure standardized by the authors: registration at baseline, provocation by vasoconstrictor solution and repetitive registrations 15 to 180 minutes after provocation.

Results

The typical rhinomanometric findings after nasal challenge comparing to baseline state were: in the first group significantly lower values of nasal air flow parameters and significantly higher values of nasal resistance parameters and in the second group a short period of nasal patency improvement followed by significant deterioration. In the control group no significant differences were registered.

Conclusion

We consider active anterior rhinomanometry as a method competent to detect patients with developed and developing rhinitis medicamentosa, rhinomanometrically defined as the early deterioration of nasal patency after vasoconstrictor nasal challenge.

Health-related quality of life in patients with chronic inflammatory versus malignant disease

J. Dotlic¹, L.J. Janosevic¹

¹ Clinical Center of Serbia, Medical Faculty University of Belgrade, Belgrade, Serbia

Abstract: ERS-0963

Objectives

The study objective was to assess and compare subjective opinion concerning health-related quality of life (HRQoL) in people suffering from two most important chronic ENT illnesses: chronic rhinosinusitis (CRS) and laryngeal cancer (LC).

Methods

Fifty-eight consecutive patients (22 with LC and 36 with CRS) of different education, social background, age and sex were asked to rank-order 34 opinion statements based on chronic ENT illness symptoms influence on their HRQoL. All rang-ordered Q sorts were subjected to correlation and by-person factor analysis to achieve patient groups who sorted the opinion statements into similar arrangements.

Results

Five well structured, clear and distinct accounts were identified in both populations. According to their characteristics factors in patients with LC were named as optimistic (13% of variance; 13.64% patients), pessimistic (14% of variance; 22.73% patients), social (10% of variance; 13.64% patients), symptomatic (14% of variance; 13.64% patients) and mental group (10% of variance; 36.6% patients). Isolated factors in CRS patients were named as stable and realistic (47.22% patients; 28% of variance), symptomatic (11.11% patients; 11% of variance), mental (5.56% patients; 8% variance), physical (11.11% patients; 11% of variance), and optimistic group (25% patients; 9% of variance).

Conclusion

Majority of CRS patients are relatively satisfied with their HRQoL, while LC patients are concerned about their condition. In both populations three groups who sorted the opinion statements into similar arrangements (symptomatic, optimistic and mental factor), which shows that in order to improve HRQoL we should pay more attention on illness symptoms and mental state of patients.

Computed tomography analysis of nasal region in neonates and young infants

W. Likus¹, G. Bajor¹, J. Markowski², K. Gruszczynska³, J. Baron³, D. Milka¹

¹ Department of Human Anatomy, Silesian Medical University, Katowice, Poland

² E.N.T Department, Silesian Medical University, Katowice, Poland

³ Department of Radiology and Nuclear Medicine, Silesian Medical University, Katowice, Poland

Abstract: ERS-0964

Session: Pediatric rhinology

Session Time: 24-06-14, 11:25

Location: Hall H

Chair person: JB Watelet

Presenting author: W. Likus

Objectives

Atresias of nasal cavity, especially in young children pose an essential problem in children's otolaryngology. Only a few morphometric studies of nasal cavity concerning healthy neonate and young infants without nasal stenosis are available. Multi-slice computed tomography is a perfect tool enabling a precise evaluation of anatomic structures. The aim of this study was a complex morphometric evaluation of clinically important bone and mucosal structures of nasal cavity and examination of their dependence on age and sex in children up to 3 years of age.

Methods

180 children, age range 0-3 years were divided into 5 age groups, and measurements of 18 distances between skeletal structures and between mucosal structures of nasal cavity were performed on their CT scans. A correlation between the widths of selected bone structures was examined.

Results

There were no statistically significant differences in analyzed morphometric parameters between adjacent age groups. The differences were statistically significant only between extreme age groups (0-3 months and 25-36 months). There was a correlation between evaluated structures and age.

Conclusion

Our results are a valuable supplement of nasal cavity morphometric data of young children. They may be useful in setting reference values of evaluated parameters in children and in diagnosis and planning of surgical treatment in children's otolaryngology.

Variability of choanal dimensions in children

W. Likus¹, G. Bajor¹, J. Markowski², K. Gruszczynska³, J. Baron³, D. Milka¹

¹ Department of Human Anatomy, Silesian Medical University, Katowice, Poland

² E.N.T Department, Silesian Medical University, Katowice, Poland

³ Department of Radiology and Nuclear Medicine, Silesian Medical University, Katowice, Poland

Abstract: ERS-0965

Session: Pediatric rhinology

Session Time: 25-06-14, 10:33

Location: Hall H

Chair person: P. Stjarne

Presenting author: W. Likus

Objectives

The posterior part of the nasal cavity is a clinically important area. The aim of the study was to determine normal values of the posterior part of the nasal cavity.

Methods

180 computed tomography scans of children without nasal obstructions up to 3 years of age were analyzed. The thickness of a layer of CT scans of head was 0.5 mm. The following distances were measured: width of the bony choanal aperture between both pterygoid processes, right and left posterior bony width between bone sidewall and septal mucosa, right and left posterior mucosal width between the lateral mucosa and the septal mucosa and maximal width of vomer. Children were analyzed in 5 age groups.

Results

Most of the measurements, were positively highly correlated with the age. The average size of choanal of infants in the first year of life was 17.1126 ± 1.625 mm, in the second year of life was 19.267 ± 1.470 mm, and in the third year 20.655 ± 1.538 mm, regardless of the gender. The evaluated linear dimensions did not present no statistically significant differences between two youngest age groups (0-3 months and 4-6 months). A linear relationship between age and average choanal size was 0,162 mm/month.

Conclusion

This study may be a very important complement to morphometric measurements of posterior part of the nasal cavity in children. These presented results may be clinically useful in diagnosis and planning of the treatment of children with disorders of breathing through the nose, especially in the early stages of their life.

The rate of donor and recipient site complications associated with the use of autologous costal cartilage in rhinoplasty- a systematic review

K. Varadharajan¹, M. Anwar¹, K. Patel¹

¹ Imperial Healthcare NHS Trust, St. Mary's Hospital, London, United Kingdom

Abstract: ERS-0966

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 12:20

Chair person: S. Carrie

Presenting author: K. Varadharajan

Objectives

Autologous costal cartilage remains a workhorse graft material for rhinoplasty. However, relatively little is known regarding rates of complications associated with its use. The aim of this systematic review was to determine rates of recipient and donor site complications associated with the use of autologous costal cartilage in rhinoplasty.

Methods

We conducted a comprehensive literature review in major databases to find relevant articles reporting rates of recipient and donor site complications associated with the use of autologous cartilage in rhinoplasty. These articles were then screened against inclusion/exclusion criteria, with 21 eligible studies eventually being included and analysed.

Results

The rate of pooled donor site complications was 3.2% and rate of pooled recipient site complications 11.4%. The pooled rate of pneumothorax was low (0.1%). The most common recipient site complication was warping (5.2%). The rate of other complications were as follows: donor site infection (0.6%), seroma (0.6%), donor site scarring (1.0%), severe donor site pain (0.2%), recipient site infection (2.5%) and graft displacement/extrusion (0.6%).

Conclusion

The use of autologous costal cartilage in rhinoplasty remains safe, with low rates of serious complications. However, it is associated with higher rates of minor recipient site complications such as warping.

Osteitis and chronic rhinosinusitis: a review of the current literature

A. Qureishi¹, N. Ibrahim¹

¹ Otolaryngology Head and Neck Surgery, Northampton General Hospital, Northampton, United Kingdom

Abstract: ERS-0967

Session: Imaging

Session Time: 25-06-14, 11:55

Location: Hall G

Chair person: N. Freling

Presenting author: A. Qureishi

Objectives

Osteitis is a distinct radiological feature seen in chronic rhinosinusitis (CRS). Multiple factors are implicated in the aetiology of osteitis including age, sex, chronic inflammation and surgery. So far studies have failed to demonstrate a correlation between clinical and radiological severity in patients with CRS and osteitis. This article aimed to review the literature on this topic, identify potential causes for this disparity and highlight areas requiring further investigation.

Methods

We searched CENTRAL, PubMed, EMBASE and Google Scholar. All articles assessing the role of osteitis or bone remodelling in sinusitis were included. There were 97 articles identified, 9 met the selection criteria.

Results

There is growing evidence to demonstrate the correlation between radiological severity in CRS as measured by the Lund-Mackey grading system and osteitis, the clinical implications of this are unclear. Patients with marked radiological osteitis and CRS do not suffer from worse sinonasal symptoms or quality of life assessments. The frequency of sinus surgery correlates well with the extent of sinonasal osteitis however doubt remains as to whether this finding is caused by surgery or a marker of severe CRS.

Conclusion

Although osteitis is a feature of patients with more severe radiological evidence of CRS the literature is yet to establish the clinical value of these findings. In addition little is known about the role of osteitis in the pathogenesis of CRS. There may be an association between the formation of bacterial biofilms and sinonasal bone remodeling; further work is needed to establish the cause and effect of osteitis in CRS.

Nasal pyriform aperture in children – normal values and clinical implications

W. Likus¹, G. Bajor¹, J. Markowski², J. Baron³, K. Gruszczynska³, A. Piotrowska-Seweryn²

¹ Department of Human Anatomy, Silesian Medical University, Katowice, Poland

² E.N.T Department, Silesian Medical University, Katowice, Poland

³ Department of Radiology and Nuclear Medicine, Silesian Medical University, Katowice, Poland

Abstract: ERS-0968

Session: Pediatric rhinology

Session Time: 24-06-14, 11:30

Location: Hall H

Chair person: JB Watelet

Presenting author: J. Markowski

Objectives

Stenosis of pyriform aperture may cause nasal obstruction and even neonatal respiratory distress. The number of morphometric studies of this region of nasal cavity concerning healthy neonates, infants and young children without nasal stenosis is insufficient. The aim of this study was to determine the dimensions of pyriform aperture and to evaluate their dependence on age and sex in children up to 3 years of age.

Methods

CT images of 180 Caucasian children (83 girls and 97 boys), aged from 0 to 3 years were selected among the patients with regular development of the brain, without any craniofacial abnormalities. We measured on CT scans the following nasal parameters: anterior bony width between two ridges extruding from the maxilla, right and left anterior bony width from the right maxillary ridge to the septal mucosa, anterior mucosal width between two mucosal edges extruding from the maxilla including the anterior airspace and the global thickness of the septum, right and left anterior mucosal width between the lateral mucosa and the septal mucosa.

Results

There was no statistically significant sex dimorphism in nasal parameters in children. There was a statistically significant correlation between the evaluated structures and age.

Conclusion

Our results defined the normal range of the measured parameters of anterior part of nasal cavity in neonates, infants and young children. They can be useful for children otolaryngologists and radiologists for determining congenital pyriform aperture stenosis.

Nasal submucosal implantation of acellular dermal matrix (Strattice™) in atrophic rhinitis – case report

V. Oliveira¹, R. Santos¹, D. Silva¹, P. Escada¹

¹ ENT, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal

Abstract: ERS-0969

Session: Septal Surgery and Turbinate Reduction

Session Time: 26-06-14 12:05

Location: Hall F

Chair person: S. Carrie

Presenting author: V. Oliveira

Objectives

Biologic mesh prostheses are increasingly used in reconstructive surgery with well-known biological tolerance, resistance and graft survival. In atrophic rhinitis the use of modern biologic mesh can be applied in submucosal grafts to regain the normal turbinate anatomy and narrow the nasal cavity.

Methods

We report a method of nasal submucoperichondrial and submucoperiosteal implantation in a patient with secondary atrophic rhinitis by using porcine acellular dermal matrix as graft.

Results

In this case, a porcine acellular dermal matrix was an effective tool in recovering normal nasal physiology. At 6 months after the original implantation, the nasal mucosa layering the graft was found to be well vascularized with no signs of erosion, stricture or infection. Crusting, fetor, and epistaxis disappeared. The bulge in the medial and lateral nasal wall persisted.

Conclusion

This technique may be adjunctively employed to functional endoscopic surgery to enhance the chances of achieving a successful result in the treatment of secondary atrophic rhinitis. Further studies and long-term follow-up are required to support the findings of this case report.

Awareness of general practitioners (gps) of the current recommended management guidelines for allergic rhinitis

N. Okpala¹

¹ ENT, Frimley Park Hospital, Frimley, United Kingdom

Abstract: ERS-0970

Session: Rhinitis, Clinical 2

Location: Hall F

Time: 23-06-14, 14:46

Chair person: C. Bachert

Presenting author: N. Okpala

Objectives

The international guidelines on the management of allergic rhinitis were developed to enhance the effectiveness and quality in management of allergic rhinitis. The aim of this study was to ascertain GPs' awareness of the current recommended management guidelines for allergic rhinitis.

Methods

A cross-sectional questionnaire-based study was performed between November 2012 and July 2013 in which 100 GPs were involved. The questionnaire was piloted prior to the main study.

Results

Results show that only 7% of GPs were aware of the ARIA or BSACI guidelines. A further 13% knew of local guidelines which were not for allergic rhinitis. Only one GP mentioned the new classification of allergic rhinitis into intermittent and persistent. A further 41% knew the older classification into seasonal and perennial. Most GPs knew the treatment for mild and moderate-severe allergic rhinitis (93% and 77% respectively). A higher percentage of GPs with previous otolaryngology experience were aware of the treatment but it did not reach significant levels. Forty-one per cent of GPs did not know the link between allergic rhinitis and asthma. Using chi-square analysis, a significant number of GPs with previous otolaryngology experience knew the co-morbidities, 89.2% (<0.05) when compared to those without experience (68.3%); and were also aware of the link with asthma, 64.9% (<0.05).

Conclusion

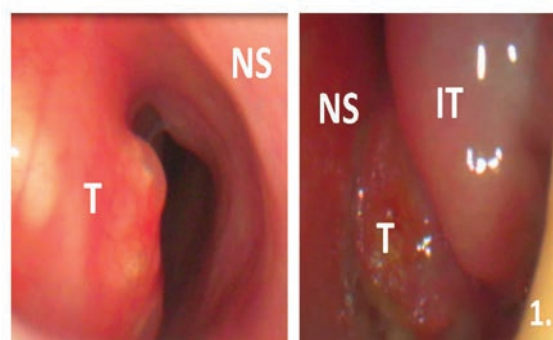
Education of GPs including more otolaryngology experience and workshops is required to increase awareness of the guidelines. These will improve management of allergic rhinitis in general practice and health planning facilitation.

ENDOSCOPIC RESECTION OF A NASAL SEPTUM CHONDROSARCOMA: CASE REPORT

M. CAIXA¹, H. RODRIGUES¹, S. ALVES¹, S. MARTINS¹, L. ANTUNES¹

¹ OTORHINOLARYNGOLOGY AND CERVICAL SURGERY, HOSPITAL GARCIA DE ORTA EPE, ALMADA, PORTUGAL

Abstract: ERS-0971



T – Tumor; NS – Nasal Septum; IT – Inferior Turbinate

Objectives

Chondrosarcomas are slow growing, malignant, cartilaginous tumors that occur in the head and neck region in 5% to 10% of the cases. Chondrosarcoma of the nasal septum is an extremely rare diagnosis, representing 4% of all non-epithelial nasal tumors. Our aim is to describe a case report of a nasal septum chondrosarcoma removed by functional endoscopic sinus surgery.

Methods

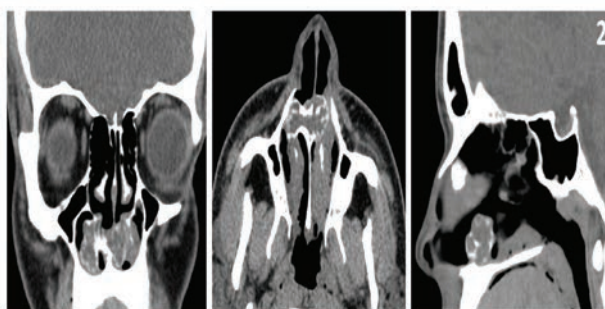
Case report.

Results

A 20-year-old man was referred to our department complaining of bilateral nasal obstruction and hyposmia for 4 months. Anterior rhinoscopy revealed the presence of a firm and non-tender intranasal mass occupying the anterior part of both nasal cavities (fig.1). Computed Tomography showed a lesion arising from the nasal septum bilaterally, suggesting a chondroma or chondrosarcoma (fig.2). The patient underwent endoscopic removal of the tumor (fig.3) and a grade II chondrosarcoma was diagnosed based on histopathological analysis.

Conclusion

Chondrosarcoma of the nasal septum is very rare and surgical excision is the only curative treatment. Functional endoscopic sinus surgery has many advantages and is indicated when the tumor is confined to the nasal cavity, without evidence of extension to the skull base. One year after the surgery the patient remains under close follow-up and there was no sign of local recurrence or distant metastasis.



Computed Tomography: intranasal mass arising from the nasal septum bilaterally.



Intranasal lesions.

Bilateral congenital choanal atresia in eight year old child

H. Oliveira¹, M. Nakanishi¹, P. Rafael Neto¹

¹ Otorhinolaryngology, University of Brasilia, Brasilia, Brazil

Abstract: ERS-0972

Objectives

The objective is to report the case of a child diagnosed with congenital bilateral choanal atresia since birth but undergo treatment only when eight years old.

Methods

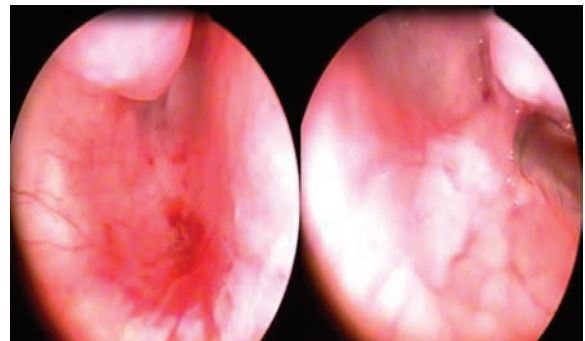
Shortly after birth, the child had difficulty breathing and required respiratory support for several weeks, until she could take on mouth breathing. Due to social and economic hardship, living in small, distant and poor town in Brazil, surgical treatment was extremely retarded. Thus, the patient had at age eight, typical facial deformities of a mouth breather. The patient underwent surgery for correction of choanal atresia endoscopically exclusive, with the appropriate result.

Results

Patient was followed for a few months to fully heal, leaving both pervious nostrils. The patient remains with dental and speech therapy following surgery for correction of sequelae resulting from years of nasal obstruction.

Conclusion

It is very importante the early diagnosis of bilateral choanal atresia and correction as soon as possible. The endonasal approach is effective and minimizes scarring and surgical sequelae.



Trends in chronic rhinosinusitis research in the past three decades

S. Banglawala¹, R. Schlosser¹, W. Thomas¹, L. Overton¹, S. Lohia¹, Z. Soler¹

¹ Otolaryngology - Head & Neck Surgery, Medical University of South Carolina, Charleston, USA

Abstract: ERS-0973

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:00

Chair person: S. Reinartz

Presenting author: S. Banglawala

Objectives

To identify trends in chronic rhinosinusitis (CRS) related publications for the past three decades.

Methods

Literature review was conducted using multiple terms including sinusitis, chronic rhinosinusitis, chronic sinus disease, nasal polyposis, ethmoid sinusitis, frontal sinusitis and maxillary sinusitis. Abstracts were divided into three decades: 1983-1992, 1993-2002 and 2003-2012. For each decade, we compared the total number of publications and journals, study design, use of validated outcome measures, quality of evidence, number of authors, country of origin and clinical versus basic science.

Results

3406 abstracts were identified. There was a statistically significant increase in the number of publications with a 637% increase from 1983-1992 to 2003-2012 ($p < 0.05$). Likewise the number of journals with CRS-related publications significantly increased during the study period (117 to 350, $p < 0.05$). Prospective studies increased (15.3% to 27.5%, $p < 0.05$) and retrospective studies decreased (33.0% to 16.0%, $p < 0.05$). Systematic reviews and meta-analysis significantly increased in the past decade (3.2% vs 0.2%, $p < 0.05$). Cohort studies were the most common type of design study (18.7% to 36.5%). In studies reporting outcome measures, the use of validated measures significantly increased over time (2.56% to 50.10%, $p < 0.05$). Although most clinical publications for all three decades were grade C (47.8-55.1%), the number and percentage of grade A and grade B significantly increased over time (6.5% to 0.9%, $p < 0.05$ and 6.1% to 4.2%, $p < 0.05$).

Conclusion

CRS-related publication quantity and quality have increased over the last 3 decades.

Efficacy of long term allergen immunotherapy in patients with allergic rhinitis

C. Yang¹, S. Kim¹, N. Longchuphon¹, S. Shin¹, K. Lee¹, S. Kim¹, J. Cho¹

¹ Department of Otolaryngology-Head and Neck Surgery, Kyung Hee medical center, Seoul, Korea

Abstract: ERS-0974

Session: Immunotherapy

Session Time: 24-06-14, 11:15

Location: Hall E

Chair person: G. Hens

Presenting author: C. Yang

Objectives

Allergic rhinitis (AR) is a global health problem affects patients from all ethnic group, socioeconomic condition and ages, although there is substantial evidence of the effectiveness of systemic immunotherapy (SIT), still controversy remained on the effect after SIT. and Long term SIT and long term follow up studies are still insufficient. Our study is about the long term SIT & their efficacy through the follow up study.

Methods

In 2004-2014, Total 76 patients who had received immunotherapy at Kyunghee medical allergy clinic due to AR were enrolled. We performed continuous administration of antigen with 3Mo. interval and analyzed results of 76 patients who received SIT for 5-10 yrs. In objective evaluation, we compared the result of MAST, eosinophil count. and in subjective evaluation, we measured the RQLQ score's change after immunotherapy.

Results

In MAST the average score of *D. farinae* was decreased from 3.92 ± 0.28 to 3.50 ± 1.17 there was significant change. ($p=0.008$). also the average eosinophil count decreased significantly ($p = 0.010$) from 5.24 ± 2.99 to 4.13 ± 2.14 . We also carried out the RQLQ to assess the patient's subjective symptoms. Compared to questionnaire before treatment, There was significantly improvement in overall categories. Especially, The improvements of average score's gap in nasal symptoms, 1.62 ± 1.47 ($p=0.000$) and eye symptoms, 1.58 ± 3.38 were high.

Conclusion

We recognized that a long-term treatment of allergic immunotherapy was effective. So, Continuous SIT can be one of recommendable modality in treatment of AR with long term vision.

Management of invasive type of fungal infection in paranasal sinuses

H. Kawauchi¹, T. Fuchiwaki¹, N. Aoi¹, I. Morikura¹, Y. Shimizu¹, Y. Hotta¹, K. Shimizu¹

¹ Otorhinolaryngology, shimane university faculty of medicine, izumo city, Japan

Abstract: ERS-0975

Session: Fungal sinusitis

Session Time: 24-06-14, 10:05

Location: Hall G

Chair person: R. Kamel

Presenting author: H. Kawauchi

Objectives

Invasive aspergillosis in paranasal sinuses is not a common disease, in comparison with non-invasive type aspergillosis in paranasal sinuses. This disease entity usually coincides with the immunocompromised hosts such as immunodeficiency patients, the aged patient, and patients with diabetes mellitus. Clinical outcome of these patients is not satisfactory. The prognosis varies in each case, depending on effects of multidisciplinary treatments such as medication of anti-fungal agents and/or surgical intervention.

Methods

We have recently experienced seven different cases of paranasal sinus aspergillosis invading to the orbit and skull base. Therefore, clinicopathological feature of this disease entity and clinical course are introduced herein.

Results

To summarize case presentation, we have experienced 7 cases of invasive aspergillosis in paranasal sinuses, extending to the orbit and skull base. It was shown that CT scan and MRI was useful to assess the bony destruction and intracranial or intraorbital extension, respectively. The serum level of beta-D-glucan and CRP were helpful for the diagnosis and monitoring of disease activity before and after treatments. However, in three patients out of 7 cases, various treatments including surgical intervention were not enough to rescue the patients and they passed away for a short period of time, because of intracranial complication.

Conclusion

Taking these into consideration, very much careful attention should be paid for patient's prognosis, even though the minimally invasive surgical removal of fungal lesion under ESS can be considered to be advantageous as well as a pharmaceutical treatment with antifungal agents such as liposomal AMB(empiric therapy) or voriconazole (target therapy).

Preoperative embolization and coblation-assisted endoscopic removal of juvenile nasopharyngeal angiofibroma

S. Husain¹, S.Z. Syed Hamzah¹, B.S. Gendeh¹, M.R. Mohamad Yunus¹

¹ ORL-HNS, The National University of Malaysia, Kuala Lumpur, Malaysia

Abstract: ERS-0976

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:35

Location: Hall H

Chair person: P. Nicolai

Presenting author: S. Husain

Objectives

We report on a series of 11 patients of Juvenile Nasopharyngeal Angiofibroma (JNA) in an effort to determine the effects of embolization prior to surgery, the use of coblator in tumour resection and to evaluate the outcome of JNA after treated surgically.

Methods

A retrospective study from 1998 till 2013. Clinical data, operative records, pre- and postoperative imaging studies and follow-up information were reviewed and analyzed.

Results

Nine out of 11 patients (9/11, 81.8%) underwent internal maxillary artery (IMA) embolization, 24 hours prior to surgical intervention. Post-embolization showed reduced tumour blush supplied by branches of external carotid system. Five out of 11 (5/11, 45.4 %) were at stage I and 6 patients (6/11, 54.5 %) were at stage II. All tumours were removed endoscopically. Three patients underwent coblator-assisted endoscopic tumour removal. Average intraoperative blood loss was 600 ml and average hospital stay was 5 days per patient.

Conclusion

Embolization will help to minimize intraoperative haemorrhage. Endoscopic approach in JNA resection provides less invasive nature, minimal morbidity and better visualization. Furthermore, coblation-assisted endoscopic JNA resection causes lesser haemorrhage and provide better visualization of surgical field. As endoscopic approach are still evolving, a shift toward the use of endoscopic approach to manage increasingly more advanced lesions will continue as technological advancements and experience progress.

A rare occurrence of optic chiasm prolapse

S. Husain¹, B.S. Gendeh¹

¹ ORL-HNS, The National University of Malaysia, Kuala Lumpur, Malaysia

Abstract: ERS-0977

Objectives

We report a case of a 31-year-old male who had optic chiasm prolapse post endoscopic transphenoidal hypophysectomy.

Methods

A case study.

Results

Patient had significant improvement of left vision following endoscopic trans-sphenoidal hypophysectomy for non-functioning pituitary macroadenoma. However, six month post surgery the patient complained of impairment of left vision. Nasoendoscopic examination revealed a pulsating mass occupying sphenoid sinus cavity. Magnetic resonance imaging scan revealed an empty sella with optic chiasmal prolapse. The visual fields and visual acuity showed non-progressive vision loss during serial follow-up in the clinic.

Conclusion

We would like to emphasise the need for monitoring of visual fields in patients post pituitary surgery and discuss on the management options in this type of case.

Giant cranionasal polyps

M. Xie¹, Z. Deng¹, L. Wan¹

¹ ENT, Zhu Jiang Hospital of Southern medical university, Guangzhou, China

Abstract: ERS-0978

Objectives

We aim to present one rare case with skull base bone defect because of pre-surgery where the polyps extended into the extradural space of the anterior cranial fossa and formed giant cranionasal polyps and share our experience for the techniques of endoscopic endonasal skull base surgery.

Methods

The patient underwent general anesthesia, a combined endoscopic and craniofacial resection approach was performed for total polyps resection.

Results

There was no nasal CSF leakage occurred postoperatively. Histology confirmed benign eosinophilic polyps with the surface coating pseudostratified ciliated columnar epithelium and edematous lamina propria, central loose connective tissue was hyperemia, large amounts of lymphatic cell, plasma cell infiltration.

Conclusion

The results suggest that endoscopic surgery-induced skull base defects should be promptly and closely repaired.

Nasal CSF leaks relapses surgical treatment

K.T. Abdulkerimov¹, R.S. Davydov¹, K.I. Kartashova¹

¹ Otolaryngology, Ural State Medical University, Yekaterinburg, Russia

Abstract: ERS-0979

Session: Skull base surgery 3

Session Time: 26-06-14, 09:35

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: K.T. Abdulkerimov

Objectives

The purpose of the study - to analyze the causes of relapses nasal liquorrhea after surgical treatment and to formulate preventive measures.

Methods

A comprehensive clinical, instrumental and laboratory study of 83 patients of nasal liquorrhea, 38 men and 45 women mean age 39.49 ± 1.81 years. Examination methods: ENT endoscopy, clinical research methods, immunologic study MRI, CT with 3D etc. Patients roughly divided into four groups. First consist of patients who produced cerebrospinal fluid shunting activities (n=15), second - patients with the neuro-surgery plastic liquor fistula (n=16), third - patients with endonasal plastic (n=27) and fourth - combined method (n=25). (Combined method includes a one-time approach to the defect of the skull base from the nasal cavity, and from the cranial cavity in one surgery (Patent RU 2402284). Postoperatively, patients III, IV groups were measures aimed at normalizing liquor pressure, with its monitoring using invasive pressure meter "Triton". Liquor pressure level was not exceed 11.5 0.5 mmHg.

Results

Relapses liquorrhea due to various reasons, such as large skull base defect (n=6), control of liquor pressure absence in early postoperative term (n=6), failure of the neurosurgical skull base plasty (n=4), multiple skull base defects (n=4), inaccurate diagnosis (n=1). In groups III and IV patients observed no recurrent of nasal liquorrhea (Fig. 1). Preventing insolvency plastic liquor fistula was caused by using of combine method skull base surgical repair and adequate postoperative management with monitoring of liquor pressure.

Conclusion

The combine method skull base surgical repair and apostoperative management liquor pressure are effective measures to avoid CSF leak relapse.

Abducens nerve palsy and cavernous sinus thrombosis: rare complications of isolated sphenoid sinus mucocele

S. Husain¹, R. Abdul Rahman¹, B.S. Gendeh¹

¹ Otorhinolaryngology_HNS, The National University of Malaysia, Kuala Lumpur, Malaysia

Abstract: ERS-0980

Objectives

We report a case of a 76-year-old female presented an isolated sphenoid mucocele with sixth nerve palsy and cavernous sinus thrombosis.

Methods

A case study

Results

The patient underwent emergency endoscopic marsupialization of the sphenoid mucocele. The eye and intracranial symptoms were improved tremendously post surgery

Conclusion

Emergency surgical intervention is crucial in case of sphenoid mucocele with intraorbital and intracranial complications in order to avoid further fatal complications.

Sublingual immunotherapy with a rice-based edible vaccine expressing cedar pollen multiple T cell epitopes attenuates the nasal symptoms in murine allergic rhinitis model with pollinosis

L. Qu¹, H. Kawauchi¹, N. Aoi¹, I. Morikura¹, T. Fuchiwaki¹, Y. Hotta¹, M. Tongu¹

¹ Otorhinolaryngology, Shimane University Faculty Of Medicine, Izumo city, Japan

Abstract: ERS-0981

Session: Immunotherapy

Session Time: 24-06-14, 11:42

Location: Hall E

Chair person: G. Hens

Presenting author: L. Qu

Objectives

In our previous study, we successfully developed murine allergic rhinitis model with cedar pollen antigen and demonstrated that oral feeding of transgenic rice seeds containing mouse dominant T cell epitopes of Cry j I and Cry j II of Japanese cedar pollen before systemic sensitization downregulated allergen-specific IgE response and T cell proliferation, and nasal symptom at intranasal challenge of cedar pollen extracts as well. In this study, we have examined whether sublingual route of administration of this Tg-rice powder attenuates or not the nasal symptoms such as nasal rubbing and sneezing upon intranasal challenge of cedar pollen extract after systemic sensitization.

Methods

BALB/c mice were pre-sensitized by means of an intraperitoneal injection of 100 ug of Cry j with 2 mg of Alum once a week for three weeks. Thereafter, mice were challenged by nasal administration of 8 ug of Cry j for 14 consecutive days. Sublingual route of administration of Tg-rice powder was done with 100 mg of two different T cell epitopes (3C7C and 99-3C) three times weekly before systemic sensitization and per os administration as well.

Results

Sublingual administration of 3C7C and 99-3C individually attenuated murine nasal symptoms such as nasal rubbing and sneezing.

Conclusion

In our present study, sublingual route of administration of Tg-rice powder as well as per os administration is also effective regimen to attenuate the nasal allergic symptoms. Now we are analysing immunological data in those mice; allergen-specific serum IgE titers, various cytokine production of cervical lymph node cells and cytokine-specific mRNA expression.

Mucosal immunity of nasopharynx and its clinical impact on allergic rhinitis

H. Kawauchi¹, I. Qu¹, M. Tongu¹, N. Aoi¹, I. Morikura¹, T. Fuchiwaki¹, F. Takaiwa², H. Takagi², E. Prokopakis³

¹ Otorhinolaryngology, Shimane University Faculty of Medicine, Izumo City, Japan

² Plant Biotechnology Department, National Institute of Agrobiological Sciences, Tsukuba, Japan

³ Otorhinolaryngology, University of Crete, Crete, Greece

Abstract: ERS-0982

Session: Rhinitis basic

Session Time: 24-06-14, 11:40

Location: Hall G

Chair person: TBC

Presenting author: H. Kawauchi

Objectives

Sublingual immunotherapy has been considered to be a painless and efficacious therapeutic treatment of allergic rhinitis which is known as type-I allergy of nasal mucosa and a large number of clinical trials have been done with more or less promising results for the last decade. Nevertheless, its mechanisms need to be further investigated.

Methods

Firstly, we constructed an effective murine model of sublingual immunotherapy (SLIT) in allergic rhinitis, in which mice were sublingually administered with ovalbumin (OVA) followed by intraperitoneal sensitization and nasal challenge of OVA. Sublingually treated mice showed significantly decreased allergic responses as well as suppressed Th2 immune responses. Sublingual administration of OVA did not alter the frequency of CD4+CD25+ regulatory T cells (Tregs), but led to up-regulation of Foxp3- and IL-10-specific mRNAs in the Tregs of cervical lymph nodes (CLN), which strongly suppressed Th2 cytokine production from CD4+CD25- effector T cells in vitro. Furthermore, sublingual administration of plasmids encoding the lymphoid chemokines CCL19 and CCL21-Ser DNA together with OVA suppressed allergic responses.

Results

Secondly, we have examined whether sublingual route of administration of this Tg-rice powder attenuates or not the nasal symptoms such as nasal rubbing and sneezing upon intranasal challenge of cedar pollen extract after systemic sensitization. As results, sublingual administration of 3C7C and 99-3C individually attenuated murine nasal symptoms such as nasal rubbing and sneezing.

Conclusion

These data suggest that sublingual route of administration of Tg-rice powder as well as per os administration is also effective regimen to attenuate the nasal allergic symptoms.

ENDOSCOPIC TECHNIQUES IN THE MANAGEMENT OF FOREIGN BODIES IN THE NOSE AND PARANASAL SINUSES OF ADULT PATIENTS

S. MILEV¹, H. ZLATANOV¹, V. TZVETKOV¹

¹ DEPARTMENT OF OTORHINOLARYNGOLOGY, MILITARY MEDICAL ACADEMY, SOFIA, BULGARIA

Abstract: ERS-0983

Objectives

Foreign bodies in the nose and paranasal sinuses are uncommon in adults and are usually related to trauma, accident or coexisting mental illness. We present our clinical experience in managing foreign bodies in the nose and paranasal sinuses of 9 adult patients.

Methods

Retrospective analysis of the endoscopic management of 9 adult patients with foreign bodies in the nose and paranasal sinuses.

Results

In our experience the foreign bodies were almost exquisitely related to dental work. Two patients had metal parts of dental instruments in the maxillary sinuses and six patients had material from cavity fillings in the maxillary sinuses. One patient had nasal foreign body since adolescence. In all cases the foreign bodies were fully extracted with minimal trauma to the patient without any complications and normal nasal and sinus physiology was preserved or recovered. Patients had quick recovery and symptoms fully resolved.

Conclusion

In our experience endoscopic management of nasal and sinus foreign bodies has proven to be safe and effective with speedy recovery, complete extraction of the foreign body and without any complications. In our department the endoscopic technique has fully replaced the classic open surgical techniques in the management of nasal and sinus foreign bodies.

A new tool for CF diagnosis: short circuit current measurements in human nasal epithelial cells collected by nasal brushing

V. Pruliere Escabasse¹, I. Fajac², A. Lorot³, P. Zadique⁴, P. Fanen⁵

¹ ENT, Centre Hospitalier Intercommunal de Créteil, Créteil, France

² Physiology, Chu Cochin, Paris, France

³ ENT, Centre Hospitalier de Reims, Reims, France

⁴ Faculté de médecine de Créteil, Unité Inserm 955 équipe 13, Créteil, France

⁵ Faculté de médecine de Créteil, Unité Inserm 955 équipe 11, Créteil, France

Abstract: ERS-0984

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 17:18

Chair person: R. Kamel

Presenting author: V. Pruliere Escabasse

Objectives

Diagnosis of cystic fibrosis (CF) is usually made by the presence of sinopulmonary disease, with abnormal sweat chloride values and the finding of CFTR mutations. New tools are necessary as an emerging number of patients present with an atypical phenotype of the disease with intermediate range sweat chloride level and only one or no identified CF-causing mutations.

Methods

We analyzed 15 primary cultures of human nasal epithelial cells (HNEC) in 5 healthy individuals, 5 cystic fibrosis and 5 atypical patients. This protocol was approved by the Institutional Review Board and ethics committee of our institution and informed consent was obtained from all patients. All participants had been previously subjected to a complete search of CFTR gene mutations. Under nasal endoscopy, human nasal epithelial cells (HNEC) were collected from the epithelium by brushing the inferior turbinates and cultured at air-liquid interface. Measurements of short-circuit current (I_{sc}) and DPN were performed.

Results

Sodium transport was significantly different in atypical CF HNEC ($12.85 \pm 1.98 \mu\text{A}/\text{cm}^2$) compared to HNEC from classic CF patients ($43.6 \pm 7.7 \mu\text{A}/\text{cm}^2$) ($p < 0.05$) but was similar to healthy individuals HNEC ($14.4 \pm 4.5 \mu\text{A}/\text{cm}^2$). I_{sc} IBMX+forsk was significantly decreased in atypical CF HNEC ($1.35 \pm 0.59 \mu\text{A}/\text{cm}^2$) compared to healthy individuals HNEC ($8.7 \pm 1.07 \mu\text{A}/\text{cm}^2$) ($p < 0.0001$) but very close to classic CF HNEC ($0.9 \pm 0.3 \mu\text{A}/\text{cm}^2$) ($p = 0.34$). DPN results have the same profile.

Conclusion

The results show that this new tool for CF diagnosis is a very reliable test and allows obtaining the same response as the one obtained in DPN test.

Sinonasal mucosal melanomas: the prognostic value of tumor classifications

J. Michel¹, A. Perret Court², N. Fakhry¹, D. Braustein³, S. Monestier², M.A. Richard², J.J. Grob², A. Giovanni¹, P. Dessi¹

¹ Head and neck surgery, Hopital de la Timone, Marseille, France

² Dermatology, Hopital de la Timone, Marseille, France

³ Biostatistical, Hopital de la Timone, Marseille, France

Abstract: ERS-0985

Session: Malignant tumours

Session Time: 24-06-14, 09:39

Location: Hall H

Chair person: M. Bernal-Sprekelsen

Presenting author: J. Michel

Objectives

To assess the prognostic value of the three staging systems found in the literature for sinonasal mucosal melanomas tumors: Ballantyne's staging system modified by Prasad (Ballantyne/Prasad staging system), the AJCC TNM classification for mucosal melanomas (mmTNM) and the 2009 AJCC TNM classification for carcinomas of the nasal cavity and sinuses (carTNM).

Methods

Retrospective study of 35 patients treated between 1995 and 2010. Each patient was retrospectively staged using the Ballantyne/Prasad staging system, mmTNM and carTNM.

Results

There were 20 women (57.1%) and 15 men (42.9%). Only carTNM was significantly correlated with overall survival ($p = 0.012$) and disease-free survival ($p = 0.041$). The other two classifications were not correlated with survival except for metastatic patients whose overall survival was lower ($p = 0.032$).

Conclusion

On the basis of these findings, we believe that carTNM should be the primary staging system for patients with mucosal melanomas of the sinonasal tract.

Current practices in perioperative management of fess patients in singapore

C.Q. Phua¹, J. Goh², D. Loke³

¹ ENT Surgery, Tan Tock Seng Hospital, Singapore, Singapore

² Yong Loo Lin Medical School, National University Singapore, Singapore, Singapore

³ ENT Surgery, Khoo Teck Puat Hospital, Singapore, Singapore

Abstract: ERS-0987

Objectives

Functional endoscopic sinus surgery (FESS) is a well established strategy for management of sinus disease following failure of maximal medical therapy. Preoperative optimisation and postoperative care have impact on the ultimate outcome. However, at present, there is lack of evidence and guideline in terms of the optimal perioperative care.

The aim of this study is to survey the perioperative management protocols currently used by Otolaryngologists in Singapore and to compare the differences in management between patients with chronic rhinosinusitis without polyps(CRSsNP), chronic rhinosinusitis with polyps(CRSwNP) and revision FESS for nasal polyposis.

Methods

Questionnaire survey was performed to collect data regarding preoperative and postoperative medications as well as postoperative nasal packing practices.

Results

Questionnaires were sent to a total of 90 Otolaryngologists registered under the Singapore Medical Council and 25 Otolaryngology registrars. We received a response rate of 61%(70/115). Preoperatively, CRSsNP patients received oral steroids less often than those who underwent primary FESS($p<0.001$) and revision FESS($p<0.001$) for nasal polyposis. Preoperative oral antibiotics(59%) were commonly prescribed in all groups of patients. Postoperatively, CRSsNP patients received oral steroids less often than those who underwent primary FESS($p<0.001$) and revision FESS($p<0.001$) for nasal polyposis. Although there is a trend towards the use of nasal packing with infusion for primary FESS and revision FESS for nasal polyposis compared to CRSsNP, this was not statistically significant. The infusion agent of choice was triamcinolone.

Conclusion

In conclusion, this survey demonstrates that there are different perioperative practices in the management of CWSsNP, CWSwNP and revision FESS for nasal polyposis

Effect of continuous systemic immunotherapy for patients with allergic rhinitis

J. Cho¹

¹ Department of Otolaryngology-Head and Neck Surgery, Kyung Hee medical center, Seoul, Korea

Abstract: ERS-0988

Session: Immunotherapy

Session Time: 24-06-14, 12:00

Location: Hall E

Chair person: G. Hens

Presenting author: J. Cho

Objectives

The clinical efficacy of SIT in allergic rhinitis is well established. However there is controversy on long term effect. We performed continuous SIT after full course of conventional immunotherapy with 3Mon. interval.

Methods

We divided 2 groups: 3~5yrs SIT, GroupA, 5~10yrs SIT, groupB. In groupA 11 patients with 3~5yrs SIT group were compared to patients with 1~2yrs SIT group. In GroupB, 72 patients with 5~10yrs SIT group were compared with result at starting point of SIT.

Results

In group A, improvement of nasal symptom was seen in both group. there was no significant difference from 1~2yrs group. But In group B, patients with 5~10yrs SIT showed significantly decrease magnitude of MAST score, peripheral eosinophil count, RQLQ score. Furthermore only 25 out of 76 patients showed new sensitization of antigen.

Conclusion

From this result with long term study, continuous SIT can be recommendable modality for patients with AR.

Evaluation of aspirin hypersensitivity in CRS patients

S.I. Kim¹, S.J. Kim¹, N.N. Longchuphon¹, S.Y. Shin¹, K.H. Lee¹, S.W. Kim¹, J.S. Cho¹

¹ ENT, AZ Sint-Jan Brugge-Oostende AV, Brugge, Belgium

Abstract: ERS-0989

Session: CRS Miscellaneous

Location: Hall H

Time: 23-06-14, 16:36

Chair person: S. Reinartz

Presenting author: S.I. Kim

Objectives

Between 1992 and 2006 118 patients were retained with the diagnosis of Eosinophilic Fungal Rhino sinusitis (EFRS). The diagnostic approach, clinical features and recurrence patterns have been observed

Methods

Patients with chronic rhino sinusitis (CRS) were retained with the diagnosis of EFRS based on the pathological findings of eosinophilic mucin (EM) Charcot-Leyden crystals (CLC) and fungal hyphae (FH). Positive fungal cultures have not been included.

Results

Sixty-seven patients (57 %) were female and 51 (43 %) male. Nasal Polyposis (NP) was noted in 70 (59%) CRS patients. Diagnosis was obtained through sampling sinonasal airway mucus secretions at surgery in 45 (38%) cases. In 73 (61.8%) cases diagnosis was obtained by sampling sinonasal airway mucus secretions following endoscopic sinus surgery (ESS). In 95 patients (50 %) FH were only found after repeated samplings. In 71 (60%) patients, only one operation was performed. Forty-two (35.6%) patients needed more operations to a maximum of 7 operations in one patient. In 5 CRS patients(4%) diagnosis was based on sampling sinonasal airway mucus secretions. In 109 (92%) of the patients a pan sinusitis was observed. Unilateral disease occurred in 9 (8%) patients. Allergy was noted in 39 patients (33%); asthma in 39 (33%); both allergy and asthma in 24 (20%) cases. APA syndrome was retained in 15 (13%) cases.

Conclusion

The increased likelihood of recurrent disease in EFRS patients is much higher in the Nasal Polyposis group. The sampling of sinonasal mucus secretions provides additional information regarding the clinical outcome in CRS patients after ESS.

Comparison analysis of heredity aspect on allergic rhinitis

S.I. Kim¹, S.J. Kim¹, N.N. Longchuphon¹, S.S. Shin¹, K.H. Lee¹, S.W. Kim¹, J.S. Cho¹

¹ Department of Otolaryngology - Head & Neck Surgery, School of Medicine Kyung Hee University Seoul Korea, Seoul, Korea

Abstract: ERS-0990

Objectives

Asthma, allergic rhinitis, allergic dermatitis, and allergic conjunctivitis composing of allergic march are multifactorial diseases brought about by various familial and environmental influences. Until now, most studies focused on only whether these allergic diseases are inherited or not. Thus, we studied the clinical features of allergic rhinitis patients classified according to heredity aspect, especially.

Methods

An analysis of 184 allergic rhinitis patients visiting Kyung Hee allergy clinic from June 2013 to December 2013. We received questionnaire including past medical history, onset year of symptom, aggravation time, RQLQ score, and examined allergy types, total Ig E, peripheral eosinophil percentage.

Results

Direct heredity group whose parents have an allergy showed earlier onset year of allergy than non-direct heredity group. In addition, direct heredity group whose same-sex parents have an allergy had an earlier onset year than that whose different-sex parents have an allergy. Then, direct heredity group has more allergic co-morbidity history than non-direct heredity group. No significant differences in other results such as allergy type, RQLQ score, total Ig E, eosinophil percentage, aggravation time.

Conclusion

Heredity, especially from same sex has a important role in allergic rhinitis patients' various characteristics including onset year, past medical history. Thus, we have to carefully examine patients' family as well as allergic patients.

Endoscopic treatment of olfactory neuroblastoma- presentation of a case

M. Giopanou¹, A. Marinou¹, I. Grigoropoulos¹, E. Zacharioudaki¹, Z. Pappas¹

¹ Otorhinolaryngology Department, General Hospital of Athens "G.Gennimatas", Athens, Greece

Abstract: ERS-0991

Objectives

Olfactory neuroblastomas (or esthesioneuroblastomas) are very rare tumors of the nasal cavity arising from the olfactory epithelium. Due to their rarity diversity exists in bibliography regarding the therapeutic options. We focused on endoscopic treatment, avoiding extended surgical procedures, in order to treat this rare nasal tumor.

Methods

We present the case of a 65 year old woman who presented in the outpatient clinic of our department, complaining for unilateral difficulty in nasal breathing and relapsing episodes of epistaxis during the past 3 months. Physical examination, including endoscopy with a rigid 30o endoscope, revealed a large red mass in the left nasal cavity. In the CT scan images the mass did not cause erosion of the cribriform plate, therefore having no expansion in the endocranium. Functional Endoscopic Sinus Surgery (FESS) was performed and the mass was excised in margins of healthy tissue. The histopathologic examination revealed a Grade II-III olfactory neuroblastoma. The patient was also treated with post-operative radiotherapy.

Results

The patient was examined in 2 and 6 months time with endoscopy. In the yearly follow-up with clinical and radiographic monitoring the patient was free from disease.

Conclusion

Treatment of esthesioneuroblastomas can vary depending on the specific case. The bibliographic data suggest a variety of approaches such as craniofacial resection, endoscopic removal and post-operative radiotherapy, whereas chemotherapy has also been used. FESS is minimally invasive, with good therapeutic results and can be considered as a treatment of choice in cases of tumors limited in the nasal cavity.

Timolol application as a protective treatment for repeated epistaxis in HHT patients

K. Ichimura¹, H. Kikuchi¹

¹ Department of Otolaryngology-Head and Neck Surgery, Glasgow Royal Infirmary, Glasgow, United Kingdom

Abstract: ERS-0992

Session: Epistaxis

Session Time: 23-06-14, 11:15

Location: Hall E

Chair person: A. Swift

Presenting author: K. Ichimura

Objectives

A recent report describes the topical use of timolol in a patient with nosebleeds secondary to hereditary hemorrhagic telangiectasia (HHT). Timolol is included in beta blockers which were discovered to be very effective in treating infantile hemangiomas. The mechanism by which it works on these tumors may allow it to help treat abnormal blood vessels that develop in patients with HHT. The case report describes the beneficial effect of timolol. We perform nasal dermoplasty (ND) as a standard surgical option for patients with HHT. ND can reduce epistaxis in frequency and severity. But unlike nostril closure operation it cannot stop bleeding completely. For the patients who underwent ND but wish to lessen epistaxis we tried to provide topical timolol therapy.

Methods

Topical timolol maleate 0.5% drops are applied three times daily for 12 weeks or more. Outcome measures of this study are frequency and severity of nasal bleeding according to Al-Dean & Bachmann-Harildstad criteria. Comparison between those measures in pre- and posttreatment period is made.

Results

So far ten patients joined the study and favorable result was obtained. Reduction of severity and frequency of bleeding was confirmed after treatment.

Conclusion

Topical timolol treatment for HHT patients may work in reducing nasal bleeding.

Effect of ESS on pulmonary function of CRS with asthma

M. Asako¹, Y. Kobayashi¹, H. Ooka¹, S. Hamada¹, A. Kanda¹, K. Tomoda¹

¹ Otorhinolaryngology head & neck surgery, Kansai Medical University, Hirakata, Japan

Abstract: ERS-0993

Session: United airways

Session Time: 26-06-14 11:33

Location: Hall D

Chair person: I. Terreehorst

Presenting author: M. Asako

Objectives

We therefore aimed to evaluate the post operative pulmonary function of chronic rhinosinusitis associated with nasal polyps and asthma.

Methods

A retrospective analysis was performed on 34 patients with/without chronic bronchial asthma who underwent ESS for medically refractory chronic rhinosinusitis with polyp. Patients received comprehensive asthma care before and after ESS (mean, 19.3 and 23.1 months, respectively). 20 patients were not clearly diagnosed asthma, 10 patients were with mild to severe persistent aspirin tolerant asthma and 4 patients were moderate to severe persistent aspirin intolerant asthma. Outcomes analyzed included pre and post ESS individual and group mean upper airway symptom scores, Lund-Makay CT scores, and pulmonary function test results.

Results

All group was significant increased the pulmonary function in 1M after ESS ($P < .01$). The various indebiomarker in the pulmonary function is useful for evaluate the lower airway condition. V50 and V25/Ht are the most accurate reflection marker of the bronchiolar constriction. There were significant increases in the V50 and V25/Ht before and after the sinus surgery in both the AIA and ATA groups ($P < .05$). ATA group is more increased of the pulmonary function than AIA group after ESS, in addition, non-asthma diagnosis group is also increased in the pulmonary function after surgery.

Conclusion

Our data indicate that patients with CRS/ WP compose clinically the group of the bronchiolar constriction.

CAN WE PREDICT NASAL BLOCKAGE SURGERY OUTCOMES BASED ON THE SUBJECTIVE AND OBJECTIVE MEASURES?

R. CHMIELEWSKI¹, E. ZGNILEC¹, K. KASPEREK-WALEWSKA¹, P. ZIELINSKA¹, R. STABLEWSKI¹, A. CHMIELIK², B. OLCZAK-KWIECIEN²

¹ DEPARTMENT OF OTOLARYNGOLOGY, MILITARY INSTITUTE OF AVIATION MEDICINE, WARSAW, POLAND

² DEPARTMENT OF RADIOLOGY, MILITARY INSTITUTE OF AVIATION MEDICINE, WARSAW, POLAND

Abstract: ERS-0994

Objectives

To determine which of the subjective or objective clinical measures predict best nasal blockage surgery outcomes.

Methods

We enrolled 100 patients scheduled for the septoplasty with or without inferior turbinoplasty. They were evaluated pre- and postoperatively. The preoperative evaluation comprised of the Nasal Obstruction Symptom Evaluation scale (NOSE) and a visual analogue scale of nasal obstruction (VAS) both for the patient and the surgeon. All patients had rhinomanometry and paranasal sinus CT scan done as objective preoperative measures. A preoperative coronal CT images were used to calculate the following anatomical parameters:

1. nasal septum deviation type
 2. nasal septum maximal deviation angle in the coronal and axial planes
 3. nasal septum maximal width (at the level of internal nasal valve)
 4. inferior turbinate width at three coronal sections - internal nasal valve, middle portion and posterior pole
 5. cross-sectional area of the air-filled nasal cavity space the levels of the internal nasal valve, maximal septal deviation and choane
- Postoperatively we repeated the Nasal Obstruction Symptom Evaluation scale (NOSE) and a visual analogue scale of nasal obstruction (VAS) both for the patient and the surgeon as well as the rhinomanometry.

Results

Results will be provided on the congress venue as the data is still being collected and analysed.

Conclusion

Conclusions will be provided on the congress venue as the data is still being collected and analysed.

The value of drug-induced sleep endoscopy for the treatment and individualized tailoring of surgery to patients with snoring and obstructive sleep apnea

I. Braverman¹

¹ Otolaryngology Head and Neck Surgery, Hille Yaffe Medical Center. Ruth and Bruce Rappaport Faculty of Medicine Technion- Israel Institute of Technology, Hadera, Israel

Abstract: ERS-0995

Session: OSAS

Location: Hall H

Time: 25-06-14 14:50

Chair person: N. de Vries

Presenting author: I. Braverman

Objectives

Drug-induced sleep endoscopy (DISE) is a procedure that is increasingly performed. It offers the possibility of dynamic upper airway evaluation during artificial sleep for selecting the proper surgical treatment for patients with obstructed sleep apnea (OSA).

Methods

Patients with snoring and OSA underwent DISE before a decision was made regarding the surgical treatment. We recorded the obstruction sites and obstruction patterns during snoring and apnea. DISE has some limitations and there is no consensus regarding the many different DISE classification systems. In most patients, the snoring noise was generated at the oropharyngeal level or in combination with the supraglottic level. The obstruction and apnea was mainly at the oropharyngeal level, in combination with other structures; usually the base of the tongue.

Results

The surgical treatment we designed for the patients was based on DISE outcomes. We performed CAUP- Coblation Upper Airway Procedure for palatal level with/ without tonsillectomy, Endoscopic Base-of-Tongue Reduction with Coblation, Partial Epiglottectomy and Palatal Stiffening Operation (capso – cautery-assisted palatal stiffening operation). There was improvement of snoring and OSA in most patients. DISE is a safe procedure, easily performed, valid and reliable. We therefore consider it to be a fundamental clinical procedure that is essential before choosing surgical treatment.

Conclusion

The information obtained from these results helps us understand the pathogenesis of OSA and the various associations between PSG outcomes and DISE results, as well as assisting the sleep surgeon in choosing various surgical techniques for optimal treatment of the patient.

Tear pump function in patients with septal deviation and turbinate hypertrophy

I. Lazarevich¹

¹ ENT, Presedential Medical Center, Moscow, Russia

Abstract: ERS-0996

Objectives

The purpose is to study the condition and active physiological function of the lacrimal flow in patients with deviated septum and nasal hypertrophy and evaluate effect of rhinoseptoplasty on tear duct function.

Methods

Patients with septal deviation and turbinate hypertrophy with no epiphora were included to the study. We used colored dye nasolacrimal test to evaluate nasolacrimal function before septoplasty and turbinate correction and on 5th day and than 1 month after surgical treatment.

Results

A total of 60 patients (42 men and 18 women) were required for the study. In 33,3% lacrimal outflow system we observed complete obstruction and in 15% cases partial dysfunction of lacrimal outflow. 1 month after septoplasty we observed improvement: in most of the cases lacrimal outflow were corrected (96,6%). Only in 4 nasolacrimal ducts with dysfunction we did not observed changes after surgery. We did not find correlation between duration of nasal obstruction and degree of the obstruction of the nasolacrimal duct. There is no correlation between side of nasal deviation and degree of nasolacrimal duct dysfunction.

Conclusion

A high incidence of nasolacrimal obstruction/dysfunction was found in patients with septal deviations, turbinate hypertrophy and no lacrimal symptoms. Septal deviations and turbinate hypertrophy may play a role of predisposing factor in nasolacrimal obstruction. Surgical correction of intranasal structures may prevent progressing symptomatic conditions.

Expression of periostin in allergic rhinitis treated with sublingual immunotherapy

S. Hamada¹, M. Asako², T. Shimano², Y. Kobayashi², A. Kanda², K. Tomoda²

¹ Otorhinolaryngology, Kansai Medical University Kori hospital, Neyagawa, Japan

² Otorhinolaryngology, Kansai Medical University, Hirakata, Japan

Abstract: ERS-0997

Session: Rhinitis basic

Session Time: 24-06-14, 11:15

Location: Hall G

Chair person: TBC

Presenting author: S. Hamada

Objectives

Seasonal allergic rhinitis induced by Japanese cedar pollen is one of the most prevalent allergies in Japan. We investigated the safety and efficacy of sublingual immno-therapy (SLIT) in the treatment of cedar pollinosis patients compared to placebo.

Methods

A randomized, placebo-controlled, double blind study was conducted in 23 cedar pollinosis patients over three pollen season in 2011-2013. The efficacy variable was the mean of the daily total symptom scores (TSS) and the QOL scores during the pollen dispersing period. Peripheral blood was obtained from all participants before SLIT treatment, at pollen season and post-pollen season. We measured periostin levels in patients which was secreted factor matricellular protein with fibrosis, and its production by airway epithelial cells is induced by IL-4 and IL-13. Recently, there has been reported that periostin was found to directly regulate expression of eosinophil accumulaton in allergic mucosal inflammation.

Results

The levels of periostin in placebo group was significantly increased at pollen season compared to pre-season and the increasing rate of periostin at pollen season was regulated in SLIT group.

Conclusion

Periostin may be involved in the therapeutic mechanisms of SLIT.

Failure of skull base reconstruction using nasoseptal flap; experience of 85 cases

M. Jalessi¹, G. Sharifi², M. Farhadi³

¹ Endoscopic Skull Base Surgery Unit ENT-H&N Research Center & Department, Iran University of Medical Sciences Hazrat Rasoul Akram Hospital, Tehran, Iran

² Neurosurgery Department of Loghman Hakim Hospital, Shaheed Beheshti University of Medical Sciences, Tehran, Iran

³ ENT- Head & Neck Research Center & Department, Iran University of Medical Sciences Hazrat Rasoul Akram Hospital, Tehran, Iran

Abstract: ERS-0998

Session: CSF leak and skull base

Session Time: 24-06-14, 12:00

Location: Hall J

Chair person: P.V. Tomazic

Presenting author: M. Jalessi

Objectives

Along with the use of endoscopic endonasal approaches for intradural lesions of skull base, their most demanding complication, post-operative cerebrospinal fluid (CSF) leak needed to be addressed to let them survive. Use of pedicled local flap and the most common one, nasoseptal flap has evolved the reconstruction of skull base defects after these approaches.

Methods

From June 2011 to september 2013, nasoseptal flap has been used for skull base reconstruction in 85 cases with various skull base pathologies including CSF leak from Sternberg canal, pituitary adenoma (needed extended approaches), craniopharyngioma, clivus chordoma, and adenoid cystic carcinoma with intracranial extension in adults and children.

Results

Only 2 cases of postoperative CSF leak were encountered which one of them was due to technical error and the other was happened after aggressive nasal blowing 3 weeks after the surgery. Pros and cons of using the flap along with tips and tricks in the technique will be discussed on HD movies.

Conclusion

Skull base reconstruction using nasoseptal flap is quite a reliable technique when dealing with high flow CSF leak in extended endoscopic endonasal approaches.

Our experience in endoscopic surgery of JNA

V. Budu¹, I. Bulescu¹

¹ ENT Microsurgery and phoniatics, IFACF ORL D. HOCIOTA, Bucharest, Romania

Abstract: ERS-0999

Session: Benign tumours

Session Time: 25-06-14, 12:00

Location: Hall H

Chair person: R. Harvey

Presenting author: V. Budu

Objectives

The authors present their experience in endoscopic surgery for juvenile nasopharyngeal angiofibroma (JNA), in a series of 10 cases, which underwent endoscopic surgery.

Methods

All the patients presented were male, with ages ranging from 11-18 years. The histologic and immunohistochemistry analysis certified the diagnosis of JNA in all cases. From these 10 cases we present the most difficult cases, which are represented by 3 cases with recurrent JNA after previous surgery, JNA with blood sources from both ICA and ECA and also recurrent JNA after classic surgery with previous ECA ligation and blood supply from the ipsilateral ICA. Endoscopic surgery was preferred for all cases with no skull base involvement. All patients underwent extensive postoperative follow-up from 2 to 6 years (mean 3.6 years) with no evidence of tumour recurrence.

Results

The cases presented underwent endoscopic surgery for JNA, with full resection of the tumour and postoperative follow-up showed no evidence of tumour recurrence between 2 to 6 years.

Conclusion

These cases were remarkable from both a clinical, but especially from a surgical point of view. The results for these cases are comparable with results communicated by most authors. Endoscopic surgery is the least invasive technique in surgery for JNA, and it is preferred in selected cases.

Fibrodysplasia of paranasal sinuses and skull base; when and how to intervene

M. Jalessi¹, M. Farhadi², G. Sharifi³

¹ Endoscopic Skull Base Surgery Unit ENT-Head & Neck Research Center & Tehran, Iran

² ENT- Head & Neck Research Center & Department, Iran University of Medical Sciences Hazrat Rasoul Akram Hospital, Tehran, Iran

³ Neurosurgery Department of Lohman Hakim Hospital, Shaheed Beheshti University of Medical Sciences, Tehran, Iran

Abstract: ERS-1000

Session: Skull base surgery 4

Session Time: 26-06-14, 11:50

Location: Hall G

Chair person: E. Wright

Presenting author: M. Jalessi

Objectives

Fibrous dysplasia is a developmental skeletal disorder that may lead to distortion, expansion, and weakening of the bone. The skull and facial bones are involved in 10-25% of patients.

Methods

We reviewed our database from 2009 to identify the cases with the diagnosis of fibrous dysplasia of skull base in which endoscopic endonasal approach was used to address the pathology. The demographic data, the clinical and radiological findings, and the management of these patients were reviewed.

Results

Four patients had endoscopic endonasal approach for management of their lesions. Two presented with headache, one with proptosis and visual impairment and the last one with McCune-Albright syndrome. The first two cases underwent biopsy for tissue confirmation. Pathology was completely removed in third case and trans passed in the forth. All the patients had pathological confirmation.

Conclusion

The ability to differentiate this entity from more aggressive pathologies of the skull base is crucial for the proper management of these lesions and preventing unnecessary procedures. Although management of this pathology is usually conservative, a range of interventions is required in various situations depending on patient's symptoms.

Endoscopic resection of esthesioneuroblastoma: long term carcinologic results

G. De Bonnecaze¹, A. al Hawat¹, S. Vergez¹, B. Vairel¹, E. Serrano¹

¹ ENT Head and Neck Surgery, CHU Toulouse Rangueil-Larrey, Toulouse, France

Abstract: ERS-1001

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:45

Location: Hall H

Chair person: P. Nicolai

Presenting author: G. De Bonnecaze

Objectives

Esthesioneuroblastoma (ENB) is an uncommon tumour arising from the olfactory cleft. Craniofacial resection followed by radiotherapy is still considered as the gold standard of treatment. The aim of our study is to assess the long term carcinologic results of endoscopic resection.

Methods

We performed a retrospective study including all patients treated for ENB at our tertiary care medical center. We analyzed for each patient: demographics data, initial staging and grading and outcome (follow up, time to recurrence, overall survival).

Results

We included 8 patients (5 males, 3 females). Initial Kadish stage was A for 1 patient, B for 3 patients and C for 4 patients. 2 patients presented lysis of the cribriform plate. 1 patient had an extension to the dura and 1 patient to the cerebral parenchyma. Endoscopic resection was followed by radiotherapy in 4 cases, concurrent radio/chemotherapy in 4 cases. The mean hospitalisation time was 3.7 days. No surgical complication was noted. The mean follow up was 95 months. Two patients presented recurrences (lymph nodes metastasis). Both were treated by standard neck dissection followed by radiotherapy. One patient died after the complementary treatment.

Conclusion

Endoscopic resection in olfactory neuroblastoma seems to be a safe and effective approach. However it must be limited to selected cases and performed by trained teams.

Ameloblastoma of maxillary sinus: a case report

C. Di Lieto¹, I. Tasca¹, G. Ceroni Compadretti¹, F. Sorace¹

¹ ENT Department, Imola Hospital, Imola (Bo), Italy

Abstract: ERS-1003

Objectives

Ameloblastoma is a common odontogenic epithelial tumour, usually arising in the maxilla or in the mandible. Extragnathic ameloblastomas are unusual, and primary sinonasal tract origin is very uncommon. The lesion probably arises from cell rests of the dental lamina or from the odontogenic epithelium and a malignant transformation is extremely rare reported. Ameloblastoma appears most commonly in the third to fifth decades, but it has also been described in children and adolescence. There is no gender predilection.

Methods

We describe a case of a 50-year-old female presenting to our Hospital for a left nasal obstruction complain. Nasal endoscopy showed the left nasal cavity completely obstructed by a polypoid lesion. A preoperative CT scan was performed showing a lesion which fills the left maxillary sinus with thinning and erosion of the walls of the sinus and polypoid manifestation at the level of the ipsilateral choana.

Results

The tumour was completely excised endoscopically under general anesthesia. There were no postoperative complications and the patient was discharged on the second postoperative day. A final diagnosis of maxillary ameloblastoma was rendered. The patient has been followed-up at 12 months and there was no evidence of recurrence.

Conclusion

Ameloblastoma is a histologically benign lesion, but locally aggressive with a marked tendency for recurrence. Surgical excision is the treatment of choice in all cases. These tumours require complete excision with adequate margins to minimize possible relapses. Recently, endoscopic management of this type of lesion has resulted in less invasive surgical approach with decreased morbidity and better tumour control.

Intraoperative application of ultrasound sonography during endoscopic orbital abscesses drainage procedures

D. Kuryga¹, A. Sieskiewicz¹, T. Lyson², M. Rogowski¹

¹ Otorhinolaryngology Department, Uniwersytecki Szpital Kliniczny, Białystok, Poland

² Neurosurgery Department, Uniwersytecki Szpital Kliniczny, Białystok, Poland

Abstract: ERS-1004

Session: Complications in rhinology

Session Time: 25-06-14, 11:35

Location: Hall J

Chair person: N. Otori

Presenting author: D. Kuryga

Objectives

The main problem that may be encountered during endoscopic orbital abscess drainage procedures is adequate visualization of the abscess cavity. The efficacy of drainage is usually confirmed by observation of puss outflow when pressure is applied on eye globe, palpational assessment of the change of orbital firmness, reduction of proptosis and evaluation of eyelid opening at the end of the procedure. Low accuracy of these methods may result in relapse of the disease and reoperations. We are presenting a series of patients in whom intraoperative ultrasonography was used during transnasal endoscopic orbital abscess drainage procedures. The advantages of this method were discussed.

Methods

All together 12 patients were operated endoscopically. In nine patients of this group subperiosteal abscess (medial - 6, superior -2 and inferior -1 case) was diagnosed. In remaining three patients intraorbital abscess was detected, including one occupying intracanal space.

Results

In 11 cases complete drainage was confirmed intraoperatively with ultrasonography. In one patient small amount of puss was left in intracanal space laterally to the optic nerve. There was no intraoperative or postoperative complication in operated patients.

Conclusion

Intraoperative ultrasonography facilitates endoscopic orbital abscess management making the surgery more precise and effective and less traumatic. It allows for more conservative resection of orbital walls, enables monitoring of drainage preventing from unnecessary manipulation in the orbit if the abscess is completely drained on one hand, on the other hand prompts to seek remaining undrained pouches of the abscess if they are still present in ultrasonographic examination.

Current position of external frontal septectomy

J. Michel¹, M. Achache¹, V. Rossi¹, A. Paganelli¹, P. Dessi¹

¹ Head and neck surgery, Hopital de la Timone, Marseille, France

Abstract: ERS-1005

Session: CRS surgical techniques

Session Time: 26-06-14 09:55

Location: Hall H

Chair person: V. Lund

Presenting author: J. Michel

Objectives

To establish the role of septectomy in the management of frontal unilateral sinusitis with contralateral healthy sinus.

Methods

Retrospective study of patients in whom we performed an external frontal septectomy. Data were collected from clinical records, operative report and pre and post operative CTscan.

Results

Nine cases of frontal septectomy were recorded between 2007 and 2013 for unilateral frontal sinusitis (8 infectious sinusitis and 1 mucocela). The average age was 60 years. One hundred percent of patients had a regression of their symptoms sinus and postoperative imaging showed a frontal sinus neo-ventilated. Others data such as the type of external approach and aesthetic outcomes were analysed.

Conclusion

We propose a new strategy reversal in the unilateral frontal sinusitis where septectomie has a place as an alternative to modified Lothrop procedure.

Expression profile of olfactory receptor genes in human olfactory mucosa

C. Verbeurgt¹, F. Wilkin², M. Tarabichi³, J.E. Dumont³, S. Hassid¹, P. Chatelain²

¹ ENT Department, Hôpital Erasme ULB, Brussels, Belgium

² Molecular biology, Chemcom, Brussels, Belgium

³ Institute of Interdisciplinary Research in human and molecular Biology, Université Libre de Bruxelles, Brussels, Belgium

Abstract: ERS-1006

Session: Olfaction

Location: Hall G

Time: 23-06-14, 14:54

Chair person: P. Rombaux

Presenting author: C. Verbeurgt

Objectives

Olfactory recognition is mediated by a large repertoire of 851 olfactory receptor loci. In spite of a rather accurate genomic characterization, very little is known about the details of the involvement of human olfactory receptor in odorant perception. So far, the responses of 48 human olfactory receptor with one or more odorant molecules have been reported. Therefore, profiling of olfactory receptor genes expression in whole human olfactory mucosa provides an opportunity to select the frequently expressed and potentially functional olfactory receptors in view of systematic deorphanization.

Methods

An Applied Biosystems TaqMan® Low Density Array containing probes for 356 predicted human olfactory receptor loci was designed to investigate their expression in whole human olfactory mucosa tissues from 26 autopsies (13 women and 13 men, with an average of 67 ± 11 years for women and 63 ± 12 years for men).

Results

The expression of 273 human olfactory receptor genes was observed in the selected whole human olfactory mucosa, among which 90 were expressed in all individuals. Globally, the olfactory receptor genes expression was not associated with age ($p=0.19$), sex ($p=0.23$) or smoking ($p=0.66$).

Conclusion

There is a substantial difference in the expressed olfactory receptor gene repertoire of each of the individuals. Most of the olfactory receptors deorphanized on the basis of sensitivity to known odorant molecules, which are described in the literature, were found in the expressed set.

Assessment of an association between allergic rhinitis and risk of herpes zoster: a population-based case control study

Y.J.J. Young J. Juhn¹, P. Wollan², B. Lahr³, B. Yawn⁴

¹ Pediatrics, Mayo Clinic, Rochester, USA

² Health Sciences Research, Mayo Clinic, Rochester, USA

³ Statistics, Mayo Clinic, Rochester, USA

⁴ Research, Olmsted Medical Center, Rochester, USA

Abstract: ERS-1007

Objectives

Asthma and atopic dermatitis have been reported to be associated with increased risks of *herpes zoster* (zoster) and *herpes simplex* infections. It is unknown whether it is true for allergic rhinitis (AR). AIMS: To determine whether AR is associated with an increased risk of zoster compared to those without AR.

Methods

This study was designed as a population-based case-control study. We compared the frequency of AR between zoster cases and age- and gender- matched controls (1:2 matching) without AR. The study was conducted in Olmsted County, Minnesota where health care environment is self-contained and all medical records for almost all Olmsted County, Minnesota residents are available for research under the auspices of Rochester Epidemiology Project. All adults (aged ≥ 50 years) with HZ were prospectively identified among Olmsted County, Minnesota residents between 2010 and 2011. Controls were birthday- and gender- matched (1:2 matching) individuals without a history of zoster.

Results

A total of 315 zoster cases and their 630 matched controls were enrolled. Of the 315 cases, 203 (64%) were females, 297 cases (94%) were Caucasians, and the mean age was 67.0 ± 10.5 years. A total of 110 (35%) zoster cases had a history of allergic rhinitis, compared to 178 (28%) controls. Controlling for all pertinent confounders, subjects with allergic rhinitis and had marginally, but not significantly, higher odds of zoster (adjusted OR, 1.34; 95% CI, 0.98-1.85; $p=0.069$).

Conclusion

AR is not significantly associated with the risk of zoster. The study finding needs to be replicated in larger studies.

Endoscopic transnasal resection of orbital apex cavernous haemangioma

B. Zhou¹, Q. Huang¹, N. Zhang¹, J.T. Shi²

¹ Otolaryngology-Head And Neck Surgery, Beijing Tongren Hospital Capital Medical University, Beijing, China

² Ophthalmology, Beijing Tongren Hospital Capital Medical University, Beijing, China

Abstract: ERS-1008

Session: Benign tumours

Session Time: 25-06-14, 11:33

Location: Hall H

Chair person: R. Harvey

Presenting author: B. Zhou

Objectives

To review the indications and the strategy of endoscopic transnasal resection of orbital apex cavernous haemangioma (OACH).

Methods

Retrospective case series. 16 patients (6men, 10 women; range 27 -62 years) with cavernous haemangiomas were enrolled in this study. All patients had comprehensive ophthalmological assessment and rhinoscopic evaluation before the operation. Transnasal endoscopic tumour resection was performed under general anaesthesia. Tumour was removed after ethmoidectomy and lamina papyracea (medial orbital wall) resection. Patients were evaluated by ophthalmologists and rhinologists post operatively.

Results

Preoperative CT and MRI imaging showed that 7 lesions located in the nasal side of the extraconal space, 8 lesions situated between the optic nerve and the medial rectus muscle and 1 lesion located lateral to the optic nerve. Complete tumour resection was achieved in 12 patients and 4 patients had orbital decompression only. 10 patients had orbital wall reconstruction at the same session. The follow up period ranged from 12-62 months. 11 patients had significant visual acuity improvement postoperatively while 5 patients remained unchanged. In 9 patients, the visual field impairment was improved 2 weeks after the operation. No major intra-operative or postoperative complication occurred.

Conclusion

OACH locating in the nasal side of the extraconal space or medial to the optic nerve in the intraconal space can be removed endoscopically. Using neuropatti to keep the orbital fat and muscle in the orbit, four- hand technique and an experienced and skillful endoscopic surgeon are essential elements for the successful operation.

Periorbital necrotizing fasciit

C. Günel¹, A. Toka¹, H.S. Basak¹

¹ Department of Otorinolaryngology Head and Neck Surgery, Adnan Menderes University Faculty of Medicine, Aydın, Turkey

Abstract: ERS-1009

Objectives

Necrotizing fasciit is progressive infection of skin and subcutaneous tissue/fascia, generally described in extremity and trunk. It occurs rarely in head and neck because of the excellent blood supply of that area. Periorbital fascial necrotizing has high morbidity and mortality and early diagnosis and treatment is required.

Methods

A 75 years old without DM and any immunosuppressed disease man was admitted with left periorbital swelling, tenderness and fever (Figure 1) There was an history of skin incision with razor blade two days ago. In hours periorbital swelling increased, became black and the wound which occurred due to skin incision started purulent discharge. Thickness of subcutaneous fat tissue was determined with Orbital MRI.

Results

After culture and pathologic samples were taken, parenteral Vancomycin and Ampicillin –Sulbactam was started. Necrotic tissue increased in hours. Clinic situation wasn't regressed with antibiotherapy therefore surgical debridement was performed until bleeding tissue was encountered. Culture of the tissue was supported *Streptococcus pyogenes*. We treated patient with antibiotherapy, re-debridement and daily dressing for three weeks.

Conclusion

Necrotizing fasciit is rare and lethal infection which generally described in extremity and trunk. Becoming dark of the lesion is an alert for recognizing necrotizing fasciit. Necrotic tissue progresses very quickly therefore being late for surgical debridement increases morbidity and mortality.



Microbiological condition of surgical field during endoscopic adenoidectomy

Y. Rusetsky¹, T. Sedykh¹

¹ Department of the ENT, First Moscow State Medical University, Moscow, Russia

Abstract: ERS-1010

Session: Pediatric rhinology

Session Time: 24-06-14, 12:10

Location: Hall H

Chair person: JB Watelet

Presenting author: Y. Rusetsky

Objectives

Antiseptic washing of surgical site traditionally used in general surgery for the prevention of wound infection prior to the intervention. However, this rule during endoscopic adenoidectomy has been ignored up to date. The aim was to study microbiological condition of surgical field and effectiveness of antiseptic protection of surgical wound during endoscopic children's adenoidectomy.

Methods

173 children with adenoids were observed. 90 children of the basic group had antiseptic washing of surgical site - nasopharynx. The biopsy was made three times: before the washing, after it and after the operation. 83 children made the control group.

Results

90 children of the basic group had 140 strains (15 species) of bacteria with the content 103 – 108 CFU before the washing. After the antiseptic washing of the surgical site there were 97 bacteria (11 species) with the content 103 – 106 CFU. 41 strains of bacteria (7 species) with concentration 102 – 104 CFU were found in the surgical wound after the second antiseptic washing so bacterial content decreased by 70,7 %. 83 patients of the control group had 131 strains (13 species) with bacterial content 103 – 107 CFU on the surface of the mucous membrane pharyngeal tonsil, and after the operation 168 strains (16 species) with concentration 105 – 108 CFU were found so bacterial content decreased by 28,2%.

Conclusion

The proposed method of the surgical field preparation during adenoidectomy has high microbiological and clinical efficacy, safety, significantly facilitates the postoperative period and should be widely used in clinical practice.

Intraturbinal versus extraturbinal microdebrider-assisted inferior turbinoplasty; preliminary results

A. El Damaty¹, H. Badran², A. Hussein³, S. Amin⁴, M. Saleh⁵

¹ ENT, Magrabi Eye and Ear Centre, Muscat, Sultanate of Oman

² ENT, Saudi German Hospital, Jeddah, Saudi Arabia

³ ENT, Saudi Airlines Hospital, Jeddah, Saudi Arabia

⁴ ENT, Fayoum University, Cairo, Egypt

⁵ ENT, Zagazig University, Zagazig, Egypt

Abstract: ERS-1011

Session: Septal Surgery and Turbinate Reduction

Location: Hall F

Time: 26-06-14 11:45

Chair person: S. Carrie

Presenting author: A. El Damaty

Objectives

To compare the intraturbinal use of the microdebrider with the extraturbinal one for inferior turbinate reduction based on subjective and objective parameters

Methods

Forty patients with nasal obstruction due to bilateral hypertrophied inferior turbinates were included in this study. All patients underwent microdebrider-assisted inferior turbinoplasty, the microdebrider was used intraturbinally on one side of the nose and extraturbinally on the other side in alternate manner. The patients were blinded to the technique used

Results

Ten patients were lost for follow up. The operative time and operative blood loss were less in the extraturbinal group ($p < 0.05$). At 1 month post operatively, the nasal obstruction VAS score showed significant improvement on the intraturbinal sides only ($p < 0.05$), at 3 and 6 months post operatively, the VAS score showed significant improvement on both sides with no difference between the 2 groups. Nasal endoscopy revealed grade 2 turbinates in 30% and grade 3 in the remaining 70% of the intraturbinal group. At 6 months post operatively, significant improvement of the turbinate size was detected on both sides. The NMCC showed significant improvement on the intraturbinal sides at 1 month with significant worsening on the extraturbinal sides. At 3 months, both sides showed significant improvement of the NMCC. No complications were reported in either group.

Conclusion

Extraturbinal microdebrider-assisted inferior turbinoplasty is as effective and safe as the intraturbinal one with shorter operative time and less blood loss with similar morbidity

Radiological profile of fungal sinusitis

S. Pillai¹, A. Bhandarkar¹

¹ Department of ENT, KMC Manipal, Manipal, India

Abstract: ERS-1012

Session: Imaging

Session Time: 25-06-14, 11:15

Location: Hall G

Chair person: N. Freling

Presenting author: S. Pillai

Objectives

The aim of this retrospective study is to outline the radiological features of fungal sinusitis in biopsy proven cases to see whether definite criteria exists to make a pre-operative diagnosis based on imaging studies.

Methods

We reviewed the outpatient records and radiological images of 50 patients with biopsy proven fungal sinusitis, who were operated in our hospital from 2008 to 2013. We classified the cases according to the clinical and radiological features as acute invasive, chronic invasive, chronic granulomatous, allergic fungal sinusitis and fungal ball. We could find distinct radiological features like hyper-attenuation, hyperostosis and bone erosion in the CT scan images of most of the cases, though in some cases the clinical presentations were not of fungal sinusitis.

Results

The CT scans of fifty patients who underwent endoscopic sinus surgery from 2008 to 2013, and who had a histopathological diagnosis of fungal sinusitis were studied to determine whether a preoperative diagnosis of fungal sinusitis could be made based on radiological findings.

Definitive radiological criteria do exists to make a pre-operative diagnosis and this is outlined in our study which consists of 15 cases of allergic fungal sinusitis, 15 patients with fungal balls, 10 acute invasive and 10 chronic invasive fungal sinusitis patients.

Conclusion

Fungal sinusitis is a diagnosis which often takes us by surprise after surgery. A high index of clinical suspicion and proper imaging studies will help in making an accurate pre-operative diagnosis.

Potential role of the long pentraxin PTX3 as a recurrence biomarker in chronic rhinosinusitis with nasal polyps

G. Bertazzoni¹, M. Trimarchi¹, M.R. Yacoub², A.A. Manfredi², M. Bussi¹

¹ Otorhinolaryngology and Head and Neck Surgery, San Raffaele Scientific Institute, Milan, Italy

² Allergology and Immunology, San Raffaele Scientific Institute, Milan, Italy

Abstract: ERS-1013

Session: CRS Basic 2

Session Time: 24-06-14, 14:40

Location: Hall G

Chair person: R. Moesges

Presenting author: G. Bertazzoni

Objectives

Current scant understanding of the pathogenetic mechanisms underlying chronic rhinosinusitis with nasal polyps (CRSwNP) makes prediction of recurrence risk difficult. The investigation of the inflammatory molecules involved in CRSwNP is therefore of particular interest. The prototypical long Pentraxin 3 (PTX3) is a soluble pattern recognition receptor, which might prove informative about etiopathogenesis and prognosis of CRSwNP. We analyzed PTX3 expression in CRSwNP to verify its presence and determine its potential predictive value on the risk of post-surgical recurrence.

Methods

We performed a cross-sectional study on 26 patients with CRSwNP who were candidates for functional endoscopic sinus surgery (FESS). The patients were diagnosed and selected using nasal endoscopy and CT imaging. Patients with history of previous FESS, or who presented with recurrence during the post-surgical long term follow-up were considered with recurrent disease. The plasmatic concentration of PTX3 was evaluated with immunochemistry and the characteristics of PTX3 distribution within the polyps were analyzed with immunohistochemistry.

Results

PTX3 proved detectable in the plasma of all patients. Moreover, the plasmatic concentration of PTX3 was on average greater in patients with recurrence and significantly different between patients with and without recurrence ($p \leq 0.05$). Conversely, patients with recurrence do not seem to be different from patients without recurrence for what concerns the distribution patterns of the molecule within the polyps ($p = 0.6828$).

Conclusion

PTX3 is a promising biomarker for chronic rhinosinusitis with nasal polyps. Studies on more numerous patients groups are necessary to confirm this contention.

Nasal mucosa narrow band imaging (NBI) in granulomatosis with polyangiitis (Wegener Granulomatosis): a preliminary study

M. Trimarchi¹, F. Pilolli¹, G. Bertazzoni¹, C. Campochiaro², E. Bozzolo², M.G. Sabbadini², M. Bussi¹

¹ Otorhinolaryngology and Head and Neck Surgery, San Raffaele Scientific Institute, Milan, Italy

² Allergology and Immunology, San Raffaele Scientific Institute, Milan, Italy

Abstract: ERS-1014

Session: Rare diseases in the nose and sinuses

Location: Hall J

Time: 25-06-14, 16:24

Chair person: R. Kamel

Presenting author: M. Trimarchi

Objectives

Narrow band imaging (NBI) endoscopy is a technique that allows for real-time visualization of mucosal and submucosal vascular patterns with no need to perform invasive procedures such as biopsy. Since Granulomatosis with Polyangiitis (GPA) is defined by vascular inflammation, we examined GPA patients with NBI to evaluate whether disease-specific mucosal vascular patterns are present.

Methods

We conducted a prospective observational study performing endoscopic evaluation of upper airways with NBI on: 1) GPA patients, 2) patients with suspect GPA, who were scheduled to undergo nasal biopsy to confirm diagnosis, 3) patients with chronic rhinosinusitis with nasal polyps (CRSwNP), and 4) healthy controls. The presence of NBI vascular alterations and histological results in patients in group 1 and 2 were matched with the final diagnosis in a cross tabulation. Sensibility (SE), specificity (SP), positive predictive value (PPV) and negative predictive value (NPV) were calculated both for NBI and histology in group 1 and group 2 patients.

Results

We enrolled 69 patients. NBI vascular patterns in GPA patients were consistently and recognizably different from healthy and CRSwNP mucosal patterns in 53% of our cases. In patients with GPA, biopsy and NBI results were for the most part comparable, except for 3 cases.

Conclusion

Compared to nasal biopsy, NBI endoscopy is a less invasive and time-demanding technique to analyze mucosal vasculature. In our cohort of patients NBI nasal endoscopy offered diagnostic sensitivity and specificity similar to histology. NBI could become in the future a supplementary diagnostic tool in the complex workup of GPA.

Effect of antihistamine nasal spray on tracheal smooth muscle

Y.L. Chou¹, H.W. Wang²

¹ Department of Otolaryngology-Head and Neck Surgery, Taichung Armed-Forces General Hospital, Taichung, Taiwan

² Graduate Institute of Clinical Medicine and Department of Otolaryngology, Taipei Medical University-Shuang Ho Hospital, Taichung, Taiwan

Abstract: ERS-1015

Session: Rhinitis Basic

Session Time: 23-06-14, 12:00

Location: Hall J

Chair person: L. Kalogjera

Presenting author: Y.L. Chou

Objectives

Azelastine is a histamine receptor-1 (H1) antagonist with anti-inflammatory properties is commonly prescribed in the form of nasal spray for rhinitis. It has also been established that allergic rhinitis and asthma frequently co-exist. The effect of H1 antagonist on nasal mucosa is well known, however, the effect of the drug on tracheal smooth muscle is still uncertain. Therefore, the aim of this study was to determine the effects of azelastine on tracheal smooth muscle in vitro.

Methods

Isolated rat tracheal smooth muscle was used to test the effect of azelastine. The following assessments of azelastine were performed: (1) its effect on tracheal smooth muscle resting tension; (2) its effect on contraction caused by 10^{-6} M methacholine as a parasympathetic mimetic; and (3) effect of the drug on electrically induced tracheal smooth muscle contractions.

Results

Results indicated that addition of methacholine to the incubation medium caused the trachea to contract in a dose-dependent manner. Addition of azelastine at doses of 10^{-5} M or above elicited a significant relaxation response to 10^{-6} M methacholine-induced contraction. Azelastine was able to inhibit electrical field stimulation-induced spike contraction. It alone had a minimal effect on the basal tension of trachea as the concentration increased.

Conclusion

This study indicated that high concentrations of azelastine might actually inhibit parasympathetic function of the trachea. Azelastine nasal spray might reduce asthma attacks in rhinitis patients because it may inhibit parasympathetic function and reduce methacholine-induced contraction of tracheal smooth muscle.

Endoscopic assisted debridement of acute invasive fungal rhinosinusitis in immunocompromised patient under local anesthesia - case report

V. Oliveira¹, P. Vale¹, D. Silva¹, P. Escada¹

¹ ENT, Centro Hospitalar Lisboa Ocidental, Lisbon, Portugal

Abstract: ERS-1016

Objectives

The invasive presentation of fungal disease of paranasal sinuses albeit rare, has high morbidity and mortality rates. Early diagnosis is critical, especially in aged individuals who are immunocompromised. We report a clinical case of a 69-year-old man with unilateral acute invasive fungal rhinosinusitis following chemoradiotherapy for metastatic lung cancer.

Methods

The biopsy pathology reports and histopathologic slides were reviewed, and based on known clinical and histologic criteria of fungal disease of the paranasal sinuses the diagnosis of acute invasive fungal rhinosinusitis was achieved.

Results

Histologically the samples showed necrotic sinonasal mucosa with the presence angioinvasive fungal forms of *Aspergillus niger*. Clinical status of the patient resolved following complete debridement procedure using local anesthesia by direct endoscopic guidance.

Conclusion

In the setting of acute invasive behavior, local debridement is critical for local control of the disease. In particular, immunocompromised patients are high-risk patients concerning all aspects of anesthesia and postoperative recovery. Extensive surgical resection in patients with these poor prognostic signs should be considered carefully in light of their poor survival. As a result, topical anesthesia can be safely and effectively achieved and can be used in office settings for local debridement using direct transnasal endoscopic control.

Paranasal sinusitis and the quality of the voice

K. Zaharia¹, A. Shehi², B. Boci³

¹ Otorhinolaryngology, Policlinic of Specialities 2, Tirana, Albania

² Epidemiology, Public Health Institution, Tirana, Albania

³ Department of Otorhinolaryngology, Universitary Hospital, Tirana, Albania

Abstract: ERS-1017

Session: Acute Rhinosinusitis

Time: 25-06-14, 15:10

Location: Hall J

Chair person: G. Adriaensen

Presenting author: K. Zaharia

Objectives

In our country a great number of individuals suffer from allergic rhinitis and sinusitis each year. A minority of this population presents and seeks relief through medications. Does exist a relation between sinusitis relief and the quality of the voice? Even when minor alterations occur, the result could have hug differences in vocal quality.

Methods

In this study are involved 20 patients and 10 control subjects. There are 12 males and 8 females all without ear and throat problems, speech disorders or previous nasal or sinus surgery. The control group included five males and five females. A questionnaire (VASS), with ten point visual scales was completed by each patient to assess the degrees of nasal obstruction, speech ranges and the degrees of patient satisfaction, before the treatment and after.

Results

We bring new data about the speech changes and the quality of the voice before and after the medical treatment of rhinitis and sinusitis. The scores defining the quality of the voice showed a highly significant difference between pre and post treatment results. (pre -46.1% post 57.23 % and control 56.8%).

Conclusion

Approximately 62% of the patients indicated changes (improvement) in vocal quality and nasal obstruction after treatment (10 days of oral antibiotic, cortisone nasal spray, mucolytic, antihistaminic). These changes show improvement of the degree of hyponasality of the patients compared the range of nasality of normal subjects. More improvement was seen in patients with severe pathology, and we recommend that patient using their voice professionally should be advised regarding the possible effects of paranasal sinusitis on vocal quality.

Avoiding routine nasal packing following septorhinoplasty does not compromise patient outcomes as measured using the glasgow benefit inventory

N. Sethi¹, R. Simpson¹, S. Prowse¹, S. Sood¹, D. Strachan¹

¹ Bradford Royal Infirmary, Bradford Teaching Hospitals NHS Trust, Bradford, United Kingdom

Abstract: ERS-0407

Session: Rhinoplasty and facial plastic surgery

Session Time: 25-06-14, 09:30

Location: Hall G

Chair person: C. Wever

Presenting author: N.Sethi

Objectives

The postoperative management of rhinoplasty/septorhinoplasty (RSR) patients remains debated with respect to the use of nasal packs. There is great variation in practice amongst surgeons with some viewing packing as necessary to achieve optimal outcomes and others strongly against the use of packs.

We aimed to evaluate if avoiding routine postoperative nasal packing in RSR leads to increased complications postoperatively and if it has an effect on patient-reported outcomes.

Methods

All septorhinoplasty and rhinoplasty operations performed between January 2005 and November 2009 were identified. These patient case notes were then reviewed to obtain patient demographics, operation details (including details of whether the patient was packed or not at the time of surgery) and any post-operative complications. The Glasgow Benefit Inventory (GBI) was then administered via telephone to measure patient-reported outcomes.

Results

In total 167 patients were identified for 11 of whom the case notes were unavailable. Of the 156 patients remaining, 126 completed the GBI questionnaire (who had undergone 132 operations). This study demonstrates no significant difference in patient reported outcomes (GBI scores) with or without the use of nasal packing

Conclusion

This study suggests that routine nasal packing can be avoided in the majority of patients. This can be done with confidence that the patient outcome is not being compromised.

A new manometry method to measure pressures in different nasal airway locations

J. Araujo-Martins¹, C. Santos², E. Barros³, P. Ribeiro⁴, N. Neuparth¹

¹ CEDOC, Faculdade de Ciências Médicas - Universidade Nova de Lisboa, Lisbon, Portugal

² Biomedical Engineering, Faculdade de Ciências e Tecnologia - Universidade Nova de Lisboa, Lisbon, Portugal

³ Otolaryngology, Centro Hospitalar de Lisboa Central - Hospital São José, Lisbon, Portugal

⁴ Physics, Faculdade de Ciências e Tecnologia - Universidade Nova de Lisboa, Lisbon, Portugal

Abstract: ERS-1019

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:27

Location: Hall H

Chair person: G. Ottaviano

Presenting author: J. Araujo-Martins

Objectives

Nasal airway pressure measurements are currently limited to whole nasal cavity values (one or both sides simultaneously). Furthermore, standard rhinomanometry has technical constraints that impose conditions which are different from daily nasal ventilation – forced ventilation, artificially created flow, one side occlusion and possible nasal valve changes.

This project aimed to develop a system that allows pressure recordings during both tidal and forced ventilation, without contralateral side occlusion and in different locations in the nose.

Methods

A catheter based rhinomanometer was constructed and programming was developed to allow real time nasal pressure recordings. Measurements were taken from volunteers.

Results

Nasal pressures were successfully recorded during tidal and forced ventilation at two locations in the nasal cavity (pavement and middle meatus), pre and post decongestion. Subjective complaints regarding nasal ventilation were also recorded.

Conclusion

Preliminary data shows that it's possible to (1-) measure nasal pressures during tidal ventilation, (2-) at different levels in the nasal cavity (pavement and middle meatus) and it also suggests that (3-) differences in anatomy and symptoms may be translated into different pressure patterns (intra- and interindividual).

FUNCTIONAL RHINOPLASTY: IMPROVING FORM & FUNCTION IN PRIMARY AND SECONDARY SURGERY

M. NARAGHI¹,

¹ OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, TEHRAN UNIVERSITY OF MEDICAL SCIENCES, TEHRAN, IRAN

Abstract: ERS-1020

Objectives

To present different factors contributing to the nasal functional problems in pre-and postoperative patients and the specific functional risk factor in any patient who is a candidate for rhinoplasty. To clarify different surgical techniques which improve nasal function in rhinoplasty.

Methods

Nasal obstruction is one of the most common complaints following rhinoplasty. There is increasing understanding of the functional role of the nasal valve during rhinoplasty. Successful management of functional problems is dependent on understanding the mechanisms which preserve nasal airway patency by increasing the stability of the lateral nasal walls and valve region to be more resistant to collapse or decrease intranasal resistances, such as septal deviations and hypertrophic turbinates.

Results

In this presentation a wide spectrum of procedures which augment valve support will be discussed. High risk procedures which predispose to primary or secondary valve stenosis will also be addressed as pitfalls in nasal surgery. Each area of pathology could be corrected by variety techniques.

Conclusion

A comprehensive discussion and multimedia demonstration of special surgical techniques on septum, turbinates, nasal tip, nasal valve and other steps in functional rhinoplasty will be covered.

Closed reposition of nasal septum (C.R.D.N.S.)

M. Adnan¹

¹ ORL, Alhada armdforce hospital, Taif, Saudi Arabia

Abstract: ERS-1021

Objectives

To determine that closed reposition of nasal Septum (C.R.D.N.S.) in children & adult are an effective procedure in pediatric & adult patient suffering Nasal Obstruction (N.O.) due to deviated nasal septum (bony part in adult) (D.N.S.).

Methods

A prospective study of 112 patients having Nasal Obstruction 31 pediatric & 81 adult due to D.N.S. underwent C.R.D.N.S. under G.A. in Military Hospital. Alhada & Southern region (Atartory Teaching Hospital) K.S.A. patients were diagnosed in the clinic by a consultant O.R.L. H&N Surgeon as deviated septum (mostly bony part in adult).

The C.R.N.S. procedure, expectation and possible complication were explained to the parents and on agreeing the patient was booked as a day case and pre-operative preparation conducted. Under short General Anesthesia with Walsham forcep the deviated nasal septum was hold.

Results

A total 112 pediatric & adult patients included in the study with Nasal Obstruction (N.O.) due to D.N.S. Age ranges from 5-13 years old: male patients 24 (77%), female patients 7 (23%). Adult patients age range from 14-45 :male 57 (70%), female 24 (30%) Duration of symptoms: Less < 6 months (12) patients, Greater that > 6 months (19) patients, Sex: Male/Female ratio = 1.6:1 pediatric. Adult less < 1 year (25), Greater > 1 year 56. Nasal Improvement showed (86) patients (76%) cured from Nasal Obstruction, 25 patients (22%) did improved from Nasal Obstruction 1 patient did not improved (10%), no patient did have worsen of symptoms worse 0 (0%).

Conclusion

Overall improvement for (C.R.D.N.S.) is 90% i.e. the procedure is effective, non-invasive, we recommend (C.R.D.N.S.) for pediatric & Adult. due to avoiding invasive surgical procedure.

EVALUATION OF A SPECIFIC AND GENERIC PATIENT REPORTED OUTCOME MEASURE IN PATIENTS UNDERGOING SEPTAL SURGERY: A PROSPECTIVE STUDY

N. KILLICK¹, R. ADVANI¹, D. BONDIN¹, V. MALIK¹, S. IZZAT¹

¹ DEPARTMENT OF OTOLARYNGOLOGY, WRIGHTINGTON WIGAN & LEIGH NHS FOUNDATION TRUST, WIGAN, UNITED KINGDOM

Abstract: ERS-1022

Objectives

Primary Aims 1. To prospectively investigate outcomes of septal surgery carried out at the Wrightington, Wigan and Leigh NHS Trust using a validated outcome measure (Nasal Obstruction Symptom Evaluation - NOSE). 2. To compare outcomes with a validated generic quality of life measure the Glasgow Benefit Inventory (GBI).

Methods

A literature search using MeSH headings Nasal Obstruction Symptom Evaluation, Glasgow benefit Inventory (GBI), nasal obstruction, quality of life, questionnaires, health status of the NHS evidence databases was carried out.

21 Patients undergoing septal surgery were prospectively recruited over a three month period. Participants were asked to complete both a pre and post surgery questionnaire. The pre surgery questionnaire consisted of the validated 5 question NOSE tool and demographic details (Stewart et al 2004a, b). The post-surgery questionnaire consisted of the NOSE tool and the GBI; an 18 question once only generic patient reported outcome measure widely used to measure outcomes following ENT procedures.

Results

Pre and post operative scores from the NOSE tools were compared both with each other and the scores from the post intervention GBI tool. A significant improvement was seen in NOSE scores post septoplasty.

Conclusion

The subjective comparison of long-term outcome using the Fairley nasal symptom questionnaire (FNQ), a disease specific validated outcome measure with the GBI has been reported previously (Konstantinidis 2005, Uppal 2005). This is the first study to show an improvement in symptoms and quality of life using these specific and generic validated outcome measures in the same patients group.

Maxillary sinus lymphoma – case report

S. Tavares¹, H. Rodrigues¹, S. Alves¹, V. Proença¹, M. Santos¹, J. Mendes¹, L. Antunes¹

¹ ENT Department, Garcia de Orta Hospital, Almada, Portugal

Abstract: ERS-1023

Objectives

The incidence of aggressive lymphoma in the nasal cavity and sinus is rare. It has a rapid increasing in size and it is, in about 60% of the cases, diagnosed in a late stage. Only 30% of the cases manifest themselves with the typical “B” symptoms. Other tumors (sarcomas, melanoma metastases, undifferentiated carcinomas and neuroendocrine tumors) must be differentiated from the lymphomas. The treatment of choice is the chemotherapy after the histological diagnosis, which is often limited by the localization of the tumor and by the fast progression of the disease.

Methods

Case report.

Results

We report a clinical case of a 15 year-old male, with an one month longstanding intensive frontal-parietal headache and photophobia which progressed, in 5 days, to diplopia, lumbar and crural pain followed by paresis of the inferior limbs. The etiologic evaluation (computed tomography and magnetic resonance imaging) confirmed the presence of a lesion involving the left maxillary sinus and the pterygoid maxillary fossa and extending intracranially. The biopsy (Caldwell-Luc surgery) confirmed the proliferation of small bluish cells indicating a Burkitt-like lymphoma. There were also identified lesions on the left kidney and adrenal gland and a lesion compressing the medulla. The patient was submitted to medullary decompression and initiated chemotherapy.

Conclusion

These tumors have a fast increasing in size over the days and before the definitive diagnosis is achieved, the patients may need to be submitted to surgical treatments to deal with complications. Facing the severity and complexity of this disease, these cases should be managed in tertiary medical centers.

Dermoid cyst of the greater wing of the sphenoid bone: an image-guided endoscopic endonasal transpterygoid approach

A. Bernic¹, M. Jurlina¹, M. Gjuric¹

¹ Department of ENT Head and Neck Surgery, University of Zagreb Zagreb University Hospital Center, Zagreb, Croatia

Abstract: ERS-1024

Objectives

Intracranial lesions of the anterior, middle, and posterior skull base are traditionally approached via transfacial and transcranial open surgeries. However, these invasive procedures commonly require long recovery periods, and lead to increased risk of serious complications. During the last several decades, progress in image-guided endoscopic endonasal surgery ensured an invaluable, less invasive alternative for the surgical approach to a variety of skull base pathology.

Methods

We here present one such case in a 14-year-old girl with a 2-year history of chronic headache, who presented to our ENT clinic for further evaluation. Neuroimaging revealed a well-demarcated oval-shaped mass on the right great wing of the sphenoid bone. The low-density lesion was reported as located between the foramen ovale and foramen rotundum with an extension to the pterygopalatine fossa, accompanied by visible bony defect. In this case, given the position of the lesion, an image-guided endoscopic transpterygoid approach was chosen as the best surgical option.

Results

A near-total resection of the lesion via marsupialization was done. Subsequent pathohistological analysis of the dissected mass pointed to a thick, stratified squamous epithelium cyst wall containing dermal elements, and hence provided the definitive diagnosis of an intracranial dermoid cyst.

Conclusion

Following the surgery, the patient recovered swiftly and with no significant side-effects or surgical sequelae. She continues to be followed in the outpatient clinic, with no recurrence of the lesion present 7 months post-surgery.

Rationalising use of CT scans in orbital cellulitis: audit of a management protocol

J. Nairn¹, A. Bradley², J. McCutcheon³, M.S.C. Morrissey⁴, H. Kubba⁴

¹ Medical Student Ninewells Hospital, Dundee Medical School, Dundee, United Kingdom

² GPST 4, Royal Hospital Sick Children, Glasgow, United Kingdom

³ GPST 3, Royal Hospital Sick Children, Glasgow, United Kingdom

⁴ Consultant ENT, Royal Hospital Sick Children, Glasgow, United Kingdom

Abstract: ERS-1026

Session: Pediatric rhinology

Session Time: 24-06-14, 12:00

Location: Hall H

Chair person: JB Watelet

Presenting author: J. Nairn

Objectives

In children the symptoms of pre-septal cellulitis and orbital cellulitis can be difficult to distinguish clinically. A previous audit in our hospital highlighted the need for an effective management protocol. Uncertainty in such circumstances was found to result in sub-optimal or adverse clinical outcomes.

Methods

This audit is a retrospective review of all children (130) presenting with signs and symptoms of orbital infection to RHSC from Jan 2012 to Jan 2014. Patients were identified from the ENT department database cross-referenced against the records held in the radiology department. Their in-patient times and microbiology results were recorded.

Results

70% (91) children in the sample population under ENT care were judged to have mild superficial infection. All of these children were admitted, treated with IV antibiotics and discharged successfully. 30% (39) children admitted were judged to require a CT scan based on criteria outlined in our protocol. Of those children, 43.5% (17) had a serious infection requiring surgical treatment. The ages of our population range between 13.1 years to 0.23 years with a median age of 4.2 years: 65 children in the cohort were boys. In 2 cases, children managed initially by the protocol had an adverse outcome. 1 as the result of an Empyema, another due to later diagnosis of Rhabdomyosarcoma.

Conclusion

It appears that the protocol both sensitive and specific to distinguish between children who have serious infection requiring CT imaging: guiding our management for the majority of children who can be managed conservatively.

Endonasal endoscopic dacryocystorhinostomy: simplified steps

M. Naraghi¹

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1027

Objectives

1. Know anatomy, physiology and pathologic conditions of the lacrimal system. 2. Detect factors influencing the outcome of endonasal endoscopic dacryocystorhinostomy. 3. Apply a simple surgical technique for endonasal endoscopic dacryocystorhinostomy with the high success rate.

Methods

The maxillary crest was the best landmark in our cases, The mucosa over the sac was elevated by a triangular elevator. After exposure of the bony crest this bone was removed by a sharp punch forceps. After total exposure of the sac, the medial wall of the sac was removed by the same punch forceps. The opening is made so large, exposing the lateral wall of sac, observing openings of the canaliculus into the sac in many cases. The nasal mucosal flap was incised to laying it over the sac. By the final trim of flap up to the remaining sac wall, fine approximating of the edges is done. The latter step is very important in preventing post-operative granulation and should be done meticulously.

Results

Dacryocystorhinostomy is a procedure used to create a lacrimal drainage pathway into the nasal cavity in order to reestablish the permanent drainage of a previously obstructed excretory system. Although preliminary reports revealed less success in comparison with external approaches, recent endonasal endoscopic surgeries on various types of DCR have preserved advantages of this technique while diminishing the failures.

Conclusion

The procedure needs no tenting by lacrimal probe and no stenting of the lacrimal system. This simple method is easy to do in every setting.

CT scanning for chronic rhinosinusitis: compliance with EPOS in the UK

R. Sproat¹, S. Qamar², R. Hettige¹

¹ Otolaryngology, Wexham Park Hospital, Slough, United Kingdom

² Otolaryngology, Royal Berkshire Hospital, Reading, United Kingdom

Abstract: ERS-1028

Session: Imaging

Session Time: 25-06-14, 11:50

Location: Hall G

Chair person: N. Freling

Presenting author: R. Sproat

Objectives

The European Position Paper on Rhinosinusitis (EPOS) has made recommendations for use Computerised Tomography (CT) for diagnosis of chronic rhinosinusitis in secondary care. Our aim was to investigate compliance with these guidelines within UK otolaryngology practice.

Methods

A multi-centre, retrospective case-note review was carried out, identifying 82 relevant cases. Supplementary information was obtained from imaging and surgical management databases.

Results

There was marked variation in practice between UK centres. In one centre 17 % of CTs for diagnosis of chronic rhinosinusitis were compliant with EPOS guidelines. Amongst centres, only 48 % of scans were carried out after the recommended duration of medical therapy. Overall, the negative scan rate was 72%. The symptoms of nasal obstruction, anterior rhinorrhoea and hyposmia had higher Positive Predictive Values (PPV) for radiological changes (30%, 50% and 38% respectively), compared to facial pain and post-nasal drip (24% and 25% respectively). Nasal endoscopy had poor specificity, consistent with corroborative literature.

Conclusion

Overall compliance with EPOS guidelines varied between UK centres and positive scan rate is low. Due to concerns about radiation exposure, we would recommend greater compliance with EPOS guidelines, and further studies to help aid the sensitivity of clinical diagnosis.

Tuberculosis of the lacrimal sac, a case report

M. Trindade Soares¹, R. Santos², A. Ribeiro da Silva³, G. Evaristo⁴, P. Henriques¹, L. Oliveira⁵, P. Montalvão⁵, M. Magalhães⁵

¹ Otorhinolaryngology, Prof. Doutor Fernando Fonseca Hospital, Lisbon, Portugal

² Otorhinolaryngology, Egas Moniz Hospital, Lisbon, Portugal

³ Otorhinolaryngology, Santarém Distrital Hospital, Lisbon, Portugal

⁴ Pneumology, Santarém Distrital Hospital, Lisbon, Portugal

⁵ Otorhinolaryngology, Instituto Português de Oncologia de Lisboa Francisco Gentil, Lisbon, Portugal

Abstract: ERS-1029

Objectives

The purpose of this paper is to call attention to an unusual diagnosis of a lacrimal apparatus infectious condition. Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis* that still remains a public health problem in many countries. Its incidence in industrialized countries has been increasing during recent years due to HIV infection and immigration. Tuberculosis affects primarily the lung and lymph nodes but has the potential to infect almost every organ system and unusual presentations raise difficulties in differential diagnosis. Orbital tuberculosis is rare even in endemic areas. In this location the disease may involve soft tissue, lacrimal apparatus or the bones of the orbital wall. Tuberculous dacryoadenitis was first described by Abadie in 1881. Since then very few other cases have been reported in the literature. Culture of *Mycobacterium tuberculosis* is required for the definitive diagnosis.

Methods

The authors report a case of primary tuberculosis affecting the right nasolacrimal system presenting with a medial canthal mass.

Results

The patient was a 60 year old woman, with type 1 diabetes, that had a history of recurrent conjunctivitis and blepharitis without response to conventional treatment. The diagnosis was made after culture of lacrimal drainage. She has been treated with anti-tubercular agents with substantial improvement.

Conclusion

Although tuberculous dacryoadenitis is a very rare manifestation of tuberculosis it should be considered in the differential diagnosis in order to perform early and adequate treatment.

Endonasal endoscopic approaches to orbit

M. Naraghi¹, M. Boroojerdi²

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1030

Session: Orbit lacrimal system

Session Time: 26-06-14 11:55

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: M. Naraghi

Objectives

The origin of orbital lesions could be intraorbital, sinonasal or intracranial. Various surgical approaches have been applied for treatment of the orbital pathologies. The medial orbital wall is composed mainly of lamina papyracea which could be accessed easily through the ethmoid sinuses. In this article, personal experiences in endoscopic approach to the orbital lesions have been explained.

Methods

Three hundred seventy patients with different orbital lesions underwent endoscopic orbital surgery in fifteen years period. A standard anterior and posterior ethmoidectomy were performed in most of cases. In sinogenic orbital lesions, treatment was complete by treating sinus of origin. In the case of the intact lamina papyracea, it was removed followed by an incision through the periosteum. At the latter stage, much precision was applied to avoid bleeding and ocular muscles injury.

Results

The outcomes were dependent on the type of the lesions. In the inflammatory conditions, the endoscopic surgery was performed as a curative modality with functional benefits for the sinuses. In the benign lesions, complete resection of the tumor was accomplished exclusively endoscopic in most of the cases. Malignant tumors such as intraorbital lymphoma frequently required other therapeutic modalities.

Conclusion

Endoscopic surgery could be an alternative treatment for a wide variety of orbital lesions including orbital masses. The endonasal routes have the advantages of being less invasive, excellent homeostasis, time saving and no scars compared to the traditional external approaches. Disadvantages include a steeper learning curve, higher equipment cost and need for an experienced surgeon.

Endonasal endoscopic management of sinonasal neoplasms

M. Naraghi¹, M. Boroojerdi²

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1031

Session: Skull base surgery 3

Session Time: 26-06-14, 10:20

Location: Hall G

Chair person: M. Bernal-Sprekelsen

Presenting author: M. Naraghi

Objectives

Tumors of the paranasal sinuses include a wide spectrum of pathologic conditions that comprise variety of presentations. Despite surgical excision, local recurrence is high. Recent progresses in the treatment of nasal and paranasal sinus tumors have evolved to the minimally invasive endoscopic surgery as the exclusive management for most cases of benign tumors and as a hybrid method in most cases of malignant tumors. In this presentation, 16 years of personal experience in endonasal endoscopic surgery for sinonasal neoplasms will be discussed, emphasizing advantages, disadvantages and recent advances in this field.

Methods

Since 1997 more than four hundred sixty four cases of sinonasal neoplasms underwent endoscopic surgery as the exclusive surgical intervention or a hybrid procedure. Angiofibroma was the most common pathology in our cases, most of them were performed exclusively endoscopically.

Results

Surgical plan was established on the basis of pathologic condition and location of tumor. Benign lesions were managed by endoscopic surgery with lower recurrence rate. In malignant lesions endoscopic surgery was performed as exclusive treatment in minority of cases, but as an adjunct to other treatments or as palliation. Postoperative endoscopic examination was performed regularly for detection of recurrence.

Conclusion

Endoscopic surgical resection could enhance complete tumor removal by providing excellent magnified and angled view, with or without complementary approaches. Image guided surgery could help to make a safe surgery with more confidence in tumor removal.

Cholesterol granuloma of the maxillar sinus: a case report

J. Ivaska¹, E. Lesinskas¹

¹ Center of Ear Nose and Throat, Vilnius University, Vilnius, Lithuania

Abstract: ERS-1032

Objectives

To report of a case of nasosinusual cholesterol granuloma.

Methods

Nasosinusual cholesterol granuloma is rare: only 38 cases were reported in literature. This is a case of cholesterol granuloma of the maxillary sinus in a male patient, Caucasoid, 37- year-old. The patient complained on foreign body sensation between nasus and nasopharynx, compression in the region of the left side cheek, nasal obstruction, increased nasal secretion for 6 months. Frequent episodes of rhinosinusitis in the past were documented during anamnesis taking. Nasal endoscopy revealed polypoid mass in the left middle nasal meatus. CT scan of the paranasal sinuses displayed soft tissues in the left maxillar sinus, left ethmoidal cells and left middle nasal meatus.

Results

The patient was successfully operated on by the endonasal endoscopic approach. Histopathological examination revealed the typical picture of cholesterol granuloma. No recurrence was observed during 30 months of follow-up.

Conclusion

It has been theorized, that there is a relation of the present pathology with possible frequent episodes of rhinosinusitis.



SPREADER GRAFTS FOR BEAUTY AND BREATHE-IMPLANT FOR FUNCTION: WHEN TO USE BOTH

D.F. A WENGEN¹

¹RHINOLOGY, ORL CENTER, BINNINGEN, SWITZERLAND

Abstract: ERS-1033

Objectives

This paper will differentiate the indications and functions of Spreader Grafts and the Titanium Breathe-Implant. Spreader Grafts improve structure and beauty of the nasal dorsum and Breathe-Implant widens and stabilizes the internal nasal valve.

Methods

Spreader Grafts have been applied in Rhinoplasty for 24 years. Their function is to provide strength and stability to the middle vault of the nose. Spreader Grafts do not open the internal nasal valve reliably. They have no effect on the stability of the lateral nasal wall. Their line of action is along the nasal dorsum. The Breathe-Implant however follows the internal nasal valve precisely as it widens the upper lateral cartilage at their lower border. This effect provides a significant opening of the internal nasal valve. Due to the stabilization of the Upper Lateral Cartilage Breathe-Implant also has a stabilizing effect on parts of the External Nasal Valve.

Results

Breathing is reliably improved by Breathe-Implant as documented in a 5-y long-term study. 90% of patients confirmed breathing improvement and 90% would also recommend Breathe-Implant to other patients. Spreader Grafts can readily be combined with Breathe-Implant as the implant can be placed on top. This combination offers the best of both worlds: Strength for the nasal dorsum by Spreader Grafts and opening of the internal nasal valve by Breathe-Implant.

Conclusion

Spreader Grafts provide beauty and structure and Breathe-Implant improves nasal breathing. Titanium Breathe-Implant has been successfully implanted in several thousand patients for the last 11 years to widen and to stabilize the internal nasal valve. Combination is possible.

Resection of extensive nasopharyngeal angiofibromas: endonasal endoscopic versus combined transnasal and transcranial approaches

M. Naraghi¹, M. Boroojerdi²

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1034

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:30

Location: Hall H

Chair person: P. Nicolai

Presenting author: M. Naraghi

Objectives

To determine the role of endoscopic surgery exclusively or in combination with transcranial approach in decreasing morbidity, intra-operative bleeding, and hospitalization period of juvenile nasopharyngeal angiofibroma surgery and describe combined endoscopic transnasal and transcranial approaches.

Methods

Of one hundred sixty four cases of juvenile nasopharyngeal angiofibroma diagnosed by endoscopic examination and computed tomography, thirty four cases were diagnosed to have intracranial extension. From the later group, seven extensive cases were selected for combined endoscopic and transcranial resection. Tumor staging ranged from stage I to IV according to Chandler's Staging.

Results

Eighty four patients underwent preoperative selective arterial embolization and in forty five cases selective arterial ligation were employed. In majority of patients, the tumors were approached endoscopically through nasal cavity with 0° and 30° 4mm telescopes without any incision. Seven cases underwent combined transnasal endoscopic, and transcranial approaches with assistance of image guided surgery and endoscopic visualization. The patients were followed by endoscopy and computed tomography. In seven transcranial approaches, craniotomy preceded rhinologic approach in four. CSF leak and skull base defect was repaired by temporalis muscle flap and pericranial flap in four and fascia lata in five. One postoperative leak was repaired with fascia lata transcranially.

Conclusion

Minimal bleeding, decreased morbidity, and shorter hospitalization period were the main reasons that prompted us to employ endoscopic technique for the removal of juvenile nasopharyngeal angiofibroma. Adding transcranial approach to the transnasal endoscopic approach provides two-sided exposure and appreciated access to huge intracranial angiofibromas.

Histopathological analysis of nasal polyps pre and after treatment: is there any difference?

L. Araújo Mohana Pinheiro¹, P. Leite da Silveira¹, C. Izaac Alfredo¹, E. Ortiz¹, A. Altemani¹, E. Sakano¹

¹ Department of Otorhinolaryngology Head And Neck Surgery, Faculty Of Medical Sciences University Of Campinas - Unicamp, Campinas, Brazil

Abstract: ERS-1035

Session: CRS Basic 2

Session Time: 24-06-14, 14:50

Location: Hall G

Chair person: R. Moesges

Presenting author: L. Araújo Mohana Pinheiro

Objectives

Nasal polyposis(NP) can be subdivided into eosinophilic and neutrophilic forms. This division can help the clinical treatment, however, there are doubts about the representativeness of the biopsy sample compared to the surgical specimen.

OBJECTIVE: To analyze the histopathological differences in pretreatment(PT) and after topical corticosteroid(POSCTN) biopsies and the surgical specimen(SX) from patients with NP.

Methods

Patients with PN were evaluated, without prior treatment, in a university hospital from July 2008 to May 2012. The material analyzed was obtained by biopsy from the NP before and after three months of topical budesonide 200mcg/day and from the surgical specimen. Histological analysis: edema of the submucosa, cellular intensity (eosinophils, plasmocytes, lymphocytes, neutrophils), basement membrane thickness, lymphoid follicles and glandular cysts. Statistical analysis by the Wilcoxon and Fisher tests, considering $p < 0.05$.

Results

19 patients, mean age of 52.2 years, were evaluated. 57.9% of patients presented progression to severe swelling of the submucosa in SX group when compared to pre-operative biopsies ($p=0.02$). As for cellularity, one patient had predominantly neutrophilic and 18 presented eosinophilic patterns. There was no significant variation between the groups in terms of cell intensity and presence of eosinophils, plasmocytes, lymphocytes, neutrophils, lymphoid follicles and thickened basement membrane. A statistically significant increase in the presence of glandular cysts was observed, 5% in PT group up to 26.3% in POSCTN and until 84.2% in SX.

Conclusion

In this study, no significant difference was found in the mucosa of the NP, with clinical meaning, when obtained through biopsy (small fragment) or surgical specimen (large fragment).

Septorhinoplasty in children with nasal septum deformations

O. Khorov¹, G. Shamrilo², G. Khorov³

¹ ENT, Grodno State Medical University, Grodno, Belarus

² ENT, Brest regional children's hospital, Brest, Belarus

³ ENT, Second Municipal Hospital of Grodno, Grodno, Belarus

Abstract: ERS-1036

Objectives

The purpose is to present preserving and functional method of septorhinoplasty for correction of nasal septum deformations in children.

Methods

Endonasal vertical incision of the mucosa and perichondrium of the nasal septum was performed. The septal cartilage was cut vertically up to perichondrium. Uninterrupted incision of the cartilage was performed. Then the rectangular piece of cartilage connected at the top with the "mother" tissue was formed. Close connection of the autocartilage fragment with the "mother" basis was maintained. As a therapeutic drug to restore the protective function of the nasal mucosa in the postoperative period herbal drug Sinupret was used.

Results

We have operated 145 patients, aged 8 to 17 years. The septum became smooth without flotation in 134 (92%) patients in distant observation period after the surgery. Intranasal structure had no signs of pathology in 126 (87%) patients.

Rhinopneumotachometry indicators 3 weeks after the surgery were $3,0 \pm 0,4$ l/min, 12 months after the surgery - $4,4 \pm 0,3$ l/min.

Indicators of mucociliary clearance 3 weeks after the surgery were $28,3 \pm 3,5$ min, 12 months after the surgery - $19,4 \pm 2,8$ min.

Conclusion

It is more preferable to use preserving surgery methods of nasal septum correction in children. Alternatively, surgeons can use our method of the modified rhinoseptoplasty preserving pedicle auto-fragment of the nasal septal cartilage as a basis.

Outcome of FESS in optic neuropathy due to rhinosinusitis

I. Konstantinidis¹, Z. Tsinaslanidou¹, A. Chatziavramidis¹, J. Constantinidis¹

¹ 2nd ORL Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract: ERS-1037

Session: Acute Rhinosinusitis

Time: 25-06-14, 14:40

Location: Hall J

Chair person: G. Adriaensen

Presenting author: I. Konstantinidis

Objectives

Optic neuropathy is the most severe orbital complication of acute rhinosinusitis. In our study, we present the FESS outcome in the treatment of this complication.

Methods

In a four years period of time, 8 patients were admitted with acute visual loss due to rhinosinusitis. The onset of the symptoms ranged from 1-4 days prior to admission. All patients underwent ophthalmologic evaluation preoperatively and postoperatively. CT and MRI scans were performed prior to FESS. Postoperative recordings included ophthalmological assessment and the use of QoL EQ-5D-3L questionnaire 6 months later.

Results

All patients (5M/3F, mean age 51.3 y.o., range: 34-62y) underwent an endoscopic procedure. Their visual acuity was severely reduced preoperatively (mean: 3.5/10, range: 1-6/10). Optic neuropathy was attributed to ARS (4/8 patients), exacerbation of CRSwNP (2/8) and CRSsNP (2/8). Postoperatively, 6 patients were improved (range 6/10-2/10) whereas 2 patients had no change in their visual acuity. QoL EQ-5D-3L scores mean was 61.4 (range: 10 to 90) showing increased quality of life in those with residual visual acuity > 3 regardless the timing of surgery. Earlier operations resulted a better visual acuity compared with the later operations.

Conclusion

FESS in optic neuropathy due to rhinosinusitis is mandatory when conservative management fails. A visual acuity >3 postoperatively preserves the stereoscopic vision and patients report better outcome. This fact indicates that even a late intervention can have a significant effect on patient's quality of life although a visual acuity of 3-5/10 is not an optimal result.

REDUCTION OF NASAL RESISTANCE BY THE TITANIUM BREATHE-IMPLANT MIGHT REDUCE SNORING AND MIGHT INCREASE ACCEPTANCE OF CPAP-MASKS

D.F. A WENGEN¹

¹ RHINOLOGY, ORL CENTER, BINNINGEN, SWITZERLAND

Abstract: ERS-1038

Objectives

This paper will provide insight in the relationship of nasal resistance with snoring. Deblocking of the nose might therefor reduce snoring.

Methods

Snoring occurs when soft tissue of the pharynx collapse and open again in a repetitious pattern causing disturbing sound. This collapse should be avoided. The main resistor of the entire upper airway is the most narrow part of the nose: the internal nasal valve. This area is responsible for more than 50% of nasal resistance.

Results

Reduction of nasal resistance by opening and stabilizing of the internal nasal valve by the Titanium Breathe-Implant has been successfully applied in several thousand patients over 11 years of use. Patients report s significant decrease of snoring activity as well as a reduction of loudness of snoring. Less nasal resistance also helps in wearing CPAP-masks.

Conclusion

Snorers should be given the chance to have their noses widened and stabilized by Breathe-Implant. Snoring might be reduced and compliance of CPAP-masks might be improved.

Non-invasive radiofrequency treatment of adenoidal hypertrophy: an innovative alternative to surgery

M. Naraghi¹

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1039

Session: Pediatric rhinology

Session Time: 24-06-14, 12:05

Location: Hall H

Chair person: JB Watelet

Presenting author: M. Naraghi

Objectives

Adenoidal hypertrophy (AH) is the most common cause of pathologic mouth breathing in children. Medical treatment of adenoid hypertrophy includes treatment of allergy, nasal sprays and antibiotics. However, in some cases AH continue to produce symptoms despite maximal medical therapy. Potential risks of anesthesia and complications of surgical procedure have persuaded promotion of non-surgical alternatives. During the last three years, the advances in expertise and technology led to the new advent of using office based setting for non-surgical procedure by the author as an innovative method for treatment of AH.

Methods

Sixty four children who were definitive candidates for surgical adenoidectomy were managed with radiofrequency treatment under endoscopy control without any need to general anesthesia. The age range was between 4 to 15. All children underwent direct endoscopic examination of adenoid before and after procedure.

Results

The period of follow-up was from 2 months to 2.5 years. All patients experienced different degrees of improvement after non-surgical procedure. The results were impressive with excitement of some of the parents for obtaining results by incredibly simple procedure comparing to surgery.

Conclusion

Non-surgical radiofrequency reduction of adenoid size has the advantages of excellent magnified view of adenoid area, accurate reduction of central obstructing part of adenoid, non-bleeding, evaluation and treatment of other non-adenoid obstructing problems, complete preservation of normal nasopharyngeal structures, no general anesthesia, no operating room stress, no hospitalization, high safety, no complication and better tolerance of children with fast and easy procedure.

Rare fungal invasive disease: palatal and nasal cladosporium bone destructive infection

H. Rodrigues¹, S. Tavares¹, S. Alves¹, M. Caixa¹, M. Santos¹, J. Mendes¹, L. Antunes¹

¹ ENT, Garcia de Orta Hospital, Lisboa, Portugal

Abstract: ERS-1040

Objectives

Cladosporium cladosporioides is a fungus common in the environment, but it is a very rare cause of human illness, mainly affecting the skin, eye, sinus and brain.

Methods

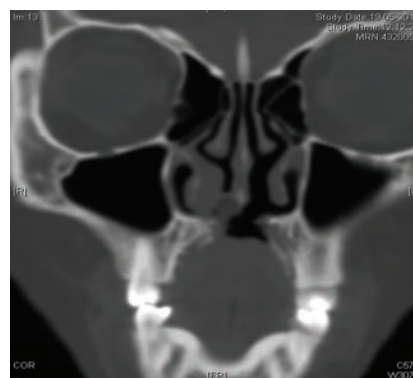
Clinical case report of a female patient, 32 years old, born in São Tomé e Príncipe, with the diagnosis of HIV infection stage C3 (CDC Classification System for HIV-Infected Adults and Adolescents), with a poor compliance to the treatments with antiretrovirals. This patient had a destructive, non-hemorrhagic lesion of the floor of the nasal cavity communicating with the hard palate and creating an oral-nasal fistula, progressively bigger.

Results

The Computed Tomography revealed destruction of the anterior part of the hard palate and a communicating oral-nasal fistula without sinusitis. The biopsy revealed infection with *Cladosporium Cladosporioides*. She underwent surgical debridement. According to antifungal sensitivity test, the patient started antifungal treatment (amphotericin daily, during 2 months) from the hospital, with oral fluconazole. One month after discharge, she was hospitalized due to severe pneumonia and poor adherence to antiretroviral therapy. Broad-spectrum antibiotic therapy started, but she ended up dying.

Conclusion

Although rare, some fungal infections may be a therapeutic challenge. In immunocompromised patients, we must be aware of the rare presentations of these infections.



Improvement of external nasal valve airway by non-surgical augmentation

M. Naraghi¹, A.F. Sontou²

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1041

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 15:05

Chair person: K. Patel

Presenting author: M. Naraghi

Objectives

Improvement of nasal airway at the valve region is one of the most challenging issues in rhinoplasty. Despite complicated techniques based on utilizing different grafts and sutures, long term results are still under debate. There are increasing indications for generous use of augmenting filling agents in otorhinolaryngology including laryngology and facial plastic surgery with only few articles on its use in rhinology and internal nasal valve. This is the first experience on non-surgical augmentation improvement of the external nasal valve.

Methods

In this study, we present our experience on fifty seven patients with the complaint of nasal obstruction due to collapse of the external valve, with or without internal valve problem. The epicenter of obstruction and severity was determined by physical examination, nasal endoscopy, rhinomanometry and acoustic rhinometry. All patients underwent augmentation of the weakened areas of the external nasal valve with biologic filler injection.

Results

Comparison of pre and post-procedure symptom groups was performed in all patients and revealed that functional problem improved in all of the patients, with a wide range of changes from minor to major improvement. The immediate result experience was exciting for many patients.

Conclusion

Non-surgical correction of nasal valve could be an easy, safe and cost effective method for improving external nasal valve function in primary and revision cases. However it should be done very cautiously by an expert surgeon with ample experiences on surgical correction of the external nasal valve to make this alternative technique mimicking the role of the supporting grafts.

Nasal intraosseous hemangioma: a case report

J. Vaz de Castro¹, C. André¹, L. Antunes¹

¹ Otorhinolaryngology, Hospital Garcia de Orta EPE, Almada, Portugal

Abstract: ERS-1042

Session: Rhinitis basic

Session Time: 24-06-14, 12:30

Location: Hall G

Chair person: TBC

Presenting author: J. Vaz de Castro

Objectives

Cavernous hemangiomas of the nose are a rarity, usually originating from soft-tissue, they can arise in the bone. Hemangiomas are benign lesions of the blood vessels or vascular elements, they are classified and diagnosed according to their histologic characteristics. When intraosseous, imagiological findings may suggest this diagnosis. The treatment of these masses is essentially surgical, however, due to their benign nature, excision may not always be indicated. Prognosis is dependent on tumor location and involvement of adjacent structures. It is our objective to report an intraosseous hemangioma of the nasal bone.

Methods

We describe the case of a 48 year old woman whose initial and only manifestation was the sudden appearance of a solid mass in the lateral aspect of the nose.

Results

Computer tomography (CT) of the paranasal sinuses revealed an expansive lesion of the left lateral aspect of the nose, originating from the left nasal bone, approximately 12 mm in diameter. This lesion appeared heterogenous with calcifications in its interior, absent of any alterations in adjacent tissues. This lesion was excised in an open nasal paralateral approach with macroscopic lesion free margins.

Conclusion

We are unaware of any case reports of intraosseous hemangiomas of the nasal bone described in the literature (PubMed). However, in the last 50 years, many reports of intraosseous hemangiomas occurring in various locations have surfaced. For this reason, intraosseous hemangiomas should make up the differential diagnosis of a slow growing petrous mass of the head and neck.

The art of facial harmony by rhinogenioplasty

M. Naraghi¹

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1043

Session: Rhinoplasty and facial plastic surgery

Session Time: 23-06-14, 14:55

Location: Hall E

Chair person: K. Patel

Presenting author: M. Naraghi

Objectives

The chin plays very important role in facial appearance. In this article, we present our experience on osteoplastic advancement of chin in patients undergoing rhinoplasty.

Methods

68 patients underwent genioplasty as a complementary procedure to rhinoplasty. Age of patients ranged from 17 to 43. All procedures were performed under general anesthesia with intraoral incision. After exposing the mentum, horizontal osteotomy was performed for chin advancement at the extent which was estimated on preoperative evaluation. The advanced segment was fixed in place with titanium plates and/or screws.

Results

Patients were followed 6 months to 6 years after operation. Improvement of facial parameters was observed in all patients. No permanent complication occurred. Three had prolonged hyposthesia up to 3 and 18 months after surgery.

Conclusion

Genioplasty could be performed in patients with chin problems during or after rhinoplasty to make a beautiful profile. Our experience with osteoplasty showed satisfactory results with no important complication.

Clinical characteristics of pregnancy rhinitis

U. Demir¹, B. Cetinkaya Demir²

¹ Otolaryngology, Uludag University Faculty Of Medicine, Bursa, Turkey

² Obstetrics and Gynecology, Uludag University Faculty Of Medicine, Bursa, Turkey

Abstract: ERS-1044

Session: NAR

Location: Hall G

Time: 23-06-14, 11:33

Chair person: L. Van Gerven

Presenting author: U. Demir

Objectives

Pregnancy rhinitis (PR) can be defined as the presence of nasal congestion that is not present before pregnancy, without other signs of upper respiratory tract infection or with no allergic cause. We aimed to evaluate if there is any difference in clinical characteristics of PR regarding to trimesters.

Methods

This study was conducted with 85 pregnant women and 26 nonpregnant controls. Nasal airway patency was measured by acoustic rhinometry and anterior rhinomanometry objectively. The subjective complaints of patients were assessed by nasal obstruction symptom evaluation (NOSE) scale in each trimester. These values were compared to control group.

Results

NOSE score of pregnant and nonpregnant women showed no statistical difference. Minimal cross sectional area in first trimester revealed significant decrease as the gestational age progresses. No difference in total nasal resistance was detected between trimesters. There was no correlation between the severity of NOSE score and minimal cross sectional area and nasal volume in all 111 patients.

Conclusion

Pregnancy rhinitis should not be underestimated since it effects nasal physiology adversely. Medical treatment guidelines including lifestyle regulations, conservative and medical treatment options are required to optimize outcomes of pregnancy rhinitis.

Nasal and sinus symptoms in chronic rhinosinusitis and nasal allergy; comparison of CT and MRI in the normal population

D. Hastan¹, D. Jarvis², K. de Hoogh², D. Vienneau³, W.J. Fokkens¹,
Collaborators of the GA2LEN network of excellence

¹ Otorhinolaryngology, Academic Medical Center Amsterdam, Amsterdam, Netherlands

² Respiratory Epidemiology, Imperial College, London, United Kingdom

³ Epidemiology Environmental Exposure and Health, Swiss Tropical and Public Health Institute (Swiss TPH), Basel, Switzerland

Abstract: ERS-1045

Session: Epidemiology

Session Time: 25-06-14, 09:30

Location: Hall J

Chair person: R. Harvey

Presenting author: D. Hastan

Objectives

There is marked geographical variation in the prevalence of chronic rhinosinusitis (CRS) prevalence in Europe. The reason for this remains unexplained. Smoking is a strong and well-established risk factor for CRS, and we hypothesised that exposure to air pollution may also influence disease prevalence.

Methods

The Ga2len survey containing the EPOS questions to diagnose CRS was sent to a random sample of adults aged 15-75 years. Exposure was assessed for individuals using geocoded residential address linked to high resolution modelled annual average air pollution maps of nitrogen dioxide (NO₂), particulate matter up to 10µm diameter (PM₁₀) and ozone (O₃), developed using land use regression techniques.

Results

Survey and pollution data was obtained for 50,746 participants living in 11 countries in Europe. The centre specific averages of NO₂ and PM₁₀, but not O₃, correlated positively to centre specific prevalence of CRS ($p < 0.05$). At individual level however the odds of having CRS increased non-significantly as NO₂ increased per 10 µg/m³ (OR 1.02, 95%CI: 0.93-1.11, $p = 0.727$). Adjustments for age, gender and smoking marginally changed the effect estimates (OR 0.98, 95%CI: 0.88-1.09, $p = 0.68$). Similarly, no association was observed for PM₁₀ (unadjusted OR 1.01 per 100 µg/m³, adjusted OR 1.00, 95%CI: 0.99-1.02, $p = 0.98$), and no association was seen with O₃ (unadjusted OR 0.98 per 100 µg/m³, adjusted OR 0.99, 95%CI: 0.97-1.02, $p = 0.42$).

Conclusion

In this large multi-centre study, CRS was more common in centres with more pollution – but this association could not be confirmed when individual level data were examined.

Value of the nose in sleep disordered breathing

M.P. Cárdenas Escalante¹, M.D. Martinez Novoa¹, C. Añez², E. Figuerola Massana¹

¹ ENT, University hospital Joan XXIII, Tarragona, Spain

Abstract: ERS-1046

Session: OSAS

Location: Hall H

Time: 25-06-14 14:55

Chair person: N. de Vries

Presenting author: M.P. Cárdenas Escalante

Objectives

Assess the results of nasal surgery in our patients with OSAS diagnosis, and find which clinical and objective parameters are significantly relevant.

Methods

We assessed 24 patients in the sleep unit who underwent nasal surgery, and collected demographic characteristics, Epworth scale, clinical questionnaire of sleep related symptoms, and evaluation of nasal function, cumulative time percentage with SpO₂ <90% (CT90), minimum oxygen desaturation, and apnea/hypopnea index (AHI). We measure improvement by a decrease in AHI or CT90 in more than 50% postoperative.

Results

A total of 24 patients with OSAS were assessed, with a mean age of 50 years., the mean in Epworth scale was 11,08. The mean AHI was 40,9, with a mean cumulative time percentage with SpO₂ <90% (CT90) of 6,4, and a mean minimum oxygen desaturation of 78,5. After nasal surgery , daytime sleepiness improved a mean 48%, sleep-related symptoms by 60%. The mean percentage of improvement expressed by patients was 80 %. The AHI decreased by 33.2 %, (no significant improvement according to SHER criteria). However CT 90 significantly improve with a mean improvement of 50.8 %.

Conclusion

Nasal obstruction is a frequent symptom in patients with OSAS. Nasal surgery do not decrease the severity of OSAS , but improves the quality of sleep by significant decrease in sleep time below 90% saturation. Self-reported improvement after nasal surgery is high, even when snoring persists, increases tolerance by the bed partner and improves sleep quality, inducing in some cases the reject the use of C-PAP.

Nasal and sinus symptoms in chronic rhinosinusitis and nasal allergy; comparison of CT and MRI in the normal population

D. Hastan¹, N. Freling², W.J. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Center Amsterdam, Amsterdam, Netherlands

² Radiology, Academic Medical Center Amsterdam, Amsterdam, Netherlands

Abstract: ERS-1047

Session: Epidemiology

Session Time: 25-06-14, 09:57

Location: Hall J

Chair person: R. Harvey

Presenting author: D. Hastan

Objectives

To verify whether the epidemiological definition of EPOS is a proper estimation of the prevalence of CRS as diagnosed by radiology we examined the symptoms and images of people having CT or MRI for any non-ENT indication.

Methods

We asked patients who had a CT or MRI scan of the head for any non-ENT indication to fill in the GA2LEN survey containing the EPOS symptom criteria. The CT / MRI scans were evaluated according to the Lund-Mackay (LM) grading system. CRS was defined by the EPOS symptoms criteria. Allergic rhinitis (AR) was defined by the self-reported history of 'nasal allergy or hay fever'.

Results

Included were 730 patients with an average age of 53 years (range 8-89). The EPOS symptoms criteria for CRS were fulfilled in 13% of participants and AR was reported by 20% of the participants. Any opacity of any sinus (LM score of ≥ 0) was seen in 45% of the scans and 16% of the scans had a LM score of ≥ 4 . Of the participants that fulfilled the EP3OS symptoms criteria 50% had a LM score of ≥ 0 and 25% a LM score of ≥ 4 . In the group of participants that reported AR these figures were 54% and 20% respectively.

Conclusion

In a population having CT or MRI of the head only 50% of the participants that fulfilled the EPOS had abnormalities at CT or MRI scan and only 25% a LM score of ≥ 4 .

Comparison of psychopathological symptoms in aesthetic and functional rhinoplasty patients

M. Naraghi¹, M. Atari²

¹ Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Psychology, Tehran University, Tehran, Iran

Abstract: ERS-1048

Session: Rhinoplasty and facial plastic surgery

Location: Hall E

Time: 23-06-14, 14:35

Chair person: K. Patel

Presenting author: M. Naragh

Objectives

The purpose of this study was to compare the psychopathological symptoms in aesthetic and functional rhinoplasty patients.

Methods

The Symptom Check List-90-revised (SCL-90-R) was administered to 22 candidates (7 males, 15 females) of aesthetic rhinoplasty and 22 patients (9 males, 13 females) of functional rhinoplasty. SCL-90-R is a validated psychopathological checklist used in clinical and sub-clinical experiments. SCL-90-R consists of 90 items and evaluates the psychopathological state of the patient. This questionnaire has 9 dimensions and reports 9 different scores on each dimension. There is also one General Symptomatic Index (GSI) which can be used as a general index of psychopathological symptoms.

Results

Chi-square test for gender distribution independence showed no significance ($\chi^2 = 0.39, P > 0.05$). GSI scores were analyzed using t-test for independent groups. Statistical analysis suggested the mean GSI score of aesthetic surgery group was significantly higher than that of functional surgery group ($P < 0.01$). Cohen's d was also incorporated into the study as a measure of effect size to support the findings. The value of Cohen's d was high ($d = 0.74$). Socio-Economic Status (SES) was analyzed using chi-square as a potential extraneous variable influencing the dependent variable (GSI) and those results illustrated that SES was not significantly different between groups and could not affect the GSI scores directly.

Conclusion

The findings of this study showed that aesthetic rhinoplasty patients had more psychopathological symptoms in comparison with functional rhinoplasty patients. The value of effect size supported the study's statistical significance tests and showed a significant difference between groups.

SEPTORHINOPLASTY IN DEVIATED & CROOKED NOSES: DIFFERENT TECHNIQUES AND POINTS FOR SUCCESS

M. NARAGHI¹,

¹ OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, TEHRAN UNIVERSITY OF MEDICAL SCIENCES, TEHRAN, IRAN

Abstract: ERS-1049

Objectives

1) know anatomic characteristics of deviated noses. 2) Identify risk factors and pitfalls in correction of deviated noses. 3) Select the best technique for each type of deviated and crooked noses.

Methods

Deviated nose is defined as a deviation of the external nasal framework, which is almost always accompanied by deviations in the nasal septum. Most patients have problems both in form and function. Establishing stable and long-term results has been a nightmare even for experienced surgeons.

Results

Analyzing the underlying anatomy in each case is important to establish the plan of treatment which differs in every case. Deviation could be noted in bony upper third part of the nose, cartilaginous middle third or combination of both and may extend to the lower third or lobule. All types of deviated noses are operated in one stage with correction of pyramid and septum. Correction of form and function includes restoration of straight dorsum, reducing asymmetries and providing functionally patent nasal valve. It involves correction of both intrinsic and extrinsic forces which are responsible for deviation. Wide exposure and extensive release of deviated cartilages would help to minimize extrinsic forces over the deviated pyramid and septum. It is especially important in the case of deviation of cartilaginous septum.

Conclusion

Proper cuts and resections of cartilage and insertion of resected materials as different types of grafts are the basis of the most techniques which were described in this problem.

Middle turbinate stabilization at fess procedure - own experience

J. Markowski¹, P. Wardas¹, A. Piotrowska-Seweryn¹

¹ Clinical Department of Laryngology, Medical University of Silesia, Katowice, Poland

Abstract: ERS-1050

Objectives

Destabilization of middle turbinate can be one of the complications of FESS procedure and it can result in pathological adhesions within the lateral wall of nasal cavity. There are several stabilization methods, yet none of the them has the advantage over the other. The aim of the study was to compare three middle turbinate stabilization techniques mentioned underneath.

Methods

The study was performed on a group of 59 patients who underwent FESS procedure due to chronic rhinosinusitis in the Clinical Department of Laryngology in the years 2011-2013. The control group comprised of 17 cases in which no destabilization of the middle turbinate was found. The study group consisted of 42 patients in whom the following procedures during FESS were performed:

- 1) Bolgerisation (n=17)
- 2) Stabilizing sutures (n=13)
- 3) Stabilizing sutures with nasal septum sutures after septoplasty (n=12)

The following parametres were assessed at the three-month follow-up:

- a) Presence of pathological adhesions in rhinoscopy
- b) Patients' subjective assessment of the nasal patency with the application of tri-caterogical MMS (mild, moderate severe) classification.

Results

No major differences among the study and control groups were found. More adhesions could be observed in the third group ($p < 0,05$). In some cases Bolgerisation was unsuccessful.

Conclusion

It seems that the reported middle turbinate stabilization techniques are equally effective. Therefore the authors are not in favour of any of the procedures mentioned. Selection of the stabilizing method should depend on anatomical conditions of patient's sinuses and nasal cavity as well as surgeon's experience.

Preliminary findings from the feasibility study for a randomised controlled trial of clarithromycin in chronic rhinosinusitis

J. Bewick¹, L. Masterson¹, S. Erskine², F. Egro¹, S. Carrie³, S. Sunkaraneni⁴, S. Ahmed⁵, A. Sama⁶, C. Hopkins⁷, C. Philpott²

¹ ENT, James Paget University Hospital, Norwich, United Kingdom

² ENT, University of East Anglia Medical School, Norwich, United Kingdom

³ ENT, Freeman Hospital, Newcastle, United Kingdom

⁴ ENT, Royal Surrey County Hospital, Guildford, United Kingdom

⁵ ENT, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom

⁶ ENT, Queens Medical Centre Nottingham University Hospital, Nottingham, United Kingdom

⁷ ENT, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

Abstract: ERS-1051

Session: Management of CRS

Session Time: 26-06-14 11:20

Location: Hall J

Chair person: TBC

Presenting author: J. Bewick

Objectives

There is currently conflicting level 1 evidence in the use of long term antibiotics for chronic rhinosinusitis. The primary aim of this study was to look at recruitment and retention of patients in preparation for a formal trial. The aim of this paper is to present the preliminary outcomes in terms of symptomatic relief in patients with CRSsNP.

Methods

Patients who fulfilled the EPOS criteria for CRSsNPs were recruited in 6 UK centres. Participants received a 12 week course of twice daily clarithromycin 250mg alongside twice daily topical mometasone and nasal douching. Follow-up was at 3 months and 6 months. For the purpose of this analysis, the Sinonasal Outcome Test (SNOT-22) score was considered before and after treatment as well as at a further 3 months after treatment.

Results

Preliminary data from 29 patients at 3 months and 24 patients at 6 months showed significant symptomatic improvement in the group as a whole. Paired t-tests on SNOT-22 scores at 3 months showed significant improvement ($p = 0.026$) which was sustained at 6 months ($p = 0.02$). The number of subjects showing > 9 point reduction in SNOT-22 scores was 45% ($n=13$), increasing to 58% at 6 months ($n=14$). Nine patients have been listed for surgery to date.

Conclusion

Whilst the results here do not have the power of the full RCT, the findings suggest that long term macrolides have the potential to achieve significant symptomatic reduction in approximately 50% of patients with CRSsNPs.

Balanced two-walled orbital decompression, our experience

D. Siau¹, A. Daudia¹

¹ ENT, Royal Blackburn Hospital, Blackburn, United Kingdom

Abstract: ERS-1052

Session: Orbit lacrimal system

Session Time: 26-06-14 12:00

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: D. Siau

Objectives

Thyroid eye disease can present with symptoms including proptosis, diplopia, compression of the optic nerve resulting in reduced visual acuity and colour vision. Treatment options include corticosteroids/immunosuppression, irradiation and orbital decompression surgery. There are a myriad of surgical techniques available with varying results. Recently we started performing a balanced two-walled decompression with a combined endoscopic and lateral canthotomy approach jointly with the ophthalmologists. In this initial phase although our numbers are few, we have very positive results to present.

Methods

We present the following outcome measures in 3 cases. Measurements for proptosis, visual acuity, colour vision, intra-ocular pressures were obtained pre-operatively and one month post-operatively. Brief Description of Surgical technique: Medial wall - endoscopic sphenoidectomy was performed to review medial orbital wall. After removal of lamina papyracea, the periorbita was incised releasing orbital fat. Lateral Wall - A lateral canthotomy was performed with inferior cantholysis. The conjunctiva was incised exposing the orbital floor and lateral wall. Temporalis muscle was freed from the temporal fossa prior to lateral wall removal allowing fat prolapse into the fossa.

Results

Mean reduction of proptosis of 5.7mm (Range 5-6mm)

Mean reduction in intra-ocular pressure of 3.3 mmHg (range 2-6)

Visual acuity - all improved

Colour vision- all unchanged

Diplopia - no subjective change

There were no post-operative complications

Conclusion

Our initial results are comparable to those reported in other series. Although our numbers are low, our results are encouraging. This supports the recent Cochrane review's suggestion that a balanced two-walled decompression offers the best result with the least complications.

Immunohistochemical study of immune response in chronic bacterial rhinosinusitis

C. Mogoanta¹, E. Ionita¹, S. Ciolofan¹, F. Anghelina¹, L. Mogoanta²

¹ ENT(ORL), University of Medicine and Pharmacy of Craiova, Craiova, Romania

² Hystology, University of Medicine and Pharmacy of Craiova, Craiova, Romania

Abstract: ERS-1053

Session: CRS Basic 2

Session Time: 24-06-14, 14:30

Location: Hall G

Chair person: R. Moesges

Presenting author: C. Mogoanta

Objectives

Tuberculosis remains a real public health problem in Tunisia. Extra-pulmonary localizations account for 20 to 30% of tuberculosis disease. We explain in this presentation the diagnostic difficulties and the therapeutic management of this rare disease.

Methods

We present a retrospective study about 3 cases of nasosinusal tuberculosis, an unusual and rare localization of the disease, followed and treated at the ENT department of the military hospital of Tunis, Tunisia.

Results

The study included a man and 2 women old respectively of 30, 65 and 36 years. The main symptoms were dominated by nasal obstruction, posterior throwing and dental pain. CT-scan showed a filling of the nasosinusal cavity with different degrees of bony lysis. In all the cases, tuberculosis was confirmed histologically after an endoscopic middle meatotomy. Investigations looking for tuberculosis elsewhere were always negative. Treatment was based on anti-tuberculosis drugs during 9 to 12 months. The evolution was favourable in all the cases.

Conclusion

Nasosinusal tuberculosis is a rare chronic infection associating often variable levels of bony lysis. Histological exams remain the best way to confirm it. Therapy is based on anti-tuberculosis drugs. Medical investigations must usually search other localizations of the disease.

Modified endoscopic Lothrop procedure in treatment of chronic frontal sinusitis

A. Mickielewicz¹, I. Gwizdalska¹, K. Lazecka¹, R. Osmólski¹, E. Witkowska¹, M. Fus²,
H. Skarzynski¹, P.H. Skarzynski¹

¹ World Hearing Center, Institute of Physiology and Pathology of Hearing, Warsaw, Poland

² Faculty of Medicine, Medical University of Warsaw, Warsaw, Poland

Abstract: ERS-1054

Session: Management of CRS

Session Time: 26-06-14 11:15

Location: Hall J

Chair person: TBC

Presenting author: A. Mickielewicz

Objectives

Endoscopic sinus surgery has a high risk of possible complications, that can occur during the operation and in the short period after surgery. Among them, eye, orbital cavity, ophthalmic nerve, anterior cranial fossa, skull base and internal carotid artery injuries are the most severe. In case of such incidence, resurgery must be performed as quickly as possible in order to withdraw irreversible results.

Methods

The aim of the study was to trace the origin of complication, discuss possible scenario of its course and ideas to withdraw it. Our material consists of eight complications that occurred after endoscopic sinus surgeries which were performed during 2009-2014: one unilateral orbital cone injury which led to visual impairment (visual acuity = light perception), one orbital muscles injury which led to oculomotor impairment and six anterior cranial fossa injuries that were managed with no further long-term effects.

Results

We present these cases with medical history, type of surgery, description of complication, way of its management and follow-up.

Conclusion

In conclusion, authors think that strict and detailed analysis of conducted complications should always be performed.

Small cell neuroendocrine carcinomas of the paranasal sinuses and nasal cavity: an extremely rare location for a known type of neoplasm

I. Villarreal Patiño¹, B. Arellano Rodriguez¹, E. Tejerina², C. Lopez-Cortijo¹

¹ ENT, Hospital Universitario Puerta de Hierro, Madrid, Spain

² Pathology, Hospital Universitario Puerta de Hierro, Madrid, Spain

Abstract: ERS-1055

Objectives

Small cell neuroendocrine carcinomas (SNEC) also known as oatcell carcinomas, is a distinct tumoral entity characterized by rapid local invasion, widespread dissemination and a poor prognosis. Due to its late discovery, localization is rarely precise. SNEC found in the head and neck region account for less than 4%. The association between the paraneoplastic endocrine syndrome and SNEC is well documented.

Methods

We report a case of 39 year old man whose clinical symptoms, radiological findings histological diagnosis and immunohistochemical staining confirm a primary SNEC of the ethmoid sinuses extending down to nasal cavities.

Results

An endoscopic complete resection was performed followed by radio and chemotherapy. He is presently symptom-free with no evidence of recurrence in clinical and radiological follow-up for close to 5 years now.

Conclusion

The clinical features of SNEC of the nasal and paranasal sinuses are nonspecific and similar to those of other tumor types in this region, including benign lesions, hence is likely to result in a delay for its discovery and treatment. Distinction between SNEC and other neuroendocrine tumors is also of great importance because of its prognostic implication, being SNEC the most aggressive in this group. Surgery, radiotherapy, and chemotherapy alone or in combination have been used for the patients with SNEC of the nasal and paranasal sinuses. Unfortunately due to the rarity of this neoplasm, there is no specific recommendation on management guidelines, and treatment possibilities are individualized for each patient.

New possibilities for pre-operative assessment of patients with nasal obstruction with rhinosys

A. Glien¹, S. Plontke¹, T. Rahne¹, G. Mlynski²

¹ ENT, Universitätsklinikum Halle (Saale), Halle (Saale), Germany

² ENT, Alte Dorfstr. 25, Stolpe auf Usedom, Germany

Abstract: ERS-1056

Session: NAR

Location: Hall G

Time: 23-06-14, 11:51

Chair person: L. Van Gerven

Presenting author: A. Glien

Objectives

To prevent misinterpretation and failure of rhinosurgery preoperative objective assessment of range of nasal obstruction and their reasons is useful.

Methods

Preoperative measurement of 10 Patients with nasal obstruction admitted for functional rhinosurgery with

- Rhinoresistometry (RRM): measurement of endonasal resistance and parameters for objective assessment of obstruction
- Acoustic rhinometry (AR): objective of localization of obstruction-generating narrowing or pathological collapse of the internal nasal valve
- Long-term-rhinoflowmetry (LRM): measurement of side-divided nasal flow plus heart beat under all-day-conditions for understanding the nasal cycle.

Results

Because of the small amount of patient and the short postoperative period the statistical validity is limited. We present two cases which illustrate our results:

Case 1: Patient with a deformation of the internal valve after functional septorhinoplasty with external approach. With AR and RRM we could describe the missing compressor/diffuser-principle of the internal valve. Widening of the nostril increases the air flow through the internal valve, reduce turbulences behind and improves the complaints of the patient.

Case 2: Patient with an empty-nose-syndrome. LRM describes the missing nasal cycle and the lacking of nasal air flow due to discomfort while nasal breathing. Augmentation of the submucosal space with algipore® was used to reduce the endonasal lumen and to influence the nasal cycle in a physiological way.

Conclusion

RHINOSYS is a suitable preoperative method to evaluate the range and cause of nasal obstruction. As well as in ear surgery preoperative objective and postoperative quality control should be a standard procedure in functional rhinosurgery.

Can we trust in vitro device deposition results from nasal casts?

P.G. Djupesland¹, A. Skretting²

¹ R&D, OptiNose AS, Oslo, Norway

² The Intervention Centre, Oslo University Hospital, Oslo, Norway

Abstract: ERS-1057

Session: Management of CRS medically

Session Time:

Location:

Chair person:

Presenting author: P.G. Djupesland

Objectives

A commercially available human silicone nasal cast (Koken Co) has been advocated, and used, for assessment of the impact of patient-, device- and formulation-related variables on deposition. The Koken-cast, however, developed for educational purposes, has a flat transparent septum allowing visualization of the complicated nasal structure. The geometry and dimensions of the Koken cast are compared with normative in vivo data and an anatomic silicone cast (OptiNose, US Inc.).

Methods

In these two casts, CT sections perpendicular to the nasal floor and dimensions (measured by acoustic rhinometry, AR) along the acoustic pathway of the nasal passage, were compared. The measured minimal cross-sectional area (MCA) describes the dimensions at the nasal valve, the area determining airflow and particle deposition patterns.

Results

The CT sections demonstrate that the Koken-cast does not accurately reflect nasal geometry and that the dimensions are 2-3 times those of the OptiNose-cast. The AR measurements confirm the dimensional differences; Koken-cast (MCA right/left=1.95/1.80 cm²); OptiNose-cast (MCA right/left=0.69/0.70cm²); in vivo (MCA right/left=0.75/0.56 cm²). The AR dimensions of the OptiNose-cast and the original healthy male nose were similar (Pearson $r=0.98$, $r^2=0.96$, $p<0.0001$ -anterior 6 cm) and close to normative AR data in healthy males (MCA right/left=0.59±0.19/56±0.13cm²).

Conclusion

The Koken-cast design with a flat transparent septum has educational value, but its internal dimensions are far outside the normal range. Cast dimensions should always be reported and the Koken-cast should not be used to represent nasal anatomy in deposition studies. Particle deposition from nasal casts, like Koken, with unrealistic dimensions must be interpreted with great caution.

Assesment of Mallamapati scale by ENT and anesthesiologist in patients with sleep disorders

M.P. Cárdenas Escalante¹, M. Gonzalez Pena¹, C. Añez², E. Figuerola Massana¹

¹ ENT, University hospital Joan XXIII, Tarragona, Spain

² Anesthesiology, University hospital Joan XXIII, Tarragona, Spain

Abstract: ERS-1058

Session: OSAS

Location: Hall H

Time: 25-06-14 14:15

Chair person: N. de Vries

Presenting author: M.P. Cárdenas Escalante

Objectives

Evaluate the degree of variability of Mallampati scale performed by the anesthesiologists and ENT, in patients with sleep disordered in the evaluation of the grade of obstruction in the upper airways.

Methods

70 patients with sleep disorders were assessed, the patients has been evaluated by an ENT and an anesthesiologists and classified by the mallampati scale in 4 different groups and both results were compared for the grade of coincidence.

Results

A total of 56 Male and 14 women, with a mean age of 48,9 years (range 17-69 years). The mean body mass index (BMI) was 28,89 Kg/m² (range 22-41 Kg/m²), the mean neck circumference (NC) was 40,73 cm. (range 32,3-53,2 cm). We found that the predominant mallampati grade in patients with sleep disorders were 2 (47%) and 3 (31%) with a good correlation in the evaluation for both of the specialists, despite of the different authors in the literature that found the opposite effect.

Conclusion

Upper airway examination is important for the assessment of chronic snoring patients. Mallampati scoring is a simple noninvasive method used to assess the difficulty of endotracheal intubation frequently used by the anesthesiologists, but it is also an important part of clinical ENT examination especially in patients with sleep disordered to determine the site of obstruction in the upper airways before taking any therapeutic decision. Despite the important degree of variability in this scale reported in the literature, we found a good correlation in the application of the scale by both specialties.

Endoscopic treatment of blow out fracture: our experience

M. Rigante¹, C. Parrilla¹, G. Bastanza¹, M. Pandolfini¹, E. Scarano¹, J. Galli¹, G. Paludetti¹

¹ Catholic University of Sacred Heart, Department of Otolaryngology Head and Neck Surgery, Rome, Italy

Abstract: ERS-1059

Session: Orbit lacrimal system

Session Time: 26-06-14 11:50

Location: Hall H

Chair person: I. Konstantinidis

Presenting author: M. Rigante

Objectives

Transnasal endoscopic repair of orbital floor fracture minimizes the risk of implant misplacement and avoids complications associated with traditional lower eyelid approaches. We present our results of the application of endoscopic technique.

Methods

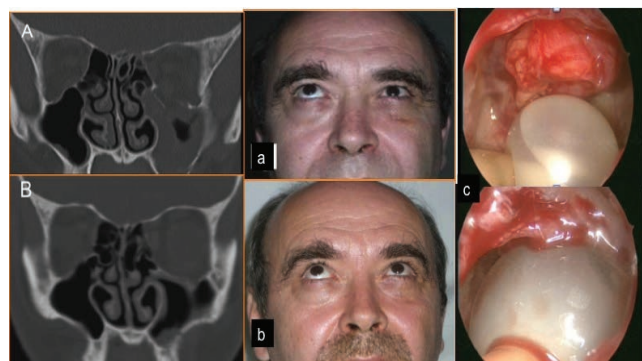
A retrospective review of 42 patients over a 6-year period was performed. We included in our study only patient with fracture involving infero-medial wall of the orbit with orbital rim preservation. Diplopia and mild enophthalmos were present in 24 patients (57,2 %) preoperatively. Operations were performed during the first 1 week after trauma. The surgical treatment consisted of fracture reduction generally using Foley catheter under endoscopic view after an antrostomy. An intraoperative ophthalmological evaluation with passive movement of the eye in case of entrapment were performed and reduction of diplopia in the immediate postoperative time and at 1 day postoperatively. The catheter was left in place for at least 10 days and stabilized in the middle meatus with a small merocel tamponade removed after 3 days. Patients were followed up for at least 3 months with ENT nasal care and ophthalmological evaluation.

Results

There were no significant intraoperative or postoperative complications. All patients had successful reduction of orbital fractures. Diplopia had complete resolution after surgery and in 3 cases the resolution was delayed of 7 days and improved after removal of the Foley catheter related to an overcorrection of the fracture.

Conclusion

In selected patients with orbital floor fractures, the transnasal endoscopic approach is safe and reliable. The technique using Foley catheter to reduce inferior orbital wall fractures endoscopically is safe and effective.



A,a. pre-operative radiological and clinical aspect of left blow out fracture
B,b. post-operative evaluation
c. endoscopic visualization and balloon catheter reduction of the fracture

Transnasal endoscopic sphenopalatine artery ligation for recurrent epistaxis

M. Hamdam Zavarce¹, C.M. Chiesa Estomba², R. Valdes Pons³, J.M. Melendez Garcia², A.S. Araujo da Costa², T. Rivera Schmitz²

¹ Otorhinolaryngology - Head & Neck surgery, Hospital Quiron, Valencia, Spain

² Otorhinolaryngology - Head & Neck surgery, University Hospital of Vigo, Vigo, Spain

³ Otorhinolaryngology - Head & Neck surgery, Hospital Povisa, Vigo, Spain

Abstract: ERS-1060

Session: Epistaxis

Session Time: 23-06-14, 11:42

Location: Hall E

Chair person: A. Swift

Presenting author: C.M. Chiesa Estomba

Objectives

Epistaxis is a common ENT emergency, with a prevalence of 12%, nevertheless only 1% requires surgical treatment. Patients with recurrent epistaxis often demand repeated and more aggressive procedures; they have comorbidities such as hypertension, cardiovascular diseases and anticoagulant treatment. Transnasal endoscopic surgery usually performed as ligation of the sphenopalatine artery is a safe, effective and a simple procedure with few complications.

Methods

Case report

Results

A 65-years-old woman with background of multiple posterior epistaxis episodes throughout the right nasal cavity, packed many times, with frequent incoherensible recurrences for 10 years, and who had an endoscopic sinus surgery years earlier. Given the persistence of bleeding, anemia, and impact on quality of life of the patient, transnasal endoscopic sphenopalatine artery ligation was performed successfully, with a clip placement at the pedicle level, obtaining a definitive control of bleeding.

Conclusion

Sphenopalatine ligation is recommended in cases of recurrent posterior epistaxis, which are not solved with less invasive procedures as nasal packing, thus resulting in acute and chronic complications. Ligation by nasal endoscopic surgery is safe, reduces morbidity, decreased hospital stay and improves patient quality of life.



Respiratory epithelial adenomatoid hamartoma of the maxillary sinus: a case report and review of literature

V. Henriques¹, R. Teles¹, A. Sousa¹, R. Estevão¹, J. Rodrigues¹, R. Moura¹, A. Fernandes¹, F. Fernandes¹

¹ ENT, Centro Hospitalar do Alto Ave, Guimarães, Portugal

Abstract: ERS-1061

Objectives

Respiratory epithelial adenomatoid hamartoma is an uncommon non-neoplastic lesion of the upper aerodigestive tract characterised by a glandular proliferation lined by a ciliated airway epithelium. Its localisation in the nasal cavity is rare and the most frequent cases described were associated with the posterior nasal septum. The entity is seen oftener in male adults.

Methods

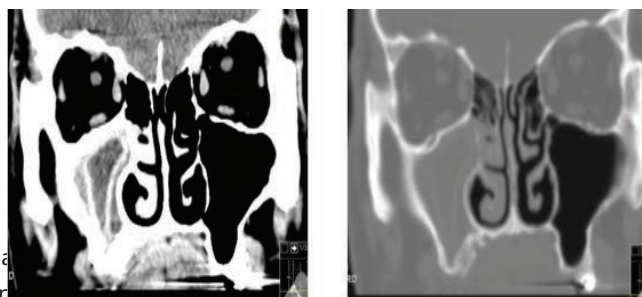
A 43-years-old caucasian men presented with long standing nasal obstruction and headache.

Results

Physical examination was normal. On Computerized Tomography was evident a mass in the right maxillary sinus. The patient underwent on general anaesthesia and the mass was surgically removed by a combined endoscopic technique and Caldwell-Luc procedure. Histologically the tumor presented a prominent glandular proliferation lined by a pseudo-stratified squamous ciliated epithelium.

Conclusion

A maxillary sinus respiratory epithelial adenomatoid hamartoma is a lesion that should be taken into the differential diagnosis of nasal lesions like schneiderian papilloma. It requires an aggressive treatment.



Autonomic dysfunction (AD) - the 'missing link' in sinonasal symptom generation?

N. Kara¹, J. Newton², H. Cocks³, V. Deary⁴, J. Wilson¹

¹ Department of ENT Surgery, Freeman Hospital, Newcastle upon Tyne, United Kingdom

² Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom

³ Department of ENT Surgery, Sunderland Royal Hospital, Sunderland, United Kingdom

⁴ Department of Psychology, Northumbria University, Newcastle upon Tyne, United Kingdom

Abstract: ERS-1062

Session: Prognostic factors in CRS

Session Time: 24-06-14, 15:12

Location: Hall J

Chair person: P. Lekakis

Presenting author: N. Kara

Objectives

Chronic Rhinosinusitis (CRS) patients have increased fatigue, known to be associated with AD. Despite rich nasal autonomic innervation, there is little contemporary assessment of autonomic function in rhinological disease. Affective disturbance is recognized in CRS, but little is known about the more general tendency of rhinology patients to somatise psychological stress and distress.

Aim – A preliminary exploration of AD, fatigue, distress and somatisation tendency in rhinology clinic outpatients.

Methods

Psychometric tools: Short form CoMPOSITE Autonomic Symptom Scale (COMPASS-31), Chalder Fatigue Questionnaire, Hospital Anxiety and Depression Scale (HADS) and Patient Health Questionnaire somatisation inventory.

Participants: To date, 22 patients (13M, 9F) aged to 24-76 years, whose responses were compared with their SNOT-22 scores and historic or population normative data, using T-test, Mann Whitney and Correlation coefficients as indicated.

Results

Mean SNOT score was in the typical range for rhinology patients: 41.64 (sd 17.98).

Group	COMPASS Total	COMPASS Orthostatic	Chalder Fatigue
Patient means	27.5	14.8	20.9
Control means	14.6	6.1	15.2
p	0.001	0.006	0.005

PHQ categories (n=19): 3 normals, 6 mild, 8 moderate and 2 severe somatisation. Both SNOT-22 and PHQ correlated positively with fatigue, anxiety and depression.

Conclusion

The results endorse a role for dysautonomia in sinonasal symptoms. Contrary to expectation, the most abnormal of the 6 COMPASS domains was Orthostatic (not Vasomotor or Secretomotor). Associated elevation of fatigue and somatisation tendency suggests a novel paradigm of symptom generation in certain rhinology patients – a potential interplay of dysautonomia, fatigue and somatisation of psychological distress.

Rhinological findings and their clinical usefulness for closer asthma fenotyping

V. Hrabe¹, O. Ruzickova-Kirchnerova², I. Malkusova³, M. Terl², P. Panzner⁴, J. Kuntscherova⁵

¹ Dept.of Otorhinolaryngology, University Hospital, Plzen, Czech Republic

² Dept.of Pneumology, University Hospital, Plzen, Czech Republic

³ Dept. of Allergology and Clinical Immunology, University Hospital, Plzen, Czech Republic

⁴ Dept.of Allergology and Clinical Immunology, University Hospital, Plzen, Czech Republic

⁵ Dept of Pathology, University Hospital, Plzen, Czech Republic

Abstract: ERS-1063

Session: United airways

Location: Hall D

Time: 26-06-14 11:24

Chair person: I. Terreehorst

Presenting author: V. Hrabe

Objectives

Our previous research findings conducted on patients with severe persistent asthma indicated a strong correlation between eosinophilic inflammation of upper and lower airways. The aim of presented study was to determine whether there are existing differences between the intensity of eosinophilia and/or polyp presentation in upper airways in patients with eosinophilic asthma with no clinically significant allergies versus patients with eosinophilic and allergic asthma.

Methods

32 patients with partially controlled severe persistent asthma treated by high doses of ICS combined with LABA were included for evaluation. According to markers of eosinophilia (FeNO, ECP, eosinophils in nasal mucosa-NM, bronchoalveolar lavage fluid, induced sputum and FBC) and allergy (skin prick tests, specific IgE) we divided asthmatics into three groups: I. eosinophilic and allergic, II. eosinophilic but non-allergic and III. non-eosinophilic asthma. We also focused on presence of perennial allergy and NSAID intolerance. CT scan of paranasal sinuses, rhinological history and examination were included for evaluation of nasal polyps presentation.

Results

Significant correlations were found in eosinophil counts in NM and nasal polyps presentation ($p=0,0012$). Nasal polyps presentation correlated mostly with eosinophilic but non-allergic asthma ($0,0117$). The intensity of eosinophilia in NM and presentation of nasal polyps correlated in the group I mostly with mould allergy, in the group II with NSAID intolerance ($p[It]0,05$).

Conclusion

We found presence of nasal polyps as a negative prognostic factor in patients with severe asthma - in allergic asthmatics indicates the risk for mould allergy (and possible ABPA or SAFS), in non-allergic asthmatics for NSAID intolerance.

Sphenoid sinus fibromyxoma: systematic review featuring a case report

S. Alves¹, S. Tavares¹, H. Rodrigues¹, H. Coelho², V. Proença¹, M. Santos¹, J. O. Neta², L. Antunes¹

¹Otorhinolaryngology-Head and Neck Surgery, Hospital Garcia de Orta, Almada, Portugal

²Pathology, Hospital Garcia de Orta, Almada, Portugal

Abstract: ERS-1064

Session: Skull Base Surgery 2

Session Time: 24-06-14, 15:00

Location: Hall H

Chair person: P. Nicolai

Presenting author: S. Alves

Objectives

Sphenoid sinus disease is difficult to diagnose as it may be insidious and reveals itself by non-specific symptoms. Sphenoid sinus fibromyxomas are rare lesions and require a high index of suspicion to be spot.

Methods

Evidence based review of available articles, concerning fibromyxoma of the sphenoid sinus, in the PubMed® database. Report of a clinical case of fibromyxoma diagnosed at our ENT-HNS Department during summer of 2013.

Results

Using desired filters and MeSH terms 'Sphenoid/Sphenoidal sinus Fibromyxoma' and 'Sphenoid/Shenoidal sinus Myxoma', we came across with very scarce useful literature.

Fibromyxomas are a histologically fibrous variant of myxomas. Primary sphenoid sinus myxomas are estimated at 0.1% of all head and neck tumours and, as other sphenoid lesions, can grow to large volumes before becoming symptomatic.

Conclusion

Fibromyxomas are rare benign tumors, but can be infiltrative, aggressive and may recur. In order to minimize the recurrences, the approach to these tumours should be its complete excision using image-guided systems.

Ectopic tooth in the nasal cavity: a case report

V. Henriques¹, R. Teles¹, A. Sousa¹, R. Estevão¹, J. Rodrigues¹, F. Silva¹, A. Fernandes¹,
F. Fernandes¹

¹ ENT, Centro Hospitalar do Alto Ave, Guimarães, Portugal

Abstract: ERS-1065

Objectives

The ectopic eruption of teeth into the nasal cavity is a rare phenomenon. These teeth can be supernumerary, deciduous or permanent. Ectopic eruption usually occur in the palate and maxillary sinus, but have also been reported in the mandibular condyle, coronoid process, orbit, and nasal cavities. Epistaxis, rhinosinusitis, nasal septal deviations, nasal septal abscess and oral-nasal fistula may occur in case of persistence and nasal eruption of the ectopic tooth. However, it can also be an incidental finding during routine examination.

Methods

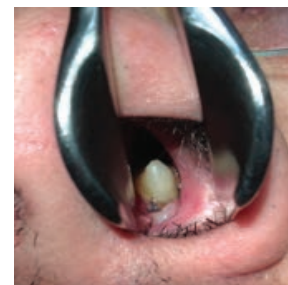
A 45-years-old caucasian men attended the emergency room complaining of nasal pain, significant nasal airway obstruction and epistaxis, since two years ago.

Results

The physical examination of the nose demonstrated a white mass compatible with a tooth and a left septum deviation. On oral examination a complete set of the teeth is present without any oral disease nor history of maxillofacial trauma or surgery.

Conclusion

The identification of ectopic teeth in the nasal cavity is important and it should be identified, differentiated and treated as soon as possible, avoiding further morbidity.



CORRECTION OF DEVIATED NOSE

F. JAKIMOVSKA¹,

¹ENT DEPARTMENT, UNIVERSITY ENT CLINIC, SKOPJE, MACEDONIA

Abstract: ERS-1066

Objectives

The deviated nose represents a complex of aesthetic and functional problem. Great emphasis should be placed on the preoperative analysis, recognition of the deformity, and a step-wise approach toward surgical repair. Rhinoseptoplasty is the nasal surgery with the aim of creating both functional and aesthetical improvements.

Methods

The speaker will try to deliver important messages regarding what surgeons have to know for a successful correction of deviated nose. Importance of septal straightening by using the techniques of L-strut cut, spreader grafts, extracorporeal septoplasty, will be discussed.

Results

The functional improvements and aesthetic appearances were assessed by Nasal Obstruction Symptom Evaluation (NOSE) and Rhinoplasty Outcomes Evaluation (ROE) tests. In all groups, pre- and postoperative rates were statistically significant ($p=0,001$).

Conclusion

The deviated nose comes in many forms and in no way can a single operation be universally applied to all patients. Structural principles and surgical anatomy will serve as the foundation, emphasizing the areas in the nose in which the intersection of form and function are most important.

Aggressive igg4 disease with maxillary and sphenoid-orbital affectation

M.P. Cárdenas Escalante¹, M.D. Martinez Novoa¹, X. Ustrell Roig², E. Figuerola Massana¹

¹ ENT, University hospital Joan XXIII, Tarragona, Spain

² Neurologist, University hospital Joan XXIII, Tarragona, Spain

Abstract: ERS-1067

Objectives

We present the clinical, radiological and histological description of a case of IgG4 disease with orbital involvement and skull base

Methods

We present a 37 year old patient who complains of diplopia, headache, and hemifacial tenderness with an expansive tumor at left pterygomaxillary fossa extending to the posterior wall of the maxillary sinus insinuating itself into the nasopharynx and nasal cavity with extension also into intracranial cavity with involvement of the cavernous sinus, in contact with the lateral wall of the orbit

Results

Complete histological study was performed with markers for IgG4 cells, which are positive, diagnosed IgG4 sclerosing disease, immunosuppressive decide to start with clinical improvement and stabilization of their disease

Conclusion

IgG4 disease is a disease of growing recognition that despite the discrepancies in the literature about considering it a separate entity or part of the inflammatory pseudotumor-like lesions should be considered in the differential diagnosis of head and neck injuries, since by its inflammatory nature makes it susceptible to medical management may modify the therapeutic approach when choosing the treatment

HTA applied in the hospital use of sinus balloon system

M. Rigante¹, M. Pandolfini¹, G. Passali¹, C. Furno², L. Leogrande², G. Bastanza¹, E. Scarano¹, G. Paludetti¹

¹ Department of Otolaryngology Head and Neck Surgery, Catholic University of Sacred Heart, Rome, Italy

² Unità di Valutazione delle Tecnologie – General Directorate, Catholic University of Sacred Heart, Rome, Italy

Abstract: ERS-1068

Objectives

The procedure of a new technology introduction is managed by Health Technology Unit, the purpose is to provide hospital decision-makers recommendations on health technology acquisitions by using a transparent and consistent evaluation process and provide accurate forecasts on the clinical, economical and organizational impacts of newly introduced technologies. We evaluated the impact of the Relieva Balloon Sinusoplasty in hospital context.

Methods

26 patients affected by chronic frontal sinusitis +/- other sinus involvement were evaluated. Patients were prospectively evaluated one years after surgery by Sinonasal Outcome Test (SNOT-20). The SNOT-20 rates the severity of 20 symptoms over the preceding two weeks, on a six-point scale (from 0 “no problem” to 5 “problem as bad as it can be”). We compared this group of patient with a case control group with the comparable characteristics (age and symptoms) operated in the same Unit.

Results

Clinical Results are summarized in the following table

Conclusion

Our experience in performing Sinoplasty procedure confirmed the safety and effectiveness of technique, as reported by actual literature. Even if its introduction into clinical practices doesn't affect reimbursement regimen, the technique is associated to less operative time and hospitalization that could imply a reduction in overall costs of the procedure. Moreover the traditional FESS procedure requires more control visits at the follow up in order to remove crust and to improve the outcome of the treatment.

	Patients treated with balloon sinusoplasty	CASE CONTROL GROUP (20 cases)
Mean operation time	35 min	78 min
Nasal packing	7/26 (26.9%)	16/20 (80%)
Mean Hospitalization stay	1,71 days	2,56 days
Mean Postoperative pain (VAS scale)	2.56	5.44
Intraoperative/postoperative bleeding	5/26 (19,2%)	15/20 (75%)
Outcome evaluation SNOT 20 (Sinonasal outcome score)	2.67 pre-op 1.24 post-op	2.86 pre-op 1.85 post-op
Number of post-operative control visits (medications)	1.72	3.5

The lateral nasal wall is a multi-triangular structure

D.F. à Wengen¹

¹ Rhinology, ORL Center, Binningen, Switzerland

Abstract: ERS-1069

Objectives

This paper will provide insight in the anatomy of the lateral nasal wall. Instead of complicated cellular structures of the ethmoidal cells this description of a triangular structure will help the novice FESS Surgeon to understand anatomy.

Methods

Anatomical and radiological studies of the lateral nasal wall will help the FESS surgeon to apply structures in endoscopic sinus surgery. The attachment of the lower turbinate and the nasal floor make up the first triangle. The lower turbinate and the orbital floor make up the next triangle. And the orbit itself is the final triangle.

Results

Understanding the triangular structure will help the surgeons to preserve vital anatomical structures like the orbit or the orbital floor. This concept is easily applicable in daily surgical cases. This concept is also far easier to understand than the usual anatomical concept of the various pneumatic spaces of the sinuses.

Conclusion

Facilitation of anatomy and reduction to pertinent structures in the form of triangles will help the young surgeons to spare vital structures and to proceed with surgery in confidence.

Posterior approach to the maxillary sinus: quicker, easier and safer

D.F. à Wengen¹

¹ Rhinology, ORL Center, Binningen, Switzerland

Abstract: ERS-1070

Objectives

This paper will provide insight in the anatomy of the lateral nasal wall in functional sinus surgery to enter the maxillary sinus. Instead of the conventional surgery to open the uncinated process we recommend to approach the maxillary sinus from posterior.

Methods

Anatomical and radiological studies of the lateral nasal wall will help the FESS surgeon to enter the maxillary sinus in endoscopic sinus surgery from the posterior end. The surgeon then opens the entire medial wall of the maxillary sinus: between the attachment of the lower turbinate and the orbital floor.

Results

The posterior approach avoids lesions to the lamina papyracea and thus to the orbit. FESS surgeons of all ages have profited from this approach. We have also invented surgical instruments to facilitate this posterior approach. .

Conclusion

To enter the maxillary sinus from the posterior part is easier, safer and quicker than opening the uncinated process. Injury to the orbit can be avoided. The final opening is large.

Endoscopic trans-sphenoidal surgery in children: our institutional experience

R. Mario¹, P. Frassanito², L. Massimi², C. Parrilla¹, L. Vargiu¹, M. Caldarelli², C. Di Rocco², G. Paludetti¹

¹ Department of Otolaryngology Head and Neck Surgery, Catholic University of Sacred Heart - Rome - Italy, Rome, Italy

² Pediatric Neurosurgery, Catholic University of Sacred Heart - Rome - Italy, Rome, Italy

Abstract: ERS-1071

Session: Skull Base Surgery 1

Location: Hall H

Time: 23-06-14, 10:32

Chair person: R. Weber

Presenting author: R. Mario

Objectives

The aim of the study is to assess the actual role of ETS in children with sellar tumors in our experience.

Methods

A retrospective review of 39 surgeries in 35 pediatric patients who underwent EES at our institution from January 2006 to December 2013 was performed.

Results

We operated on 17 males and 18 females (mean age 12.7y, range 1-17y). Clinical onset was consistent with endocrine deficits in 16 cases and neurological in 8. Lesion site was sellar-sovrasellar (23=43.5%), intrasellar (10=25.6%), and other (9=23.7%). A LD was placed in case of intraoperative CSF leak (9=23.7%). Grade of resection was judged total in 25 (64.1%), subtotal in 8 (20.5%), partial in 6 (15.4%). We observed pituitary adenoma (14=35.9%), craniopharyngiomas (11=28.2%), Rathke's cleft cysts (5=12.8%), other (9=23.1%). Perioperative mortality was nil, postoperative complications were CSF leaks (7=17.9%), neurological worsening (2=5.1%), and CSF infection (1=2.6%). Treatment of CSF leak required the placement of LD and in 2 case surgical revision. Hormonal replacement therapy was required in 12 patients new onset of diabetes insipidus was not observed. At follow-up (mean 25m, range 1-89m) 1 recurrence and 4 progressions of residual tumor and 1 death were observed.

Conclusion

Endoscopic transphenodal surgery is a safe and effective surgical option also in children. The minimal invasiveness makes it ideal for the treatment of pediatric lesion of this region, in which it is essential to preserve the integrity of the hypothalamic-pituitary axis and of the naso-facial structures to assure the correct growth of the child.

Nasal intraosseous hemangioma: a case report

J. Vaz de Castro¹, C. André¹, L. Antunes¹

¹ Otorhinolaryngology, University Hospital Regensburg, Regensburg, Germany

² Ophthalmology, University Hospital Regensburg, Regensburg, Germany

³ Radiology, University Hospital Regensburg, Regensburg, Germany

Abstract: ERS-1105

Objectives

To determine the effect of orbital decompression procedures on the intraocular pressure (IOP). The orbital compartment syndrome represents an emergency situation. Due to the elevated IOP vision loss may ensue. Several maneuvers including lateral canthotomy are discussed to reduce the IOP.

Methods

Eight orbits were studied in a fresh frozen cadaveric model (4 specimen). Intraorbital volume was determined by CT volumetry. An orbital compartment syndrome was simulated by injecting viscous material into the orbit. Injected volumes were documented and lateral canthotomy, cantholysis, inferior and superior septolysis were performed. IOP and exophthalmometric measurements were obtained after each intervention.

Results

Controlled elevation of IOP was achieved in all specimen. IOP was partially reduced after performing a lateral canthotomy in 8 orbits. IOP was significantly and sufficiently decreased under 20 mmHg by inferior cantholysis in 7 orbits. An additional superior cantholysis was necessary in 2 orbits to achieve a complete decompression. Inferior or superior septolysis were not needed to further reduce the IOP.

Conclusion

Lateral canthotomy must be followed by an inferior cantholysis in order to successfully decompress an orbital compartment syndrome in the majority of cases. Occasionally, superior cantholysis may generate additional benefit. Additional inferior and superior septolysis were not shown to provide a beneficial effect when performed after canthotomy and cantholysis.

OUR EXPERIENCE OF BENIGN NERVE SHEATH TUMOURS OF THE NASAL TIP

P. BIJOOR¹, S. KHWAJA², T. WOOLFORD¹

¹ OTORHINOLARYNGOLOGY, MANCHESTER ROYAL INFIRMARY, MANCHESTER, UNITED KINGDOM

² OTORHINOLARYNGOLOGY, STEPPING HILL HOSPITAL, STOCKPORT, UNITED KINGDOM

Abstract: ERS-1073

Objectives

To present two cases of a benign nerve sheath tumor in the nasal tip, and to discuss the diagnostic dilemmas and genetic associations of this entity.

Methods

Two case reports and review of the medical literature.

Results

A 14 year old girl presented with a recurrent slow-growing lesion of her nasal tip. She had undergone 3 previous procedures to excise a similar lesion. Histopathological diagnosis of these lesions revealed appearances in keeping with a neurofibroma. Due to its association with Neurofibromatosis type 1, she was referred for a genetic assessment, which confirmed that this was an isolated neurofibroma with no genetic implications. The second case was a 24 year old woman who was referred from primary care with a slow-growing cystic lesion of her nasal tip. She underwent excision of this lesion, which revealed a schwannoma of the nasal tip.

Conclusion

Benign peripheral nerve sheath tumours should be considered as a differential diagnosis for nasal tip soft tissue lesions, albeit an exceedingly rare presentation. They tend to be isolated lesions, with no underlying genetic condition; however due to their association with neurofibromatosis type I, this must be considered and excluded.

Investigation of sinonasal airflow and transport

C. Rennie¹, N. Tolley², A. Bates³, K. Gouder³, D. Doorly³

¹ Aeronautics & Otolaryngology, Imperial College London, London, United Kingdom

² Otolaryngology, Imperial College London, London, United Kingdom

³ Aeronautics, Imperial College London, London, United Kingdom

Abstract: ERS-1074

Session: Nasal flow and resistance measurements

Session Time: 23-06-14, 14:54

Location: Hall H

Chair person: G. Ottaviano

Presenting author: C. Rennie

Objectives

Knowledge of the geometry and flow conditions are requirements for understanding the physiological mechanics of the airways. Imaging and experimental measurement techniques have been applied to determine the variations in nasal airway geometry and the characteristics of nasal inspiratory flow. Whilst the results are relevant to a host of applications, the particular case of sinonasal ventilation well illustrates the interrelation between form, flow and function as well as motivating the development of improved techniques for clinical management.

Methods

1. 3T MR imaging has been investigated as a means to define the anatomy in congested and decongested states in 15 healthy subjects.
2. Variations in nasal inspiratory flow profile were recorded bilaterally, simultaneously and in high temporal detail across a cohort of 15 subjects for conditions of normal inspiration, sniffing and smelling.
3. Short half-life Krypton imaging has been used to investigate gas exchange between the maxillary sinus and the nasal cavity.

Results

Results show very large changes in nasal airway calibre and moreover allow the variation in mucosal engorgement throughout the nasal cavity to be mapped.

Highly time resolved hot wire measurements of inspiratory flow profiles revealed for the first time the rapid temporal development of inspiratory flow during normal inspiration and dramatically so during sniffing.

The effective flow rates between the nasal cavity and maxillary sinus were found to depend on the ostial geometry.

Conclusion

Through the application of a unique range of experimental techniques a further insight into the mechanisms involved in sinonasal airflow and transport is described.

Structural pedicled mucochondral-osteal nasoseptal flap: a novel method for orbital floor reconstruction after sinonasal and skull base tumor resection

E. Kalyoussef¹, R.F. Schmidt², J.K. Liu², J. Eloy¹

¹ Otolaryngology, Rutgers New Jersey Medical School, Newark, USA

² Neurosurgery, Rutgers New Jersey Medical School, Newark, USA

Abstract: ERS-1075

Objectives

Unrepaired orbital floor defects after sinonasal and skull base tumor resection can lead to herniation of orbital contents into the maxillary or ethmoidal sinuses, possibly resulting in infection and significant cosmetic and functional deficits. Orbital floor defects are usually repaired using prosthetic implants or autogenous material. Nasal septal cartilage has been used previously as a free graft for reconstruction. However, its reliance on local vascular supply can result in ischemia and necrosis in the postoperative period. The vascularized pedicled nasoseptal flap, consisting of mucoperichondrium and mucoperiosteum, is routinely used as an effective reconstruction method for endoscopic repair of cerebrospinal fluid leaks arising from skull base dural defects. However, this flap does not provide rigid structural reconstruction when used alone.

Methods

We report a case of an orbital floor defect repaired using a pedicled mucochondral-osteal nasoseptal flap (PMCONSF).

Results

This technique incorporates the structural component of the nasal septal cartilage and bone with the vascularized pedicled nasoseptal flap.

Conclusion

The use of vascularized grafts for orbital floor reconstruction has been associated with improved integration and healing, especially in patients requiring postoperative radiotherapy. We propose a structural mucochondral-osteal nasoseptal flap for repair of these defects. We believe that this PMCONSF is a versatile and reliable option for orbital floor reconstruction.

Modified subtotal-Lothrop procedure for extended frontal sinus and anterior skull-base access: a case series

J. Eloy¹, E. Kalyoussef¹, L.J. Mady¹, V.V. Kanumuri¹, P.F. Svider², J.K. Liu³

¹ Otolaryngology, Rutgers New Jersey Medical School, Newark, USA

² Otolaryngology, Wayne State University School of Medicine, Detroit, USA

³ Neurosurgery, Rutgers New Jersey Medical School, Newark, USA

Abstract: ERS-1076

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:15

Location: Hall H

Chair person: P. Nicolai

Presenting author: J. Eloy

Objectives

The endoscopic modified Lothrop procedure (EMLP) is well established for resistant frontal sinus disease and anterior skull base (ASB) exposure. However, this technique may be unnecessarily aggressive by removing avoidable sinonasal structures in select cases. We previously proposed a modification of the EMLP, termed the modified subtotal-Lothrop procedure (MSLP) to access the ASB and complex frontal sinus disease for which access to the bilateral frontal sinus posterior table is required in a cadaveric study. This study provides a step-by-step description of this technique, and presents our experience in 5 patients who underwent this approach.

Methods

A retrospective analysis was performed at a tertiary referral center on all patients undergoing endoscopic ASB resection and complex frontal sinus surgeries between May 2011 and May 2013. Of 8 patients identified who underwent a MSLP, 5 had at least 1-year follow-up.

Results

All patients underwent successful ASB exposure via the MSLP without complications and preservation of one frontal sinus recess. Adequate access to the bilateral posterior frontal sinus table was achieved in all cases. A patent frontal sinus drainage pathway could be assessed endoscopically after a mean follow-up of 18.6 months (range, 12-27 months).

Conclusion

The MSLP is a feasible approach for exposure of the ASB and accessing complex frontal sinus pathology. This modification provides adequate ASB exposure and surgical maneuverability similar to the EMLP, while preserving one frontal sinus recess. This modification was successful in providing adequate exposure and maneuverability as well as maintaining frontal sinus patency in this small cohort.

Image-guidance in endoscopic sinus surgery: is it associated with decreased medicolegal liability?

J. Eloy¹, E. Kalyoussef¹, P.F. Svider², C.M. D'Aguillo¹, S. Baredes¹, M. Setzen³, A.J. Folbe²

¹ Otolaryngology, Rutgers New Jersey Medical School, Newark, USA

² Otolaryngology, Wayne State University School of Medicine, Detroit, USA

³ Otolaryngology, New York University, New York, USA

Abstract: ERS-1077

Session: CRS miscellaneous

Session Time: 25-06-14, 14:25

Location: Hall J

Chair person: G. Adriaensen

Presenting author: J. Eloy

Objectives

The use of image-guidance (IG) in endoscopic sinus surgery (ESS) has escalated over the last decade despite a lack of consensus that its use improves outcomes or decreases complications. One theoretical reason for using IG in ESS is its potential to minimize legal liability should an adverse outcome occur. In this study, we aimed to characterize the role of IG in ESS litigation, and further detail other factors in pertinent cases. A secondary objective was to characterize recent malpractice litigation for other relevant factors.

Methods

Relevant cases from Westlaw were examined to determine whether the use of IG played a role in initiating litigation in ESS malpractice suits. Factors such as patient demographics and alleged cause(s) of malpractice litigation were examined.

Results

Out of 30 malpractice cases from 2004 to April 2013, 4 (13.3%) mentioned the use of IG during ESS, although this did not appear to be a factor affecting the plaintiff's decision to initiate litigation, nor the case outcomes. In the 26 cases (86.7%) in which IG was not used, its non-use was not specified as an alleged cause of negligence. Eleven (36.7%) cases were resolved in the defendant's favor. Frequently-cited factors included iatrogenic injury (83.3%), permanent deficits (66.7%), needing additional surgery (63.3%), orbital and intracranial injury, and perceived deficits in informed consent (40.0%).

Conclusion

The use of IG was not found to be a factor in ESS litigation. This suggests that not using IG does not necessarily make one more vulnerable to malpractice litigation.

Expression of ADAM10 and ADAM17 in nasal polyp

S. Park¹, W. Bae²

¹ Otorhinolaryngology, Inje University, Busan, Korea

² Otorhinolaryngology, Dong-A University, Busan, Korea

Abstract: ERS-1078

Session: CRS Basic 3

Session Time: 24-06-14, 16:45

Location: Hall E

Chair person: S. Vlamincx

Presenting author: S. Park

Objectives

To assess the roles of ADAM 10 and ADAM 17 in nasal polyps by assaying for expression of these materials.

Methods

The expression of ADAM 10 and 17 was investigated in the nasal polyps undergoing endonasal sinus surgery and compared with that in inferior turbinate mucosa samples obtained from non-allergic hypertrophic rhinitis patients. Tissue samples were analyzed by Western blotting and immunohistochemical staining.

Results

The expression of ADAM 10 and 17 protein was significantly higher in inferior turbinate than in nasal polyp ($P < 0.05$). ADAM 10 and 17 were detected most commonly in the cytoplasm. Lining epithelium of nasal polyp showed decreased expression of ADAM 10 and 17. In the submucosa, ADAM 10 and 17 were found in glandular cells, but ADAM 10 and 17 expression was mostly detected in inflammatory cells in submucosa.

Conclusion

We suggest that decreased ADAM 10 and 17 proteins may contribute to develop of nasal polyps and abnormal structural tissue remodeling in nasal polyps.

Diagnosis and management of sinonasal lymphoma

J. Suh¹, K. Peng¹, S. Bhuta², M. Wang¹

¹ Head and Neck Surgery, University of California Los Angeles, Los Angeles, USA

² Pathology, University of California Los Angeles, Los Angeles, USA

Abstract: ERS-1079

Session: Skull Base Surgery 2

Session Time: 24-06-14, 14:05

Location: Hall H

Chair person: P. Nicolai

Presenting author: J. Suh

Objectives

The goal of this presentation is to review the diagnosis, management, and clinical behavior of sinonasal lymphoma in our institution and to review the literature surrounding the diagnosis and management of this disease.

Methods

A pathology database spanning 22 years at a single tertiary care center was reviewed examining all cases of sinonasal lymphoma.

Results

Seventeen patients with sinonasal lymphoma were identified. Maxillary and ethmoid sinuses were affected more frequently (n = 8 patients each) than sphenoid and frontal sinuses (n = 5 patients each). Histologically, the most common type was diffuse large B cell lymphoma (53%, 9 patients), followed by extranodal NK-cell lymphoma (ENKL, 21%, 3 patients). Presenting symptoms included nasal obstruction and rhinorrhea (53%, 9 patients) and diplopia (18%, 3 patients); radiographic imaging demonstrated a discrete mass (59%, 10 patients), sinus opacification (53%, 9 patients), and/or bony erosion (35%, 6 patients). Treatment included chemotherapy alone (71%, 12 patients), chemotherapy and radiation (6%, 1 patient), and radiation alone (6%, 1 patient).

Conclusion

Lymphoma of the nasal cavity and paranasal sinuses is extremely rare, may mimic benign processes, and may manifest either in an isolated fashion or in conjunction with systemic disease. B-cell lymphomas, a more favorable diagnosis, account for a majority of cases, while ENKL is associated with rapid disease progression and death. Chemotherapy and radiation are the main therapies. Histologic diagnosis is of paramount importance, and clinicians must remain cognizant of this entity to differentiate it from other sinonasal malignancies or benign lesions.

Comparison of three modalities of corticosteroids administration in chronic rhinosinusitis and changes in olfactory function

C. Colbrant¹, G. Reychler¹, C. Huart¹, P. Rombaux²

¹ ORL, Pulmonology, Brussels, Belgium

² ORL, Institute of Neurosciences, Brussels, Belgium

Abstract: ERS-1082

Objectives

Olfactory dysfunction is deemed to be a significant contributor to poor quality of life in chronic rhinosinusitis (CRS). This study was undertaken to assess the effectiveness of three modalities of corticosteroids administration in patients with CRS. Secondly, to compare modalities between themselves and the effects on olfactory function changes.

Methods

A cohort of 30 patients with CRS (aged from 18 to 72 years) were recruited and randomized in three groups depending on the route of corticosteroids administration. Corticosteroids were administered during 16 days by oral (Medrol[®], 32mg/8d - 16mg/4d - 8mg/4d), nasal spray (Rhinocort[®], 2 x 2 x 64µg/nostril) or nebulized (Pulmicort[®], 2 x 1mg/4mL) (Sonic nebulizer, AOHBOX NL11SN, DTF Medical) route. Olfactory function was assessed using orthonasal (Sniffing stick test with the threshold-discrimination-identification score) (TDI) and retronasal psychophysical olfactory (odors identification) (RETRO) tests at inclusion and after the treatment.

Results

TDI and RETRO were similar between three groups at baseline. TDI improved by 5.5, 5.8 and -1.1 for sonic nebulization, oral and nasal spray groups respectively. This improvement was significantly different between modalities ($p = 0.010$) and only clinically relevant for oral and nebulized administration. It was similar between oral and nebulized administration but significantly higher than nasal spray administration. RETRO improved by 1.1, 4.2 and 0.7 for sonic nebulization, oral and nasal spray groups respectively ($p = 0.231$).

Conclusion

Effectiveness of nebulized and oral administration is demonstrated on orthonasal olfactory. The benefit is better than with nasal spray. Changes in olfactory function can be demonstrated with psychophysical testing.

TGF-beta1 plays an important role in osteitis in CRS with nasal polyps: a preliminary study

M. Wang¹, B. Zhou¹, T. Ye¹

¹ Department of Otorhinolaryngology Head and Neck Surgery, Beijing Tongren Hospital Capital Medical University Key Laboratory of Otolaryn, Beijing, China

Abstract: ERS-1083

Objectives

To investigate the molecular mechanism of osteitis in CRSwNP and CRSsNP in Chinese adult patients.

Methods

Histology bone grade of surgical samples were analyzed in 10 controls, 16 CRSsNP patients, and 23 CRSwNP patients. Ethmoid bone tissue samples were examined by means of quantitative real time RT-PCR for TGF-beta1, TGF-beta receptor I and II, Smad2 and Smad3. Immunohistochemistry examination of TGF-beta 1, TGF-beta receptor I and II, p-Smad2 and p-Smad3 in ethmoid bone tissues was also performed.

Results

Patients with CRSwNP showed significantly higher bone grade than patients with CRSsNP and controls. mRNA concentrations in ethmoid bone tissues of TGF-beta 1, TGF-beta receptor I, and smad3 were significantly higher than patients with CRSsNP and controls. Although there were no significant differences between the concentrations of smad2 in patients with CRSwNP and CRSsNP, these were significantly increased compared with control patients. Results of immunohistochemistry showed that the protein expressions of TGF-beta 1, TGF-beta receptor I and II, p-Smad2 and p-Smad3 were consistent with mRNA concentration.

Conclusion

Chronic rhinosinusitis with nasal polyps is characterized by a relative higher activity of TGF-beta 1 signaling pathway versus CRSsNP in bone tissues. This finding may be explanation of molecular mechanism of osteitis in CRSwNP.

Haemophilus influenzae immunity in non-vaccinated splenectomized beta-thalassemia children

A. Sotoodeh Jahromi¹

¹ Immunology, jahrom university of medical sciences, jahrom, Iran

Abstract: ERS-1084

Objectives

Patients with beta thalassemia major and asplenia are at increased risk for encapsulated bacterial infections. The aim of study was to determine the Hemophilue influenza type b (Hib) antibody concentration among beta thalassemic patients with or without spleen.

Methods

The Hib antibody concentration was investigated in 850 patients with thalassemia major, 437 of who had undergone splenectomy. Hib antibody was determined by an ELISA kit (IBL, Germany). Subjects who had Hib antibody level ≥ 1.0 $\mu\text{g/ml}$ as long term protection, between 0.15 to <1.0 $\mu\text{g/ml}$ as short term protection and <0.15 $\mu\text{g/ml}$ as no protection. For the analysis we used SPSS 11.5 software. A p-value less than 0.05 were considered statistically significant.

Results

The mean antibody level against Hib was lower in patients without spleen than in patients with spleen (0.39 ± 0.5 vs 1.08 ± 0.55 $\mu\text{g/ml}$; $p < 0.001$). The prevalence of protective antibody level in patients without spleen was significantly lower than in patients with spleen (32.3% vs 85.7%; $p < 0.001$). Protection against Hib decreased with raise interval time after splenectomy from 57.2% in ≤ 60 months interval to 10.8% in >120 months interval ($p=0.001$). Near thirty percent of the 437 splenectomized subjects had long term protection against hemophilus influenza type b where as 64.4 percent of 413 subjects with spleen had long term protection ($p < 0.001$).

Conclusion

Patients with splenectomy had lower Hib antibody level than cases with spleen. Also antibody level decreased with time interval after splenectomy. Thus the vaccine recommendation seems essential for splenectomized thalassemia major.

Haemophilus influenza immunity in non-vaccinated children, South of Iran

S. Sobhanian¹, A. Sotoodeh Jahromi¹

¹ Immunology, Jahrom university of medical sciences, Jahrom, Iran

Abstract: ERS-1085

Objectives

Hemophilus influenza type b (Hib) infection has a high morbidity and mortality rate especially in children less than 5 years of age. The incidence of Hib disease in Iran is not known and Hib vaccine is not included in the National Immunization Program. The aim of the present study was to investigate the level of antibody to Hib of children five years or younger living in Jahrom, Iran.

Methods

Three hundred eighty six children 5 years or younger were selected by random sampling method. A blood samples were taken from those children. Anti-Hib IgG antibody (anti-PRP) level was determined in the serum by using anti-Hemophilus influenza IgG EIA kit (IBL, Germany). An anti-PRP antibody levels of 0.15 microg/mL and over were accepted as the natural immunity.

Results

The mean concentration of Hib antibody was 0.94 +/- 0.480 microg/mL. Natural immunity was determined in three hundred and twenty six (84.5%) of the children. The proportion of natural immunity was increased from 64.9% among children = 12 month old to 95.2% in children aged 49-60 month (p=0.0001).

Conclusion

The exposure rate of children with Hib was higher than expected, even in children who were just a few months old. Present data revealed need to be introducing Hib conjugate vaccine in the National Immunization Programs.

OUTCOMES OF IRRADIATED ALLOGRAFT AND XENOGRAFTS IN SEPTO-RHINOPLASTY

A. LIEDER¹, T.G. LEONTSINIS²

¹ ENT, HEALTH EDUCATION NORTH EAST, DARLINGTON, GERMANY

² ENT, CITY HOSPITALS SUNDERLAND, SUNDERLAND, UNITED KINGDOM

Abstract: ERS-1086

Objectives

Irradiated allografts and xenografts are licensed for use in reconstructive surgery and can be used when own cartilage is insufficient for reconstructing nasal structures. We have retrospectively studied outcomes of septorhinoplasties utilising Tutoplast®-processed cadaveric rib cartilage (Tutoplast®) and bovine pericardium (Tutopatch®) to evaluate complications and long-term outcome.

Methods

Tutoplast® and/or Tutopatch® were utilised in 32 patients (42%). Patients received oral antibiotics (Flucloxacillin or Co-Amoxiclav) for 5-7 days and topical antibiotic ointment (Mupirocin) for 10-14 days. First follow-up was at 7 days postoperatively, at two and at six months, with a final follow-up at one year.

Results

32 patients, 15 male and 17 female, underwent septorhinoplasty utilising Tutoplast® and/or Tutopatch® grafting to reconstruct nasal septum, augment nasal dorsum, or both. Mean age at time of surgery was 34 ± 13 years. 16 operations (50%) were revisions. Tutoplast rib cartilage was used in 29 cases (91%) and Tutopatch in 11 cases (34%). In 8 cases (25%), both Tutopatch and Tutoplast were used. No immediate complications (Epistaxis, pain or other) were observed. Follow-up was on average 12.5 months. We observed long-term complications in two patients (over 2 months from surgery). Revision rhinoplasty was offered to 7 patients (22% revision rate). The reasons were the following: graft resorption (2 patients), slight saddling (4 patients), asymmetry of nostrils (1 patient).

Conclusion

We conclude that in our hands, utilisation of Tutoplast® and/or Tutopatch® graft for reconstruction in septorhinoplasty is safe, offering predictable results. It offers a viable alternative to autologous rib or ear cartilage.

Aggressive IgG4 disease with maxillary and sphenoid-orbital affectation

M.P. Cárdenas Escalante¹, M.D. Martinez Novoa¹, X. Ustrell Roig², E. Figuerola Massana¹

¹ ENT, University Hospital Joan XXIII, Tarragona, Spain

² Neurologist, University Hospital Joan XXIII, Tarragona, Spain

Abstract: ERS-1087

Objectives

We present the clinical, radiological and histological description of a case of IgG4 disease with orbital involvement and skull base.

Methods

We present a 37 years old patient who complains of diplopia, headache, and hemifacial tenderness with an expansive tumor at left pterygomaxillary fossa extending to the posterior wall of the maxillary sinus insinuating itself into the nasopharynx and nasal cavity with extension also into intracranial cavity with involvement of the cavernous sinus, in contact with the lateral wall of the orbit.

Results

Complete histological study was performed with markers for IgG4 cells, which were positive, and diagnostic for IgG4 sclerosing disease, immunosuppressive treatment is decided with clinical improvement and stabilization of their disease.

Conclusion

IgG4 disease is a disease of growing recognition that despite the discrepancies in the literature about considering it a separate entity or part of the inflammatory pseudotumor-like lesions should be considered in the differential diagnosis of head and neck injuries, since by its inflammatory nature makes it susceptible to medical management may modify the therapeutic approach when choosing the treatment.

Intranasal presentation of condyloma acuminata - a case report

T.C. Wang¹, K.W. Huang¹

¹Otolaryngology, Tainan Municipal Hospital, Tainan, Taiwan

Abstract: ERS-1088

Objectives

Condyloma acuminata is a common lesion in the anogenital region that transmitted by the human papillomavirus (HPV) types 6 and 11. It can involve aerodigestive tract, being termed as recurrent respiratory papillomatosis due to high risk of recurrence. Recurrent respiratory papillomatosis is most found in the larynx, but intranasal presentation is rare.

Methods

We report a male patient who suffered from progressive right nasal obstruction for 3 years. Local examination revealed papillomatous mass over right vestibule, inferior concha, middle concha, nasopharyngeal surface of the soft palate and nasal septum. Condyloma acuminata was diagnosed after initial biopsy. We performed eradicated mass excision with CO2 laser cauterization by endoscopy according to literature review and recommendation.

Results

After operation, the patient has regular follow-up for 6 months. The mucosa is well healed without local recurrence.

Conclusion

Condyloma acuminata is a benign disease with high recurrent rate. Intranasal presentation is rarely recorded in the literature. Considering of easily relapsing, eradication of the lesion with long term follow-up is required, as it was the case for use told

Acute fulminant invasive fungal sinusitis

T.C. Wang¹, K.W. Huang¹, S.Y. Fang²

¹Otolaryngology, Tainan Municipal Hospital, Tainan, Taiwan

²Otolaryngology, National Chen Kung University Hospital, Tainan, Taiwan

Abstract: ERS-1089

Objectives

Acute fulminant invasive fungal sinusitis (AFIFS) is a rapidly progressing fungal infectious disease with a high mortality rate. The disease is commonly seen among patients with immune deficiencies, such as patients with diabetes and malignant tumors. The present study examined 12 cases of AFIFS to discuss the factors that impact the prognosis and treatment plan of these patients.

Methods

Clinical data dating from January of 1996 to December of 2013 was collected through the hospital computer database, and 12 confirmed AFIFS cases were identified. The potential risk factors, clinical symptoms, fungal culture results, treatment methods, complications, and prognoses of these 12 cases were then further evaluated.

Results

The ages of the 12 patients ranged from 12 to 83 years old. Ten of the 12 patients were diabetic, and 4 of those diabetic patients had accompanying diabetic ketoacidosis (DKA) upon arrival at the hospital. One had acute lymphocytic leukemia accompanied with neutropenia. The most common primary symptoms were nose symptoms (including eschar, necrosis and epistaxis), while the most common secondary symptoms were facial-cheek symptoms (including swelling, numbness, and pain).

Conclusion

AFIFS is a severe fungal infectious disease with a high mortality rate when accompanied with intracranial invasions. Aside from repetitive extensive debridement and the use of antifungal drugs, proactively correcting the underlying diseases of patients to improve their immunity is the only way to achieve optimal treatment efficiency.

Pre operative assessment of difficulties in exploring the maxillary sinus disease by studying CT scans called middle meatal antrostomy (MMA) concept

M. Chittaloor¹

¹ENT, Madhumani Nursing Home, Nandyal, India

Abstract: ERS-1090

Objectives

Middle meatal antrostomy(mma) is the basic step in maxillary sinus fess.the dimensions of MMA decide the difficultiles in exploring the maxillary sinus. The problems of maxillary sinus exploration in fess are inversely proportional to the size of MMA.

Methods

MMA concept is derived from studying ct scans taking the following anatomical factors.

1. lamina - uncinata line to know maxillary ostium placement
2. height of proterior frontanella versus height of nasal chamber
3. maxillary sinus size.

All these factors are studied in every case to assess the dimentision of MMA.

If the surgeon can assess the MMA dimentions pre operatively the surgeon can prepare to face the difficulties.

results

The results are divided into three groups.

1. good.

The height of the MMA is more than half of the height of nasal chamber.

2. accepatable.

The height of MMA is less than half of the height of nasal chamber

3. Difficult.

The height of the MMA is less than 1/3 of the height of the nasal chamber.

If the maxillary size is small and hypoplastic it will be difficult case.

If the placement of maxillary ostium is more than 2mm lateral to the lamina-uncinate line it will be difficult MMA.

Conclusion

With this MMAconcept we could demonstrate evidence based operative findings correlating with CT scan findings and show that we can pre operativley assess the difficulties of maxillary sinus disease and plan accordingly to tackle the clearance of disease with special instuments.

Even a beginner can use this technique to learn frontal recess explorations and correlate the CT scan findings.

Frontal trephine is a safe, secure, sure and easy technique in locating frontal drainage pathway in difficult frontal recess explorations

M. Chittaloor¹

¹ENT, Madhumani Nursing Home, Nandyal, India

Abstract: ERS-1091

Objectives

Frontal sinus is the most difficult sinus to explore endoscopically.

We have used frontal trephine technique to identifying the frontal drainage pathway not taking the risk of damaging the base of skull.

Methods

Frontal trephine set supplied by micro debricator is used which has the following parts.

1. guard
2. 3mm drill
3. guide wire
4. 16 no. needle for fixing

the lower and medial end of eyebrow is used and a stab incision is given in the floor of frontal sinus. The drill is used with guard and a trephine hole is made into the frontal sinus. the wide bore needle is fixed and beddine solution is pushed to see the opening the frontal recess.

Results

In all the 25 difficult frontal recess explorations we have used this technique and we could easily identify the frontal recess drainage pathway in all cases(100%).

Conclusion

Most of the surgeons are afraid of exploring frontal recess when it is complicated by khun cells, aggar nasi and other complicated cells blocking the frontal drainage pathway.

In such situations frontal trephine is a sure, safe, secure and easy way to identify the frontal drainage pathway and avoiding fatal complications like injuring base of skull causing csf rhinorrhea.

Even a beginner can use this technique to learn frontal recess explorations and correlate the CT scan findings.

Treatment of allergic rhinitis using coblator-assisted partial turbinoplasty

D. Lim¹, S.H. Kang¹, B.H. Kim¹, M.S. Rhu¹

¹ Otolaryngology, Konkuk University Chungju Hospital, Chungju, Korea

Abstract: ERS-1092

Objectives

The ideal treatment for allergic rhinitis refractory to medical therapy is still lacking. Radiofrequency surgery, by means of tissue volume reduction, has already been proved to be safe and effective in the treatment of snoring, and chronic hypertrophic rhinitis. Thus, this department has attempted a Coblator[®]-assisted partial turbinoplasty (CAPT) for patients with allergic rhinitis for which drug treatment has not been responsive or its effect has been inadequate at best. This investigation sought after its effect, compared and analyzed the effect of laser-assisted partial turbinoplasty (LAPT).

Methods

200 consecutive patients with allergic rhinitis refractory to medical treatment were prospectively enrolled in the study. All of the patients underwent CAPT or LAPT and were observed postoperatively for more than 6 months. 100 patients were treated with CAPT, and 100 patients with LAPT. Postoperative changes in degree of nasal obstruction, rhinorrhea, itchy nose, sneezing, operation time, intra-operative bleeding, operation-associated pain and duration of crust formation were compared between the two surgical methods.

Results

There were no significant differences in improvement of allergic symptoms and intra-operative bleeding between the two groups. Operative time was less in the CAPT group and crust was formed for a shorter postoperative period. Operation-associated pain was less in the LAPT group.

Conclusion

The study demonstrates that CAPT appears to be effective for treating allergic rhinitis with poor response to medical therapy. In comparison with LAPT, symptomatic improvements are similar but the operation and recovery times are shorter. However, pain is much more severe than LAPT.

Dynamic changes of serum il-2 during complex immunotherapy of chronic polypoid rhinosinusitis

U. Vokhidov¹, U.S. Khasanov¹

¹ Department of otorhinolaryngology, Tashkent medical academy, Tashkent, Uzbekistan

Abstract: ERS-1093

Objectives

Chronic polypoid rhinosinusitis (CPRS) is one of the most pressing problems of Otorhinolaryngology due to its advanced, recurrent character [Fan G.K., 2009].

Purpose: To assess changes serum IL-2 in the complex treatment of patients with CPRS on background of immunotherapy.

Methods

We have studied 100 patients with a diagnosis of «CPRS». All patients underwent surgery on the prevalence of polypoid process. After morphological examination patients were divided into 2 groups: patients with «eosinophilic» and «neutrophilic» CPRS. Patients with «eosinophilic» CPRS appointed intranasal corticosteroid mometasone furoate 2 dose 1 time per day for 3-6 months. Patients with «neutrophilic» CPRS appointed antibiotic roxithromycin 150 mg 1/2 tablet 1 time a day for 3-6 months. Besides the above, both groups of patients were given immunomodulator Deoxyribonucleic acid Natrii (Derinat) as basic therapy.

Results

Following the treatment, the IL-2 in serum of blood in patients with both groups of patients decreased to 6 months was within normal limits. Indicator IL-2 in serum of blood in patients with «eosinophilic» CPRS was as follows: before treatment - $8,2 \pm 2,6$ pg/ml, after 3 months - $7,1 \pm 1,8$ pg/ml, after 6 months - $5,5 \pm 1,2$ pg/ml. Patients with «neutrophilic» CPRS with «neutrophilic» CPRS was much higher than those in patients with «eosinophilic» CPRS. In this group of patients IL-2 before treatment was - $16,8 \pm 7,5$ pg/ml, after 3 months of treatment - $7,9 \pm 3,8$ pg/ml, after 6 months - $5,6 \pm 1,1$ pg/ml.

Conclusion

The use of immune therapy normalizes IL-2 in serum of blood in patients with CPRS, which in the future may prevent relapse of disease.

Inverted papilloma of nasal cavity and paranasal sinuses and middle ear in the data of ENT department of Silesian Medical University: histo- clinical analysis

J. Markowski¹, J. Paluch¹, P. Wardas¹, W. Likus²

¹ Laryngology Department, Silesian Medical University, Katowice, Poland

² Human Anatomy Department, Silesian Medical University, Katowice, Poland

Abstract: ERS-1094

Objectives

Papillomas of nasal cavity and paranasal sinuses according to WHO classification (1991) are divided into inverted papilloma, exophytic papilloma and cylindrical papilloma. Inverted papillomas expand most aggressively and turn malignant more often than others.

The aim of this study was to present diagnostic procedures (especially computed tomography examination and histopathological examination), classification and treatment methods (comparison of FESS technique and traditional via external approach) of inverted papillomas.

Methods

Material consists of 28 cases of inverted papillomas: 27 cases of nasal cavity and paranasal sinuses and 1 case of sinonasal and middle ear inverted papillomas treated surgically in ENT Department of Silesian Medical University. Patients admitted to our Department usually suffering from unilateral nasal obstruction, purulent and bloody rhinorrhoea from the nose and headache. On otolaryngological examination has been detected a lively red granulation, which filled all nasal meatus. In patient with sinonasal and middle ear Schneiderian papilloma purulent and bloody otorrhoea from left ear occurred accompanied by pain and hearing loss. Otoscopy revealed granulation in tympanic cavity.

Results

All patients were treated surgically (FESS technique or traditional). The recurrence rate of our group was 25% (7 cases for 28 treated) with a mean 5 years follow-up.

Conclusion

Classification and clinic – histopathological analysis of Schneiderian papillomas in this article were introduced.

Primary orbital tumors: histo-clinical study in material of ENT department of medical university of Silesia

J. Markowski¹, E. Jagosz-Kandziora¹, J. Paluch¹, J. Pajak², W. Likus³, E. Mrukwa-Kominek⁴

¹ Laryngology Department, Silesian Medical University, Katowice, Poland

² Pathomorphology Department, Silesian Medical University, Katowice, Poland

³ Human Anatomy Department, Silesian Medical University, Katowice, Poland

⁴ Ophthalmology Department, Silesian Medical University, Katowice, Poland

Abstract: ERS-1095

Objectives

Primary orbital tumors are usually localised in the retroeyeball space, inside or outside conus. Orbital cavity is an interdisciplinary subject and area of interest of many specialists, i.e. ophthalmologists, ENT doctors, neurosurgeons and maxillo-facial surgeons.

Methods

The authors present diagnostics and surgical management of primary orbital tumors in 122 patients hospitalized in the ENT Department of the Medical University of Silesia in Katowice in the years 1990-2013 (68 women - age range of 23 – 79 years: average age: 45 years and 54 were men (age range 27 – 72 years; average: 40 years). All patients were treated surgically.

Results

Of the total number of 122 cases, 56 (46%) of them were malignant tumors, 42 (34%) benign tumors, 19 (16%) inflammatory tumors and others tumors 5 cases (4%). In cases of malignant tumors local recurrence up to 5 years was found in 36 (64.3%) cases. All those people died. In the other 20 (35.7%) cases of malignant tumors, the patients remained under close follow-up in the outpatient clinic, without signs of local recurrence (follow up from one 1 to 17 years).

Conclusion

The basic method of treatment of malignant orbital tumors is surgery, combined with irradiation and/or chemotherapy. Late diagnosis is decisive for radical surgical procedures to be performed, which drastically reduce the quality of life and chances for complete recovery. The results of treatment of malignant orbital tumors are not satisfactory (the 5-year survival rate was 36%).

Evaluation of airway hyperresponsiveness in chronic rhinosinusitis in southern china: diagnostic values of sinus ct and serum eosinophil count

F. Chen¹, X. Luo¹, R. Xu¹, J. Deng¹, K. Zuo¹, H. Li¹, J. Shi¹

¹ ENT department, The First Affiliated Hospital Sun Yat-sen University, Guangzhou, China

Abstract: ERS-1096

Objectives

To evaluate the diagnostic values of sinus CT and serum eosinophil (EOS) count for asymptomatic AHR in CRS patients.

Methods

We performed a prospective and single blinded designed study by enrolling 112 consecutive CRS patients. These CRS patients were subdivided into AHR and non-AHR groups based on histamine provocation test. The following parameters were compared between two groups of CRS patients: Lund-Mackay sinus and olfactory cleft CT scores, blood EOS number and ratio and nasal symptoms.

Results

Of these 112 CRS patients, 43 (38.4%) presented with AHR. Proportion of positive olfactory cleft opacification (OCO) and total CT score in AHR group were significant higher than non-AHR group (72.1% vs. 30.4%, $P < 0.000$, 18.79 ± 5.01 vs. 15.82 ± 5.45 , $P = 0.005$). Mean EOS number in AHR group was higher than non-AHR group (304.65 ± 184.38 vs. 197.79 ± 155.64 cell/ μ L, $P = 0.001$). The optimal cutoff value of blood EOS number to diagnosis AHR was 255 cell/ μ L (sensitivity, 67.5%; specificity, 70.6%). Combined positive olfactory cleft and an EOS number >255 cells/ μ L provided a positive predictive value for AHR of 74.1%, and a negative predictive value of 87.2%. Nasal symptom scores were not significantly different between the two groups.

Conclusion

These findings justify a prospective assessment of sinus CT and serum eosinophil count as a screening tool for AHR in CRS patients.

Endoscopic salvage treatment for vision lost caused by sinonasal fibro-osseous lesions

J. Deng¹, F. Chen¹, Y. lai¹, J. Shi¹

¹ ENT department, The First Affiliated Hospital Sun Yat-sen University, Guangzhou, China

Abstract: ERS-1097

Objectives

Fibro-osseous lesions of sphenoid sinus or ethmoid sinus may affect the optic nerve, and cause vision loss or ptosis. Endoscopic optic nerve decompression is useful in traumatic optic neuropathy, but few studies focus on non-traumatic ones. We review the cases in our hospital. And try to figure out whether salvage surgery is effective.

Methods

We reviewed the cases from 2008 to 2012 which diagnosis fibro-osseous lesions of the paranasal sinuses with vision loss.

Results

Seven patients were identified in this study with the age between 8 to 16-year old (4 boys and 3 girls). All cases underwent transnasal endoscopic surgeries by the same surgeon. All but one patient exposed the optic nerve during surgery. Two patients which visual acuity (VA) was 0.02 and hand movement (HM) before surgery, became no light perception (NLP) right after surgery, but soon recovered to 0.1 and 50cm/FC. Both of them were diagnosis fibrous dysplasia with disease duration of 1 year and 6 years. Three patients remained the same visual acuity (0.8, 0.3 and 0.2) before and after surgery. Two of them diagnosis fibrous dysplasia and the other was ossifying fibroma. Two patients' VA improved remarkably short after surgery. One of them diagnosed osteoma with VA 0.1 before surgery and 1.5 three days after surgery. The other diagnosed ossifying fibroma (10cm/FC before surgery and 0.1 5 days after surgery). Both of them had shorter disease duration (1 month and 6 month respectively).

Conclusion

Endoscopic optic nerve decompression may save the already loss vision and the shorter disease duration the better outcome.

Chronic rhinosinusitis and quality of life; assessing the correlation between rsom-31 and vas measurements

D. Dietz de Loos¹, L. van der Meer¹, W.J. Fokkens¹

¹ Department of otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1098

Objectives

Quality of Life (QoL) questionnaires are probably the most reliable outcome measurements in CRS but are relatively cumbersome. In certain situations a VAS (Visual Analogue Score) asking patients how their CRS is in general might be an easier evaluation tool. In this study we analyse the correlation between the RSOM-31 questionnaire, a VAS overall sinus' score, and the comparable items measured as VAS.

Methods

We collected RSOM-31, 'VAS overall sinus' score and VAS per symptom and analysed correlations.

Results

705 CRS patients were included in this study (CRSwNP n=400). Mean RSOM-31 versus VAS overall sinus' score showed a moderate correlation ($r=.52$). Stronger correlations were found for RSOM-31 nasal domain score ($r=0.82$) and VAS overall sinus' score and symptom-specific questions in the RSOM-31 or asked as VAS such as nasal congestion ($r=.80$), rhinorrhea ($r=.83$), sneezing ($r=.81$), impaired sense of smell ($.82$), and postnasal drip ($r=.86$), all p-values $< .001$.

Conclusion

We found a moderate correlation between mean RSOM-31 and 'VAS overall sinus score'. A good correlation between VAS overall sinus score and RSOM-nasal domain score suggests patients reflect their nasal burden, and other aspects of their disease (e.g. eye, ear, sleep) are left out of consideration. The different instruments both measure different aspects of the burden of CRS. We encourage the use of disease specific QoL questionnaires in the evaluation and treatment of CRS, but we want to focus attention on possible problems that can be encountered when interpreting different quality of life measurement instruments.

Symptoms in chronic rhinosinusitis with and without nasal polyps

D. Dietz de Loos¹, C. Hopkins², W.J. Fokkens¹

¹ Department of otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

² Department of otorhinolaryngology, Guy's Hospital, London, United Kingdom

Abstract: ERS-1099

Objectives

According to EPOS, chronic rhinosinusitis with and without nasal polyps diagnoses are defined by clinical criteria, supported with endoscopy. We want to know if it is possible to make an accurate distinction between patients with and without nasal polyps based on a limited number of clinical criteria, collected by health-related quality of life questionnaires. A validated instrument that can differentiate patients with chronic rhinosinusitis with and without nasal polyps could be used in epidemiologic research.

Methods

We collected RSOM-31 questionnaires from CRS patients with and without nasal polyps and compared mean total RSOM-31 scores, mean domain scores, mean symptoms scores, and percentages of patients reporting symptoms per diagnosis based on endoscopy and CT scan. Furthermore a prediction model was obtained by multivariable regression analysis, to define individual risk for nasal polyps in daily practice.

Results

We collected 234 RSOM-31 questionnaires. Patients with CRSwNP scored significantly higher and more often on nasal symptoms as 'Rhinorrhoea' and 'Decreased sense of taste or smell'. Patients with CRSsNP significantly scored more often and higher on 'facial pain' and 'ear pain'.

A prediction model containing patient characteristics and the RSOM-31 items 'Rhinorrhoea', 'Decreased sense of taste or smell', 'facial pain', 'ear pain' and 'Inconvenience of always having to carry tissues around' gives a sensitivity of 81% and specificity of 61% on the outcome 'nasal polyps'.

Conclusion

We constructed a prediction model that makes a distinction between patients with and without nasal polyps with a certain sensitivity and specificity. This instrument could be used for epidemiologic research on chronic rhinosinusitis.

Impact of upper airway on lower airway

A. Aleksic¹, D. Vranjes¹, N. Stevandic¹, S. Spremo¹, D. Travar¹

¹ Clinical Center Banja Luka, Department of Otorhinolaryngology, Banjaluka, Bosnia and Herzegovina

Abstract: ERS-1100

Objectives

It has been hypothesized that a positive bronchial challenge to methacholine could predict that those subjects with allergic rhinitis (AR) would develop asthma. Patients with AR may have asthma symptoms or spirometric abnormalities that point to it, as it reduced the value of forced expiratory volume at 1 second (FEV1) and forced expiratory flow at 25-75% (FEF 25-75). A very recent study reported that impaired value FEF 25-75 constitutes a relevant predictive factor for bronchial hyperreactivity (BHR) in patients with AR. The aim of this study was to determine the presence of BHR, as well as the presence of spirometric impairment in patients with AR.

Methods

The study included 70 patients of both sexes with intermittent and persistent AR. Clinical examination, skin-prick test, nasal provocation test, spirometry and methacholine challenge test were performed in all patients.

Results

Forty one patients showed positive methacholine bronchial challenge. The logistic regression analysis evidenced that younger age, longer duration of AR and impaired spirometric parameters FEF 25-75 were significantly associated with presence of BHR. Spirometric parameters FEF 25-75 <70% of predicted were significantly more frequent in patients with persistent AR.

Conclusion

This study confirmed bronchial involvement and the role of some risk factor such as impaired FEF25-75 values in patients with AR alone, which have indicated the presence of a close connection between the upper and lower airways. Spirometry should be part of a standard diagnostic procedure in patients with AR due to their disorder will detect the presence of BHR.

Nasal allergy in otitis media with effusion in children

D. Vranjes¹, A. Aleksic¹, S. Spremo¹, D. Travar¹, N. Stevandić¹

¹ Clinical Center Banja Luka, Department of Otorhinolaryngology, Banjaluka, Bosnia and Herzegovina

Abstract: ERS-1101

Objectives

The significant incidence of allergic rhinitis (AR) associated with otitis media with effusion (OME) has suggested a role of allergy in the pathogenesis of OME. Studies of the pathogenesis of OME have identified interactions among infection, allergic reactions, and eustachian tube dysfunction. The aim of this study was to investigate the role of nasal allergy in OME in children.

Methods

The retrospective study included one hundred and ten children with allergic rhinitis, both sexes. All children underwent routine diagnostic procedures consisting of complete disease history, ENT examination, skin tests and tympanometry. OME was diagnosed on the basis of otoscopic findings and tympanometry. A positive allergic rhinitis history was defined as the presence of a watery, runny nose with one or more of the following symptoms: sneezing, nasal obstruction, nasal itching and conjunctivitis.

Results

There were forty-three (39%) females and sixty-seven (61%) males. Thirty-two (29%) of children had intermittent and seventy-eight (71%) of children had persistent AR. Ninety-six (87%) of children were polysensitized. Twenty-two children (20%) with AR had OME. There was not a statistically significant association between OME and AR.

Conclusion

These results stress the importance of AR for the diagnostic and therapeutic approach in OME. Children with AR should be investigated by tympanometry for OME.

A case of orbital osteomyelitis after endoscopic sinus surgery

J. Yeon¹, W. Shim¹, S. Park¹

¹ Dep. of Otorhinolaryngology Head & Neck surgery, Chungbuk National University Hospital, Cheongju, Korea

Abstract: ERS-1102

Objectives

Orbital complications after endoscopic sinus surgery (ESS) occur in 0.23% of primary sinus surgeries. Most of previously reported complications include orbital hemorrhage, diplopia, strabismus, optic nerve injury, epiphora and blindness. We report a case of unusual ESS complication, orbital osteomyelitis with orbital cellulitis after endoscopic tumor (inverted papilloma) removal.

Methods

ESS was performed on a 72-year old male, diagnosed with left maxillary sinus inverted papilloma. There were no remarkable problems throughout the surgery and he was discharged 2 days after surgery. Ocular pain occurred 7 days after surgery and diplopia and extra-ocular muscle limitation occurred 3 days after that. Post-operative computed tomography revealed bony dehiscence of orbital floor and orbital cellulitis around inferior rectus muscle.

Results

The patient was admitted and treated with intravenous antibiotics and corticosteroid for 10 days. Ocular pain was relieved and diplopia was partially improved. He took antibiotics for total of 6 weeks and orbital cellulitis was fully recovered. Three months after antibiotics therapy, he was free of diplopia.

Conclusion

This case is reported to emphasize that delayed inflammatory complication can occur after ESS, and paying attention to patient's complaint is essential for early recognition and early intervention on this unpleasant complication.

Outcomes of image guided sinus surgery for chronic rhinosinusitis in a tertiary referral centre

F. Egro¹, L. Masterson¹, J. Bewick¹, C. Philpott¹

¹ Department of Ear Nose & Throat, James Paget University Hospital, Gorleston-on-Sea, United Kingdom

Abstract: ERS-1104

Objectives

Functional endoscopic sinus surgery has been the mainstay for the surgical management of chronic rhinosinusitis. However, image guidance surgery is an emerging technology that provides a safe and cost effective alternative, and may decrease surgical revision rates, thus allowing a more efficient treatment of sinus disease. The aim of this study was to assess the early outcomes of image guidance sinus surgery with respect to quality of life.

Methods

A retrospective review of all patients who underwent bilateral image guided sinus surgery between January 2011 and December 2013 was performed.

Results

A total of 210 patients underwent image guided sinus surgery. The diagnoses included chronic rhinosinusitis with nasal polyposis (62.9%, n=132), without nasal polyposis (29.5%, n=62), and various forms of allergic/eosinophilic fungal rhinosinusitis (4.3%, n=9). A total of 22.4% (n=47) had undergone previous endoscopic sinus surgery and only 1.4% (n=3) required further revision. Only 4 patients had complications and only 1 patient required an overnight admission. A statistically significant decrease in SNOT-22 scores (pre-operative mean=50.1, SD±23.8; post-operative mean=21.9, SD±19.4; p<0.001) was observed and was comparable between aetiologies.

Conclusion

This study provides short-term evidence that navigational surgery performed in a uniform manner can result in significant patient gain. This was particularly noted in terms of quality of life, low requirement for revision surgery and a high day case discharge rate.

Orbital compartment: effects of emergent canthotomy and cantholysis

F. Haubner¹, H. Jäggle², S. Schleder³, T. Kühnel¹, H.G. Gassner¹

¹ Otorhinolaryngology, University Hospital Regensburg, Regensburg, Germany

² Ophthalmology, University Hospital Regensburg, Regensburg, Germany

³ Radiology, University Hospital Regensburg, Regensburg, Germany

Abstract: ERS-1105

Objectives

To determine the effect of orbital decompression procedures on the intraocular pressure (IOP). The orbital compartment syndrome represents an emergency situation. Due to the elevated IOP vision loss may ensue. Several maneuvers including lateral canthotomy are discussed to reduce the IOP.

Methods

Eight orbits were studied in a fresh frozen cadaveric model (4 specimen). Intraorbital volume was determined by CT volumetry. An orbital compartment syndrome was simulated by injecting viscous material into the orbit. Injected volumes were documented and lateral canthotomy, cantholysis, inferior and superior septolysis were performed. IOP and exophthalmometric measurements were obtained after each intervention.

Results

Controlled elevation of IOP was achieved in all specimen. IOP was partially reduced after performing a lateral canthotomy in 8 orbits. IOP was significantly and sufficiently decreased under 20 mmHg by inferior cantholysis in 7 orbits. An additional superior cantholysis was necessary in 2 orbits to achieve a complete decompression. Inferior or superior septolysis were not needed to further reduce the IOP.

Conclusion

Lateral canthotomy must be followed by an inferior cantholysis in order to successfully decompress an orbital compartment syndrome in the majority of cases. Occasionally, superior cantholysis may generate additional benefit. Additional inferior and superior septolysis were not shown to provide a beneficial effect when performed after canthotomy and cantholysis

Endonasal transethmoidal orbital decompression in endocrine ophthalmopathy

P.A. Kochetkov¹, D.M. Savvateeva¹

¹ ENT-dept, I.M.Sechenov The First Moscow State Medical University, Moscow, Russia

Abstract: ERS-1106

Objectives

Endocrine ophthalmopathy (EO) - is severe hyperplasia of orbital muscles and orbital fat. Vast majority of EO cases can be controlled by medical treatment. However, some patients with EO still present with exophthalmus and they need additional surgical treatment.

Methods

40 patients with EO have been operated. 32 had bilateral and 8 –unilateral EO. Totally 72 TED. We used endonasal endoscopic transethmoidal approach (TED). The technique of this operation includes maximally wide opening of the maxillary sinus and all ethmoidal cells, resection of the anterior wall of the sphenoid sinus and medial third of the upper wall of the maxillary sinus. Then we removed the bone of the medial orbital wall and cut the periorbita. Orbital fat was not removed.

Results

In all patients good result has been achieved and regress of exophthalmus varied from 2 to 6,5 mm. They also had temporary diplopia which disappeared after 1 to 3 weeks. In 15 patients vision improved 3-5 days after operation. Periorbital hematoma developed in 32 cases. In the rest 2 patients endonasal surgery was not successful enough and they have been operated again for orbital muscles correction for elimination of diplopia. We did not observe any purulent or inflammatory complications. All the patients were discharged from the clinic on the 7th day after surgery.

Conclusion

We suppose that TED is an optimal surgical method for patients with EO and allows more than 90% cases achieve regress of exophthalmus and complete disappearance of temporary diplopia.

Physiological and pathophysiological role of nasal septum

G. Piskunov¹

¹Otolaryngology department, Russian Medical Academy of Postgraduate Education, Moscow, Russia

Abstract: ERS-1107

Objectives

Septum, dividing nasal cavity in two parts, creates two anatomical structures. Impairment of nasal septum can result in various abnormalities of nasal cavity functions

Methods

We examined healthy volunteers and patients with septum deviations with endoscopy, rhinometry, rhinomanometry. The aerodynamic flow in the nasal cavity was video recorded with passing of smoke flow. We examined excretory, absorption, mucociliary functions of the mucous membrane using instant polymer film with methylene blue and saccharin.

Results

In healthy men the air flow has a circle rout on the level of nasal valve. Then the air flow is going along the common nasal passage at the level of middle turbinate and down to the nasopharynx. During the expiration it has more laminar nature. In the presence of septum deviation, the air flow changes its direction. If the prominence exists, the air flow goes through the middle passage. Persistent irritation of anterior part of the middle turbinate leads to inflammation and hypertrophy of the anterior part of turbinate. In the presence of prominence in the posterior part of septum, the atrophic process starts, leading to formation of additional communication with maxillary sinus.

The mucociliary function, absorption, excretion are different in opposite nasal cavities and in different sites of the mucous membrane. They depend on the nasal cycle.

Conclusion

Nasal septum provides for cyclic activities of different nasal functions. Being regulated by the nasal cycle, the nasal mucous can be switched off active functioning to rest state. Effective rest is possible only in presence of a straight septum.

The therapy of first-time identified chronic rhinosinusitis with nasal polyps (CRSwNP): results of study with 7-year follow-up

G. Piskunov¹

¹Otolaryngology department, Russian Medical Academy of Postgraduate Education, Moscow, Russia

Abstract: ERS-1108

Objectives

CRSwNP affects from 1 to 30% of people in different populations. Patients typically come to the clinic with a significant difficulty in nasal breathing. Detection rate is increasing with age. Endoscopy has increased the detection rate of CRSwNP.

To analyze the history of disease of patients with first-time identified CRSwNP and study the anatomical features of intranasal structures. To treat patients and evaluate treatment results.

Methods

Included in the study were patients with polyps and no previous nasal or sinus surgery. A total of 160 patients (106 men and 54 women) were enrolled. 116 patients had nasal obstruction for more than 5 years. Allergy was found in 70 patients (40 had allergic rhinitis, 30 had bronchial asthma). We observed deviated septum and turbinate hypertrophy in 132 cases (82.5%). The follow up period was from 3 to 7 years.

Septoplasty, endoscopic polypsinusotomy, turbinate surgery were performed.

Results

Eosinophilic polyps were found in 76 cases (47.5%), neutrophilic - in 69 cases (43.1%). In 13 cases (8.1%) inverted papilloma and in 2 cases (1.25%) - cancer was found. Both papilloma and carcinoma were observed in patients with unilateral polypous process. The recurrence of polyps took place in 4 patients with bronchial asthma in 1 year after surgery, in 6 patients without asthma - from 11 months to 1 year 8 months after surgery. Relapse rate was 7.5%.

Conclusion

Early detection of aerodynamics abnormalities in the nasal cavity and restoration of physiological nasal breathing may prevent the nasal polyps. To prevent relapses, concomitant conditions should be considered.

Treatment of chronic rhinosinusitis with nasal polyps (CRSwNP): review and guidance for clinicians

G. Piskunov¹

¹Otolaryngology department, Russian Medical Academy of Postgraduate Education, Moscow, Russia

Abstract: ERS-1109

Objectives

To distinguish the forms of rhinosinusitis with polyps from practical point of view.

Methods

Polyps development can be associated with numerous factors: bacterial colonization, fungal infection, dysfunction of the ciliary epithelium, intolerant of non-specific anti-inflammatory drugs, the predominance of the parasympathetic nervous system tonus. The main physiological stimulus for the nasal mucosa is the air flow. Due to influence of the aerodynamics in the nose an altered immunological activity is formed. In these areas there is an increase of cellular infiltration and mucous membrane swelling, which result in altered aerodynamics of the nasal cavity and decreased ventilation of nasal sinuses. It creates the pathogenetic mechanism that leads to blockage of the meatus and formation of CRS, including the polyps. Formation of mucosal sites with altered immunological activity is facilitated by the presence of biological defect. The process of the mucous membrane restructuring takes a long time.

Results

There are several types of polyposis in nasal cavity and paranasal sinuses:

1. Polyposis due to aerodynamics.
2. Polyposis due to chronic suppurative inflammation.
3. Polyposis due to fungal infections.
4. Polyposis due to metabolism of arachidonic acid.
5. Polyposis in cystic fibrosis, Kartagener's syndrome.

Conclusion

There is a clear clinical need to diagnose precisely the type of polyposis. This is important for development of treatment strategy in terms of surgery and pharmacological therapy.

Nasal lavage levels of gm-csf and chronic nasal hypereosinophilia

E. De Corso¹, D. Lucidi¹, S. Baroni², M. Battista¹, M. Romanello¹, G.C. Passali¹, M. Rigante¹, C. Zuppi², G. Paludetti¹

¹ Head and Neck Surgery, Institute of Otolaryngology, Roma, Italy

² Department of diagnostic and laboratory medicine, Institute of Biochemistry and Clinical Biochemistry, Roma, Italy

Abstract: ERS-1110

Objectives

Chronic nasal hypereosinophilia is determined by release of local and systemic chemotactic mediators even though the exact pathophysiology is unknown. The aim of our study was to measure levels of GM-CSF in nasal lavage of patients affected by chronic eosinophilic sino-nasal inflammation to clarify relationship with eosinophilic tissutal infiltration and clinical features.

Methods

We randomly selected, between November 2012 and June 2013, 70 patients with chronic eosinophilic inflammation (average age 41,8 years) that were classified as: persistent allergic rhinitis(group 1); non-infectious non-allergic rhinitis with eosinophilia syndrome(group 2) and chronic rhino-sinusitis with polyps(group 3). Finally we enrolled 20 healthy subjects as controls(group 4). All patients underwent: symptoms score questionnaire based on a visual analogue scale, nasal endoscopy and/or CT scan and allergy testing. Nasal cytology and GM-CSF assays in nasal lavage were performed in all subjects.

Results

Levels of GM-CSF were detectable in 34/70 (48.57%) patients with an average concentration of 2.67 + 0.8 pg/ml whereas in controls only 1/20 showed detectable GM-CSF levels. Eosinophils infiltration was significantly higher in patients with detectable GM-CSF respect to undetectable ones (respectively 49,4% vs. 39,28%;p<0,05). Furthermore a significant correlation was found between GM-CSF levels and percentage of tissutal eosinophils infiltration(p<0,05). Correlation between symptoms scores and GM-CSF levels was significant only in group 2 that moreover showed higher average concentration of GM-CSF compared to group 1 and 3 (2,9pg/ml vs. respectively 1,6 pg/ml and 1,8 pg/ml) (p<0.05).

Conclusion

Our data suggest that GM-CSF is involved in the development of nasal hypereosinophilia in chronic eosinophilic sino-nasal disorders.

Association between sleep disordered breathing and lower airway disease in PCD

E. Cantone¹, V. di Rubbo², L. di Giorgio³, L.L. di Micco³, S. Montella³, M. Esposito⁴, M. Carotenuto⁴, F. Santamaria³, M. Iengo⁵

¹Department of Neuroscience Odontostomatologic and Reproductive Science ENT section "Federico II" University Naples Italy. ¹ Department of Molecular and Cellular Biology and Pathology "Federico II" University Naples Italy, ² Università "Federico II", Naples, Italy

² Department of Neuroscience Odontostomatologic and Reproductive Science ENT section "Federico II" University Naples Italy, ¹, Università "Federico II", Naples, Italy

³ Department of Translational Medical Sciences "Federico II" University Naples Italy, Università "Federico II", Naples, Italy

⁴ Center for Childhood Headache Clinic of Child and Adolescent Neuropsychiatry Department of Mental Health Physical and Preventive Medicine Second University of Naples Naples Italy, Università "Federico II", Naples, Italy

⁵ Department of Neuroscience Odontostomatologic and Reproductive Science ENT section "Federico II" University Naples Italy, Università "Federico II", Naples, Italy

Abstract: ERS-1111

Objectives

Since a correlation between upper and lower airway diseases is described, we hypothesized that in primary ciliary dyskinesia (PCD) sleep-disordered breathing (SDB) is associated with lung impairment.

Methods

Sixteen stable PCD patients (4.9-17.2 years) and forty-two controls underwent overnight respiratory polysomnography and Sleep Disturbances Scale for Children (SDSC). Nasal endoscopy assessed PCD nasal obstruction. We appraised PCD lung disease by pulmonary function tests and chest high resolution computed tomography (HRCT) score.

Results

Compared to controls, PCD had higher obstructive apnea (4.7 versus 0.2, $p < 0.001$), central apnea (0.8 versus 0.2, $p < 0.001$), hypopnea (1.8 versus 0.2, $p < 0.001$), apnea-hypopnea (7.8 versus 0.6, $p < 0.001$), and oxygen desaturation indexes (ODI; 0.7 versus 0.2, $p = 0.002$), while mean oxygen saturation (97.1% versus 98.1, $p < 0.001$), nadir oxygen saturation (93% versus 97.2%, $p < 0.001$), and mean oxygen desaturation (4% versus 1%, $p < 0.001$) were lower. In PCD, the SDSC total score, and subscores of disorders in initiating and maintaining sleep, and sleep-wake transition disorders were significantly lower than controls. Nasal endoscopy revealed adenoidal hypertrophy in 50% of PCD, and chronic rhinosinusitis in all cases (quantitative score range, 4-9). Total HRCT score was 7 (range, 0-14). ODI was significantly related to functional residual capacity ($r = 0.8$, $p = 0.02$), total HRCT score ($r = 0.6$, $p = 0.03$), and peribronchial thickening score ($r = 0.7$, $p = 0.02$). Mean oxygen saturation was significantly associated with bronchiectasis severity score ($r = -0.6$, $p = 0.02$).

Conclusion

In stable PCD nocturnal desaturation is associated to lung function and structure abnormalities, indicating that SDB may contribute to PCD morbidity and that upper and lower airway disease can mutually affect sucrose consumption.

CO₂ modulates the central neural processing of sweet perception: an fMRI study

E. Cantone¹, A. Prinster², V. Verlezza³, G. Sarnelli³, R. Cuomo³, F. di Salle⁴, M. Iengo⁵

¹Department of Neuroscience Odontostomatologic and Reproductive Science ENT section "Federico II" University Naples Italy. ¹ Department of Molecular and Cellular Biology and Pathology "Federico II" University Naples Italy ², Università "Federico II", Naples, Italy

²Biostructure and Bioimaging Institute National Research Council Naples Italy, Università "Federico II", Naples, Italy

³Gastroenterology Unit Department of Clinical and Experimental Medicine "Federico II" Naples Italy, Università "Federico II", Naples, Italy

⁴ Department of Medicine Salerno University Italy. ⁵ Department of Cognitive Neuroscience Faculty of Psychology and Neuroscience Maastricht University Maastricht The Netherlands ⁶, Università "Federico II", Naples, Italy

⁵ Department of Neuroscience Odontostomatologic and Reproductive Science ENT section "Federico II" University Naples Italy, Università "Federico II", Naples, Italy

Abstract: ERS-1112

Objectives

The neural system for taste appears to be responsive to CO₂. In fact, carbonated beverages seem to induce a powerful modulation of different gustatory inputs. However, the neural processing of CO₂-related information is still largely unknown. In this study, we investigated the effect of carbonation on the brain processing of sweet stimuli, and its differential effect on sucrose and artificial sweeteners.

Methods

The cortical representation of taste-related neural responses has been studied in nine healthy volunteers using functional Magnetic Resonance Imaging (fMRI), while four different gustatory stimuli, each a variation of a single beverage differing only for the presence of carbonation and for the sweetening agent, were delivered by computer-controlled automatic injectors.

Results

The presence of carbonation reduced taste-related brain activity relative to the processing of sweet sensation, independently of the sweetening agents that, per se, had a clear effect on neural responses. The main effect of carbonation consisted in an overall decreased neural processing of the information related to sweetness. This effect was much more prominent with sucrose, and was able to reduce significantly the processing differences between sucrose and artificial sweeteners. These results are coherent with ecological interpretations based on the higher hedonic and caloric value of sucrose.

Conclusion

These findings provide new insights in the mechanisms underlying over-nutrition and obesity, and suggest that CO₂ would help developing non-caloric beverages interacting favourably with dietary interventions, while associating CO₂ and sucrose may increase sucrose consumption.

INTERLEUKIN-10 -1082 G>A AND -592 A>C POLYMORPHISMS IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME

S. ÖZDAS¹, T. ÖZDAS², M. ACAR³, S.S. ERBEK⁴, S. KÖSEOĞLU⁵, G. GÖKTÜRK⁵, A. IZBIRAK¹

¹ DEPARTMENT OF BIOLOGY, HACETTEPE UNIVERSITY FACULTY OF SCIENCE, ANKARA, TURKEY

² OTOLARYNGOLOGY, YENIMAHALLE HOSPITAL, ANKARA, TURKEY

³ OTOLARYNGOLOGY DEPT., YUNUS EMRE HOSPITAL, ESKISEHIR, TURKEY

⁴ OTOLARYNGOLOGY DEPT., BASKENT UNIVERSITY, ANKARA, TURKEY

⁵ OTOLARYNGOLOGY, ANKARA NUMUNE EDUCATION AND RESEARCH HOSPITAL, ANKARA, TURKEY

Abstract: ERS-1113

Objectives

Expression of interleukin-10 (IL-10) decreases in patients with obstructive sleep apnea syndrome (OSAS). However, the effect of IL-10 genotypes on the development of OSAS is unknown. The aim of this study was to examine the potential association of the -1082 G>A and -592 A>C polymorphisms in the IL-10 promoter gene with the development of OSAS.

Methods

A prospective and case-control study was performed with 91 OSAS patients and 60 healthy controls. The genotypes of IL-10 (-1082 G>A and -592 A>C) were identified by DNA sequencing analyses performed after polymerase chain reaction.

Results

The frequency of the -1082 G/A and A/A genotypes of IL-10 was significantly higher among patients with OSAS than in the controls ($P=0.003$). There were no differences in the frequency of the -592 genotypes between the two groups ($P=0.718$). There was no relationship between the IL-10 genotypes and patient gender, body mass index and apnea-hypopnea index ($P>0.05$).

Conclusion

In this study, the IL-10 -1082 G/A and A/A genotypes were associated with increased susceptibility to OSAS. As this study consisted of a population-based study, further research should be performed on larger study subjects to reveal the precise role of IL-10.

Targeted spect scintigraphy of head bones - factor of significance for a decision on osteoma surgery

N. Stevandic¹, A. Aleksic¹, D. Vranjes¹

¹ Department of Otorhinolaryngology, Clinical center Banja Luka, Banjaluka, Bosnia and Herzegovina

Abstract: ERS-1114

Objectives

Osteoma represents the most common benign neoplasm of the nose and paranasal sinuses. Asymptomatic patients can be managed conservatively or submitted to surgery in spite of its location or extension. Scintigraphy of bones is a diagnostic procedure in which we use radiopharmaceuticals that accumulate in bone tissue, more in bone lesions and less in places of normal functioning of bone tissue. SPECT targeted scan of head bones can be an important factor in deciding on the optimal timing for the surgery, as an innovation in the diagnostic protocol.

Methods

We present eight cases with frontal and frontoethmoidal osteoma that required surgery. We investigated significance of SPECT scintigraphy of head bones for predicting the expansivity of osteoma and the need for surgery.

Results

Targeted SPECT scintigraphy of head bones can allow us to predict expansion of osteoma and the possibility of the destruction of paranasal sinus walls.

Conclusion

SPECT scintigraphy can also help us decide on the optimal timing for the surgery, which allows us to select the method involving less destruction and reconstruction, and thereby faster and easier post-operative recovery, as well as a better life quality of the patient.

Our experience in minimal invasive endoscopic approach of the anterior skull base benign tumors in children

B. Mocanu¹, C. Mocanu², S. Stoica³, I. Boagiu⁴, D. Grigorescu⁴, R. Merchea⁴

¹ Otolaryngology Head and Neck Surgery, ENT Institute "Prof. Hociota" Bucharest Romania Brain Institute – Monza Hospital Bucharest Romania, Bucharest, Romania

² Otolaryngology Head and Neck Surgery, Dr. Mocanu ENT Clinic Bucharest Romania, Bucharest, Romania

³ Neurosurgery, S.C.U.C. "Maria Skłodowska Curie" Bucharest Romania - Brain Institute Monza Hospital Bucharest Romania, Bucharest, Romania

⁴ Otolaryngology Head and Neck Surgery, ENT Institute "Prof. Hociota" Bucharest Romania, Bucharest, Romania

e-Poster

Abstract: ERS-1115

Objectives

The authors are presenting their experience in approaching benign skull base tumors in children, pathology that is resolved through endoscopic transnasal surgery.

Methods

In this paper are exemplified some complex maneuvers for the ablation of an ethmoidal encephalocele at a three months old baby, excision of a meningoencephalocele at a two and a half years old child and a rare case of clivus chordoma at a six years old child. We emphasize the key moments of the surgical intervention – intraoperative closure of CSF leak, efficient hemostasis and the usage of suspension microlaryngoscopy instruments during the resection of tumors in the retrosphenoidal region.

Results

All the interventions described were performed exclusively by a mono disciplinary ENT surgical team. Postoperative treatment, including dressings, nasal hygiene, have been very challenging.

Conclusion

Undertaking endoscopic skull base surgery in children presents unique complexities to the surgical team. Rare pathologies present diagnostic challenges and surgical dilemmas. Surgical equipment and techniques usually carried out in adults are not always possible or desirable in young children.

Management of iatrogenic csf leak after endoscopic sinus surgery – our experience

B. Mocanu¹, C. Mocanu², S. Stoica³, I. Boagiu⁴, D. Grigorescu⁴, R. Merchea⁴

¹ Otolaryngology Head and Neck Surgery, ENT Institute “Prof. Hociota” Bucharest Romania / Brain Institute – Monza Hospital Bucharest Romania, Bucharest, Romania

² Otolaryngology Head and Neck Surgery, Dr. Mocanu ENT Clinic Bucharest Romania, Bucharest, Romania

³ Neurosurgery, S.C.U.C. “Maria Sklodowska Curie” Bucharest / Romania - Brain Institute Monza Hospital Bucharest Romania, Bucharest, Romania

⁴ Otolaryngology Head and Neck Surgery, ENT Institute “Prof. Hociota” Bucharest Romania, Bucharest, Romania

Abstract: ERS-1116

Objectives

The authors would like to present their experience in closure of the dural breaches appeared in the last 10 years during about 2500 endoscopic sinus surgeries done.

Methods

The endoscopic per-primam closure, immediately after the identification of rhinoliqorrhoea, was done using several types of grafts in two or three layers, with or without biological glue.

We are discussing about the closure of high flow CSF leak occurring after transsphenoidal surgery of craniopharyngiomas. For these breaches was necessary to use titanium plates or endoscopic suturing of the dura with non-absorbable suture 6.0 with a “sliding knot”

Results

The dural breach was closed successfully in all cases, without other surgical reinterventions to be necessary.

Conclusion

It's brought in discussion the precise compulsory identification and location of the breach, the utility of biological glue and xeno-grafts, the correlation of learning curve with the appearance moment of these surgical occurrences.

Endoscopic single-nostril transsphenoidal approach of the hypophyseal tumors

B. Mocanu¹, S. Stoica², C. Mocanu³, I. Boagiu⁴, D. Grigorescu⁴, R. Merchea⁴

¹ Otolaryngology Head and Neck Surgery, ENT Institute "Prof. Hociota" Bucharest Romania / Brain Institute – Monza Hospital Bucharest Romania, Bucharest, Romania

² Neurosurgery, S.C.U.C. "Maria Sklodowska Curie" Bucharest / Romania - Brain Institute Monza Hospital Bucharest Romania, Bucharest, Romania

³ Otolaryngology Head and Neck Surgery, Dr. Mocanu ENT Clinic Bucharest Romania, Bucharest, Romania

⁴ Otolaryngology Head and Neck Surgery, ENT Institute "Prof. Hociota" Bucharest Romania, Bucharest, Romania

Abstract: ERS-1117

Objectives

The Neurosurgery-ENT team presents some cases operated in the last years (pituitary adenomas, dysgerminomas, craniopharyngiomas).

Methods

We are focusing on the approach type (single nostrils versus both nostrils), the key moments of the intervention (complete ablation, efficient intraoperative hemostasis, intraoperative closure of dural breach, postoperative treatment) and the results of this type of surgery.

Results

The authors bring into question the usage of aggressive instruments for the resection of the tumors (microdebrider versus ultrasonic dissector) and a review of surgical techniques and materials used for closing of the hypophyseal fossa after transnasal transsphenoidal approach of tumoral sellar pathology - allografts or xenografts, from adipose tissue, muscle, fascia latta, bone graft, to adhesive glue and titanium plates that will ensure the necessary rigidity to the skull base. A resistant retentive cavity can be assured by the dura mater suture with non-absorbable suture 6.0 with a "sliding knot".

Conclusion

The team uses as a study base over 300 surgical interventions performed in the last 6 years, both in adults and children.

SINONASAL INVERTED PAPILLOMA: A RETROSPECTIVE REVIEW OF 46 CASES

S. Blioskas¹, D. Rachovitsas¹, S. Dova¹, K. Rova¹, F. Lako¹, K. Markou¹

¹ 1ST DEPARTMENT OF OTORHINOLARYNGOLOGY, HEAD AND NECK SURGERY, AHEPA UNIVERSITY HOSPITAL, THESSALONIKI, GREECE

Abstract: ERS-1118

Objectives

This series was undertaken to highlight the experience of our institution with the management of inverted papilloma over a 20-year period.

Methods

A retrospective review of the charts of 46 cases of inverted papilloma presented to our unit from 1991 to 2012 was performed. Data analysis evaluated surgical outcomes of various surgical approaches in terms of recurrence rates, before and after the introduction of endoscopes in our facility.

Results

Forty six patients were considered eligible for this study. The average age at time of presentation was 53 years with a male/female ratio of 4.7:1. The follow-up period ranged from 10 months to 5 years (mean, 48.4 months).

Twenty six patients (56.5%) were treated via an endoscopic approach, and four out of them (15.4%) suffered biopsy-proven recurrence. All of them were treated during the later decade, when endoscopes gained popularity among the surgeon of our department. Twenty patients (43.5%) underwent an external approach, with four (20%) suffering a recurrence. Most of them were treated before requisite equipment as well as surgical experience of endoscopic approaches was available.

All recurrences occurred at the initial site and the average delay between surgery and recurrence was 30 months (12 months to 4 years). The overall malignancy rate was 4.3% with all cases concerning synchronous tumors.

Conclusion

Our study indicates that the advent of endoscopic techniques concerning the treatment of sinonasal inverted papilloma was accompanied by comparable overall recurrence rate and acceptable morbidity. Regardless of the approach a minimum follow-up of 5 years is recommended.

Laser assisted osteoplastic frontal sinusotomy

S. Yeshenka¹, I. Karol²

¹Otorhinolaryngology, 432 Main Military Clinical Medical Center, Minsk, Belarus

²Otorhinolaryngology, Belarussian Medical Academy of the postgraduate education, Minsk, Belarus

Abstract: ERS-1119

Objectives

We present the osteoplastic frontal sinusotomy including development an osteoplastic flap with using a CO₂ laser. 86 patients have been treated surgically in the ENT Department of the Minsk Regional Clinical Children's Hospital and ENT Department 432 Main Military Clinical Medical Center between January 1 2008 and December 30 2013.

Methods

With CO₂ laser application the anterior frontal table was osteotomized and osteoplastic flap was formed with mucopericranial attachment for blood supply. The bone table is then removed or outfractured to allow complete sinus visualisation, including ducts and ostia. Then, the main purposes of he operation were achieved. During next stage of operation we made symmetrically positioned holes by drill or CO₂ laser in the frontal bone and osteoplastic flap followed by their fixation.

Results

Complications were encountered in some of these cases (frontal pain, postoperative sinusitis, temporary hypo- or anesthesia in the zone of innervation of supraorbital nerve), but major complication such as death, meningitis, brain abscess, mucocele or mucopyocele have not been recorded. There were no cases of flap necrosis, cosmetic effect was found as quite satisfactory. CO₂ laser application used to prevent cracking when the bone fragments were thin and fragile.

Conclusion

Osteoplastic frontal sinusotomy was found to be sparing and effective technique for operative management on frontal sinus pathology, ensuring both good cosmetic and functional results.

case report: orbital and intracranial complications of acute rhinosinusitis

V. Limantaite¹, E. Lesinskas¹

¹ ENT, Vilnius University Hospital Santariskiu Clinics, Vilnius, Lithuania

Abstract: ERS-1120

Objectives

Intracranial complications due to acute rhinosinusitis are rare nowadays. However, despite of the appropriate and well-timed treatment, the mortality rate of intracranial complications remains very high.

Methods

We present a case of acute complicated rhinosinusitis. 21 years old female patient was admitted to the hospital with complaints of acute rhinosinusitis and unilateral oedema of superior eyelid. The patient refused to hospitalization and surgical treatment; therefore she was discharged from the hospital. 4 days later she was readmitted to the emergency room with burst abscess of the upper eyelid. Head CT scan showed abscess formation in the right frontal lobe.

Results

One week after endoscopic sinus surgery and intensive antibacterial therapy in the ENT and ICU, the MRI showed deterioration of the abscess formation. With appearance of focal neurological symptoms, patient was admitted to the neurosurgical unit for urgent craniotomy and frontal lobe abscess drainage. Postoperative period was fluent and after 2 months of rehabilitation period no neurological impairment is observed.

1 pic. Burst abscess of the right upper eyelid

2 pic. Abscess formation in the right frontal lobe. Cerebral oedema.

3 pic. Abscess formation in the right frontal lobe. Cerebral oedema.

Conclusion

Intracranial complications should always be suspected and diagnosed on time, especially if there is orbit involvement.

After 2 months of rehabilitation patient shows good results, no neurological impairment is observed.

EFFICACY OF INFERIOR TURBINOPLASTY WITH THE USE OF CO₂ LASER, RADIOFREQUENCY, AND ELECTROCAUTERY

A. KAPRANA¹, E. PROKOPAKIS¹, E. KOUDOUNARAKIS¹, G. VELEGRAKIS¹

¹ OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, UNIVERSITY HOSPITAL OF HERAKLION CRETE, HERAKLION, GREECE

Abstract: ERS-1121

Objectives

Comparative study of CO₂ laser, electrocautery and radiofrequency turbinoplasty in the treatment of rhinitis symptoms.

Methods

Methods: From 1994 till 2011, 3219 patients were enrolled in the study. Two hundred and eighty-three patients were lost during follow-up. Of the remaining 2936 patients, 1066 were managed using the CO₂ laser, whereas 664 and 1206 were managed with the use of radiofrequency and electrocautery, respectively. All procedures were performed under local anesthesia. Patients were asked to evaluate their symptoms with the visual analogue scale (VAS) preoperatively, as well as 1 month and 1 year postoperatively. Rhinomanometry was used to objectively evaluate the effect on nasal obstruction.

Results

Mean VAS values preoperatively, regarding nasal obstruction, were 7.43 ± 0.96 , 7.33 ± 0.87 and 7.64 ± 0.95 in the CO₂ laser, radiofrequency and electrocautery group respectively. One month postoperatively, the score was significantly improved in all groups (CO₂ laser: 3.44 ± 0.99 ; radiofrequency: 3.26 ± 0.76 ; electrocautery: 3.19 ± 0.79), which was almost stable in the first year follow-up. Similar results were also observed in the evaluation of sneezing and rhinorrhea. Outcome did not statistically differ between the three methods.

Conclusion

The CO₂ laser, radiofrequency and electrocautery offer excellent postoperative results in turbinoplasty cases under local anesthesia.

A rare case of a secondary nasal meningioma

D. Rachovitsas¹, S. Dova¹, S. Blioskas¹, K. Argyriou¹, N. Foroglou², K. Markou¹

¹ 1st Department of Otorhinolaryngology - Head and Neck Surgery, AHEPA University Hospital, Thessaloniki, Greece

² 1st Department of Neurosurgery, AHEPA University Hospital, Thessaloniki, Greece

Abstract: ERS-1122

Objectives

literature is limited. Our purpose is to present a case of a sizeable secondary sinonasal meningioma with total absence of neurological symptoms.

Methods

A 51 year-old woman visited our clinic complaining of nasal obstruction and discharge. Rhinoscopy revealed a fleshy bluish-red mass emanating from the roof of the left nasal cavity, pushing the septum to the right. CT scan and MRI evidenced a huge mass in the left frontal lobe extending to the left nasal cavity via the cribriform plate of the ethmoid bone. (Fig.1,2) The total absence of neuro-ophthalmological signs was remarkable. The histopathological features were consistent with meningothelial meningioma. Surgical extirpation via craniotomy combined with lateral rhinotomy was successfully performed. The patient shows no evidence of recurrence 2 months postoperatively.

Results

Meningiomas are typical tumors of the central nervous system. They are often asymptomatic and slow-growing. Nasal meningiomas pose difficulty in diagnosis, because they appear as nasal polyps and thus result in an inappropriate treatment. Complete surgical removal is the definite treatment and the most crucial for rate recurrences.

Conclusion

Secondary nasal meningiomas, although rare, should be included in the differential diagnosis from other nasal masses, due to their non-specific clinical appearance. Overall prognosis is excellent after total extirpation, while radiotherapy is recommended for unresectable cases.

Long-term results of treatment of polypous rhinosinusitis

V. Vishniakov¹

¹Otorhinolaryngology, Moscow State University of Medicine and Dentistry, Moscow, Russia

Abstract: ERS-1123

Objectives

Object of the present investigation is study of influence of intranasal corticosteroids on prevention of polypous rhinosinusitis relapse after surgical treatment.

Methods

Under investigation there were 80 patients with polypous rhinosinusitis who were divided into 2 equal groups. All the patients had gone through endoscopic polypsinusotomy according to standard methodology.

The first group consisted of 40 patients to whom intranasal corticosteroid mometazoni furoat (nazonex) was prescribed for the period of 6 months after surgery.

The second group included 40 patients who for certain reasons did not get intranasal corticosteroids. Time of observation was 4 years.

Results

Results of objective observation show that minimal invasive character of endoscopic surgery in combination with proceeded prolonged treatment intranasal corticosteroids for the period of 6 months make it possible to achieve disease remission at 80% of patients who suffer from polypous rhinosinusitis. Only surgery itself without supplementary prescription of topical corticosteroids gives disease remission only in 35% of patients; but 65% of patients were characterized by relapse of polypous process that could be treated only by means of new surgery.

Conclusion

Therefore, neither the most thoughtfully done operation with the use of modern instruments, technique and methodologies, nor prolonged corticosteroid therapy cannot cure completely polypous rhinosinusitis.

To conclude we are apt to say that prolonged medicated therapy of polypous rhinosinusitis with intranasal corticosteroids is considered to be scientifically bound and necessary because it improves the patients quality of life making possible either to avoid repetition of surgery or to get prolonged remission of disease.

Basal cell carcinoma of nasal vestibule – reconstruction with free skin graft

A. Manganaris¹, S. Tzellas¹, T. Amvrosidou¹, P. Giaramazidis¹, I. Karasmanis¹

¹ E.N.T. Department, Hippokration General Hospital, Thessaloniki, Greece

Abstract: ERS-1124

Objectives

The nasal vestibule, the most anterior part of the nasal cavity, is lined with keratinizing squamous cell epithelium. Therefore, cancers of this area must be considered as skin tumors and have different clinical behaviour from cancers of the true nasal cavity. Although the majority of nasal vestibule tumours are squamous cell carcinomas, basal cell carcinomas are also seen but the published cases are very few.

Methods

A 65-year-old man was referred to our department with a six month history of a growing mass in the left nasal vestibule, with occasional epistaxis and obstructed nasal breathing. Nasoendoscopy revealed a 1.0 × 1.0 cm sized, brownish, irregular shaped, multinodular mass in the left nasal vestibule.

Preoperative diagnosis included a Computed Tomography (CT) scan and an excisional biopsy under local anaesthesia. The CT revealed a mass without infiltration of cartilages or bony structures (T1 according to Wang's classification) and the histopathologic diagnosis was basal cell carcinoma (BCC).

Results

Surgical excision of the tumor with narrow margins of normal tissue was our treatment of choice, utilizing a modified Moure's lateral rhinotomy incision. Reconstruction of the resulting mucosal deficit was performed using a full thickness free skin graft from the subclavian area.

Conclusion

The BCC of the nasal vestibule is a very rare neoplasm and complete surgical excision is the primary therapeutic target. However, the cosmetic and functional result is also of paramount importance and can be achieved by using a free skin graft.

Assessment of nasal polyposis in patients with cystic fibrosis - association of clinical symptoms and endoscopic findings

A. Skouras¹, P. Giaramazidis¹, T. Mantis¹, S. Tzellas¹, I. Karasmanis¹, C. Grigoriadis¹,
A. Manganaris¹

¹ E.N.T. Department, Hippokration General Hospital, Thessaloniki, Greece

Abstract: ERS-1125

Objectives

Cystic fibrosis is a serious inherited disease which mainly affects the lungs and pancreas of patients of Caucasian descent. Symptoms usually begin in early childhood and include persistent cough, wheeze, repeated chest infections and food malabsorption. Nasal polyposis affects 10-50% of patients with CF. The purpose of our study is to document a possible correlation between the SNOT-20 questionnaire and nasoendoscopy in CF patients.

Methods

A total of 31 patients who are monitored in the CF Unit with symptoms of chronic rhinosinusitis, were referred for assessment to the E.N.T. clinic. All of them were asked to complete the special SNOT-20 questionnaire. Endoscopic evaluation was performed and they were staged according to the Lund-Kennedy system. The evaluation included Computed Tomography scan for all patients diagnosed with nasal polyps and culture swabs.

Results

Six-teen patients of the 31 had chronic rhinosinusitis with nasal polyps. The average age of onset was 12.19 (\pm 6.25) years. The main symptoms were: a) nasal obstruction, purulent nasal/postnasal drip, pressure headache and hyposmia/anosmia. Data analysis revealed a significant correlation between the endoscopic findings and the SNOT-20 questionnaire ($p < 0.05$). All patients were initially treated conservatively with a documented remission of symptoms in 80%. Three patients underwent endoscopic polypectomy for symptom relief.

Conclusion

The incidence of nasal polyposis is high in patients with CF. In contrary to the published data, we experienced a positive correlation between the SNOT-20 questionnaire and nasoendoscopy. Further studies with a larger patient population are required in an attempt to integrate the SNOT-20 questionnaire in the diagnostic algorithm of CF patients.

SURGICAL OUTCOME OF COBLATION MIDLINE GLOSSECTOMY IN MULTILEVEL SURGERY FOR OBSTRUCTIVE SLEEP APNOEA

L. HUANG¹, P. MOK²

¹ OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, TAN TOCK SENG HOSPITAL, SINGAPORE, SINGAPORE

² OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, KHOO TECK PUAT HOSPITAL, SINGAPORE, SINGAPORE

Abstract: ERS-1126

Objectives

The tongue base is a significant contributing factor in many case of Obstructive Sleep Apnoea. A multitude of tongue base procedures exist, but all often have unpredictable results. The aims of this study were twofold:

1. Analyse the surgical success rate of Coblation Midline Glossectomy in patients with moderate to severe Obstructive Sleep Apnoea
2. Subset analysis of Moore's tongue base staging system as a tool to guide surgical decision making in tongue base obstruction

Methods

This was a case series with retrospective data analysis. All patients were recruited from the Obstructive Sleep Apnoea clinic at Khoo Teck Puat Hospital, Singapore from June 2011 to December 2013. All had a preoperative polysomnogram and a postoperative polysomnogram performed 3 to 6 months post surgery.

Results

Nine patients had undergone Coblation Midline Glossectomy in the study period. Only five of them had performed a postoperative polysomnogram. Three out of five attained surgical success. One showed improvement in postoperative apnoea hypopnea index but did not meet criteria for surgical success, One patient had a worse postoperative apnoea-hypopnea index. Out of the three patients who showed surgical success, 2 out of 3 had Moore's A tongue base position and 1 had Moore's B.

Conclusion

Coblation Midline Glossectomy is a useful technique to treat tongue base obstruction in Obstructive Sleep Apnoea. It had showed a 60% success rate (3/5) in our case series. A larger sample population would be ideal to further evaluate this feasible technique.

Rhinoscleroma presenting with hoarseness: a case report

A. Melendez¹, V. Hernandez¹, L. Korytkowski¹

¹ Otolaryngology, Hospital Santo Tomas, Panama City, Panama

Abstract: ERS-1127

Objectives

Describe the clinical and histopathological presentation of rhinoscleroma, a rare, chronic granulomatous disease endemic in Africa, Central and South America and Eastern Europe that produces deformities in the airway which can be lethal if untreated.

Methods

We review the clinical chart of a 32 y/o female patient who presented with hoarseness and cough as her main complaint. During physical examination using the endoscope, granulomas were observed at the middle turbinate in her left nostril associated with stenosis of the choanal area. The laryngoscopy also demonstrated granulomas in the laryngeal inlet and mucopurulent drainage coming from the trachea.

The granulomas were biopsed and with special stains as Warthin- Starry, H-E, the pathognomonic features of: Miculicz cells and Russell bodies were clearly observed in the samples..

Results

After the histopathological confirmation, the patient received antibiotic treatment for six months with ciproflaxacin 500 mgs bid with clinical improvement.

Her outpatient control visits have been uneventful in the last 12 months.

Conclusion

Rhinoscleroma although endemic in the Central American region is very rare here. The clinical presentation may not be strictly based on nasal symptoms as it happened in our case where hoarseness and cough were the main complaints. A thorough clinical examination is mandatory to evaluate the airway as the disease has three stages, catarrhal, proliferative and stenotic which can overlap. The diagnosis depends on culture and histopathological findings

If untreated the disease progresses to stenosis and/ or deformity of the airway at any site and may threaten life.

Retro-orbital pain as unique symptom of onodi cell mucopyocele

F.R. Fiorini¹, G. Meccariello¹, G. Mannelli¹, A. Deganello¹

¹ Otorhinolaryngology head and neck surgery, University of Florence, Florence, Italy

Abstract: ERS-1128

Objectives

Onodi cell is a cell of the posterior ethmoid, located superiorly or laterally to the sphenoid sinus; it is close to the optic canal, sometimes included in it. It often represents an incidental radiologic finding, being present only in 7% of the general population, and is rarely involved in sinonasal disorders.

Methods

A 16 year-old girl presented the sudden onset of an oedema of the superior right eyelid, associated with retro-orbital pain, ipsilateral fronto-temporal headache, no diplopia or visual impairment. Fiberoptic endoscopy demonstrated mucosal congestion of turbinates, with mucopurulent secretions from fontanelle and sphenoethmoidal recess. Orbital CT evidenced complete opacity of ethmoidal cells. Intravenous antibiotic/corticosteroid therapy was administered and a contrast enhanced MRI was performed. It demonstrated a suspicious mucopyocele of the right Onodi cell, in contact with the optic nerve sheath caused by the interruption of the internal wall of the orbit.

Results

We performed endoscopic transethmoidal marsupialization of the mucopyocele 24 hours after admission to avoid a possible endocranial extension of the process. The ocular signs recovered immediately. Infusional therapy was carried out during the next 4 days and oral therapy for 7 days after dismissal. MRI performed 1 week later demonstrated complete resolution of the radiologic findings.

Conclusion

Onodi cell represents a rare localization of mucopyocele. Ocular pain, diplopia and visual impairment may be present. The MRI allows differential diagnosis with expansive or flogistic lesions. Surgery may be delayed, however the definitive treatment is always surgical, and its timeliness, even without visual compromission, may reduce the incidence of endocranial complications.

Endonasal endoscopic management of a giant frontal sinus and supraorbital cholesteatoma extending far back to the middle fossa and temporal muscle

S. Mulazimoglu¹, H. Basak¹, Z.C. Tezcaner¹, S. Beton¹, B.C. Meco², C. Meco¹

¹ Department of Otorhinolaryngology, Ankara University Medical School, Ankara, Turkey

² Department of Anesthesiology and Reanimation, Ankara University Medical School, Ankara, Turkey

Abstract: ERS-1129

Objectives

Frontal sinus cholesteatoma is a rare entity. Limited number of cases in the literature was presented, in all of which external approach was used with only one exception. We present a unique case with a giant frontal sinus and supraorbital cholesteatoma with posterolateral extension, who underwent endonasal endoscopic resection. The aim of this report is to discuss possibilities of transfrontal endoscopic approach and to describe technical notes of this surgery.

Methods

A 49-years old female had 1-year history of left proptosis. Imaging studies demonstrated a mass at left frontal sinus and supraorbital area with extra-axial extension and bony erosions, which was pushing the globe and optic nerve inferiorly, and frontal lobe posteriorly, extending far back to the middle fossa and temporal muscle. Endonasal endoscopic transfrontal surgery was performed through Draf III procedure. By sacrificing anterior ethmoidal artery and suspending periorbita inferiorly, a wide opening was achieved to evacuate and washout the cholesteatoma debris and resect the matrix as much as possible.

Results

In this unique case it was possible to visualize and reach every corner of the giant cholesteatoma cavity by angled optics and instruments. Like in a radical cavity surgery it was possible to remove all debris and leave a large frontal opening. There were no intraoperative complications and no recurrences during the follow-up.

Conclusion

In suitable cases like this one, Draf III procedure let us reach and manipulate lesions going far posterolateral in the frontal sinus, and leave adequate drainage pathway for cavity aeration and future controls.

Osteoma and nasal polyposis: an unusual association

H. Chahed¹, A. Mediouni¹, J. Marrakchi¹, R. Bachraoui¹, R. Zainine¹, M. Ben Amor¹,
N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1130

Objectives

To describe a rare association between two pathologies with an unclear etiopathogenesis

Methods

It is a retrospective descriptive study over a period of 24 years [1990-2014]. During this period, 6 patients were operated for nasal polyposis associated with sinus ostéoma.

Results

The average age was of 51 years with a sex-ratio of 5/1. History of recurrent rhino sinusitis was reported in all cases, repeated polypectomies in 2 cases. Clinical symptoms were headaches (66,7%), nasal obstruction (100 %), anosmia (83 %), visual troubles (16 %). The physical exam found a bilateral nasal polyposis in all cases, a medial canthal swelling in one case. The facial CT scan concluded in pansinus opacification in all cases. The osteomea was in the posterior ethmoid (2 cases), anterior ethmoid (1cas), ethmoido-frontal (2 cases) and frontal (1 case). A bilateral endoscopic ethmoidectomy was performed in all cases. the ostéome was removed by endoscopic approach (3 cases), by Jacque incision (1 case), and paralatero nasal one (1 case).

Conclusion

The ostéoma-polypose association could make evoke a similar etiopathogenesis. The chronic rhino sinusitis, often associated with nasal polyposis, could stimulate the osteoblastic proliferation and ostéoma Genesis

INVERTED PAPILOMA OF THE NOSE: A MANAGEMENT PLAN

M. DOBRE¹, M. POENARU¹, N. BALICA¹, C. DOROS¹

¹ ENT DEPARTMENT TIMISOARA, UNIVERSITY OF MEDICINE AND PHARMACY "VICTOR BABES" TIMISOARA ROMANIA, TIMISOARA, ROMANIA

Abstract: ERS-1131

Objectives

Inverted papilloma (IP) is a primarily benign epithelial neoplasm with a propensity to transform to squamous cell carcinoma (SCC). A case with an IP of the nasal cavity is presented at 15 months follow-up.

Methods

A 56-year-old male presented with persistent left nasal obstruction, rhinorrhea, impaired sense of smell and pain. On examination, the left nostril was filled with a polypoid tumour (1 cm diameter), which used to bleed on touch. A CT-scan showed a soft tissue lesion involving the left nasal cavity with no bone destruction or any expansion. Under general anaesthesia endoscopic removal of the tissue was done.

Results

Histopathological examination showed an inverted papilloma. In specimens from surgical removal human papilloma virus (HPV) has been detected as well as papovavirus. No recurrence was observed after a follow-up of 15 months.

Conclusion

Because of the high rate of recurrence of IPs, their aggressive nature and malignant transformation, long-term follow-up is required. Wide surgical excision is necessary to achieve adequate treatment.

Endonasal endoscopic dacryocystorhinostomy: causes of surgical failure

H. Chahed¹, R. Bachraoui¹, A. Mediouni¹, J. Marrakchi¹, M. Ben Amor¹, R. Zainine¹, N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1132

Objectives

Modalities of surgical management of cerebrospinal rhinorrhea (CSR) and evaluate the causes of failure.

Methods

A total of 15 patients with CSR (6 traumatic, 2 iatrogenic, and 7 spontaneous) were treated in our institution during an 13-year period (2000-2013).

Results

The average patient age was 44,9 years. The most frequent symptom was an intermittent clear rhinorrhée; meningitis was reported in 2 cases. CT Scan was performed in all cases. MR imaging was performed in 7 cases. The skull base defects were in cribriform plate (7 cases), the roof of the ethmoid sinus (6 cases), sphenoid sinus (1 case), and frontal sinus (1 case). the endoscopic approach in 14 cases, the combined one in 1 case. An overlay procedure was adopted in all cases. CSF rhinorrhea was resolved during the first attempt in 13 patients. 2 recurrent CSR were reported and relieved after a second surgery.

Conclusion

The endoscopic approach is safe and effective for the treatment of CSF rhinorrhée. It remains efficient after failure of the neurosurgical approaches. failure are usually reported in lateral sphenoid sinus recess defects.

Septal perforation: etiologies and surgical management

H. Chahed¹, J. Marrakchi¹, A. Mediouni¹, R. bachraoui¹, R. Zainine¹, M. Ben Amor¹, N. Bel-taief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1133

Objectives

Describe etiologies and evaluate indications and surgical approaches in septal perforations.

Methods

It is a retrospective descriptive study in which Twenty two patients with septal perforation were diagnosed between 2000 and 2013. surgery was performed in 11 cases.

Results

The average age was 45 years old [extremes of age from 24 to 86 years].with a sex ratio of 1.5 main clinical symptoms were Nasal obstruction and Rhinorrhea (8 cases) and recurrent epistaxis (3 cases).7 patients were asymptomatic. The septal perforation was associated with palatine defect in one case. The etiologies were iatrogenic (13 cases), syphilis (3case), relapsing polychondritis (2 cases), Wegener granulomatosis(2 cases), chronic rhinitis (1case) and T- cell lymphoma (1 cases). Only patients who 11 patients with iatrogenic perforation and chronic rhinitis were operated by using local rotating flaps with a conchal cartilage graft (5 cases). Evolution was simple in all operated cases.

Conclusion

Surgery is usually performed in symptomatic perforations using well vascularized mucosal flap. Different techniques are proposed depending on the location and the size of the perforation.

Complications of endoscopic endonasal surgery: management and prevention

H. Chahed¹, J. Marrakchi¹, W. Abid¹, A. Mediouni¹, R. Bachraoui¹, S. Tabebi¹, S. Sahtout¹, R. Zainine¹, M. Ben Amor¹, N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1134

Objectives

Evaluate our attitude in the management of endonasal endoscopic surgery complications.

Methods

516 patients underwent endoscopic endonasal surgery during a period of 10 years (2000-2009). Forty-one complications were diagnosed and managed in our department.

Results

41 complications occurred in 35 patients. The average age was 35.6 years with a male predominance (sex ratio 5H/1F). These complications were peroperative (9 cases), early postoperative (5 cases) and late (27 cases). bleeding ere the most common intraoperative complication. Early postoperative surgical complications were, mainly, secondary hemorrhagia (4 cases) and ophthalmic complications (1 case). Late postoperative surgical complications are dominated by synechia (14 cases). Other complications: crusty rhinitis, mucocele and closure of the middle meatus were found in respectively 4, 4 and 5 cases. The therapeutic approach depends of course on the complications encountered.

Conclusion

Complications encountered with the waning of the sinonasal endoscopic surgery may involve the functional and vital prognosis. The experience of the surgeon, the preoperative imaging and the perfect knowledge of the anatomy of the nasal cavity are the only guarantee of better control of this technique.

Endonasal endoscopic dacryocystorhinostomy: causes of surgical failure

H. Chahed¹, R. Zainine¹, J. Marrakchi¹, R. Bachraoui¹, A. Mediouni¹, M. Ben Amor¹,
N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1135

Objectives

Evaluate causes of failure of endoscopic dacryocystorhinostomy (DCR)

Methods

It is a retrospective study which included 50 patients who underwent endoscopic DCR between 1999 and 2011. Bilateral DCR was performed 3 cases.

Results

The average age was of 36,7 years with a sex-ratio of 0.28. The endoscopic DCR indications were: Failures of external DCR (22 cases), associated rhinosinusitis pathologies (21 cases), stenosis of the lower portion of the lacrimal duct (9 cases) and dacryolith (1 case). Endoscopic DCR was performed under general anesthesia in all cases. Average follow-up was of 6,5 months. The result was considered satisfactory in 88,67 % of the cases.

Main risk factors of failure were: a duration of intubation bicanaliculonasale superior to 4-month-old ($p=0,02$). Best functional results were reported in women, patients of more than 55 years old and those without concomitant rhinosinusitis pathologies.

Conclusion

The success of endoscopic DCR requires a long surgical training and respect of the anatomical landmarks.

Early effects of endoscopic sinus surgery (ess) and postoperative conservative treatment in patients with chronic rhinosinusitis with and without polyps influenced by bacterial infection.

P. Strek¹, K. Hydzik-Sobocinska¹, B. Bobrzynska¹, P. Hartwich¹, R. Nieckarz¹, A. Wrobel¹

¹ Department of Otolaryngology, Jagiellonian University Medical College, Krakow, Poland

Abstract: ERS-1136

Objectives

Assessment of early effects of ESS and postoperative conservative treatment in patients with CRS with and without polyps influenced by bacterial infection.

Methods

115 patients with CRS were screened and inclusion criteria for this study were met by 51 patients with CRS with polyps and 50 with CRS without polyps. Patients completed a Likert scale (LS) questionnaire before ESS, at three and six months following surgery. Microbiological samples were taken from the osteomeatal complex during surgery and if indicated at follow up visits. Endoscopy was used as an objective assessment method of the local state before surgery and at three and six months.

Results

Patients with CRS with polyps following surgery had a greater treatment benefit than patients with CRS without polyps. These findings were based on a greater subjective improvement on LS. However a comparable improvement of the local state was found in both groups on endoscopy. In both groups the greatest improvement of the subjective condition and local state was observed after first three months, this degree of improvement reached a plateau at six months. Higher scores at subjective and objective assessment were found in patients with presence of bacterial growth from osteomeatal complex samples.

Conclusion

We found that early effects of ESS are most prominent in the first three months after surgery and reach a plateau in the next three months. Our results suggest that procurement of osteomeatal bacterial samples before surgery and during follow up is advisable as bacterial growth was found to be a prognostic factor of treatment outcome.

Choanal atresia : surgical approaches and therapeutic results

H. Chahed¹, R. Zainine¹, A. Mediouni¹, J. Marrakchi¹, R. Bachraoui¹, M. Ben Amor¹,
N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1137

Objectives

Discuss the therapeutic modalities and surgical results of choanal atresia.

Methods

It is a retrospective study about 29 cases of choanal atresia followed over 20 years period.

Results

The age of discovery was 10,6 years (1 day - 35 years). A female prevalence was noted. Atresia was bilateral in 8 cases and unilateral in 21 cases. Scan of facial bones was produced in 23 cases. atresia was bony in 30,4% of the cases, membranous in 13% and mixed nature in 56,6%. Concerning the treatment, we had recourse to the divulsion in a case, the way transpalatine in 15 cases and the way endonasale in 13 cases. The success rate obtained by the endoscopic way endonasale is 72,72% and by the way transpalatine is estimated at 71,42%. The success rate passes to 100% after surgical recovery.

Conclusion

The choanal atresia The choanal atresia is a rare congenital malformation. Endoscopic nasal surgery has completely revolutionized the therapeutic approach of this pathology. It becomes currently the technique of choice.

AN AUDIT OF INVESTIGATION AND DIAGNOSIS OF NASAL SEPTAL PERFORATION LEADING TO THE DEVELOPMENT OF A MANAGEMENT PATHWAY

S.G. DERBYSHIRE¹, B. ATTLMAYR¹, A.C. SWIFT¹

¹ ENT, HEALTH EDUCATION NORTH EAST, DARLINGTON, GERMANY

² ENT, CITY HOSPITALS SUNDERLAND, SUNDERLAND, UNITED KINGDOM

Abstract: ERS-1138

Objectives

The aetiology of nasal septal perforations involves iatrogenic, traumatic, inflammatory, infectious, neoplastic, and caustic causes. Septal perforations are a diagnostic challenge, a thorough medical history and appropriate investigation is essential in their evaluation due to the association with systemic disease. An audit of assessment, investigation and subsequent diagnosis was performed leading to the development of a management pathway.

Methods

30 consecutive patients with septal perforation were prospectively reviewed to ascertain whether appropriate history and investigations were recorded and performed in correlation with the literature. The findings led to the development of a pathway to focus assessment of these patients. Following implementation of the pathway, completion of the audit loop was performed by prospective case note review of 30 patients.

Results

Increased correlation between history and subsequent investigation was noted on closing the audit loop.

Prior to intervention 56.6% of patients were appropriately investigated given the clinical history. In comparison, 86.6% were appropriately investigated following implementation of the management pathway.

Conclusion

Implementation of an investigation and management pathway has improved the assessment and diagnosis of nasal septal perforation.

Endoscopic sinonasal surgery under navigation system

Z. Ozergin Coskun¹, E. Dursun¹, O. Celebi Erdivanli¹, A. Ozgur¹, S. Terzi¹, M. Demirci²

¹ Otorhinolaryngology Department, Recep Tayyip Erdogan University Training and Research Hospital, Rize, Turkey

² Otorhinolaryngology Department, Recep Tayyip Erdogan University, Rize, Turkey

Abstract: ERS-1139

Objectives

Endoscopic sinonasal surgery has escalated over the last decade with technical advancements such as development of navigation systems. The navigation system has made surgery more confident for the difficult areas of nose, paranasal sinuses and skull base. This study aimed to evaluate the efficacy of endoscopic sinonasal surgery aided by a navigation system.

Methods

Forty-one patients who underwent endoscopic sinonasal surgery under the assistance of navigation system were evaluated retrospectively between January 2013 and March 2014. Electromagnetic navigation system (Fusion ENT Navigation System, Medtronic) was used. Indications and complications were analyzed.

Results

Indications for surgery included sinonasal polyposis (n=28, 68%), chronic rhinosinusitis (n=6, 15%), sinonasal neoplasms (n=5, 12%), choanal atresia (n=1, 2%) and other (n=1, 2%). No major complications were noted.

Conclusion

Intraoperative navigation systems increase the safety and efficiency of endoscopic sinonasal surgery. However, navigation system doesn't perform surgery by itself and surgeons' knowledge's and experiences are still the most important issues. We would especially recommend navigation system for extensive disease and revision surgeries, in which the anatomy and landmarks can be expectedly distorted.

Sphenoid sphenoid sinus tumor pathology

H. Chahed¹, J. Marrakchi¹, R. Bachraoui¹, A. Mediouni¹, M. Ben Amor¹, R. Zainine¹,
N. Beltaief¹, G. Besbes¹

¹ENT departement, RABTA hospital, Tunis, Tunisia

Abstract: ERS-1140

Objectives

Describe surgical management and histologic results of sphenoid tumours.

Methods

It is a retroerspective study which included Six operated of sphenoid tumour in our departement between 1990 and 2013 .

Results

This study included 3 men and 3 women with extremes of age from 5 to 55 years. clinical symptoms were dominated by headache refractory to conventional analgesics, otological and rhinological signs. Oculomotor impairment was noted in 2 cases and peripheral facial palsy in one case. The endoscopic exam showed a fleshy formation in only 3 cases. Otoscopy showed a polyp in a patient whose biopsy was not decisive.

A CT scan was requested in all patients. The appearance was variable from one case to another with different degrees of extension depending on the pathology. Additional MRI was performed in one patient . An endoscopic endonasal sphenoidotomy was performed in all cases for diagnosis or treatment.

histological examination, concluded to Inverted papilloma (3 cases), squamous cell carcinoma (2 cases) and malignant lymphoma (1 case).The evolution depended on the pathology.

Conclusion

Sphenoidal tumors are rare. surgeon must know how to make the diagnosis in spite of a misleading semiology. The evolution of the imaging and endoscopic surgical techniques have helped to provide a better understanding of the sphenoid sinus.

Management of inverted papilloma in 2014: an evidence based review.

B. Attlmayr¹, S. Derbyshire², A.C. Swift²

¹ ENT Department, Royal Liverpool and Broadgreen University Hospitals, Liverpool, United Kingdom

² ENT Department, Aintree University Hospital, Liverpool, United Kingdom

Abstract: ERS-1142

Objectives

Inverted papilloma is the most common benign nasal tumour. There is a high rate of recurrence and a potential of malignant transformation. Two reviews in 2006 established the recurrence rate for endoscopically treated inverted papilloma as around 12%. Since then, several units have published much lower recurrence rates. The aim of this review is to determine possible factors, which might account for the lower recurrence rates.

Methods

We performed a systematic review of the current literature 2007 to 2013. Our inclusion criteria were defined as English language, original articles with a minimum follow up of 1 year and an average follow up of 2 years.

Results

A total 1385 patients from 16 case series were identified. 116 cases were Krouse stage T1, 498 stage T2, 716 stage T3 and 55 stage T4. The average length of follow up was 49.8 months (range 27-167) and the total recurrence rate for all patients was 11.5%. On average the time between surgery and recurrence was 18.7 months. The majority of patients (n=1021) were operated upon using a purely endoscopic approach. Significantly lower recurrence rates could be found for procedures using an attachment orientated excision (n=577; recurrence of 6.9%; p=0.0001) and utilising frozen sections (n=532; recurrence of 7.0%; p=0.0001).

Conclusion

There is a general trend towards endoscopic surgery. There may be some benefit to the use of attachment orientated surgery and the use of frozen sections. Multi-centred randomised controlled trials are required. Thorough pre-operative planning and long term follow up are advised.

Revision dacryocystorhinostomy

F. Rodrigues¹, V. Soares¹, R. Tavares², M. Rocha¹, S. Sousa¹, J. Santos¹

¹ Otorhinolaryngology head and neck surgery, Centro Hospitalar Tondela Viseu, Viseu, Portugal

² Ophthalmology, Centro Hospitalar Tondela Viseu, Viseu, Portugal

Abstract: ERS-1143

Objectives

With a success rate of about 90%, dacryocystorhinostomy (DCR) is an excellent treatment option for selected patients with nasolacrimal duct obstruction.

However, the management of unsuccessful cases can be challenging.

Methods

Retrospective analysis of the clinical records of patients who underwent DCR at a single center, with particular interest in revision surgeries.

Review of medical literature published in PubMed in the last 5 years using the terms: "dacryocystorhinostomy" and "revision".

Results

All dacryocystorhinostomies carried out in São Teotónio's Hospital were performed by a team consisting of an otolaryngologist and an ophthalmologist.

104 patients met the 6 months minimum follow up period and were included in the present study. 112 DCR were performed, 14 of which were revision procedures.

The recorded overall success rate was 88% (Endoscopic - 94%, External - 87%), whereas revision procedures when considered alone were effective in 93% of cases (Endoscopic - 100%, 6/6; External - 88%, 7/8).

Conclusion

Reported success rates for revision DCR are lower than primary DCR. This was not the case in our study. In fact, the success rate of revision procedures compares favorably to that of primary DCR.

Possible explanations are a good selection of the surgical revision technique, a careful execution and the use of topical Mitomycin C applied to the nasal neo-ostium.

Nonetheless, existing data on Mitomycin C is controversial and its value remains unknown. Further studies should be considered in order to draw conclusions about its effectiveness and safety.

Expanded endonasal endoscopic orbital decompression: ten years of experience

M. Naraghi¹

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1144

Objectives

Endoscopic orbital decompression expands the orbital cavity into the ethmoid cavity and medial maxillary sinus. We presented our experience, extending the borders of endoscopic orbital decompression beyond the infra-orbital nerve to remove near complete two orbital walls in an exclusively endoscopic procedure.

Methods

During the past ten years 96 cases of orbit underwent near complete medial and inferior wall decompression, medial and lateral to the infra orbital nerve. All endoscopic decompressions were performed by the senior author. Removal of the lateral orbital floor is added to the technique for medial wall decompression originally described by Kennedy and then Metson. After removing lamina papyracea endoscopically, the roof of the maxillary sinus was removed medially, infraorbital nerve was identified and then the remained portion of inferior orbital wall which is located lateral to the infraorbital nerve was carefully removed.

Results

All patients had significant improvement in proptosis. Proptosis was reduced by a mean of 4.3 in expanded decompression. Infra-orbital nerve hypoesthesia was reported by five patients postoperatively. There was improvement in all nine patients with preoperative optic neuropathy.

Conclusion

Orbital decompression is planned to remove the orbital wall to allow expansion of the increased volume of the orbital contents. Of the four walls surrounding the orbital contents, one or more may be removed for orbital decompression. Decompression of the medial wall together with the complete inferior wall of the orbit, medial and lateral to the infra-orbital nerve seems to provide adequate space for the orbital contents in the maxillary and ethmoid sinuses with acceptable low morbidity.

The development of a nasal physiology diagnostic service and the subsequent effect on surgical intervention in nasal septal deviation

S.G. Derbyshire¹, T. Kay², J. Wong², B. Attlmayr¹, A.C. Swift¹

¹ Otolaryngology, University Hospital Aintree, Liverpool, United Kingdom

² Audiology, University Hospital Aintree, Liverpool, United Kingdom

Abstract: ERS-1145

Objectives

Nasal obstruction is typically diagnosed by a patient's subjective complaint of nasal stuffiness coupled with a physical examination demonstrating anatomic restriction of the nasal passages. Objective testing of nasal physiology is rarely used outside of the research environment, due to limitations which include expense, time constraints and variable sensitivity and specificity. Our novel approach of setting up a nasal physiology diagnostic service in conjunction with the local department of audiology is described. The effect of nasal physiology testing on intervention is also described.

Methods

Following initiation of the nasal physiology diagnostic service, acoustic rhinometry, rhinomanometry, tympanometry and nasal partitioning ratio was performed on 127 consecutive patients. Patients referred for investigation presented with nasal obstruction and were assessed as having nasal septal deviation. Results and subsequent intervention was recorded prospectively.

Results

Refinement in the diagnostic service is described. Nasal physiology testing was found to be unreliable in severe nasal septal deviations but aided the decision making process when used in patients with a mild or moderate septal deviation.

Conclusion

The setting up of a nasal physiology diagnostic service in conjunction with an audiology department has allowed objective testing of nasal obstruction. Further refinement of the service is in development. The availability of objective testing has aided decision making with regard surgical intervention.

NASAL SURGERY IN SLEEP-DISORDERED BREATHING

M. NARAGHI¹

¹ DIVISION OF RHINOLOGY AND FACIAL PLASTIC SURGERY DEPARTMENT OF OTORHINOLARYNGOLOGY HEAD AND NECK SURGERY, TEHRAN UNIVERSITY OF MEDICAL SCIENCES, TEHRAN, IRAN

Abstract: ERS-1147

Objectives

The role of the nose in the development and severity of sleep disordered breathing is still a matter of debate. The nose is the first part of airway, and may affect nasal breathing with subsequent influences on the breathing during sleep. The nasal valve is the narrowest area of the nose which is located between the caudal portion of the upper lateral cartilage and the nasal septum.

Methods

The nasal valve area have the greatest resistance to the air. Any narrowing or collapse of the nasal valve area, may severely compromise the nasal airway and cause airway obstruction during sleep and sleep disordered breathing. Even very small changes in this area can result in significant increase in the nasal resistance with power of four exponentially.

Results

The treatment of choice for nasal problems in patients with the sleep disordered breathing is different according to the pathologic condition in every case. In the cases of mucosal problems, medical therapy for allergy and corticosteroid nasal sprays may help in many patients. Nonsurgical treatments include medical treatment of rhinosinusitis and allergy and rhinitis.

Conclusion

Surgical procedures include valve surgery for increasing diagnosed problem of valve stenosis, septoplasty, inferior turbinoplasty, middle turbinoplasty, functional endoscopic sinus surgery, adenoidectomy and repair of secondary intranasal synechia. Decreasing the nasal resistance often leads to a better quality of sleep in most patients with sleep disordered breathing. However its efficacy on obstructive sleep apnea is small.

Airway management in rhinologic surgeries

M. Naraghi¹

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1148

Objectives

The nose is the first part of the airway, undergoing different surgical procedures during rhinologic operations. Endonasal endoscopic surgery, septoplasty and septorhinoplasty are common procedures on the nose with different amount of bleeding during operation.

Methods

Close relationship of nasal surgery site to the endotracheal tube, accumulation of blood inside the mouth, different head movements and positions during surgery and direct touch of the tube by the surgeon and assistant consist only a part of the list of conditions which make this procedures with some risk regarding airway if the surgical team have not enough concern about it.

Results

With special attention during over several thousands of rhinologic surgeries, the author will present personal experience of securing the airway during these procedures which could prevent unwanted airway complications during surgery.

Conclusion

Applying safety precautions and avoidance of inadvertent changing of the position of the endotracheal tube helps to secure airway and prevent aspiration with subsequent decrease of adverse problems associated with anesthesia in rhinologic surgeries.

Endoscopic management of superior-medial orbital dermoid cyst

M. Naraghi¹, M. Boroojerdi², N. Hajarolasvadi²

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1149

Objectives

Dermoid cysts are congenital benign anomalies originating from ectodermal tissue during neural tube closure. These cysts may present in different region but the incidence of head and neck dermoid cysts is only seven percent. Dermoid cyst in superior-medial orbital region is a rare condition and its routine management has been through open approaches.

Methods

A young man with right medial canthus enlarging mass from four years ago had also complaint of epiphora with worsening in cold weather. The patient does not have any sign of nasal obstruction, postnasal discharge, vision alteration or limited eye movements. In CT scan a well-defined mass was noticed in superior-medial orbital region. Based on clinical and radiological findings the patient underwent endonasal endoscopic surgery.

Results

In surgical procedure, after incising uncinat process and entering bulla ethmoidalis, the frontal recess was exposed and a protruding mass was revealed. After incision yellow discharge and large amount of hair were extracted. The cyst was evacuated and then removed completely. Pathological evaluation was consistent with dermoid cyst. Postoperatively, the patient's epiphora resolved completely.

Conclusion

We presented a minimally invasive technique for treatment of orbital dermoid cyst with acceptable results and no morbidity.

Evaluation of smell in the laryngectomee

H. Rodrigues¹, S. Alves¹, S. Tavares¹, J. Vaz de Castro¹, M. Santos¹, P. Correia¹,
J. Brito Mendes¹, L. Antunes¹

¹ ENT, Garcia de Orta Hospital, Lisboa, Portugal

Abstract: ERS-1150

Objectives

Total laryngectomy invariably leads to a decrease in the ability to smell due to lack of air flow in the nasal cavity, because of the interruption of the airway. Thus, the odorous particles do not reach the olfactory epithelium, although this can be intact. Patients can develop adaptive sniffing strategies. An example is inducing nasal flow maneuver or 'polite yawning', which allows a flow of odorous particles in sufficient amount to stimulate the olfactory epithelium.

Methods

We evaluated 12 Laryngectomees, asking them for the year in which total laryngectomy was performed and about their complaints of hyposmia, as well as on other conditions that could justify the change of smell. We proceeded to rhinoscopy seeking to identify any aspects that could obstruct airflow to the upper floor of the nasal cavities. Laryngectomees were submitted BAST-24[®] test and we recorded the scores in the spreadsheet test.

Results

We found that most of the members of the Group of Patients Laryngectomees Hospital Garcia de Orta had effectively anosmia or hyposmia. The patient that performed better on tests, developed adaptive strategies through movements of facial muscles and tongue outlining the nasal airflow-inducing maneuver. The literature shows an improvement in performance on olfactory test after training the 'polite yawning', driven by Speech Therapy.

Conclusion

Laryngectomy has a very significant impact on the smell. The proposed adaptive strategies are easy to learn and demonstrate a significant improvement in olfactory ability and should integrate programs of rehabilitation of laryngectomy patients.

Severe deep orbital pain induced by maxillary pneumocele

M. Naraghi¹, S. Mortazavi²

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Department of Radiology, University of Minnesota, Minnesota, USA

Abstract: ERS-1151

Objectives

Remain asymptomatic over long periods and rarely presents with classic signs. We present a rare case of maxillary pneumocele presenting with severe deep orbital pain.

Methods

A ten year old boy presented with progressive left maxillary and orbital pain from 9 months. It had a typical cascade beginning with the numbness of the left upper lip, then anesthesia of the canine teeth with gum around it, and finally the center of pain was deep orbit. He also experienced two episodes of severe orbital pain with barotrauma during descent in travels to the mountainous regions. The parents also had noted swelling of the left cheek since two years ago.

Results

The patient underwent functional endoscopic sinus surgery based on the presumed etiology of occlusion of the maxillary sinus ostium by one-way valve mechanism. There was significant improvement of symptoms after surgery.

Conclusion

Most pneumoceles remain asymptomatic over long periods and are not diagnosed until there is an external deformity or the displacement of adjacent structures causing symptoms. Treatment is based on relieving one-way valve mechanism as we reported in our case of maxillary pneumocele.

Endoscopic management of orbital abscess

M. Naraghi¹, M. Boroojerdi²

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1152

Objectives

Subperiosteal and intraorbital abscesses are serious complications of paranasal sinus inflammations that are best managed by combination of medical and surgical approaches. Surgical management is mandatory in the case of orbital abscess. Other indications of surgery include loss of visual acuity, gross collection, clinical deterioration and failure to improve within 48 hours of antibiotic treatment. In the absence of these criteria a trial of intravenous antibiotic treatment can be considered with close monitoring of the patient.

Methods

This paper presents endoscopic management of extensive abscess of the orbit of an adolescent with severe swelling of eyelid and chemosis. Obstructed ostiomeatal complex was managed at first step to help drainage of abscess and permanent drainage route of involved sinuses. Pearls to success and avoidance of pitfalls will be described in the article.

Results

Postoperative recovery was uneventful with very fast resolution of symptoms and signs, so that in 48 hours the eye movements and vision reverted to normal with improvement of chemosis and eyelid swelling.

Conclusion

Endoscopic management of medial abscess has considerable advantages when compared with traditional external approach. Treatment of underlying sinus diseases could cause decrease in recurrence rate. Lack of facial scar and fast improvement are other advantages of this method.

Arteriovenous fistula of the nose

M. Naraghi¹, M. Boroogerdi²

¹ Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

² Division of Rhinology and Facial Plastic Surgery Department of Otorhinolaryngology Head and Neck Surgery, Rhinology Research Society, Tehran, Iran

Abstract: ERS-1153

Objectives

Traumatic arteriovenous fistula in the nose is a rare condition. We present a case of traumatic arteriovenous fistula in the root of the nose in a child. Missed traumatic arteriovenous fistula in the nose may cause considerable deformity if left untreated.

Methods

We present a rare of traumatic arteriovenous fistula in the root of the nose in a 7 years-old child. The patient had a history of accident 3 months before presentation. Physical exam revealed swelling of the radix area with bluish discoloration of the skin. On palpation it was soft and compressible. Flow jet sound was obtained by auscultation of the area.

Results

The child underwent CT scan of the lesion which revealed vascular lesion in the radix of the nose. Digital subtraction angiography made definite diagnosis and provided subsequent embolization of the area.

Conclusion

Due to the projected situation of the nose, nasal trauma is the most common trauma in the face. Traumatic arteriovenous fistula is a rare complication of nasal trauma which should be considered in any persistent swelling of the nose. The cause may be either penetrating or blunt injury in the nose. In our presented case, blunt injury three months before presentation was the cause of lesion. It should be diagnosed in early stage to prevent its deforming effect on the underlying bones specially in children.

Pathophysiology and diagnosis of ciliary dysfunction

M. Armengot¹, J. Milara², M. Mata³, C. Carda³, J. Cortijo⁴

¹ Oto-rhino-laryngology, General and University Hospital. University of Valencia, Valencia, Spain

² Research Foundation, General and University Hospital. University of Valencia, Valencia, Spain

³ Pathology Department, University of Valencia, Valencia, Spain

⁴ Pharmacology Department, University of Valencia, Valencia, Spain

Abstract: ERS-1154

Session: Mucociliary dysfunction from diagnosis to treatment

Session Time: 24-06-14, 10:00

Location: Hall F

Chair person: M. Rautiainen

Background and aims:

Primary cilium is involved in embryonic development, the polarity of many cells, the maintenance of homeostasis, sensory functions (hearing and balance, smell, sight) and cell division. Its dysfunction causes nonmotile ciliopathies. Motile cilia has carrier functions: gives motility to a cell (sperm cells) or materials located on the surface: respiratory tract, Fallopian tubes and cerebrospinal fluid. Its dysfunction causes motile ciliopathies: Primary Ciliary Dyskinesia (PCD).

Methods:

PCD is a congenital and hereditary disease in which cilia are immotile, dysmotile or both. The PCD phenotype is characterized by impaired mucociliary clearance which is responsible for chronic lung, sinus and middle ear disease. 50% of patients have situs inversus (Kartagener's Syndrome). Most of the affected males are infertile and females show low fertility. Recent studies have identified PCD causing mutations in several genes encoding structural and/or functional cilia proteins: outer dynein arms (ODAs), ODA assembly, radial spoke genes, nexin-dynein regulatory complex genes and the central apparatus gene.

Results:

Indirect methods for the diagnosis of the PCD, such as determining the mucociliary transport and / or nasal nitric oxide have low specificity. The analysis of ciliary ultrastructure defects by transmission electron microscopy (TEM) has limitations, because 15-30% of PCD patients show normal ciliary structure.

Discussion:

Documentation ciliary dysfunction via digital high-speed video microscopy (DHSV) has high sensitivity and specificity of PCD and should be considered the gold-standard for diagnosis.

Allergen interactions with epithelium

S. Toppila-Salmi¹, P. Mattila², S. Joenväärä³, J. Renkonen³, R. Renkonen³

¹ Department of Allergy, Helsinki University Central Hospital, Helsinki, Finland

² Finnish Institute of Molecular Medicine, University of Helsinki, Helsinki, Finland

³ Haartman Institute, University of Helsinki, Helsinki, Finland

Abstract: ERS-1155

Session: The epithelial barrier

Session Time: 25-06-14, 09:30

Location: Hall E

Chair person: N. Zhang

The recent genome wide association and gene expression studies have confirmed the importance of immune detection and Th2 cell mediated immune responses in the pathogenesis of allergy, and has raised new interest in the role of epithelial barrier function and tissue-level responses. The sequencing of the human genome has allowed comparison of the DNA sequence among different individuals which will allow an understanding of the basis of phenotype and severity. Gene function may be altered by a change in the sequence of the DNA, in epigenetic programming, or in microRNA or other regulators. With epigenetics or other gene regulator mechanisms, environmental factors may reverse aberrant gene expression profiles associated with different disease states. The timing of exposure to environmental factors, in addition to the genetic susceptibility, plays an important role in the future development of allergic disease. We have previously demonstrated an active barrier function against environmental stress in healthy but not in atopic patients. Now we started Next Generation Sequencing for nasal epithelial cell swabs from healthy and birch pollen allergic subjects. We aim to study whether atopic status, the season, and the immunotherapy to birch pollen, have an effect on the nasal epithelial exome, the DNA methylation profile, expressed transcripts, and mucus microbiome. The scientific value of this study is to understand the dynamic biology and genetics of allergic rhinitis, and apply the knowledge to the development of novel preventive, diagnostic and therapeutic approaches.

Direct central nervous system pharmaceutical delivery using endoscopic skull base mucosal graft reconstruction to bypass the blood brain barrier

B. Bleier¹

¹ Otolaryngology-Head and Neck Surgery, Massachusetts Eye and Ear Infirmary Harvard Medical School, Boston, USA

Abstract: ERS-1156

Session: CRS and Endoscopic surgery

Session Time: 24-06-14, 09:30

Location: Hall D

Chair person: P. Skarzynski

Background:

The blood-brain barrier (BBB) is localized to the endothelium and arachnoid and prevents absorption of neuropharmaceuticals larger than 500Da. Current skull base techniques allow for the ability to reconstruct arachnoid defects with mucosa which is 1000 times more permeable than the BBB. Our aim is to determine whether mucosal grafts can be used deliver high molecular weight therapies to the brain.

Methods:

IACUC approved mouse model in which a 3mm transarachnoid defect was repaired using a septal mucosal graft. After 1 week the graft was exposed to a rhodamine conjugated dextran solution of 20, 40, or 500kDa for 12, 48, or 72 hours (n=3/group). The spatial extent of rhodamine diffusion into the brain was quantified by fluorescent microscopy. Next using a 6-hydroxydopamine mouse model of Parkinson's disease (PD), the efficacy of transmucosal delivery of the therapeutic peptide GDNF (30kDa) was determined by tyrosine hydroxylase (TH) immunopositivity.

Results:

The mucosal graft allows for the significant transport of molecules up to 500kDa directly to the brain and striatum in both a time and molecular weight dependent fashion. Transmucosal GDNF was protective against the development of the PD phenotype with preservation of TH in both the striatum and substantia nigra.

Discussion:

A byproduct of graft reconstruction of the skull base is the creation of a mucosal conduit to the brain which is permeable to large therapeutic molecules. While further clinical studies are required, this data suggests that mucosal grafts may represent a reproducible method to reliably bypass the BBB which would represent an enormous advance in neuropharmacology.

P-glycoprotein in CRS: New Insights into Pathogenesis and Therapeutic Options

B. Bleier¹

¹ Otolaryngology-Head and Neck Surgery, Massachusetts Eye and Ear Infirmary Harvard Medical School, Boston, USA

Abstract: ERS-1157

Session: From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology

Session Time: 24-06-14, 11:27

Location: Hall D

Chair person: R. Schlosser

P-glycoprotein(P-gp) is an efflux pump encoded by the MDR1 gene which functions as part of the innate chemo-immunity pathway through ATP-dependent transport of intracellular substrates. Our group has established that P-gp is overexpressed in nasal polyps and is a marker of eosinophilia and radiographic inflammation in chronic rhinosinusitis(CRS). We then demonstrated that P-gp functions as an immunomodulator in CRS. Using primary human epithelial cell cultures we showed that IL-6 and GM-CSF secretion are highly correlated with P-gp expression. Additionally, inhibition of P-gp resulted in a significant reduction in IL-6, GM-CSF, and TSLP secretion. We then confirmed these findings in staphylococcal enterotoxin B stimulated nasal polyp explants demonstrating that P-gp is also capable of regulating IL-5 secretion. The findings of P-gp overexpression in nasal polyps, coupled with its ability to modulate Th2 associated cytokines, point to a potential role for P-gp in the development or maintenance of Th2 associated CRS. P-gp overexpression has also been associated with steroid resistance in a variety of inflammatory disorders, including Crohn's disease, due to its ability to efflux corticosteroids. We confirmed this finding in nasal polyp explants demonstrating that inhibition of P-gp resulted in both increased intracellular retention and decreased secretion of prednisone. Our data suggests that P-gp overexpression may lead to both increased epithelial derived pro-inflammatory cytokine secretion and steroid resistance in the setting of Th2 associated CRS. Consequently, the use of P-gp inhibitors may provide a novel therapeutic avenue in the management of these patients to both reduce inflammation and enhance steroid potency.

Frontal sinus balloon sinuplasty: pitfalls and limitations

P. Tomazic¹

¹ Medical University of Graz, Dept. of General ORL, H&NS, Graz, Austria

Abstract: ERS-1158

Session: CRS and Endoscopic surgery

Session Time: 24-06-14, 09:30

Location: Hall D

Chair person: P. Skarzynski

Introduction:

Balloon sinuplasty has been a controversial topic in rhinology ever since its introduction. Great enthusiasm has especially been focused on frontal sinus drainage as this is the most challenging paranasal sinus to reach endoscopically.

Methods:

Patients with CRS refractory to medical therapy who had been scheduled for endoscopic sinus surgery between 2009 and 2011 were included in this study. Success rates of patients who eventually underwent frontal sinus balloon sinuplasty ("Balloon-Only" and "Hybrid" procedures) were elaborated. Furthermore complications, possible technical problems and pitfalls are analyzed.

Results:

In total 45 patients were planned for balloon sinuplasty. In a "Balloon-Only" procedure 38 frontal sinuses were planned with a success rate of 42%. In a "Hybrid" procedure 35 frontal sinuses were planned with a success rate of 43%. Success rates did not significantly correlate to CT-scores, osteitic bone changes or previous surgery. Frontal recess configuration was found out to be a limiting factor of success. No intraoperative complications occurred.

Discussion:

Our initial success rate was low and dissatisfying especially for frontal sinus balloon sinuplasty. Frontal recess anatomy was found out to be a major cause for failures and will be elucidated. Despite the fact that no intraoperative complications occurred we encountered a CSF-leak after attempted frontal sinus balloon sinuplasty. Another problem for "Balloon-Only" approach in routine could be lacking histologic work-up.

Smell training, signs of neurodegenerative diseases

T. Hummel¹

¹ Smell & Taste Clinic Dept. of ORL, TU Dresden, Dresden, Germany

Abstract: ERS-1159

Session: Smell disorders, diagnosis and treatment

Session Time: 23-06-14, 09:42

Location: Hall C

Chair person: D. Simmen

Smell and taste disorders can markedly affect the quality of life. In recent years we have become much better in the assessment of the ability to smell and taste. In addition, information is now available to say something about the prognosis of individual patients. With regard to therapy there also seems to be low but steady progress. Of special importance for the treatment is the ability of the olfactory epithelium to regenerate.

Treatment of olfactory disorders- what have we achieved so far?

T. Hummel¹

¹ Smell & Taste Clinic Dept. of ORL, TU Dresden, Dresden, Germany

Session: Smell & Taste

Session Time: 25-06-14, 10:00

Location: Hall K

Chair person: S. Lacroix

Olfactory function is known to be modulated by repeated exposition to odors. In the past few years numerous studies have been performed on the question whether patients with olfactory loss would benefit from “training” with odors in terms of an improvement of their general olfactory function. Typical designs were that patients were asked to train over a period of 12 weeks, exposing themselves twice daily to 4 intense odors. Olfactory testing before and after training revealed that patients experienced a general increase in their olfactory whereas olfactory function was more or less unchanged in patients who did not perform olfactory training. Such studies have also shown that “training” can be helpful in older people or patients with neurodegenerative disorders. A multicentric study also indicated that training with strong odors is better than training with weak odors. Overall, these results indicate that the structured, short-term exposition to selected odors seems to increase olfactory sensitivity.

Quality of life among chronic rhinosinusitis patients in Belgium (translation, cultural adaptation and validation of the SNOT-22)

A.L. Poirrier¹, C. De Dorlodot², M. Horoi³, C. Cox⁴, P. Costa¹, P.P. Lefebvre¹, P. Eloy²

¹ Otolaryngology, CHU Sart Tilman, Liege, Belgium

² Otolaryngology, CHU Dinant-Godinne, Yvoir, Belgium

³ Otolaryngology, CHU Saint-Pierre, Brussels, Belgium

⁴ Otolaryngology, Antwerp University Hospital, Antwerp, Belgium

Abstract: ERS-1161

Session: CRS and Endoscopic surgery

Session Time: 24-06-14, 10:20

Location: Hall D

Chair person: P. Skarzynski

Background and aims:

ENT surgeons are increasingly requested to demonstrate their effectiveness. The 22-item Sino-Nasal Outcome Test (SNOT-22) is a fully validated and easy-to-use outcome measure. Our primary goal was to translate and validate the SNOT-22 in a cohort of 422 French-speaking subjects. We used the same standardized method to translate the questionnaire into Dutch and German.

Methods:

Our version was obtained by forward and backward translations by 6 independent interpreters. Five experienced rhinologists compared the translations to each other and a group of 12 patients selected the most appropriate translation. For validation, a prospective study on 376 patients and 46 healthy volunteers was conducted in 3 University-affiliated Hospitals. Reproducibility, known group differences, responsiveness to treatment and validity were analysed. Scores were compared to visual analogue scale, nasal obstruction symptoms evaluation (NOSE) score and Lund-Mackay score.

Results:

The test-retest reliability coefficient was 0.78, indicating a good stability over time. The internal consistency was high. Our questionnaire was able to discriminate rhinological patients from control subjects ($p < 0.0001$) and improved significantly after surgery ($p < 0.0001$), indicating a good responsiveness. There was a relative correlation with visual analogue and NOSE scales, but no correlation with Lund-Mackay score.

Discussion:

The SNOT-22 is reliable, valid and meaningful for a French-speaking population, could help the clinician and be incorporated into international trials. Validation of Dutch and German versions is ongoing.

New treatment options in vasculitis

M. Caversaccio¹

¹ ENT Head and Neck Surgery, University Hospital, Bern, Switzerland

Abstract: ERS-1162

Session: Wegener and other vasculitis -when to suspect in CRS

Session Time: 24-06-14, 10:15

Location: Hall I

Chair person: A. Danielsen

Background:

A substantial proportions of vasculitis patients present with disease of the upper airways, i.e., sinonasal and other ear/nose/throat symptoms. The treatment of the disease is challenging. Cyclophosphamide, azathioprine or methotrexate combined with corticosteroid or sulfamide are current treatment options. Alternative options could be plasmapheresis or mycophenolat-mofetil. In the last years biologicals like cytokin-inhibitors, B-cell depletion or inhibitor of T-cell co-stimulation showed first promising results.

Methods and results:

We present our results with infliximab, rituximab and abatacept.

Conclusion:

Biologicals could be in the future in some cases of vasculitis the first or second choice of treatment.

Quality of life and control of allergic rhinitis in patients from regions beyond western Europe and the United States

A. Lopatin¹

¹ Medical Center, Business Administration of the President of Russian Federation, Moscow, Russia

Session: Allergic rhinitis

Session Time: 25-06-14, 11:15

Location: Hall B

Chair person: P. Hellings

There is comparatively little information on the diversity in prevalence, associated triggers/factors as well as on health-related quality of life (HRQoL) in subjects with allergic rhinitis (AR) in countries beyond Western Europe and North America.

We tried to review and reassess the information in on the prevalence and HRQoL in AR patients from diverse regions of the world, represented by different countries (Argentina, Australia, Brazil, Russia, Singapore, South Africa and Turkey). In view of the absence of a standardized definition for "AR control", we also tried to determine whether a working definition of AR can be inferred from validated tests or other instruments documented to date. Despite comparatively low number of studies, this review demonstrated that overall the symptoms of AR impair the HRQoL of patients in these regions by adversely impacting sleep, daily activities, physical and mental status and social functioning, similar to that demonstrated in much larger numbers of studies of AR patients in Europe and the US. "Overall" control of the disease should encompass reduction of nasal and ocular symptoms, as well as improvements in HRQoL, comorbid conditions, and cognition. Although some instruments are currently available for measuring control of AR, none is capable of assessing all these aspects, emphasizing the need to develop appropriate new instruments.

Endoscopic resection of extended juvenile angiofibromas

M. Bernal-Sprekelsen¹, C. Langdon¹, P. Herman², B. Verillaud², R. Carrau³, D. Prevedello³, P. Nicolai⁴, A. Schreiber⁴, P. Battaglia⁴, P. Castelnovo⁵

¹ ORL-HNS, Hospital Clinic, Barcelona, Spain

² ORL-HNS, H.Lariboisiere, Paris, France

³ ORL-HNS, Wexner Medical Center The Ohio State University, Ohio Columbus, USA

⁴ ORL-HNS, Univ.Brescia, Brescia, Italy

⁵ ORL-HNS, Univ. Insubria, Varese, Italy

Abstract: ERS-1164

Session: Juvenile Angiofibroma

Session Time: 25-06-14, 10:15

Location: Hall B

Chair person: O. Ogretmenoglu

Background and aims:

Exclusively endoscopic resection of extended juvenile angiofibromas is still controversial.

Outcome study after endoscopic resection of advanced types of JNA.

Methods:

Retrospective study of Fisch-Andrews IIIA and IIIB staged cases from 5 tertiary referral ORL-HNS Depts. operated on endoscopically. JNAs were resected in a multi-bloc fashion. More recently, radiofrequency has been introduced for tumor fragmentation. All patients underwent prior embolization. Residual JNA was defined as NMR contrast-enhancing tissue with neither volume increase nor symptoms during the follow-up; JNA recurrence was defined as volume-increasing contrast-enhanced or displaying symptoms and were subsequent re-operated endoscopically.

Results:

73 cases staged IIIA (71.9%) and IIIB (28.1%) were included. Mean follow-up for 54/73 was 37.9 months (range 2-196 months; SD 39.6). Mean age was 16.4 years. Mean hospital stay was 6.1 days (range 2-16; SD 3.6) for 47 cases. Mean blood loss in 47 patients was 1279.7 mL (median was 600ml; range 100-11000ml; SD 2110.1). Patients with residual disease (n=18 or 24.6%) are stable as assessed with sequential MRIs. At last follow-up, all patients were alive and those with residual tissue displayed neither symptoms nor imaging signs of regrowth.

Conclusions:

The feasibility of endoscopic surgery of JNA extended beyond the nasal fossa and the paranasal sinuses could be shown. In experienced hands, endoscopic removal of even extended JNA might become the standard procedure, avoiding external approaches, most of which have a high morbidity.

Excessive fibrin deposition in patents with CRSwNP

T. Takabayashi¹, R. Schleimer², S. Fujieda¹

¹ The Division of Otorhinolaryngology Head and Neck Surgery, University of Fukui, Fukui, Japan

² The Division of Allergy and Immunology, Northwestern University Feinberg School of Medicine, Chicago, USA

Abstract: ERS-1165

Session: Immunotherapy update 2014

Session Time: 26-06-14, 09:30

Location: Hall F

Chair person: J. Vokurka

Background & Aims:

Nasal polyps (NPs) are characterized by intense edema or pseudocyst formation with a high content of plasma proteins, mainly albumin. However, the mechanisms underlying NP retention of plasma proteins in submucosa remain unclear. We hypothesized that formation of fibrin mesh retains plasma proteins in NP. We assessed the fibrin deposition and expression of the coagulation factors in patients with chronic rhinosinusitis (CRS).

Methods:

Sinonasal tissues were collected from patients with CRS and control subjects. We assessed fibrin deposition by means of immunofluorescence. We assayed mRNA for factor XIII-A (FXIII-A) by using real time PCR and measured FXIII-A protein by means of ELISA, immunohistochemistry, and immunofluorescence.

Results:

Immunofluorescence data showed profound fibrin deposition in NPs compared with UT from CRS and control subjects. FXIII-A mRNA levels were significantly increased in NP from patients with CRS with nasal polyps (CRSwNP; $P < .001$) compared with uncinata tissue from patients with CRS or control subjects. Similarly, FXIII-A protein levels were increased in NP. Immunofluorescence analysis revealed FXIII-A expression in inflammatory cells, and FXIII-A+ cell numbers were significantly increased in NP. Most FXIII-A staining was observed within CD68+/CD163+ M2 macrophages in NP. Levels of FXIII-A correlated with markers of M2 macrophages, suggesting that M2 macrophages are major FXIII-A producing cells in NP.

Conclusions:

Overproduction of FXIII-A by M2 macrophages might contribute to the excessive fibrin deposition in the submucosa of NP, which might contribute to the tissue remodeling and pathogenesis of CRSwNP.

Management of CSF leaks

T. Schmidt¹

¹ Departamento de especialidades, Universidad de Concepción, Concepción, Chile

Abstract: ERS-1166

Session: Defects of the Anterior Skull Base, filling the gap

Session Time: 25-06-14, 10:18

Location: Hall I

Chair person: C. Georgalas

Cerebrospinal Fluid leak (CSFleak) is a serious and sometimes fatal condition because there is a significant risk of meningitis o brain abscess. The aim of the presentation is to show how we identify CSF, localize the site(s) of the leak(s), and present our diagnostic algorithm as well as our closure techniques. To identify CSF we use Beta 2 Transferrin because of its high sensitivity and specificity (98%). The limitation for the use is costs and the amount of liquid required. If beta 2 transferrin and imaging techniques could not rule out the presence of a CSF leak we perform a Fluresceine test, injecting 1ml of 5% sodium fluresceine intrathecally. To localize the lesion we use HRCT scans and in specific cases MRI.

Our diagnostic algorithm is as follows:

*: High resolution head and sinus CT.

**: When confronted with masses of the anterior skull base.

To close the defect we use the endoscopic approach excepting the case were open neurosurgical surgeries are required as intracranial lesions as well as repeated failure of endoscopic approaches, lateral lesions in the frontal sinus and some tumor patients. For small lesions we use free flaps and for bigger than 1cm lesions we recommend pedicled mucoperiostal flaps (Hadad) in a multi-layer manner. High risk patients for flap failure are treated with a first layer of fat and fascia covered with leukocyte and platelet rich fibrin membranes (L-PRF). A mucoperiostal pedicled flap is put in place and the edges are covered by the L-PRF membranes.

How to treat facial pain

A.M. Agius¹, N.S. Jones², R. Muscat³

¹ Otolaryngology, University of Malta, Msida, Malta

² Otolaryngology, University of Nottingham UK, Nottingham, United Kingdom

³ Physiology and Biochemistry, University of Malta, Msida, Malta

Abstract: ERS-1317

Session: Facial pain and Headache

Session Time: 26-06-14, 10:00

Location: Hall I

Chair person: M. Barnes

A common complaint in ENT clinics, chronic facial pain is frequently misdiagnosed as sinusitis and tends to recur following technically successful sinus surgery. Long-term patient follow-up and clinical trials have enabled otolaryngologists to pinpoint a neurological cause. As a result, current concepts of treatment are undergoing a complete revision in our medical and surgical approach to facial pain.

The use of low-dose amitriptyline was initially proposed by Jones who recorded its successful use in the clinical setting. This has been confirmed by a recent randomised controlled trial. Pindolol, a beta adrenoceptor blocker with partial agonistic properties at the 5-HT_{1A} receptor in the central nervous system, has been shown to significantly reduce analgesic consumption in such patients by reducing pain intensity. This finding supports the concept of descending serotonergic projections in the modulation of nociception. The site of action of these two agents, the modalities of treatment and long-term prognosis are discussed.

Effects of surgery on lower airways

K. Aanaes¹, H.K. Johansen², M. Skov³, F. Buchvald³, T. Hjuler¹, T. Pressler⁴, N. Høiby², K.G. Nielsen³, C. Buchwald¹

¹ Department of Otolaryngology Head and Neck Surgery, Rigshospitalet, Copenhagen, Denmark

² Department of Clinical Microbiology, Rigshospitalet, Copenhagen, Denmark

³ Department of Paediatrics and Adolescent Medicine, Rigshospitalet, Copenhagen, Denmark

⁴ Copenhagen CF centre, Rigshospitalet, Copenhagen, Denmark

Abstract: ERS-1168

Session: Cystic Fibrosis

Session Time: 23-06-14, 11:15

Location: Hall D

Chair person: V. Ramakrishnan

In patients with cystic fibrosis (CF), the paranasal sinuses have a high microbial diversity and are often colonised by CF pathogens (e.g. *Pseudomonas aeruginosa*). Being a part of the united airways, it is evident that the sinuses can be a bacterial reservoir for initiating or maintaining pulmonary infections.

By addressing all sinuses with sinus surgery and followed by two weeks' intravenous antibiotics, 6 months' antibiotic nasal irrigations, and 12 months' topical steroids, we have shown that the CF pathogens can be eradicated from the sinuses. Furthermore, in a prospective, intervention cohort study, this treatment strategy significantly reduced the frequency of pulmonary samples positive for CF pathogens the first postoperative year. These results are in concordance with others focusing on eradicating sinus bacteria. Moreover, several studies substantiate that sinus surgery relieves symptoms of chronic rhinosinusitis in CF patients and improves quality of life.

The positive as well as the negative long-term results of the aggressive CF sinus treatment are unknown. The future challenges are to distinguish the CF patients who will benefit from a more aggressive sinus treatment and thereby prevent chronic sinus infections, and find these patients in their early stage of infection. Furthermore, many treatment modalities have been purposed, but we yet have to invent and determine the most effective way of bactericidal treatment.

Diagnostic and therapeutic consequences of mucosal lymphoid aggregates and local IgE in chronic rhinosinusitis with nasal polyps

L. Calus¹, T. Van Zele¹, P. Gevaert¹

¹ Upper airway research laboratory, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-1169

Session: Junior Member Symposium: Airway mucosa

Location: Hall I

Time: 23-06-14, 09:30

Chair person: T. van Zele

Presenting author: L. Calus

Chronic rhinosinusitis with nasal polyposis (CRSwNP) is a prevalent and difficult to treat disease. The goal was to investigate the importance of the local inflammation in the diagnosis, prognosis and treatment of CRSwNP.

The first major aim was to investigate the local inflammation in CRSwNP that drives the production of nasal IgE. T follicular helper (Tfh) cells, a specialized T helper cell subset present in lymphoid aggregates, and the concentration of IL-21, the most important effector cytokine of Tfh cells, are significantly increased in CRSwNP compared to control tissue. This close relationship of Tfh and B cells in lymphoid aggregates is believed to drive polyclonal B cell activation and subsequent local polyclonal IgE production. We also found that CRSwNP patients had significantly increased FLCs concentrations in mucosal tissue and nasal secretion compared to controls and chronic rhinosinusitis without nasal polyps. These data suggest that FLCs may provide an additional non-IgE mediated pathway to augment or replace IgE mediated mast cell degranulation in CRSwNP.

The treatment of CRSwNP remains a challenge for ENT-specialists. Therefore the second major aim was to explore the clinical role of IgE and of local inflammation in surgery for CRSwNP. A 12-year prospective cohort study after endoscopic sinus surgery showed that surgery might significantly alleviate nasal symptoms. However, the study identified a considerable group of patients that developed CRSwNP recurrence (78.9%), of which 36.8% underwent revision surgery. The presence of tissue IL-5 and comorbid allergy were identified as risk factors for a poor outcome and the need for revision surgery.

In conclusion, we found that the local inflammation and local IgE in CRSwNP are relevant in disease outcome. Therefore, diversification of CRSwNP based on clinical (like allergy and asthma) and local inflammatory characteristics (like local IgE and IL-5) should lead to the development of individual strategies to prevent, diagnose and treat CRSwNP.

Visual outcomes after endoscopic pituitary surgery

T. Schmidt¹, J. Pinto²

¹ Departamento de especialidades, Universidad de Concepción, Concepción, Chile

² Neurocirugía, Hospital Regional de Concepción, Concepción, Chile

Abstract: ERS-1170

Session: Endoscopic Pituitary Surgery

Session Time: 26-06-14, 10:15

Location: Hall K

Chair person: A. Rokade

One of the main purposes of pituitary surgery is to decompress the optic chiasm to improve the visual field.

The aim of the lecture is to present the results of visual outcomes after endoscopic surgery and the factors which influence good outcomes.

All our patients underwent visual field examination evaluated by a neuroophthalmologist prior and after surgery beside neurosurgical, endocrinological and ENT evaluation.

The endoscopic transnasal approach to the pituitary gland is performed in our center by an ENT and NC team. Both stay in the operating room until the whole surgery is finished. Utilizing a 4 hand technique a posterior septectomy, wide sphenoidal opening and resection of the floor of the sella exposing both cavernous sinuses and the superior and inferior coronary sinuses is performed. The whole tumor is resected and the sella is reviewed endoscopically for any residual tumor. Finally it is filled with surgical and covered with a mucoperiosteal flap in case that a CFS fistula occurred.

In our experience 97,3% of these patients have visual field defects before surgery. 71 % of them improve after surgery. The best results are seen in patients with smaller tumors, non functional macroadenomas, and those with no residual tumors. Worse results are obtained in patients who underwent secondary surgery, those who have suprasellar extension, residual tumors and had radiation therapy prior to surgery.

Adequate endoscopic surgery for pituitary tumors is effective for visual field improvement.

Extended approaches to the frontal sinus

P.J. Wormald¹

¹ Otolaryngology Head and Neck Surgery, University of Adelaide, Adelaide, Australia

Abstract: ERS-1171

Session: Frontal Sinus

Session Time: 26-06-14, 09:00

Location: Hall A

Chair person: W. Fokkens

As ESS has become widely adopted so the understanding of the complex and varied anatomy of the sinuses has improved. However, the frontal recess and frontal sinus remain an enigma. The anatomy is complex, varied and can be confusing. A common reason for ESS failure is inadequate removal of cells obstructing the outflow of the frontal sinus. This is due to the complexity of the anatomy of the frontal recess.. This presentation is aimed at giving the surgeon guidelines for understanding some of the difficult anatomical configurations and provides a step by step approach to managing these surgically. The techniques starts with dealing with Type 4 cells within the frontal sinus and procedes to illustrate the steps necessary to perform the Draf 3 approach with consistent success. Surgical techniques used are presented anatomical illustration followed by video clips of the procedures. Finally the outcomes using this technique are presented.

Which patients require a blood transfusion?

M. Soyka¹

¹ ENT Department, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-1172

Session: Severe Epistaxis

Session Time: 24-06-14, 11:15

Location: Hall K

Chair person: S. Reinartz

Epistaxis may be misjudged as an uncomplicated nuisance although severe and challenging cases occur frequently, sometimes leading to life threatening situations. The decision on when to do routine blood testing in order to identify those patients at risk is difficult and the need to obtain a blood count seems underestimated. Furthermore, it is challenging to determine when to administer blood transfusions. Giving blood to a patient not only is associated with potential infectious risks but also with an increased morbidity and mortality.

This lecture aims at providing an evidence based step-by-step approach in the diagnostics and decision taking whether and when a blood transfusion is required in severe epistaxis. Generally, blood administrations should be restricted to an absolute minimum and transfusion triggers need to take into account premorbid conditions, especially cardiac diseases. Low haemoglobin levels can be tolerated if a patient is not otherwise ill and asymptomatic. Different risk factors could be identified in a recent study. The acronym THREAT (Trauma, Hematologic disorder, and REAr origin of bleeding ? Transfusion) summarises these risk factors and may help, especially young colleagues, in identifying patients at risk for blood transfusions in epistaxis.

Vidian neurectomy in the treatment of NAR

P.J. Wormald¹

¹ Otolaryngology Head and Neck Surgery, University of Adelaide, Adelaide, Australia

Abstract: ERS-1173

Session: Treatment options in NAR

Session Time: 25-06-14, 12:00

Location: Hall D

Chair person: H. Saleh

Vidian neurectomy was first popularized in the 1960s by Golding-Wood and for a period was widely used. However, it was found that the effectivity of the procedure was limited with a significant number of patients having a return of symptoms within 2 years. With the advent of ESS and a significant improvement in the understanding of the surgical anatomy of the pterygopalatine fossa so the indications for this procedure have been reviewed. This presentation looks at the current indications for Vidian neurectomy and the results (long term) achieved with the surgical technique presented. The technique is presented with the aid of anatomical dissections and video clips. The results are discussed in the context of its role in current rhinological practice as well as its role in future research in this field.

Anatomical variance in CT and MRI

N. Freling¹

¹ Radiology, AMC, Amsterdam, Netherlands

Abstract: ERS-1174

Session: Comprehensive imaging of the nasal cavity and paranasal sinus

Session Time: 24-06-14, 11:30

Location: Hall C

Chair person: A. Swift

As many as 52 variants on normal sinonasal anatomy have been listed since the introduction of CT in the seventies and eighties of the previous century. Many an individual does harbour more than one variant. Most of the variants are considered normal at endoscopy. Why, then, are we concerned about this natural variance?

Some of these variants may contribute to serious complications if not appropriately analyzed before endoscopic surgery, endangering vital structures like optic nerve and internal carotid artery, causing iatrogenic trauma to the orbit and skull base. Asymmetry of the fovea ethmoidalis should be analysed carefully in coronal and sagittal planes to assess its steepness and its height. Onodi and other variants may be difficult to recognize in full blown polyposis nasi or CRS.

Hypo- or aplasia of the sinuses may change your endoscopic surgical strategy.

Multislice CT(MSCT) or Cone Beam CT(CBCT) is the imaging technique of first choice for (preoperative) evaluation of the anatomy of the nose and paranasal sinuses because of its high spatial resolution, its multiplanar reconstructions, the short examination time and the reduction in radiation dose applying low dose protocols as a standard. CT serves as a road map for surgery.

In this presentation the optimal CT protocol will be shortly addressed and the surgically relevant and "dangerous" variants will be shown and discussed: Onodi cells, bony dehiscence of the orbit, asymmetry of the skull base, how to identify the anterior ethmoidal artery, how to differentiate hypoplasia from a silent sinus regarding maxillary sinuses.

Are there still indications for external approaches of the sinus?

R. Weber¹

¹ ENT, Division of paranasalsinus and skullbase surgery traumatology, Karlsruhe, Germany

Session: External approaches to the sinus

Session Time: 25-06-14, 11:15

Location: Hall I

Chair person: P. Maragkoudakis

Background and aims:

To define current indications for external frontal sinus surgery

Methods:

Comprehensive literature review and personal experience

Results:

Advanced endonasal endoscopic frontal sinus surgery (e.g. Draf III) and highly developed surgical tools (e.g. powered instrumentation, navigation) replaced external approaches nearly completely. This applies to acute and chronic rhinosinusitis, and mucoceles. Osteomas and inverted papillomas too, are often completely removed endonasally. There are only some indications for external approaches, mainly osteoplastic, in tumor surgery and traumatology and very rare indications in inflammatory frontal sinus disease. Main reasons are: the pathologic process could not be reached or removed adequately, a permanent drainage could not be realized, an external approach may be much faster than an endonasal one in critical patients. Basic techniques are osteoplastic approach with preservation of the frontal sinus drainage pathway, obliteration, cranialisation, reconstruction of the anterior wall. Nowadays, obliteration of the frontal sinus declined to a very rare operation. Recent developments describe minimal invasive external approaches in traumatology to avoid a coronal incision. Controversial, several authors do an external minitrephine in addition to an endonasal approach.

Conclusions:

Primary goal is to address the underlying disease properly. External frontal sinus surgery is indicated decreasingly, but sometimes necessary. In these cases an osteoplastic approach

Immunotherapy in an ENT clinic

O. Pfaar¹

¹ Dept. of Otorhinolaryngology HNS University Hospital Mannheim, Center for Rhinology and Allergology, Wiesbaden, Germany

Abstract: ERS-1174

Session: Immunotherapy update 2014

Session Time: 26-06-14, 09:54

Location: Hall D

Chair person: E. Prokopakis

ENT-specialists are frequently consulted by patients suffering from allergic rhinoconjunctivitis (ARC). As 'causal', immunomodifying treatment option allergen immunotherapy (AIT) is of special relevance in the treatment of these patients [1] [2]. AIT is in clinical use for more than 100 years now ([3], reviewed in [4]).

The clinical efficacy for both subcutaneous (SCIT) and sublingual (SLIT) AIT has been demonstrated in multiple DBPC-clinical trials which were the basis for many reviews and meta-analyses in this field e.g., from the Cochrane-library ([5] [6] [7]). Moreover, several international recommendations and Position Papers for practical immunotherapy have been published by different global societies such as the AAAAI [8] or the EAACI [9].

Both knowledge about the principles of AIT as well as a solid training in an experienced setting are essential for a successful and safe course of this treatment. This presentation will overview the "seven golden rules of practical AIT" including e.g. indications and contraindications of AIT as well as it will provide practical guidance in performing AIT based on personal experience for more than 15 years in an ENT-based allergy unit. Moreover, the basic knowledge about sufficient emergency treatment and –training which is mandatory for the start-up of AIT in clinical routine will also be highlighted.

References

1. Bousquet J, Lockey R, Malling HJ (1998) Allergen immunotherapy: therapeutic vaccines for allergic diseases. A WHO position paper. *J Allergy Clin Immunol* 102: 558-562.
2. Bousquet J, Khaltaev N, Cruz AA, Denburg J, Fokkens WJ, et al. (2008) Allergic Rhinitis and its Impact on Asthma (ARIA) 2008 update (in collaboration with the World Health Organization, GA(2)LEN and AllerGen). *Allergy* 63 Suppl 86: 8-160.
3. Noon L, Cantar B (1911) Prophylactic Inoculation against Hay Fever. *Lancet*: 1572-1573.
4. Durham SR, Leung DY (2011) One hundred years of allergen immunotherapy: time to ring the changes. *J Allergy Clin Immunol* 127: 3-7.
5. Calderon MA, Alves B, Jacobson M, Hurwitz B, Sheikh A, et al. (2007) Allergen injection immunotherapy for seasonal allergic rhinitis. *Cochrane Database Syst Rev*: CD001936.
6. Radulovic S, Calderon MA, Wilson D, Durham S (2010) Sublingual immunotherapy for allergic rhinitis. *Cochrane Database Syst Rev* 12: CD002893.
7. Dretzke J, Meadows A, Novielli N, Huissoon A, Fry-Smith A, et al. (2013) Subcutaneous and sublingual immunotherapy for seasonal allergic rhinitis: a systematic review and indirect comparison. *J Allergy Clin Immunol* 131: 1361-1366.
8. Cox L, Nelson H, Lockey R, Calabria C, Chacko T, et al. (2011) Allergen immunotherapy: a practice parameter third update. *J Allergy Clin Immunol* 127: S1-S55.
9. Alvarez-Cuesta E, Bousquet J, Canonica GW, Durham SR, Malling HJ, et al. (2006) Standards for practical allergen-specific immunotherapy. *Allergy* 61 Suppl 82: 1-20.

Medical options in difficult to treat patients with CRS

H.J. Dhong¹

¹ Department of Otorhinolaryngology - Head and Neck Surgery, Samsung Medical Center, Seoul, Korea

Abstract: ERS-1177

Session: Management of the patient who has failed FESS

Session Time: 26-06-14, 10:00

Location: Hall A

Chair person: P.J. Wormald

It is widely accepted that CRS is an inflammatory disease with diverse phenotypes. This diversity comes from the different severity and persistency of mucosal inflammation. To treat CRS, it is necessary to decrease and break any etiologies which induce persistent mucosal inflammation such as infection, nonspecific environmental stimulation allergy, asthma. Persistent inflammation is considered to be associated with poor responses to surgery. However, it is difficult to identify or control factors for persistent inflammation. There are several medical options to decrease persistent inflammation. Oral or topical steroid is widely recommended for controlling the inflammatory cascade. The mechanism of action is to modulate the transcription of genes and also influence the translational and post-translational mechanisms. Whenever sinus is exacerbated with bacterial infection, antibiotics should be applied based on the culture sensitivity result. Antifungal therapy is not recommended in general. In patients with co-existing allergic rhinitis, all efforts to control allergic reaction would be helpful. Leukotriene receptor antagonist is recommended in selected patients. Saline irrigation is universally recommended for all patients. Theoretically saline irrigation improves mucociliary flow, hydrates the mucosa and removes toxic substances from the sinuses. The optimal concentration has not been determined, but normal saline is more physiologic. It is as important as treatment itself that patients should be informed of the pathophysiology of CRS, and should understand that certain types of CRS are diseases which need lifelong medical care and environmental control.

Role of coagulation factors in tissue remodeling of chronic rhinosinusitis

T. Shimizu¹, S. Shimizu¹

¹ Otorhinolaryngology, Shiga University of Medical Science, Otsu, Japan

Abstract: ERS-1178

Session: Basic research in CRS

Session Time: 24-06-14, 10:00

Location: Hall C

Chair person: K. van Drunen

Background and aims:

To elucidate the role of coagulation factors in tissue remodeling of chronic rhinosinusitis (CRS), we measured the concentration of thrombin in nasal secretion from patients with CRS, and determined the tissue localization of its receptor (PAR-1) in nasal polyps. The effects of thrombin and PAR-1 agonist peptide on secretion of MUC5ACmucin and profibrotic cytokines (PDGF and VEGF) were examined using the cultured human nasal epithelial cells.

Methods:

Thrombin concentration of nasal secretion from CRS patients was measured spectrophotometrically using the synthetic substrate S-2238. Concentrations of MUC5AC mucin, PDGF and VEGF in culture medium were measured using cultured epithelial cells. The effect of intranasal instillation of thrombin in rat nasal epithelium was also examined.

Results:

Significant concentrations of thrombin and thrombin-antithrombin complex were found in nasal secretion, and those were significantly increased in CRS patients with asthma. Immunohistochemical study revealed that thrombin receptor (PAR-1) was localized in nasal epithelial cells. Thrombin and PAR-1 agonist peptide significantly stimulated the secretion of MUC5AC mucin, PDGF and VEGF from cultured human airway epithelial cells. Intranasal instillation with thrombin induced hypertrophic and metaplastic changes of goblet cells in rat nasal epithelium.

Conclusions:

These results indicate that activation of coagulation system occurs in nasal mucosa of CRS, and thrombin may play an important role in tissue remodeling such as goblet cell metaplasia and formation of nasal polyps, by stimulating the secretion of MUC5AC mucin, PDGF and VEGF from epithelial cells via its receptor PAR-1. New therapeutic potentials with anticoagulant drugs will be shown.

Presentation European position consensus document on DISE

M. Carrasco¹, A. De Vito², V. Agnoletti³, M. Bosi⁴, A. Braghiroli⁵, A. Campanini², N. de Vries⁶, E. Hamans⁷, W. Hohenhorst⁸, B.T. Kotecha⁹, J. Maurer¹⁰, F. Montevecchi², O. Piccin¹¹, G. Sorrenti¹¹, O.M. Vanderveken⁷, C. Vicini²

¹ ENT, Hospital Universitario Dr. Peset, Valencia, Spain

² ENT, Morgagni-Pierantoni Hospital, Forlì, Italy

³ Anaesthesia and Intensive Care Unit Emergency Department, Morgagni-Pierantoni Hospital, Forlì, Italy

⁴ Thoracic Diseases Department, Morgagni-Pierantoni Hospital, Forlì, Italy

⁵ Department of Pulmonary Rehabilitation, Scientific Institute of Veruno, Veruno, Italy

⁶ ENT, Sint Lucas Andreas Hospital, Amsterdam, Netherlands

⁷ ENT, Antwerp University Hospital, Antwerp, Belgium

⁸ ENT, Alfried Krupp Hospital, Essen, Germany

⁹ ENT, The Royal National Throat Nose and Ear Hospital, London, United Kingdom

¹⁰ ENT, University Hospital Mannheim, Mannheim, Germany

¹¹ ENT, S. Orsola-Malpighi University Hospital, Bologna, Italy

Abstract: ERS-1179

Session: Drug induced sleep endoscopy (DISE)

Session Time: 25-06-14, 11:15

Location: Hall C

Chair person: E. Hamans

There is comparatively little information on the diversity in prevalence, associated triggers/factors as well as on health-related quality of life (HRQoL) in subjects with allergic rhinitis (AR) in countries beyond Western Europe and North America.

We tried to review and reassess the information in on the prevalence and HRQoL in AR patients from diverse regions of the world, represented by different countries (Argentina, Australia, Brazil, Russia, Singapore, South Africa and Turkey). In view of the absence of a standardized definition for "AR control", we also tried to determine whether a working definition of AR can be inferred from validated tests or other instruments documented to date. Despite comparatively low number of studies, this review demonstrated that overall the symptoms of AR impair the HRQoL of patients in these regions by adversely impacting sleep, daily activities, physical and mental status and social functioning, similar to that demonstrated in much larger numbers of studies of AR patients in Europe and the US. "Overall" control of the disease should encompass reduction of nasal and ocular symptoms, as well as improvements in HRQoL, comorbid conditions, and cognition. Although some instruments are currently available for measuring control of AR, none is capable of assessing all these aspects, emphasizing the need to develop appropriate new instruments.

Medial maxillectomy in the treatment of CRS

I. Konstantinidis¹

¹ 2nd ORL Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract: ERS-1180

Session: Management of the patient who has failed FESS

Session Time: 26-06-14, 10:15

Location: Hall A

Chair person: P.J. Wormald

Background and aims:

Despite standard endoscopic middle meatal antrostomy and maximal medical treatment, a significant percentage of patients suffer from persistent maxillary sinusitis. This presentation aims to summarize all indications for an endoscopic medial maxillectomy in patients with recalcitrant chronic maxillary sinusitis providing information on the related surgical techniques.

Methods:

A pubmed search was performed for papers published on medial maxillectomy and chronic maxillary sinusitis of the last decade. Indications and their related pathophysiology were organized and are presented along with personal data as follows: Gravity dependent sinuses, postoperative ostium obstruction, need for access in certain areas and medial wall destruction.

Results:

Medial maxillectomy uses gravity for better sinus drainage, and offers better saline irrigation, local application of medications and follows up inspection. An endoscopic medial maxillectomy and its modified forms offer a wider surgical field and access to all "difficult" areas of the maxillary sinus.

Conclusion:

Patients with cystic fibrosis, AFRS, extensive mucocoeles, odontogenic foreign bodies, previous limited endoscopic sinus surgery or extended open surgery and recurrent disease may require an endoscopic medial maxillectomy. Modified forms of the procedure can preserve the anterior buttress, nasolacrimal duct and inferior turbinate if possible.

Synergy between TLR-2 and TLR-3 signalling in primary human nasal epithelial cells

K. Golebski¹, J. van Tongeren¹, D. van Egmond¹, E. de Groot¹, W. Fokkens¹, C. van Drunen¹

¹ Otorhinolaryngology, Academic Medical Center University of Amsterdam, Amsterdam, Netherlands

Abstract: ERS-1181

Session: Junior Member Symposium: Airway mucosa

Location: Hall I

Time: 23-06-14, 10:10

Chair person: T. van Zele

Presenting author: K. Golebski

Introduction:

Although we have a detailed understanding of how single microbial derived triggers activate specialized TLRs on airway epithelial cells, we know little of how these receptors react in a more complex environment. As in everyday life nasal epithelial cells are exposed to multiple TLR agonists, we wanted to explore whether exposure to one trigger could affect the responsiveness to another TLR trigger.

Methods:

Primary nasal epithelium from healthy individuals and the bronchial epithelium cell line NCI-H292 were exposed to different TLR agonists and the effect on the expression of different TLRs was determined using the quantitative PCR. Moreover, we evaluated the effect of TLR-3 stimulation on TLR-2 functionally by ELISA.

Results:

Stimulation of airway epithelium with a specific TLR agonist affects gene expression of another TLRs. In primary nasal epithelium, poly(I:C) challenge results in an up-regulation of the TLR1, TLR2, and TLR3 genes and reduction of expression of TLR5. Furthermore, we show that poly(I:C) induced activation of TLR-2 contributes to stronger cell responses to the TLR-2 agonist PGN and that regulation of these synergistic responses may take place at the mRNA level of IL6 and IL8. Although the effect of TLR-3 stimulation on TLR-2 functionality and most of the effects on the expression of other TLRs could be replicated in our NCI-H292 model, poly(I:C) failed to up-regulate TLR1 and showed an additional up-regulation of TLR4.

Conclusion:

Our data suggests that to better understand TLR mediated innate responses we need to consider the impact of the presence of multiple triggers.

Late onset asthma, the relationship with the upper airways and the risks of declining lung function

A. Ten Brinke¹

¹ Pulmonology, Medical Center Leeuwarden, Leeuwarden, Netherlands

Abstract: ERS-1182

Session: European Respiratory Society - The relation between upper and lower airways

Session Time: 26-06-14, 09:45

Location: Hall C

Chair person: TBC

Asthma is a heterogeneous condition with many clinical subtypes. The classical, most prevalent type of asthma starts in early childhood, is associated with atopy (e.g. allergic rhinitis), and typically runs in families. This type of asthma has been extensively studied in in vivo and in vitro asthma models, and can be reasonably well controlled by current anti-asthma medications. Asthma that starts in adulthood, however, has received much less attention. Cross-sectional and population based studies suggest that it is often severe at onset, less responsive to therapy more likely to persist and associated with poor lung function. In recent years several studies have shown that specific clinical, functional and inflammatory characteristics of asthma are associated with more exacerbations or a more rapid decline in lung function. It shows that in particular adult patients with combined eosinophilic asthma and nasal polyposis seem to be at risk of more severe disease. In the present presentation this distinct phenotype will be explained with specific emphasis on the relationship between upper airways and loss of lung function. For the clinician (both pulmonologists as well as ENT-specialists), knowledge and early recognition of this phenotype is very important and might have important consequences for prevention and treatment of the disease.

The relationship between upper and lower airways in patients with CRS and asthma

M. Nonaka¹

¹ Otorhinolaryngology, Tokyo Women's Medical University, Tokyo, Japan

Abstract: ERS-1183

Session: European Respiratory Society - The relation between upper and lower airways

Session Time: 26-06-14, 10:15

Location: Hall C

Chair person: TBC

Chronic rhinosinusitis (CRS) is often associated with asthma. Asthmatic rhinosinusitis is characterized by local production of helper T type 2 cytokines and increased levels of cysteinyl LTs (CysLTs). In patients with CRS associated with asthma, the severity of sinus abnormalities is related to sputum eosinophilia as well as peripheral blood eosinophilia. The relationship between CRS and asthma is thought to be the same as the relationship between allergic rhinitis and asthma. That is, one airway, one disease. Based on published data, topical nasal steroids (like fluticasone propionate (FP)) and anti-LT agents (like montelukast) are expected to be effective for asthmatic rhinosinusitis in suppressing Th2 cytokines and CysLTs, respectively.

In the case of coexistence of allergic rhinitis and asthma, one affects the upper airways and the other the lower airways. In fact, orally inhaled corticosteroids reduced seasonal eosinophilia in both the circulation and the nose and attenuated seasonal nasal symptoms. On the contrary, topical nasal steroids improved the asthma. Given evidence that allergic rhinitis improved due to strengthened inhaled therapy for asthma, we looked at how asthmatic rhinosinusitis was affected by strengthening the treatment of asthma by changing from inhaled FP to FP plus salmeterol in a single inhaler.

In the symposium I will report the efficacy of combined intranasal FP and montelukast therapy and also show that strengthened inhaled therapy for asthma alleviated asthmatic rhinosinusitis.

PCD new treatment options

C. von Buchwald¹

¹ Department of Otolaryngology - Head and Neck Surgery and Audiology, Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark

Abstract: ERS-1184

Session: Mucociliary dysfunction from diagnosis to treatment

Session Time: 24-06-14, 09:30

Location: Hall F

Chair person: M. Rautiainen

Background and aims:

Primary ciliary dyskinesia (PCD) is a rare genetic disease caused by mutations in genes involved in ciliary structure and function. Due to a defective mucociliary clearance patients with PCD accumulate secretions in the airways. Since birth, patients suffer from recurrent respiratory infections and chronic rhinosinusitis. The Danish PCD Centre at Rigshospitalet is responsible for diagnostics and follow-up of all Danish PCD patients. Patients are followed every third month. At multidisciplinary team conferences it is decided which patients should be offered sinus surgery. PCD treatment lacks consensus and evidence especially concerning the sino-nasal problems and effect of sinus surgery. *P. aeruginosa* (Pa) is an opportunistic pathogen that causes the majority of morbidity and mortality in patients with cystic fibrosis (CF). We have demonstrated that CF patients can house a bacterial reservoir in their sinuses and that sinus surgery with intensive follow-up can lead to decreased lung inflammation. We hypothesize that PCD patients may harbour pathogenic bacteria in their sinuses and may benefit from sinus surgery.

Methods:

Literature overview and report of our preliminary results from sinus surgery in PCD patients.

Results:

Pa frequently colonizes the lower respiratory tract in PCD patients. In addition, we report the results from sinus surgery and sinus cultures.

Discussion:

PCD patients can harbour pathogenic bacteria in their sinuses and may benefit of a treatment modality addressing their sinuses by surgery.

The economic impact of chronic rhinosinusitis: does the end justify the means?

L. Rudmik¹

¹ Otolaryngology - Head and Neck Surgery, University of Calgary, Calgary, Canada

Abstract: ERS-1185

Session: CRS and Endoscopic surgery

Session Time: 24-06-14, 10:10

Location: Hall D

Chair person: P. Skarzynski

Background and aims:

With the fundamental understanding that all resources are scarce, it is important for health care providers to consider how we recommend and utilize health care resources. The purpose of this talk will be to: 1) report evidence on the productivity cost associated with refractory CRS, and 2) report the cost-effectiveness of endoscopic sinus surgery (ESS) compared to continued medical therapy for refractory CRS.

Methods:

1) Data from a prospective multi-institutional observational study was used to quantify the annual productivity cost per patient with refractory CRS and 2) a Markov decision tree economic model was developed to compare the cost-effectiveness of ESS versus continued medical therapy for refractory CRS.

Results:

1) The mean annual productivity cost per patient with refractory CRS is \$10,077. 2) Using a 30 year time horizon, the economic model demonstrates that the ESS group cost a total of \$34,473.40 and produced a total of 22.46 QALYs. The medical therapy group cost a total of \$42,914.12 and produced a total of 18.91 QALYs. Thus ESS is a dominant intervention, being less costly and more effective. The cost-effectiveness acceptability curve from the multivariate sensitivity analysis demonstrated that there is 89% certainty that the ESS strategy is the most cost-effective decision.

Discussion:

Results from recent studies have demonstrated that refractory CRS is associated with substantial productivity costs to society and ESS followed by appropriate medical therapy appears to be the most cost-effective intervention for long-term management of refractory CRS.

When to expect a vasculitis in CRS

M. Laudien¹

¹ Otorhinolaryngology Head and Neck Surgery, Christian Albrechts University of Kiel, Kiel, Germany

Abstract: ERS-1186

Session: Wegener and other vasculitis -when to suspect in CRS

Session Time: 24-06-14, 09:30

Location: Hall I

Chair person: A. Danielsen

Vasculitides could be classified as primary, secondary and not classified. Even though secondary vasculitides like cocaine induced vasculitides and primary vasculitides of the main vessels like Takayasu arteritis may mimic CRS-symptoms this abstract concentrates on the ANCA associated small vessel vasculitides Granulomatosis with Polyangiitis (GPA) and Eosinophilic Granulomatosis with Polyangiitis (EGPA) in adults.

The clinical definition of CRS is: more than 12 weeks of disease with inflammation of the nose and paranasal sinuses with nasal obstruction, nasal discharge and facultative facial pain/pressure and dysosmia. Endoscopic signs (nasal polyps/mucopurulent discharge/oedema) and CT changes might be helpful in diagnosis.

80% of all GPA patients show manifestation of the disease in the upper respiratory tract and about 5% of the patients stay in a localized disease state only affecting the upper airways. Crusts, ulcers, nasal discharge, nasal obstruction, tenderness and pain over paranasal sinuses and pathologic CT-scans are items used in well established scoring systems like the Birmingham Vasculitis Activity Score (BVAS) or the EarNoseThroat-Activity Score (ENTAS).

Over 80% of all EGPA patients show a manifestation in the ENT-region. Nasal obstruction (more than 40%), nasal discharge (about 35%), cephalgia (20%) and dysosmia (over 10%) are frequent symptoms. MR-scan changes are common (up to 50%).

Biopsies and biomarkers are of low predictive value.

Conclusion

Vasculitides mimic symptoms and physical findings of CRS. Expert experience and center based multidisciplinary diagnostics are key factors to rapidly diagnose and adequately treat the patients from first contact and over time.

Olfactory and sinonasal outcomes in endoscopic transsphenoidal skull-base surgery

E.D. Wright¹

¹ Surgery (Otolaryngology-Head & Neck Surgery), University of Alberta, Edmonton, Canada

Abstract: ERS-1187

Session: Endoscopic Pituitary Surgery

Session Time: 26-06-14, 10:00

Location: Hall K

Chair person: A. Rokade

In the past 10-15 years endoscopic approaches to lesions of the anterior cranial base, most commonly via a transsphenoidal approach, have become commonplace and the norm in many centres. Commensurate with this has been an interest on the part of Rhinologists to evaluate the impact of these potentially destructive approaches on nasal and sinus function post-operatively. One of the most contentious aspects of the impact on sinonasal outcomes is that of olfaction, with many authors reporting a deleterious effect on olfactory function.

As part of this presentation the author will present a concise review of the current state of the literature on the topic of sinonasal outcomes in patients undergoing a transsphenoidal approach to the cranial base as well as details of his personal research on the topic, including data from a prospective cohort study examining subjective, objective, and olfactory outcomes. Additional new data will also be presented regarding frontal sinusitis after turbinate sacrificing and turbinate preserving approaches.

A balanced analysis of the existing literature in the context of this data will provide the audience with the information required to formulate their own decisions as to how best to mitigate the effects on the sinonasal complex of the endoscopic transsphenoidal approach to the cranial base. However, it can be reasonably stated that subjective, olfactory, and radiological outcomes are not adversely affected by a unilateral middle turbinate sacrificing approach while a mild effect has been noted on nasal endoscopic scores in these same patients in the early post-operative time period.

TRP channels in rhinitis

P. Smith¹

¹ Clinical Medicine, Griffith University, Queensland, Australia

Abstract: ERS-1188

Session: Nasal Hyperreactivity/nonallergic rhinitis

Session Time: 25-06-14, 09:30

Location: Hall C

Chair person: D. Milosevic

Transient receptor potential (TRP) receptors are ion channels that form part of the innate immune system to detect and respond to wide-varying threats, including exogenous and endogenous chemicals as well as physical irritants (temperature, pH, osmolality and electrical charge). TRPs are ion channels that are heavily expressed on sensory fibres of trigeminal nerve and are instrumental in many of the clinical features of all forms of rhinitis. TRPs form part of the chemical and irritant threat detection of the upper airways, which also includes the type 2 taste receptor (T2R) and epithelial acetylcholine. Activation of the T2R or epithelial inflammation products such as acetylcholine lowers the threshold of activation of TRPs to sensory stimuli.

The TRP vallinoid type 1 (TRPV1); which is the capsaicin receptor, is the best described TRP in the trigeminal system and is reported to be present in up to 60% of trigeminal sensory nerves. In understanding the allergic response it is critical to note that histamine works on sensory nerves via TRPV1 to induce sensory symptoms and TRPV1. Many other allergic and inflammatory mediators activate G proteins on sensory nerves resulting in a reduced TRPV1 threshold. Activation of TRPV1 ion channels stimulate the release of the neuropeptides calcium gene related peptide and substance P which comprise important parts of both acute and chronic allergic and inflammatory responses. TRPV1 is increased in patients with non-allergic rhinitis. The TRP Ankyrin 1 (TRPA1) receptor is the major detector of oxidative injury, but has a promiscuous internal N tail, that signals danger from a wide range of substances including volatile compounds, ozone and components of smoke. Eosinophil derived nerve growth factor increases expression of both TRPV1 and TRPA1.

The role of osteoneogenesis on outcomes of FESS

K. Snidvongs¹

¹ Otolaryngology, Chulalongkorn university, Bangkok, Thailand

Abstract: ERS-1190

Session: Prognostic factors in Rhinosinusitis

Session Time: 23-06-14, 11:45

Location: Hall I

Chair person: A. Sama

Osteoneogenesis is a feature of chronic rhinosinusitis (CRS), which associates with higher disease severity shown by greater endoscopy and CT scores. Its presence and severity can be assessed by either radiography or histopathology. Both Kennedy Osteitis Score and Global Osteitis Score are simple, and reproducible scales in radiologically assessing osteoneogenesis. Although seen after previous endoscopic sinus surgery (ESS), osteoneogenesis is also a feature in patients without prior interventions. It is poorly understood what drives the bone change in non-surgical population and whether it is bone infection or bone inflammation. However bacteria and inflammatory cells are not demonstrated in bone specimens. Histopathology reveals only osteoblastic activity and new woven bone formation. Thus, osteoneogenesis should be a more appropriate term than osteitis.

The impact of osteoneogenesis on outcomes of ESS is unclear. Osteoneogenesis has been acknowledged a predictive factor for inferior outcomes post ESS. However it is not known whether osteogenesis brings poor results or it just shares similar endpoints with eosinophilic inflammation as it has been shown that osteoneogenesis associates with high tissue and serum eosinophilia. Patients with tissue eosinophilia have greater severity of the bone change and eosinophilic inflammation associates with poorer treatment outcomes.

In contrast to previous knowledge, a recent study reveals that patients with and without osteoneogenesis have similar improvement on symptoms, quality of life and endoscopy score after both subgroups receive post-operative aggressive topical steroid therapies. The role of osteoneogenesis on outcomes of ESS may depend on which maintenance treatments are given.

Clara cell 10-kDa protein: an important regulator of upper airway inflammation

Z. Liu¹

¹ ENT, Tongji Hospital Tongji Medical College Huazhong University of Science and Technology, Wuhan, China

Abstract: ERS-1192

Session: Lessons from Molecular biology in rhinitis

Session Time: 23-06-14, 12:00

Location: Hall C

Chair person: N. Zhang

Clara cell 10-kD protein (CC10) is an anti-inflammatory and immunomodulatory molecule with multiple functions. CC10 expression is down-regulated in inflammatory upper airway diseases including allergic rhinitis (AR) and chronic rhinosinusitis (CRS). CC10 can inhibit the expression of chitinase 3-like 1 protein that is involved in the eosinophilic inflammation in CRS. CC10 can also suppress osteopontin expression in AR and osteopontin-induced expression of Th2 and pro-inflammatory cytokines in airway epithelial cells. CC10 gene transfection can inhibit NF- κ B activity in airway epithelial cells. CC10 can also inhibit Th17 responses through modulating the function of dendritic cells in the context of AR. Proinflammatory and Th2 cytokines can down-regulated CC10 production, whereas Th1 cytokines and interleukin-10 can promote CC10 production in sinonasal mucosa. Allergen exposure leads to a transdifferentiation of CC10 secreting cells into trefoil factor family 1 secreting cells and /or goblet cells in upper airways, resulting in the diminished expression of CC10. Thus, the feedback loop between CC10 and local milieu can promote the development of AR and CRS.

Clinical strategy in hereditary hemorrhagic telangiectasia

T. Kuhnel¹, C. Rohrmeier¹, K. Wirsching¹

¹ ORL, University of Regensburg, Regensburg, Germany

Abstract: ERS-1193

Session: Hereditary hemorrhagic telangiectasia (HHT)

Location: Hall F

Time: 23-06-14, 11:15

Chair person: J. Rimmer

Hereditary hemorrhagic telangiectasia (HHT) is an „orphan disease“ with epistaxis as the predominant symptom in more than 95% of cases. Arteriovenous (AV) shunts are cause of high bloodflow and epistaxis may be serious. It can cause iron deficiency anemia as well as crusting and severe limitation of quality of life. Mutations at the ENG-gene (Type HHT 1), the ACVRL1-gene (Typ HHT 2) and the SMAD4-gene code for different types of the disease. Diagnostic action must be taken at first contact and comprises of pulmonary, hepatic, gastrointestinal, cerebral and rhinologic means. Hypertension needs to be addressed as well as sleep apnea syndrome. Diseased mucosa requires frequent and intensive care to keep it soft and moist. Anticoagulant treatment needs to be indicated with great care. Lasertherapy is offered on an individually tailored basis. Long periods of satisfying controll of epistaxis can be achieved. Feeding arteries can be tied off and the septal mucosa is covered by silicone sheets permanently. Embolisation is recommended in desperate situations only. Pulmonary AV-Shunts are adressed once the calculated shunt volume exceeds 4% and therapy is mandatory due to the risk of pulmonary hypertension or brain abcess. Hepatic AV-Shunts may require embolisation or an organ transplant. Pharmacotherapy is evolving after suffering from set-backs in the past. Bevacizumab, a recombinant, humanised, monoclonal antibody has shown promising results. Another drug, a mTOR-Inhibitor, that modifies immune reaction may also turn out to prove its potential and is matter of scientific studies at present.

The Impact of CRS and Allergic rhinitis in the pediatric population

P. Stjarne¹, M. Westman¹, M. Holmstrom¹, M. Wickman²

¹ ENT, Karolinska University Hospital, Stockholm, Sweden

² The National Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden

Session: Pediatric Chronic Rhinosinusitis

Session Time: 25-06-14, 11:15

Location: Hall A

Chair person: I. Tasca

Background:

Non-infectious rhinitis in children is a global health problem with moderate to severely bothersome symptoms such as fatigue, nasal congestion, headache, postnasal drip, repeated sneezing, runny nose and ocular symptoms. The health economic impact of the disease is substantial in Sweden with caregiver absenteeism being the major factor. However, little is known about the prevalence or impact of CRS in children but there is some evidence that allergic rhinitis predisposes for CRS.

Methods:

We used data from the population based birth cohort BAMSE (Barn/Children, Allergy/Asthma, Milieu, Stockholm, Epidemiologic study) consisting of 4 089 children born between 1994 and 1996 in Stockholm, Sweden.

Results and conclusions:

Allergic rhinitis symptoms among 4-year olds are more persistent than non-allergic rhinitis symptoms, until 8 years of age. Allergic and non-allergic rhinitis are associated with asthma, eczema and food-hypersensitivity at both 4 and 8 years of age. Parental allergy-related disease may be an important risk factor for NAR as well as AR, and the risk is comparable for maternal and paternal allergy. Parental hay fever seems to be the dominating hereditary risk factor for AR. The prevalence of CRS in adolescence seems to be low, but the symptoms bothersome.

Gustatory rhinitis

L.J. Jovancevic¹, C. Georgalas²

¹ Rhinology, Clinical Centre of Vojvodina University of Novi Sad, Novi Sad, Serbia

² Rhinology, Academic Medical Centre University of Amsterdam, Amsterdam, Netherlands

Abstract: ERS-1195

Session: Nasal Hyperreactivity/nonallergic rhinitis

Session Time: 25-06-14, 10:00

Location: Hall C

Chair person: D. Milosevic

Gustatory rhinitis is a nonallergic, noninflammatory type of rhinitis, observed in all age groups. It is a syndrome of food-induced nasal hypersecretion, characterized by the acute onset of copious watery or, occasionally, mucoid rhinorrhea, occurring immediately after the ingestion of certain foods (most often hot and spicy). Hot chilli peppers, red cayenne, tabasco sauce, red pepper, horseradish, black pepper, hot and sour soup, onion, chilli, vinegar, and mustard have been often implicated in gustatory rhinitis.

Nonadrenergic, noncholinergic, or peptidergic neural system including capsaicin and its receptor (TRPV1) play a significant role in nonallergic as well as in gustatory rhinitis.

Typically the excessive rhinorrhea occurs exclusively during food ingestion and begins within a few minutes of eating the involved food, usually with no associated sneezing, pruritus, congestion, or facial pain. Patients with gustatory rhinitis do not have any chemosensory (taste and olfaction) disturbances.

Gustatory rhinitis is classified into four subcategories: idiopathic, posttraumatic, postsurgical and gustatory rhinorrhea associated with cranial nerve neuropathy. The rhinorrhea in patients with idiopathic gustatory rhinitis is always bilateral, whereas the other types may be unilateral.

The diagnosis of gustatory rhinitis should be based on history and exclusion of other types of chronic rhinitis.

Initially, the treatment should be the avoidance of the involved food. If avoidance fails, the use of ipratropium bromide nasal spray is recommended for the symptoms of gustatory rhinitis. Also, an endoscopic vidian neurectomy can be done, with excellent results, in patients with intractable symptoms, as in other nonallergic rhinitis patients with rhinorrhea.

Resveratrol Reverses Transepithelial Fluid and Electrolyte Imbalance in a Hypoxia-Induced Model of Acquired CFTR Deficiency

B.A. Woodworth¹

¹ Surgery/Otolaryngology, University of Alabama at Birmingham, Birmingham, USA

Abstract: ERS-1196

Session: Junior Member Symposium: Airway mucosa

Location: Hall I

Time: 23-06-14, 09:50

Chair person: T. van Zele

Presenting author: B.A. Woodworth

Background and Aims:

Ineffective mucociliary clearance (MCC) is a common pathophysiologic process that underlies airway inflammation and infection. A dominant fluid and electrolyte secretory pathway in the nasal airways is governed by the cystic fibrosis transmembrane conductance regulator (CFTR). Decreased transepithelial Cl⁻ transport secondary to an acquired CFTR deficiency may contribute to respiratory epithelial dysfunction by abrogating MCC and increasing mucus viscosity. The objectives of the present study were to test resveratrol, a CFTR channel potentiator, in a model of acquired CFTR dysfunction as preparation for a clinical trial of mucociliary activators in human sinus disease.

Methods:

Primary sinonasal epithelial cells, bronchoepithelial cells (wild type and F508del CFTR), and HEK293 cells expressing exogenous human CFTR were investigated by Ussing chamber and patch clamp technique under non-phosphorylating conditions. Effects on airway surface liquid (ASL) depth were measured using confocal laser scanning microscopy. Impact on CFTR gene expression was measured by quantitative reverse transcriptase polymerase chain reaction.

Results:

Resveratrol activated temperature corrected F508del CFTR and enhanced CFTR-dependent Cl⁻ secretion in human sinus epithelium to an extent comparable to the recently approved CFTR potentiator, ivacaftor. Using inside out patches from apical membranes of murine and HEK293 cells, resveratrol stimulated an ~8 picosiemens Cl⁻ channel consistent with CFTR. Hypoxia-induced abnormalities of fluid and electrolyte secretion in sinonasal epithelium were corrected with treatment as measured by ASL (in μm : 4.33 \pm 0.9, hypoxia; 6.94 \pm 0.65, control; 7.64 \pm 0.77, resveratrol+hypoxia, $p < 0.05$).

Conclusion:

CFTR activation with leading edge Cl⁻ secretagogues represents an innovative approach to sinus and nasal airway disease predicated on stimulation of fluid and electrolyte secretion.

Chloride secretagogues for acquired CFTR deficiency in Chronic Rhinosinusitis

B.A. Woodworth¹

¹ Surgery/Otolaryngology, University of Alabama at Birmingham, Birmingham, USA

Abstract: ERS-1197

Session: From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology

Session Time: 24-06-14, 11:15

Location: Hall D

Chair person: R. Schlosser

Background and aims:

Decreased mucociliary clearance is a major contributing feature to chronic rhinosinusitis (CRS). The objectives of the present study were to test models of acute inflammation for acquired defects in transepithelial Cl⁻ secretion.

Methods:

Primary murine nasal septal epithelial (MNSE) cultures were exposed to lipopolysaccharide (LPS) or an ultrafiltrate of PAO1 *Pseudomonas aeruginosa* (bacteria-free preparation from 20 hour log-phase growth). Basal media was collected from airway cell monolayers and analyzed for murine CXCL1/KC (human IL-8 analogue) by ELISA to confirm activation of NFκB mediated inflammatory signaling. Cultures were mounted in Ussing chambers for ion transport measurements.

Results:

MNSE cultures incubated with PAO1 filtrate or LPS (100 nM) for 24 hours produced significantly elevated CXCL1/KC (PAO1, 1267.4±54.3 pg/ml and LPS, 1774±159.4 pg/ml) when compared to controls (660±139.5 pg/ml) ($p < 0.05$). CFTR-mediated Cl⁻ transport [change in short-circuit current, DISC (mA/cm²)] measured using forskolin (20 mM) was significantly decreased compared to controls (PAO1, 9.7±0.5; LPS, 9.6±1.6; control, 13.8±0.9, $p < 0.05$). Quantitative PCR (reported as relative mRNA levels±S.D.) showed significant inhibition of CFTR mRNA expression when cultures were incubated with PAO1 (0.76±0.03) and LPS (0.69±0.19) when compared to controls (1±0.19) ($p < 0.05$).

Conclusion:

Exposure to LPS or PAO1 extract in primary airway epithelial cells led to acquired defects in transepithelial Cl⁻ transport. These findings indicate that acute inflammation or infection in sinonasal epithelia may create acquired defects in CFTR, reduce MCC, and create a localized cystic fibrosis environment.

Different settings of the MRI

E. Menif¹

¹ Radiology, AMC, Amsterdam, Netherlands

Abstract: ERS-1174

Session: Comprehensive imaging of the nasal cavity and paranasal sinus

Session Time: 24-06-14, 11:45

Location: Hall C

Chair person: A. Swift

As many as 52 variants on normal sinonasal anatomy have been listed since the introduction of CT in the seventies and eighties of the previous century. Many an individual does harbour more than one variant. Most of the variants are considered normal at endoscopy. Why, then, are we concerned about this natural variance?

Some of these variants may contribute to serious complications if not appropriately analyzed before endoscopic surgery, endangering vital structures like optic nerve and internal carotid artery, causing iatrogenic trauma to the orbit and skull base. Asymmetry of the fovea ethmoidalis should be analysed carefully in coronal and sagittal planes to assess its steepness and its height. Onodi and other variants may be difficult to recognize in full blown polyposis nasi or CRS.

Hypo- or aplasia of the sinuses may change your endoscopic surgical strategy.

Multislice CT(MSCT) or Cone Beam CT(CBCT) is the imaging technique of first choice for (preoperative) evaluation of the anatomy of the nose and paranasal sinuses because of its high spatial resolution, its multiplanar reconstructions, the short examination time and the reduction in radiation dose applying low dose protocols as a standard. CT serves as a road map for surgery.

In this presentation the optimal CT protocol will be shortly addressed and the surgically relevant and "dangerous" variants will be shown and discussed: Onodi cells, bony dehiscence of the orbit, asymmetry of the skull base, how to identify the anterior ethmoidal artery, how to differentiate hypoplasia from a silent sinus regarding maxillary sinuses.

DCR: endoscopic versus external

R. Roithmann¹

¹ Department of Otolaryngology, Universidade Luterana do Brasil, Porto Alegre, Brazil

Abstract: ERS-1199

Session: Surgery of the Orbit and lacrimal pathways

Session Time: 23-06-14, 10:00

Location: Hall K

Chair person: M. Bernal-Sprekelsen

DCR: Endoscopic versus external approach

Background and aims:

The traditional technique-of-choice by ophthalmologists is the external approach, in which a skin incision is made in order to access the bone and lacrimal sac. The endoscopic approach follows the inverse pathway. A nasal mucosa flap is first created, followed by an endonasal osteotomy to expose the lacrimal sac. Both techniques have shown excellent results (>90%) when properly indicated and performed. The aims of this presentation is to revise the most relevant aspects of the endoscopic DCR technique we have been using, from the preoperative assessment to the post-operative care, for the proper rehabilitation of the lacrimal pathway.

Methods:

Review based on author primary cases in the past 10 years using endoscopic DCR in association to an ophthalmologist.

Results:

A very high success rate was achieved (>90%). The ophthalmologist was responsible for the differential diagnosis of epiphora, the concomitant treatment of lacrimal canaliculi obstruction if present and intraoperative probing. The ENT was responsible for diagnosis and correcting associated nasal disorders (eg: septum deviation), lacrimal bone and sac opening and flaps. Stents were used in $\pm 30\%$ of cases. Advantages of the procedure were no external scar, magnificent view of the entire lacrimal sac and preservation of the lacrimal pump trough the eye's orbicular muscle.

Conclusion:

When properly indicated and performed, endoscopic DCR has a very high rate of success. A joint work of the ENT and the ophthalmologist might be advantageous for the best possible care of the patient with epiphora.

Regeneration of olfactory mucosa

S. Katsunuma¹

¹ Otolaryngology-Head and Neck Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

Abstract: ERS-1200

Session: Smell disorders, diagnosis and treatment

Session Time: 23-06-14, 09:54

Location: Hall C

Chair person: D. Simmen

The olfactory mucosa is a pseudostratified columnar epithelium, which is comprised of supporting cells, olfactory receptor neurons (ORNs) and basal cells. The ORNs have the unique ability that they function as the primary sensory neurons while performing continuous degeneration and regeneration throughout lifetime. The ORNs are derived from basal cells and become mature with the cell bodies moving apically. However, this regenerative ability decreases with age and/or because of injury, infection and environmental factors, which lead to olfactory dysfunction. To improve such olfactory dysfunction, our laboratory has challenged for the ORNs to regenerate using various approaches. To induce newborn ORNs, we implanted bone marrow stem cells into mouse olfactory mucosa, where the cells became into the basal cells. Many transcription factors and neurotrophic factors are involved in differentiation and maturation of the ORNs. We practiced the spatiotemporal gene expression mediated by adenoviral vector in the mouse olfactory pathways, which may be able to deliver exogenous gene for the treatment of degeneration of the ORNs. Besides these strategies, we have examined the effect of administration of the neurotrophic factors on the mouse olfactory mucosa to elicit the regenerative ability of the ORNs. In this session, we will mainly discuss the effect of topical administration of the neurotrophic factors on the mouse olfactory mucosa and the possibility that it become an alternative therapeutic option for olfactory dysfunction.

QOL in HHT

G. Bachmann-Harildstad¹, S. Dheyauldeen², A. Geirdal³, K. Heimdal⁴

¹ Otorhinolaryngology, Akershus University Hospital, Lørenskog, Norway

² Otorhinolaryngology Head and Neck Surgery, Oslo University Hospital Rikshospitalet, Oslo, Norway

³ Faculty of Social Sciences, Oslo University College, Oslo, Norway

⁴ Department of Medical Genetics, Oslo University Hospital Rikshospitalet, Oslo, Norway

Abstract: ERS-1201

Session: Hereditary hemorrhagic telangiectasia (HHT)

Location: Hall F

Time: 23-06-14, 12:00

Chair person: J. Rimmer

Background and aims:

The rarity of hereditary hemorrhagic telangiectasia (HHT) renders it a challenge to collect a sufficient number of patients for the study of quality of life (QoL) in this disease. In this review we wanted to compare studies on health-related QoL in HHT from different countries.

Methods:

A Pubmed search from the period 2002 – 2014 was performed. Epidemiologic studies using at least the health related SF-36 questionnaire, a study size of at least 30 subjects, inclusion according to Curacao criteria and a prospective design comparing normative data were included. The results of health-related QoL were tabulated and compared. Additionally, studies on disease specific QoL were included. Case series and primary interventional studies were excluded.

Results:

The literature revealed 36 published studies. Of these, six studies from five European countries matched the inclusion criteria. The overall and the health related QoL was impaired when compared to normative data and the degree of epistaxis correlated with impaired QoL in all studies. The disease specific QoL studies showed a lower odor threshold, a lower quality of sleep and an impaired respiratory-related QoL.

Conclusion:

The literature gives evidence that patients with HHT have a lower overall QoL, health-related QoL, and disease specific QoL in different countries. Additionally, a lower disease specific QoL was indicated in respect to three symptoms recently.

Inverted papilloma of the frontal sinus and recess, new treatment options

G. Adriaensen¹, S.M. Reinartz¹, C. Georgalas¹, W.J. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1202

Session: Inverted papilloma

Session Time: 25-06-14, 12:00

Location: Hall K

Chair person: P. Strek

Background:

Inverted papilloma (IP) is a benign sinonasal tumor for which endoscopic surgery with complete removal of underlying and surrounding mucoperiosteum at the attachment site followed by drilling and/or coagulation of this area is the treatment of choice. This can be challenging in the frontal sinus.

Methods:

We present the to our knowledge largest single center case series published to date of endoscopically managed IP of the frontal sinus. A clear distinction is made between frontal sinus involvement and origin, surgical and follow-up data are provided, and a possible use of topical 5-fluorouracil (5-FU) in the post-operative management is proposed.

Results:

Nineteen cases, 15 revision cases, have been identified in a period of ten years. There were 2 recurrences (10.5%) for which reoperation took place. None have recurred after with an average follow up of 40 months.

5-fluorouracil is a chemotherapy agent with can be locally applied and has been successfully used in a treatment regime after surgical debulking of sinonasal adenocarcinoma, and in the treatment of several surface neoplasia and preneoplastic skin conditions. We first used it in a rapidly recurrent case of Schneiderian papilloma and in 6 mostly revision cases of IP afterwards in which complete removal was not totally secure. None have recurred with an average follow up of 29 months.

Conclusions:

We believe topical application of 5-FU might have a place in the postoperative treatment of challenging IP surgery.

The development of nasal polyp disease involves early nasal mucosal inflammation and remodelling

N. Zhang¹, J. Meng², C. Bachert³

¹ Department of Otorhinolaryngology, Upper Airway Research Laboratory, GHENT, Belgium

² Department of Otorhinolaryngology, Upper Airway Research Laboratory, CHENGDU, China

³ Department of Otorhinolaryngology, Upper Airway Research Laboratory, GHENT, Belgium

Abstract: ERS-1203

Session: Basic research in CRS

Session Time: 24-06-14, 10:15

Location: Hall C

Chair person: K. van Druenen

Our former studies suggest that there may not be a direct link between inflammation and remodelling in upper airway disease. Therefore we investigated the pathological features prevalent in the development of nasal polyps and elucidated the chronological order and relationship between inflammation and remodelling, by comparing specific markers of inflammation and remodelling in early stage nasal polyps confined to the middle turbinate (refer to as middle turbinate CRSwNP) obtained from 5 CRSwNP patients with bilateral polyposis, mature ethmoidal polyps from 6 CRSwNP patients, and normal nasal mucosal tissue from 6 control subjects. Middle turbinate CRSwNP demonstrated significantly more severe epithelial loss compared to mature ethmoidal polyps and normal nasal mucosa. The epithelial cell junction molecules E-cadherin, ZO-1 and occludin were also expressed in significantly lower amounts in mature ethmoidal polyps compared to healthy mucosa. Middle turbinate CRSwNP were further characterized by significantly increased numbers of subepithelial eosinophils and M2 type macrophages, with a distinct lack of collagen and deposition of fibronectin in polyp part. In contrast, the turbinate area of the middle turbinate CRSwNP was characterized by an increase in TGF- β activated myofibroblasts expressing α -SMA and vimentin, an increase in the number of pSmad2 positive cells, as well as increased deposition of collagen. These findings suggest a complex network of processes in the formation of CRSwNP; including gross epithelial damage and repair reactions, eosinophil and macrophage cell infiltration, and tissue remodelling. Furthermore, remodelling appears to occur in parallel, rather than subsequent to inflammation.

DISE and head and truck position

N. de Vries¹, F. Safiruddin¹

¹ ENT, st Lucas Andreas Hospital, Amsterdam, Netherlands

Session: Drug induced sleep endoscopy (DISE)

Session Time: 25-06-14, 11:45

Location: Hall C

Chair person: E. Hamans

Background:

Drug Induced Sedated Endoscopy (DISE) is often employed to assess the site(s), configuration and severity of obstruction in OSA. DISE is usually performed in supine position. We recently showed that the obstruction pattern might be different when DISE is performed in lateral position. In the present study we compared the DISE findings in lateral position with findings in supine position, but the head turned to lateral.

Design:

Prospective study.

Methods:

60 patients with OSA, (44 males, mean AHI 20) underwent DSE under propofol sedation, using the VOTE classification. Patients were placed in lateral position and the upper airway was evaluated. Patients were subsequently placed in supine position with the head turned to the right side.

Results:

In lateral position 9 patients (15%) had a complete Antero-posterior (A-P) collapse at the level of the Velum and 9 had a partial collapse. With trunk in supine position and head in lateral position, at the level of the velum, 4 patients had a complete A-P collapse, and 2 had a partial A-P collapse. For all other sites the patterns and severity of collapse were not significantly different for lateral position and head turned only.

Conclusion:

During DISE findings in lateral position and in supine position with the head turned, findings were similar with as only exception the degree of collapse at the level of the Velum. There are implications on how to perform DISE, in particular when positional therapy is considered as part of the treatment program.

Treatment of allergic rhinitis, the current guidelines

L. Kalogjera¹

¹ Department of ORL/Head and Neck Surg., University Hospital Center "Sestre Milosrdnice", Zagreb, Croatia

Abstract: ERS-1205

Session: Latest update on AR treatment (in collaboration with EAACI)

Session Time: 24-06-14, 11:15

Location: Hall I

Chair person: C. Cingi

ARIA is the most disseminated guideline in allergic rhinitis (AR). From the beginning, ARIA documents have been consistent in keeping the stepwise approach to treatment according to the severity of the disease, based on its impact on health-related quality-of-life (HRQL) and perception of the severity of symptoms on a visual analog scale. However, one third of the patients remain uncontrolled, despite adequate treatment. Comorbidities and specific phenotype of inflammation may affect the response to treatment. The classification on 4 subtypes according to the duration and severity of symptoms has remained the guideline for the choice of first-line treatment, however, the control of symptoms is the factor which may modify the choice of anti-inflammatory treatment and include additional treatment according to the remaining symptom/s, after the treatment according to the guidelines has been applied. The latest revision of ARIA document 2010, which was developed according to the GRADE approach, recognized nasal topical steroids as the treatment superior to oral antihistamines and antileukotrienes. The step-up and step-down decision is brought after 2-4 weeks of treatment, and reviewing of the symptoms severity. Persistent symptoms in uncontrolled patients may be treated with the addition of nasal anticholinergics, ocular cromones or antihistamines, or with application of oral steroids and decongestants, depending on the most bothersome symptom. Immunotherapy should be considered in the uncontrolled patient with moderate to severe AR. A new revision is expected to include the positioning of the topical nasal steroid and antihistamine in combination and nasal steroid with hydrofluoroalkane propellant, respectively.

Pitfalls in blepharoplasty

K. Ingels¹

¹ Otorhinolaryngology, Radboud University Medical Center, Nijmegen, Netherlands

Abstract: ERS-1206

Session: Pitfalls in facial plastic surgery

Session Time: 23-06-14, 09:30

Location: Hall B

Chair person: P. Palma

Blepharoplasty is a common rejuvenation procedure from which a lot of patients can benefit. A facial plastic surgeon needs a thorough knowledge of peri-orbital anatomy and must be able to perform upper and lower blepharoplasty in a safe way, when the patients wish and the indication are there. Because it is an elective operation with predominantly aesthetic goals, less than perfect results like asymmetry are hardly accepted. More pitfalls are discussed below.

Upper blepharoplasty:

In order to avoid disappointments eyelid ptosis, caused by weakness or rupture of the m. Levator palpebrae must be excluded. Brow ptosis is another common clinical sign that needs attention and mostly repair. Lagopthalmus can be avoided by meticulous design of the skin surplus in relation to the position of the brow. A deep sulcus sometimes is pre-existing, but can also be the result of removing (too much) fat.

Lower blepharoplasty:

Lower blepharoplasty is known for its risk of postoperative unsatisfying results. Ectropion is easy to occur especially when the pars tarsalis of the m. Orbicularis oculi is denervated, or the orbital septum entered in the skin-muscular-flap technique. Overresection of skin is another possible explanation for traction and/or displacement of the lower canthal ligament. The tension on that ligament will determine whether there is a need for canthopexy or canthoplasty. We prefer to redrape fat pads rather than remove fat because the latter can cause hollow eyes.

Effect of topical drugs on airway mucociliary clearance and ciliary beat frequency

L. Zhang¹, J. Jiao¹

¹ Beijing Key laboratory of Nasal diseases, Beijing Institute of Otolaryngology, Beijing, China

Abstract: ERS-1207

Session: Mucociliary dysfunction from diagnosis to treatment

Session Time: 24-06-14, 09:30

Location: Hall F

Chair person: M. Rautiainen

Background and aims:

Mucociliary clearance is an intrinsic first-line defense mechanism in the respiratory tract. Cooperative beating of epithelial cell cilia, which induces clearance of mucus from the airway, is the driving force of mucociliary clearance. Intranasal drug administration has become a common method of medication in recent years; a pre-requisite of nasally administered products is that drugs and additives in the dosage form do not interfere with normal nasal mucociliary clearance and ciliary function. Our study aimed to investigate the effect of antihistamines, corticosteroids and decongestants, which are widely used drugs for the treatment of rhinitis, sinusitis and related allergic or chronic conditions, as well as benzalkonium chloride (BKC) and potassium sorbate (PS), which are commonly used intranasal formulation preservatives, on airway mucociliary clearance and ciliary beat frequency.

Methods:

Primary ciliated epithelial cell cultures from human nasal mucosa of chronic sinusitis patients was established. And assessment of changes in CBF of epithelial cell cultures treated/untreated with intranasal medications or preservatives were measured using high-speed digital imaging methods.

Results:

Our studies suggest that crystalline BKC and BKC-containing intranasal medications, including topical steroid, decongestants, antihistamines may influence nasal mucociliary clearance or nasal mucosal ciliary function.

Discussion:

Thus, an investigation of the influence and safety of topical drugs on mucociliary clearance and ciliary function is of great importance, in the development of new nasal drugs and selection of appropriate safe excipients.

Septoplasty and quality of life

M. Hytönen¹

¹ Department of Otorhinolaryngology, Helsinki University Central Hospital, Helsinki, Finland

Abstract: ERS-1208

Session: All you need to know about septal correction

Session Time: 23-06-14, 11:15

Location: Hall B

Chair person: D. Simmen

Great awareness has focused not only on the symptoms but also on patients' quality of life (QoL), either generic (general) or disease-specific health. Several studies have investigated the effect of septoplasty surgery on patients' QoL. In many studies, a positive effect on QoL has often been seen. Septoplasty has resulted in significant improvement in disease-specific QoL, high patient satisfaction and decreased medication use. Severe preoperative nasal obstruction seems to indicate a higher predicted improvement. After septoplasty QoL improved also in the population 65 years of age or older. Turbinate surgery has improved the outcome of septoplasty surgery.

Our own study consisted of 188 septoplasty patients. Post-operatively nine of 22 SNOT-22 items improved significantly. However, in a generic QoL questionnaire (15D) the mean QoL, i.e. general well-being, became significantly poorer. The QoL became increasingly poor especially in the older age groups and among patients in which the improvement achieved in nasal symptoms postoperatively was minor. The more nasal symptoms the patients had pre- or postoperatively, the poorer the QoL was in general. Based on our results critical evaluation of the symptoms and findings in the patients is essential to deciding whether surgery or other treatment should be given to individual patients having nasal blockage symptoms. Especially in patients with mild symptoms or among older patients adequate medical treatment has to be tried before even considering surgery. The results also encourage to use of a systematic questionnaire to estimate the severity of symptoms in daily clinical practice.

Epidemiology and predisposing factors in ARS and CRS

J. Mullo¹

¹ Rhinology Unit & Smell Clinic ENT Department, Hospital Clínic - IDIBAPS, Barcelona, Spain

Abstract: ERS-1209

Session: EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment:

Session Time: 24-06-14, 09:45

Location: Hall A

Chair person: W. Fokkens

Acute rhinosinusitis (ARS) is a common disease, primarily managed in primary care, which prevalence rates vary from 6-15%. The primary cause of ARS are viruses (common cold) with 0.5-2% of patients developing secondary acute bacterial rhinosinusitis. ARS incidence varies with season (winter months), climatic variations, and with a damp environment and air pollution. Some evidences support that allergic inflammation and cigarette smoke predispose patients to ARS through changes in ciliary motility and function. There is little evidence however to support a role for ARS in primary cilia dyskinesia. Chronic concomitant disease in children, poor mental health, and anatomical variations have been associated with an increased incidence of ARS but the role of laryngopharyngeal reflux remains unclear.

Chronic rhinosinusitis with (CRSwNP) and without (CRSsNP) nasal polyps constitutes one of the more prevalent diseases encountered in medicine with significant medical costs and impact on quality of life and general health. Prevalence of CRS varies from 1% in Korea, 3-6% in Canada, and 14% in the USA. In Europe, the GA2LEN Survey has shown that about 11% of the European population has CRS with marked geographical variation and being smoking a significant predisposing factor. Although a number of factors have been associated with CRS (ciliary impairment, allergy, aspirin sensitivity, Immunodeficiencies, biofilms, laryngopharyngeal reflux, or environmental factors) there exists a close relationship between CRS and lower airway inflammatory diseases (asthma, bronchiectasis, and even COPD).

Aspirin intolerance, diagnosis and treatment

J. Mullo¹

¹ Rhinology Unit & Smell Clinic ENT Department, Hospital Clínic - IDIBAPS, Barcelona, Spain

Abstract: ERS-1210

Session: Drugs, allergies and other (un)desirable effects

Session Time: 25-06-14, 09:45

Location: Hall D

Chair person: L. Kalogjera

Presence of aspirin intolerance in patients with chronic rhinosinusitis with nasal polyps (CRSwNP) and asthma is usually associated with a severe and eosinophilic upper and lower airway disease. This requires comprehensive management of all the components of the syndrome, recognized as the “aspirin triad”, “Widal’s triad”, or “Samter’s triad”, and currently “aspirin-exacerbated respiratory disease” (AERD). The mechanisms of action of aspirin and non-steroidal anti-inflammatory drug (NSAID) sensitivity/intolerance are related to cyclooxygenase inhibition, increase in leukotriene production, and other abnormalities of the arachidonic acid metabolism. Diagnosis of the syndrome should be based on international definitions of chronic rhinosinusitis and nasal polyps which are based on sinonasal symptoms, nasal endoscopy, and sinonasal CT scan. Diagnosis of aspirin hypersensitivity / intolerance is initially based on a history of respiratory reaction after NSAID intake but should be confirmed or excluded by using oral, bronchial, or nasal provocation testing with aspirin. Avoidance of aspirin and NSAIDs should be recommended and CRSwNP management should follow the recommendations of general guidelines, with a special emphasis on adequate doses of intranasal corticosteroids and short courses of oral steroids for exacerbations. Surgical procedures (polypectomy, endoscopic sinus surgery, and/or ethmoidectomy) should be recommended if the medical treatment fails and the beneficial effects may extend to bronchial asthma if sinus surgery is performed. After surgery, medical treatment, including nasal and oral corticosteroids, is recommended for CRSwNP patients. Aspirin desensitization may be however a valuable alternative for selected patients.

Lessons to be drawn from lower airways

I. Agache¹

¹ Allergy and Clinical Immunology, Transylvania University Faculty of Medicine, Brasov, Romania

Abstract: ERS-1205

Session: Latest update on AR treatment (in collaboration with EAACI)

Session Time: 24-06-14, 12:00

Location: Hall I

Chair person: C. Cingi

Defining asthma severity and control guides the step-wise management of asthma as now recommended by all international guidelines. The introduction of the longitudinal end-points such as asthma risk defined by exacerbations and lung function decline set a new perspective in assessing and treating asthma patients. Although severity grading as per the ARIA guidelines proved a real success for the daily management of allergic rhinitis, defining control and future risk is still controversial due to the lack of solid end-points such as exacerbations and lung function.

A major advance in asthma management was the description of phenotypes, followed by endotypes and biomarkers related to the underlying pathogenetic pathways, leading to the fast growing concept of endotype-driven treatment of asthma.

Applying the same model to allergic and non-allergic rhinitis could prove as successful as for asthma in promoting personalized approaches, especially for the severe forms of the disease. The well recognized link between rhinitis and asthma should be integrated and tackled within the framework provided by endotypes.

Endotypes can be defined in relation to the background inflammation or in terms of treatment responsiveness. The following endotypes are proposed for allergic rhinitis: eosinophilic or Th2 (IL-4/IL-13) inflammation; steroid-responsive, anti IgE responsive, anti IL-5 responsive, anti IL-4/IL-13 responsive. For non-allergic rhinitis the definition of phenotypes is more difficult: eosinophilic or neutrophilic inflammation, steroid responsive or resistant and should include also the driving cause of the inflammation: superantigens, local IgE production, autoantibodies.

Bitter receptors and bitter solutions

N. Cohen¹

¹ Otorhinolaryngology - Head and Neck Surgery, University of Pennsylvania School of Medicine, Philadelphia, USA

Abstract: ERS-1212

Session: From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology

Session Time: 24-06-14, 11:39

Location: Hall D

Chair person: R. Schlosser

Bitter taste receptors (T2Rs), originally identified in taste cells of the tongue, where they protect against the ingestion of toxic plant and/or bacterial products are also expressed in extragustatory tissue including the airways. One T2R isoform, T2R38, was recently identified in cilia of sinonasal epithelial cells, and detects quorum-sensing molecules from gram-negative bacteria. Activation of T2R38 in the sinonasal epithelium stimulates an increase in nitric oxide production that increases mucociliary clearance and directly kills bacteria. T2R38, encoded by the TAS2R38 gene, has several common genetic polymorphisms that result in altered receptor functionality. Recent clinical studies have also found correlations of TAS2R38 genotype with susceptibility to gram-negative upper respiratory infection as well as necessity for surgical intervention in the management of Chronic Rhinosinusitis. We will discuss the ramifications of these findings in the context of prognosis as well as novel therapeutic targets.

Upper Airway Stimulation

J.T. Maurer¹

¹ Dept. of Otorhinolaryngology, Universit Medicine Mannheim, Mannheim, Germany

Abstract: ERS-1213

Session: Positional therapy/new surgeries for severe to extreme OSAS

Session Time: 23-06-14, 09:30

Location: Hall D

Chair person: A. Marzetti

In adult patients with obstructive sleep apnea (OSA), anatomic malformations less often cause upper airway obstruction during sleep than in children. In many cases, the upper airway looks rather normal. Especially, there are normal or absent tonsils and the facial skeleton is normognathic.

During wakefulness the genioglossus muscle is unconsciously activated shortly before inspiration starts. During sleep the physiological reduction of the tone of the genioglossus muscle as well as a desynchronisation with the diaphragm are major reasons for the loss of airway patency in adult OSA.

Pacemakers have been developed during the last 15 years which stimulate the hypoglossal nerve during sleep and try to mimic behaviour of the genioglossus muscle in a patent airway.

Several studies have been published during the last two years showing the feasibility and efficacy in adult OSA. Using specific selection criteria and a modified surgical technique both being published recently a safety and a promising success rate have been documented.

Now, there are one year results of a large multicenter trial (STAR trial) showing an efficacy in objective and subjective parameters regarding sleep disordered breathing, daytime sleepiness and quality of life.

The big potential of this innovative treatment in otherwise surgically untreatable OSA patients has been demonstrated.

Pheno- and endotyping of CRS - the future is now!

C. Bachert¹, P. Tomassen¹, L.U.O. Zhang², X. Wang²

¹ Upper Airway Research Laboratory, University of Ghent, Ghent, Belgium

² ENT, Tongren Hospital University of Beijing, Beijing, China

Abstract: ERS-1214

Session: Prognostic factors in Rhinosinusitis

Session Time: 23-06-14, 11:30

Location: Hall I

Chair person: A. Sama

Chronic rhinosinusitis (CRS) is a disabling disease affecting 10 to 14% of the Western populations. In a European multicenter epidemiological study, it recently has been demonstrated that cigarette smoking increases the risk of CRS; CRS is also associated with late-onset asthma. However, questionnaire-based population studies are obviously limited in further defining the CRS subgroup relevant for such associations.

CRS is defined by symptoms and clinical signs, and may be supported by nasal endoscopy and CT scanning (EPOS 2012). CRS actually shows remarkable heterogeneity, both at the clinical phenotype level and at the molecular pathophysiological level. Current consensus discerns two major phenotypes (defined as subgroups of patients with homogeneous clinically observable characteristics based on nasal endoscopic findings): CRS with nasal polyps (CRSwNP) and without nasal polyps (CRSsNP). The clinical dichotomization of CRSwNP vs. CRSsNP was initially reflected at the pathophysiological level with characteristic inflammatory and remodelling patterns in Caucasian subjects. However, a number of studies recently reported a spectrum of immunologic profiles, especially in non-Caucasian populations. Thus, the simple differentiation in Th1 and Th2 disease was not reflecting current knowledge and a differentiation into disease clusters (pathophysiologically defined endotypes) was an obvious aim. This differentiation would target a better understanding of the various pathomechanisms of disease, a meaningful association with co-morbidities such as asthma or disease recurrence, and finally a better selection of individuals for specific therapeutic approaches involving biologics such as anti-IL5, anti-IgE or other monoclonal antibody therapy.

Genetics of Hereditary hemorrhagic telangiectasia

A.D. Kjeldsen¹

¹ Otorhinolaryngology, Odense University Hospital University of Southern Denmark, Odense, Denmark

Abstract: ERS-1215

Session: Hereditary hemorrhagic telangiectasia (HHT)

Location: Hall F

Time: 23-06-14, 11:30

Chair person: J. Rimmer

Hereditary Hemorrhagic Telangiectasia (HHT) is an autosomal dominantly inherited vascular disease characterized by the presence of mucocutaneous telangiectasia and visceral arteriovenous malformations (AVMs). About 85% of HHT patients carry mutations in ENG, ACVRL1 or SMAD4 genes. The majority of mutations identified in family probands are family specific and more than 700 different mutations have been described. New mutations in the mentioned genes are often described, and the task is to differentiate between benign polymorphism and pathogenic mutations.

Identification of a pathogenic mutation in HHT families is important, first to confirm the clinical diagnosis, and second to provide predictive testing in the asymptomatic at-risk relatives, to ensure early screening and treatment for PAVMs in affected family members. However in diagnosing new families with HHT the use of clinical diagnostic criteria (The CuraCao criteria) is crucial. HHT patients express a wide variety of clinical symptoms both within the same family and between different families and other factors than the mutations being responsible for the clinical manifestations must exist. Specific genotype phenotype correlations and known geographic variations will be described.

Olfaction after endoscopic sinus surgery: long-term results

H.R. Briner¹

¹ Klinik Hirslanden, ORL-Zentrum, Zurich, Switzerland

Session: Smell & Taste

Session Time: 25-06-14, 09:30

Location: Hall K

Chair person: S. Lacroix

Impairment of the sense of smell is one of the main symptoms of patients with chronic rhinosinusitis. The severity of the loss of the sense of smell usually parallels the severity of the underlying chronic rhinosinusitis. Successful treatment of patients with chronic rhinosinusitis therefore has the potential to reduce or normalize the loss of olfaction. If medical treatment fails to control the patient's symptoms, endoscopic sinus surgery is indicated. It is known that endoscopic sinus surgery can improve the sense of smell in patients with loss of olfaction due to chronic rhinosinusitis. If surgery is performed for chronic rhinosinusitis, a special focus should be on the olfactory cleft. If there is mucosal disease in the olfactory cleft, a gentle lateralization of the middle turbinate may restore drainage and ventilation of the olfactory. Following this concept, good long term results regarding olfaction can be achieved.

Appropriate maximal medical therapy of chronic rhinosinusitis in the pediatric population

F. Baroody¹

¹ Otolaryngology-Head and Neck Surgery, The University of Chicago Medicine, Chicago, USA

Abstract: ERS-1217

Session: Pediatric Chronic Rhinosinusitis

Session Time: 25-06-14, 11:30

Location: Hall A

Chair person: I. Tasca

Objectives:

Chronic rhinosinusitis is a common problem in the pediatric age group that adversely affects quality of life. Although the pathophysiology is not as well studied as adult disease, chronic inflammation seems to play a role with a smaller contribution to infections except in the context of acute exacerbations. Multiple treatment modalities have been used to medically manage this problem.

Methods:

Recommendations for the medical therapy of this conditions will be made based on a thorough review of available medical evidence.

Results:

Saline irrigation is useful in the therapy of chronic rhinosinusitis in children and is supported by an excellent safety record, reasonable compliance, and a randomized controlled trial that shows that this therapy improves quality of life as well as objective outcomes on computerized tomography scans. Since chronic inflammation is important in the pathophysiology of the disease, intranasal steroids are recommended based more on their safety and efficacy in allergic rhinitis than on well controlled randomized trials in pediatric rhinosinusitis. There is some level 1 evidence to support the efficacy of a short taper course of systemic steroids in therapy. There is no evidence to support the use of antihistamines, leukotriene modifiers or mucus thinners in therapy. Finally, although common in clinical practice, the use of antibiotics is not supported by high level evidence and would be better reserved for use in acute exacerbations of chronic disease.

Conclusion:

The maximal medical therapy of pediatric chronic rhinosinusitis will be reviewed and algorithms presented to facilitate management.

Nasal provocation test using allergen extract versus cold dry air provocation test: which and when?

Y.H. Kim¹

¹ Department of Otorhinolaryngology Head & Neck Surgery, College of Medicine Inha University, Incheon, Korea

Abstract: ERS-1218

Session: Nasal provocation tests

Session Time: 23-06-14, 10:00

Location: Hall F

Chair person: P. Stjarne

Nasal provocation test (NPT) is an ideal test for diagnosing allergic rhinitis (AR), since the target organ, the nasal cavity itself, is directly provoked by the causative allergen. In spite of its usefulness, NPT has not been widely accepted in clinical practice, because of its lack of standardized method and diagnostic criteria. This lecture will introduce our method of NPT using intranasal spray of house dust mite allergen extract. This lecture will also discuss the association between NPT and skin prick test, and the proposed diagnostic criteria of AR using acoustic rhinometry in our large-population based study.

The nonspecific nasal hyper-reactivity (NHR) could be defined as hyper-responsiveness of the nasal cavity induced by nonspecific, non-allergenic stimuli. Cold Dry Air (CDA) provocation test is one of the provocative protocols designed to detect and evaluate this NHR. It has been accepted that CDA provocation is superior to other protocols in detecting NHR. However, there had been still very few studies about its clinical application. This lecture will introduce CDA machinery we developed, and discuss its usefulness in detecting and evaluating NHR. This lecture will also cover the diagnostic criteria of NHR using CDA provocation and acoustic rhinometry. Finally, our subjective cold hyper-responsiveness (SCH) grade would be introduced, which was proved to correlate well with the actual result of CDA provocation test.

Rhinosporidiosis & Rhinoscleroma

R. Singh¹

¹ ENTHNS, Kasturba Medical College Manipal University, Manipal, India

Abstract: ERS-1219

Session: Rhinosporidiosis & Rhinoscleroma

Session Time: 25-06-14

Location: Hall G

Chair person:

Background & Aims:

Granulomas of the nose and the paranasal sinuses represent an uncommon but clinically important group of rhinogenic disorders. Rhinosporidiosis and rhinoscleroma have been known for over a hundred years. Yet unresolved enigmas in rhinosporidiosis include the mode of infection, mechanisms of spread and some aspects of histopathology. This paper aims to highlight the current problem statement of rhinosporidiosis and rhinoscleroma in southern India, its classical presentations and recent trends in diagnosis and treatment.

Methods:

A retrospective study was conducted in a tertiary care hospital in India on diagnosed cases of rhinosporidiosis and rhinoscleroma. Pertinent endoscopic, radiologic and histologic findings were noted in order to exemplify their classical clinical picture. Contemporary management strategies, including medical treatment modalities and the role of sinonasal surgery was reviewed.

Results:

Rhinosporidiosis is relatively common in southern India. Common presenting symptom include nasal obstruction however epistaxis is a classical feature of rhinosporidiosis. The symptomatology of Rhinoscleroma depends on the stage of disease. Most of these cases can be diagnosed based on clinical examination however histopathology is confirmatory. Endoscopic laser or bipolar assisted surgery is ideal however recurrence and nasal deformity is not uncommon.

Conclusions:

Among all the nasal granulomas rhinosporidiosis is still commonly encountered in southern India. A high index of suspicion, coupled with timely diagnosis and appropriate medical and surgical treatment, is mandatory in the management of these cases.

Differential diagnosis of facial pain

C. Nguyen¹

¹ Surgery, Head & Neck Surgery, Ventura, USA

Abstract: ERS-1220

Session: Facial pain and Headache

Session Time: 26-06-14, 09:30

Location: Hall I

Chair person: M. Barnes

Facial pain is a common complaint among patients presenting to rhinologists. Elucidating the etiology of facial pain can be challenging due to the many different causes. Having a framework to utilize to help pinpoint the diagnosis is helpful. One tool developed by the International Headache Society is the International Classification of Headache Disorders, 3rd edition (beta). This divides headaches into primary (Migraine, tension-type, trigeminal autonomic cephalalgias, & other), secondary (due to trauma/injury, vascular/non-vascular causes, substance, infection, other disorder of the eye/ear/dental/mouth, homeostasis, psychiatric) and painful cranial neuropathies/other facial pain.

This latest edition now has a sub-category for headache from chronic or recurring sinusitis. The salient features are clinical, endoscopic, or imaging evidence of past or current sinonasal infection or inflammation along with at least 2 of the following: headache in temporal relation to the onset of sinusitis, waxing and waning in conjunction with other symptoms of the disease, exacerbation with pressure, & appropriate localization. These factors will help rule in a sinus cause.

Careful history-taking (onset, character, duration, associated symptoms, medication use) and examination along with selective imaging for sudden onset headache, history of cancer, suggestion of neurological issue or positive exam finding, HIV status, or presentation with constitutional symptoms, will help to narrow the differential diagnosis.

Knowledge of the common causes as well as the cranial neuropathies and signs and symptoms suggesting occult malignancy will help rule out ENT related pain. Ultimately a multi-disciplinary approach is critical to the diagnosis and management of many headache and facial pain sufferers.

New systemic treatments, evidence and pipeline

P. Gevaert¹

¹ Otorhinolaryngology, Ghent University, Ghent, Belgium

Abstract: ERS-1221

Session: New treatment options for CRS

Session Time: 25-06-14, 09:30

Location: Hall A

Chair person: D. Kennedy

Chronic rhinosinusitis with bilateral nasal polyposis (NP) is an invalidating disease of the nasal sinus mucosa that affects 4% of the population and is frequently associated with asthma. In the past decade we investigated several therapeutic approaches in double blind placebo controlled investigator-initiated trials. Next to treatment with oral doxycycline and oral methylprednisolone, we also investigated anti-IL-5 (mepolizumab) and anti-IgE (omalizumab) injections in patients with NP.

In a randomized, double-blind, placebo controlled trial, 30 patients with severe nasal polyposis refractory to corticosteroid therapy were randomized in a double blind fashion to receive either 2 single IV injections of 750 mg mepolizumab (anti-IL-5) or placebo. 12/20 patients on mepolizumab showed a significantly improved nasal polyp score and CT-scan score compared to placebo. The effect of mepolizumab in the responder group significantly maintained until 36 weeks after treatment, implying a long-term effect in selected patients.

Further, we conducted the first double-blind placebo-controlled randomized trial, investigating the clinical efficacy of omalizumab (anti-IgE) in patients with CRSwNP and comorbid asthma. 24 subjects were randomized to receive subcutaneous treatment with anti-IgE or placebo. A significant decrease in total nasal endoscopic polyp score, nasal symptoms, asthma symptoms and the asthma quality of life questionnaire was observed after Omalizumab treatment in both allergic and non-allergic NP patients with asthma. We investigated some promising novel approaches targeting IL-5 and IgE in patients with nasal polyps. Phenotyping and endotyping based on local inflammation will become more important in tailoring the right treatment for the right patient.

The four - hand technique in surgery of juvenile angiofibroma

J. Constantinidis¹

¹ 2nd ORL Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract: ERS-1222

Session: Juvenile Angiofibroma

Session Time: 25-06-14, 09:45

Location: Hall B

Chair person: O. Ogretmenoglu

The four hand technique was an additional evolution of endoscopic surgery of sinonasal and skull base neoplasms. The advantage of this technique is the collaboration between two surgeons, broadening the operating field to the second nasal fossa and adding a fourth surgical hand.

We reviewed the clinical records and the preoperative and postoperative imaging studies of 16 patients with juvenile angiofibroma who were treated with an endoscopic approach and the four hand technique in the period from January 2005 to February 2014.

According to the Radkowski's system, one patient was at stage Ia, four at stage Ib, two at stage IIa, three at stage IIb, four at stage IIc (infratemporal fossa invasion) and two at stage IIIa (clivus erosion). Nine patients underwent preoperative embolization. The endoscopic treatment involved total ethmoidectomy, middle meatal antrostomy, sphenoidotomy, clipping of the sphenopalatine artery and its branches and drilling of the pterygoid basis and clivus (in three cases). All patients underwent magnetic resonance imaging 3, 6 and 12 months postoperatively. Mean follow-up was 23.7 months (range 3-65). All patients were free of macroscopic disease. The intra-operative blood loss was not excessive (200-800 ml, mean: 450 ml) and no patient required a blood transfusion.

Results showed that endoscopic treatment of stage I-IIIa JNA is a safe and effective treatment modality due to the lack of external scars, minimal bone resection, blood loss and low recurrence rate.

The four hand technique allows additional to the endoscope the use of more instruments and therefore a better surgical access to the pathology. Permanent traction of the tumor and precise dissection of anatomical structures is possible.

We can combine washing and suctioning with drilling or navigation during surgery.

The presence of two surgeons reduce not only the surgical time but improves the quality of surgery.

Nasal polyposis in lung transplant recipients with cystic fibrosis

D. Holzmann¹, M.B. Soyka¹, D. Vital¹

¹ Department of Otorhinolaryngology Head & Neck Surgery, University Hospital Zurich, Zurich, Switzerland

Abstract: ERS-1223

Session: Cystic Fibrosis

Session Time: 23-06-14, 12:00

Location: Hall D

Chair person: V. Ramakrishnan

Background:

Chronic rhinosinusitis with nasal polyposis (CRSwNP) is frequently encountered in patients with cystic fibrosis (CF). Based on our experience CRS has a significant impact on allograft (dys-)function in CF patients. Little is known about the pathogenesis of nasal polyps (NP) in CF patients in particular in lung transplant (LTx) recipients. The objective of our presentation is to elucidate the role of CRSwNP in CF patients after LTx.

Methods:

Cultures of nasal secretions as well as microbiologic data from both bronchoalveolar lavage (BAL) and sputum were analyzed in all CF patients after LTx. In addition, genetic mutation, cf specific phenotype, lung function test, presence of NP, bacteriology and current antimicrobial therapy were recorded and correlated. After LTx all CF patient underwent a frontosphenoidectomy as described elsewhere. Meticulous nasal care and follow-up visits formed the mainstay to control polyp regrowth.

Results:

Among 94 CF-LTx patients 73 were eligible for this survey. In the course of time after LTx 35/73 (48%) developed NP. Colonisation/infection with *Pseudomonas aeruginosa* (PA) was the only parameter correlating with the development of NP. NP are more frequently prevalent in CF-LTx patients than in their non-transplanted counterparts.

Discussion:

Controlling NP in CF-LTx patients requires a distinct treatment plan including the main target to eliminate PA in the nasal cavity and sinuses. Adequate sinus surgery combined with meticulous nasal care are the cornerstones in preventing polyp regrowth.

Surgical management of juvenile nasopharyngeal angiofibroma: Analysis of 162 cases 1995-2012

D. Wang¹, Y.A.N.G. Huang¹, Z. Liu¹, J. Wang¹, X. Sun¹, L.E.I. Yang¹

¹ ENT, EENT Hospital Fudan University, Shanghai, China

Abstract: ERS-1224

Session: Juvenile Angiofibroma

Session Time: 25-06-14, 10:00

Location: Hall B

Chair person: O. Ogretmenoglu

Objectives/Hypothesis:

The purpose of this study was to report on a series of 162 patients presenting with juvenile nasopharyngeal angiofibroma in a single academic hospital during the past 17 years, in an effort to compare outcomes between open and transnasal endoscopic approach, and to define an ideal treatment strategy.

Study Design:

Patients who received either open or endoscopic surgery with a minimum follow-up of 6 months were selected. Local control and complications were compared between groups. Methods: Retrospectively, clinical data, surgical reports, pre- and postoperative images, and follow-up information were reviewed and analyzed.

Results:

All patients were male subjects from 8 to 41 years old. Ninety-six patients were treated by transpalatal or transmaxillary approach, and the remaining 66 patients were treated using transnasal endoscopic approach with/without labiogingival incision. When compared to the open surgery group, the endoscopic surgery group showed a lower median intraoperative blood loss (800 vs. 1100 mL, P5.017) and a lower number of postoperative complications (one vs. 10). In addition, recurrence statistically correlated with Radkowski's classification and patient age.

Conclusions:

Transnasal endoscopic approach can be successfully used for Radkowski's stages I-IIb tumors and selective IIc-IIIb lesions, allowing for less blood loss, fewer postoperative complications, and a lower percentage of recurrence in comparison to open surgery. The management of recurrent tumor is complex, should be individually tailored, and should take into account tumor location, patient age, complications of treatment, and the possibility of spontaneous involution, to better define treatment strategy.

Dorsal augmentation and its pitfalls

S. Paun¹

¹ ENT, St BARTHOLOMEW'S and the Royal London Hospitals, London, United Kingdom

Abstract: ERS-1225

Session: What do we learn from our mistakes in rhinoplastic surgery

Session Time: 24-06-14, 12:03

Location: Hall B

Chair person: R. Xavier

This presentation highlights contemporary techniques in augmentation rhinoplasty. Causes of deformity, options for grafting materials and the relative benefits of which areas to augment are discussed. Limitations and pitfalls are presented with options to avoid these.

Molecular mechanisms of nasal epithelial repair and remodeling in viral infection

D. Wang¹, Z. Liu¹, H. Yu¹, J. Wang¹, X. Sun¹, J.U.A.N. Liu¹

¹ ENT, EENT hospital Fudan University, Shanghai, China

Abstract: ERS-1226

Session: Lessons from Molecular biology in rhinitis

Session Time: 23-06-14, 11:15

Location: Hall C

Chair person: N. Zhang

Total maxillectomy is sometimes necessary especially for malignant tumors originating from the maxillary sinus. Here we describe a combined transoral and endoscopic approach for total maxillectomy for the treatment of malignant maxillary sinus tumors and evaluate its short-term outcome. This approach was evaluated in terms of the physiological function, aesthetic outcome, and complications. Six patients underwent the above-mentioned approach for resection of malignant maxillary sinus tumors from May 2010 to June 2011. This combined transoral and endoscopic approach includes five basic steps: total sphenoidectomy, sublabial incision, incision of the frontal process of the maxilla, incision of the zygomaticomaxillary fissure, and hard palate osteotomy. All patients with malignant maxillary sinus tumors successfully underwent the planned total endoscopic maxillectomy without the need for facial incision or transfixion of the nasal septum; there were no significant complications. Five patients received preoperative radiation therapy. All patients were well and had no recurrence at follow-up from 13 to 27 months. The combined approach is feasible and can be performed in carefully selected patients. The benefit of the absence of facial incisions or transfixion of the nasal septum, potential improvement in hemostasis, and visual magnification may help to decrease the morbidity of traditional open approaches.

Advanced Radiology of the Skull Base

E. Menif¹

¹ Radiology, CERU, Tunis, Tunisia

Session: Advanced Radiology of the skull base

Location: Hall I

Background and aims:

Skull base's anatomy is complex. However, CT scans and MRI make it easier to understand and to improve the pretreatment diagnosis.

The aims of this presentation are:

To describe in detail radiological anatomy of the skull base on CT and MRI.

To explain the limits, the contents, and the relation of skull base to the deep facial spaces.

To locate the communication pathways between the nasal cavities, the paranasal sinus, the deep facial spaces and the endocranium.

To explain the perineural spread by nerve anastomoses and communication pathways.

Method and results:

The high resolution CT scans with 2D and 3D reconstructions enable the study of bony structures and the recognition of the skull base's foramina.

The parenchymal window identifies the deep facial spaces and the organization of deep spaces in columns facilitates learning.

MRI studies the content of foramina and detects perineural and perivascular spread of pathologic processes and their endocranial extension.

Nerve anastomoses explain endocranial extension of distant pathologic processes of deep spaces.

Conclusion:

Knowledge of the skull base anatomy on CT scan and MRI, knowledge of the communication pathways and perineural and perivascular spread is the key to topographic diagnosis. It is the first stage of etiologic diagnosis and it provides comprehensive diagnostic extension.

Nasal polyp murine models

D.W. Kim¹

¹ Otorhinolaryngology-Head and Neck Surgery, Seoul National University Boramae Medical Center, Seoul, Korea

Abstract: ERS-1228

Session: Basic research in CRS

Session Time: 24-06-14, 09:30

Location: Hall C

Chair person: K. van Drunen

Background:

Studies on the pathophysiology of nasal polyps or therapeutic trials in human subjects have been limited, thus an animal model is needed. Several animal models have been developed like rabbit models. However, most of these models had neutrophilic inflammation, which is different from human nasal polyps with eosinophilic infiltration.

Methods:

Authors developed a nasal polyp murine model by SEB exposure to nasal chronic allergic inflammation. After induction of an ovalbumin (OVA)-induced allergic rhinosinusitis, 3% OVA was instilled into the nasal cavity of mice, 3 times a week with weekly administration of 5 ng SEB for 8 weeks.

Results:

In SEB-treated mice, polyp-like mucosal lesions with eosinophilic inflammation, microcavity formation and mucosal disruption were observed. These models showed a significant increase in the infiltration of total inflammatory cells, eosinophils, and lymphocytes with higher levels of IL-5, eotaxin, and OVA-specific IgE. To investigate the effect of long term exposure of OVA plus SEB, they were instilled into nasal cavity for 6 months. 6 months model had more polyp-like lesions, higher mucosal thickness and higher number of eosinophils in tissues than 3 months model. Long term polyp model documented more Th2-deviated immunologic profiles than short term (3 months) model. Eosinophil/neutrophil and IL-4/INF- γ were increased from 3 months to 6 months. Lastly, some application of this model should be also presented in this session.

Conclusions:

SEB induced nasal polyp mice model is close to human polyps in regard to immunohistopathologic aspects. This model will be valuable in investigating therapeutic trials or elucidating pathophysiologic mechanism.

Induction of nasal polypoid lesions in an allergic rhinosinusitis

D.W. Kim¹

¹ Otorhinolaryngology-Head and Neck Surgery, Boramae Medical Center Seoul National University College of Medicine, Seoul, Korea

Abstract: ERS-1229

Session: Immunotherapy update 2014

Session Time: 26-06-14, 09:42

Location: Hall F

Chair person: J. Vokurka

Background

There has been increasing evidence supporting the role of *Staphylococcus aureus* enterotoxins in the pathogenesis of nasal polypoid lesions. Authors investigated the histological and immunologic effects of SEB on the formation of nasal polypoid lesions in an allergic rhinosinusitis murine model.

Methods:

After induction of an ovalbumin (OVA)-induced allergic rhinosinusitis, OVA with SEB (5 or 500 ng) was instilled into the nasal cavity of mice for 8 weeks. Control mice did not receive SEB or OVA instillation. Histopathological changes were observed using hematoxylin and eosin, Sirius red, Giemsa, Masson's trichrome, and Alcian blue stains. The levels of interleukin (IL)-4, IL-5, IL-8, IL-13, eotaxin, interferon gamma, total IgE, and OVA-specific IgE from serum or nasal lavage fluid were measured using enzyme-linked immunosorbent assay.

Results:

In 5ng of SEB-treated mice, more polyp-like mucosal lesions with eosinophilic inflammation, microcavity formation and mucosal disruption were observed compared with control and 500ng of SEB-treated mice. These models also showed a significant increase in the infiltration of total inflammatory cells, eosinophils, and lymphocytes with higher levels of IL-5, eotaxin, and OVA-specific IgE. In this model, superantigen effect was confirmed by FACS analysis showing CD4 positive T cells with higher expression of SEB-associated V β chains (3,7,8, and 17). In addition, these CD4 positive T cells had up-regulation of Ki67 (proliferative marker) and GATA-3 (Th2 transcription factor).

Conclusions:

5ng of SEB induces nasal polypoid lesion characterized by eosinophilic infiltration and microcavity via T cell stimulation of superantigen in allergic inflammatory background.

Eosinophilic otitis media

N. Yoshida¹

¹ Otolaryngology, Jichi Medical University Saitama Medical Center, Saitama, Japan

Abstract: ERS-1230

Session: Wegener and other vasculitis - when to suspect in CRS

Session Time: 24-06-14, 10:00

Location: Hall I

Chair person: A. Danielsen

Eosinophilic otitis media (EOM) is an intractable otitis media characterized by the presence of a highly viscous yellow effusion containing eosinophils. The diagnostic criteria of EOM established by the EOM study group in 2011 are as follows; Major criterion: otitis media with effusion or chronic otitis media with eosinophil-dominant effusion. Minor criteria: 1) highly viscous middle ear effusion; 2) resistance to conventional treatment for otitis media; 3) association with bronchial asthma; 4) association with nasal polyposis. Definitive cases are defined as positive for the major criterion plus two or more of the minor criteria. EOM is an intractable and persistent disease, and it also presents a high risk for development of severe hearing loss. The immunohistological studies have shown the active inflammation with production of various cytokines and chemokines that induce migration of eosinophils in the middle ear mucosa. Many IgE-immunopositive cells were found in the middle ear mucosa, and IgE levels in middle ear effusion are significantly higher in EOM patients than those in control patients with common otitis media with effusion. The presence of high-level IgE may exacerbate eosinophilic inflammation in the middle ear. In addition, the incidence of EOM in eosinophilic chronic rhinosinusitis is around 10% in our study. The coincidence of the bronchial asthma and patulous eustachian tube in patients with EOM has been reported. The pathogenesis, clinical features and management of EOM associated with chronic rhinosinusitis will be discussed.

Sinus and temporal bone in Cystic Fibrosis

M.C. Berkhout¹, E. Rijntjes², W.J. Fokkens¹, H.G.M. Heijerman³

¹ Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

² Otorhinolaryngology, Haga Teaching Hospital, The Hague, Netherlands

³ Pulmonary Diseases, Haga Teaching Hospital, The Hague, Netherlands

Abstract: ERS-1231

Session: Cystic Fibrosis

Session Time: 23-06-14, 11:30

Location: Hall D

Chair person: V. Ramakrishnan

Rhinosinusitis and nasal polyps are common in patients with Cystic Fibrosis (CF). A Dutch adult patient group showed the prevalence of rhinosinusitis was 63% and of uni- or bilateral nasal polyps 25%.

Computed tomography in CF patients frequently shows opacification and a decreased pneumatization of the paranasal sinuses. This pneumatization seems to be related to genotype, with more severe CF resulting in more impaired pneumatization. A commonly held hypothesis is that an early onset of chronic rhinosinusitis decreases pneumatization. However, this is contradicted by research showing that in CF piglets the underdevelopment of the sinuses was seen prior to the onset of opacification of the sinuses, suggesting that the hypoplasia is directly influenced by the CF mutation.

Interestingly, in CF patients temporal bone pneumatization is more extensive compared to the general population and middle ear pathology is generally uncommon. Moreover, the temporal bone pneumatization is not related to CF genotype, suggesting that temporal bone pneumatization is under a different influence than the paranasal sinus pneumatization.

The pathophysiology of sinonasal manifestations in CF is not fully elucidated. It is often assumed that CF-related rhinosinusitis is a consequence of the increased viscosity of the airway surface liquid and impaired mucociliary function. However, the fact that the middle ear and the temporal bone behave different compared to the paranasal sinuses in patients with CF challenge this hypothesis.

Juvenile Angiofibromas

M. Bernal-Sprekelsen¹

¹ Servicio de ORL, Hospital Clinic, Barcelona, Spain

Abstract: ERS-1232

Session: Juvenile Angiofibromas

Session Time: 23-06-14

Location: Hall D

Epistaxis is a common emergency in the general population, and can be severe or even fatal. This pathology affects approximately 60% of the population at some stage of their lives. Epistaxis has a number of local and systemic etiological factors, but 85% of the cases are said to be idiopathic - in the remainder anticoagulation therapy is one of the most common causes. The clinical approach of epistaxis is patient dependent and can include an adjustment of anticoagulant therapy or an active treatment with cauterization, anterior or posterior nasal pack, ligation of the artery sphenopalatine or embolisation. As in older patients there often exists an important comorbidity and polymedication, the epistaxis in this patient group can be severe, can recur frequently and can require different therapeutic strategies. Current knowledge about side effects of medicines and interactions of medicines mutually or interactions between medicines and alimentation is very extensive. Contrary to this, with regard to epistaxis there are only few studies published which examined the pharmacological profile of patients with severe epistaxis. This lecture aims at providing an evidence based overview of the role of comorbidities, polymedication, drug interaction in the group of severe epistaxis and if these patients require different therapeutic strategies. Secondly it will feature a retrospective study at a tertiary care hospital in 125 patients with severe epistaxis between 2005 and 2012. The results of this study underline the high number of cardiovascular comorbidities and recent changes in the pharmacological profile. In this group an overall 5-year mortality rate of 18% was observed.

Local drugs in CRS: evidence for efficacy

G. Adriaensen¹

¹ Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1233

Session: New treatment options for CRS

Session Time: 25-06-14, 10:00

Location: Hall A

Chair person: D. Kennedy

Introduction

CRS defines a spectrum of disease in which different types of inflammation of the nasal and paranasal mucosa are the result of a dysfunctional host-environment interaction occurring at their interface. Therefore it only seems logical to target CRS disease with local pharmacotherapy, provided that delivery of the local drug to the target tissue is adequate.

Methods

The existing evidence for local drug therapy in CRS is reviewed and a recommendation given based on levels of evidence. For this sake CRS will be divided in CRS with and without nasal polyps. Also local drugs for which there is no solid evidence will be mentioned. New concepts in delivery techniques will be discussed.

Conclusion

Local pharmacotherapy remains the first step in treating CRS. When this fails to resolve the symptoms or the disease becomes uncontrolled, systemic drugs and/or surgery is the next step often only to pave the way again for renewed local treatment.

Surgical management of maxillary sinonasal inverted papilloma

E. Serrano¹, E. Mouchon¹, S. Nadeau², G. De Bonnecaze¹

¹ ORL Department, Larrey University Hospital, Toulouse, France

² ORL Department, Hospital, Montreal, France

Abstract: ERS-1234

Session: Inverted papilloma

Session Time: 25-06-14, 11:30

Location: Hall K

Chair person: P. Streck

Introduction

The inverted papilloma (IP) is the most frequent benign tumor of the nasal fossa and sinus. The endoscopic removal alone or with adjunctive external approach became the therapeutic of choice in the last years. The extent of the surgery when the IP takes origin in maxillary sinus is still object of debate. Our aim is to demonstrate the efficacy of the endoscopic removal combined with the sublabial anterior antrostomy approach.

Methods

Retrospective analysis of 64 patients with IP treated in our center. The follow up has been more than 5 years for all patients. Endoscopic removal of the IP has been done for all patients, exclusively or combined with an external approach.

Results

The overall recurrence rate was 14% (9/64). Twenty-three patients on 64 had maxillary inverted papilloma. Ten of them had endoscopic resection alone, 12 had a combined approach with a Caldwell-Luc and 1 had lateral rhinotomy. There were 4 recurrences (17%), 3 of them had the endoscopic surgery alone. No patients have had a medial maxillectomy on their first intervention. One patient required this procedure after the recurrence.

Conclusion

We do think that an endoscopic approach assisted by a sublabial anterior antrostomy is an efficient way to treat patients with maxillary involvement by the papilloma. It has the advantage to preserve the lacrymal duct and the inferior turbinate, respecting the nasal physiology even with a maxillary sinus extension of the disease.

Changing Concepts in Microbiology of CRS and other disease

S. Lynch¹

¹ Medicine, University of California San Francisco, San Francisco, USA

Abstract: ERS-1235

Session: The microbiome in CRS

Session Time: 25-06-14, 08:30

Location: Hall A

Chair person: C. Bachert

Chronic rhinosinusitis (CRS), characterized by persistent sinonasal inflammation for twelve or more weeks, has been associated with a range of well-established respiratory microbial pathogens. More recently, largely due to major advances in the capacity to detect the presence and activity of bacterial species without the need for conventional culture, the sinuses, like other sites in the human host, have become a focus of microbiome research. Using culture-independent approaches, several independent studies have demonstrated that the sinuses support thriving and highly diverse microbial communities in healthy individuals that are typically attached as biofilms to the mucosa. In severe CRS patients with long-standing disease however, these sessile communities, are significantly perturbed, are depleted of a large range of species including the lactic acid bacteria, and are typically dominated by respiratory pathogens. This hallmark CRS loss of sinus community diversity and with it, a significant loss of microbial functions necessary to maintain activation of immune homeostasis and prevent the chronic immune activation observed in patients, fits the emerging paradigm of disease-associated mucosal-microbial interactions at other sites in the human host. These observations, while preliminary, have fuelled optimism that microbial rehabilitation of the sinus mucosa may prove a powerful therapeutic modality to treat CRS. Beyond local therapeutic efficacy, due to the well-established link between upper and lower airway disease, targeted rehabilitation of the sinus microbiome may also have important implications for a variety of lower airway diseases.

Surgical approaches to the maxillary sinus

H.R. Briner¹, A. Leunig²

¹ Klinik Hirslanden, ORL-Zentrum, Zurich, Switzerland

² Dr. Gaertner GmbH, HNO-Klinik München-Bogenhausen, Munich, Germany

Abstract: ERS-1236

Session: Surgical approaches to the maxillary (or sphenoid) sinus

Session Time: 24-06-14

Location: Hall B

Acute and chronic inflammatory disease of the maxillary sinuses is frequent. Most often, medical therapy is sufficient. However, if medical therapy fails, surgical therapy is indicated. Before the area of endoscopic sinus surgery, transoral approaches were used such as the Caldwell-Luc approach. The endoscopic technique now allows approaching disease of the maxillary sinus via the natural drainage pathways. This has the advantage, that the natural drainage pathways can be enlarged if they are blocked by diseased mucosa. Detailed knowledge of the anatomy of the ethmoidal infundibulum and its relationship to the unciniate process, the lacrimal bone and the ethmoidal bulla is necessary to perform a precise surgical approach to the maxillary sinus. This allows to tailor the size of the opening to the extent of the disease of the sinus. In extensive disease involving the lateral or anterior wall of the sinus, the transnasal endoscopic approach can be enlarged up to a partial medial maxillectomy. With this approach, total surgical control over the whole maxillary sinus is possible which allows treating also benign and malignant tumors.

The instructional course will give answers to the following questions: does this patient need surgery of the maxillary sinus?; what are the anatomical landmarks?; how large should the opening to the sinus be?; what to do in difficult cases like revision surgery? A variety of cases with video clips will be demonstrated.

Comparisons of different DISE scoring systems

A.V.M.T. Vroegop¹, D.I.S.E. Cooperative study groups¹

¹ Otorhinolaryngology, Saint Lucas Andreas Hospital / Antwerp University Hospital, Amsterdam, Netherlands

Abstract: ERS-1237

Session: Drug induced sleep endoscopy (DISE)

Session Time: 25-06-14, 11:30

Location: Hall C

Chair person: E. Hamans

Background and aim

The aim of upper airway evaluation in patients with obstructive sleep apnea (OSA) is not only to gain a better insight into the complex pathophysiology of upper airway collapse but also to improve treatment success rates by selecting the most appropriate therapeutic option for the individual patient. Various techniques of upper airway assessment have been introduced over the years, including X-ray cephalometry, computed tomography scanning, magnetic resonance imaging, pressure measurements and drug-induced sleep endoscopy (DISE). The authors aim to provide a comprehensive overview of the different DISE scoring systems.

Methods

The authors performed a literature search to set up a database of research papers describing the development and introduction of DISE scoring systems.

Results

Although several scoring systems have been introduced over the years, no standard approach toward assessment and classification of DISE findings has been universally adopted yet. The development of a standardized and universally accepted DISE scoring system remains a point of interest for future research. In the authors opinion, a scoring system should preferably consist of an easy-to-use and uncomplicated algorithm based on anatomical landmarks, clear enough to avoid confusion but at the same time allowing for registration of more rare collapse patterns, anatomical peculiarities, and the effect of maneuvers and therapy (simulation).

Conclusion

Ideally, DISE assessment would more and more include solid and objective upper airway measurements. In conclusion, a DISE work-up for OSA should preferably include a uniform sedation protocol, standard calibrated quantification, assessment through a universal scoring system and a treatment-targeted approach.

Finding the right patient for septal correction

A.G. Beule¹

¹ Rhinology and Skull Base, UNSW and Macquarie University, Sydney, Australia

Abstract: ERS-1238

Session: Nasal obstruction in children and adults

Session Time: 24-06-14, 09:30

Location: Hall B

Chair person: R. Poulblon

Nasal obstruction is a frequent complaint in children and adults, respectively. Based on multifactorial analysis, it is caused by increased nasal resistance and other less-well defined influencing factors.

Septal deviation is observed in up to 75% of the population. Despite only a limited number of studies, septal correction currently results in good short-term but unsatisfactory long-term results with regard to nasal obstruction. Addition of turbinoplasty with different techniques has only temporary beneficial effect.

As a consequence, patient selection for septoplasty and individually tailored rhinosurgery remains a challenge even for the experienced rhinosurgeon. Due to the high incidence of septal deviation, anterior rhinoscopy or nasendoscopy alone are unreliable to decide whether or not recommending a septal correction. Besides, visual assessment of the nasal passage is made difficult by its transparent nature. As diameter, surface and configuration of the nasal passage influence the sensation of nasal breathing, objective measurement of these factors are mandatory.

In recent years, objective rhinologic diagnostic procedures including acoustic rhinometry, rhinomanometry, rhinoresistometry and long-term rhinoflowmetry have been developed to assist in this decision-making process. Furthermore, clinical test such as Cottle's or Bachmann's test provide specific information to functional areas, such as the nasal valve.

Advantages and disadvantages of these techniques are present and critically discussed. Clinical cases are presented including an algorithm to plan the surgical strategy as precise as possible.

Cold dry air provocation in the diagnosis of NAR

C. Holland¹, C.L. Segboer¹, C. Georgalas¹, C.M. van Drunen¹, W.J. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Centre, Amsterdam, Netherlands

Abstract: ERS-1239

Session: Nasal provocation tests

Session Time: 23-06-14, 09:30

Location: Hall F

Chair person: P. Stjarne

Nasal provocation tests are useful in evaluation and diagnosis of rhinitis. Non-allergic rhinitis (NAR) patients suffer from nasal hyper-reactivity characterized by nasal obstruction, rhinorrhea and sneezing. These symptoms are evoked by non-specific stimuli. For a long period the diagnosis of NAR has been one per exclusionem. In 1998 Braat et al. first described a standardized intranasal cold dry air provocation method in which they could differentiate patients with non-allergic rhinitis from healthy control subjects. They proved a specificity of 71% , higher than histamine provocation with a specificity of 0%. More recent studies have led to a variety of cold dry air provocation protocols, with different objectives and outcome measures. This lecture will give an overview of recent literature on methods of cold dry air provocation. The results of a study we conducted in which we compared non- allergic rhinitis patients with healthy controls, allergic, and mixed rhinitis patients will be presented.

The twisted nose

K.S. Patel¹

¹ ENT Surgery, St Marys Hospital, London, United Kingdom

Abstract: ERS-1240

Session: All you need to know about sepal correction

Session Time: 23-06-14, 12:00

Location: Hall B

Chair person: D. Simmen

The crooked nose represents one of the most challenging aspects of modern rhinoplasty. Such cases frequently need to resolve the combination of aesthetic and functional problems. Most crooked noses have defects affecting the bony upper third, septum, and possibly the upper lateral and lower lateral cartilages. Management of crooked noses requires detailed pre-operative analysis, and assessment of the likely operative procedures, thereby predicting the need for graft materials

The whole spectrum of operative techniques may be required to obtain a satisfactory outcome, and not least various camouflage methods to ensure that the end result is perceptibly as straight as possible.

As with all rhinoplasty, managing patient expectations is essential.

IL-33 and Type 2 innate lymphoid cells in the pathophysiology of chronic rhinosinusitis

J. Shaw¹, S. Fakhri¹, M. Citardi¹, P. Porter², D. Corry², F. Kheradmand², Y. Liu³, A. Luong¹

¹ Otorhinolaryngology - Head and Neck Surgery, University of Texas Medical Center at Houston, Houston, USA

² Medicine, Baylor College of Medicine, Houston, USA

³ Immunology, Baylor Institute for Immunology Research, Dallas, USA

Abstract: ERS-1291

Session: Basic research in CRS

Session Time: 24-06-14, 10:30

Location: Hall D

Chair person: P. Skarzynski

Background:

Chronic rhinosinusitis (CRS) without nasal polyps (CRSsNP) and CRS with nasal polyps (CRSwNP) are associated with T helper 1 (Th1) and T helper 2 (Th2) cytokine polarization, respectively; however, the pathophysiology of CRS remains unclear. The importance of innate lymphoid cells in Th2-mediated inflammatory disease has not been clearly defined.

Methods:

Relative gene expression was evaluated using quantitative real-time polymerase chain reaction. Innate lymphoid cells in inflamed ethmoid sinus mucosa from patients with CRSsNP and CRSwNP were characterized using flow cytometry. Cytokine production from lymphoid cells isolated from inflamed mucosa of patients with CRS was examined using ELISA and intracellular cytokine staining.

Results:

Elevated expression of ST2, the ligand-binding chain of the IL-33 receptor, was observed in inflamed sinonasal mucosa from CRSwNP compared with CRSsNP and healthy control subjects. An increased percentage of innate lymphoid cells as observed in inflamed sinonasal mucosa from CRSwNP compared with CRSsNP. ST2 positive innate lymphoid cells are a consistent source of IL-13 in response to IL-33 stimulation. Significant induction of IL-33 was observed in epithelial cells derived from patients with CRSwNP compared with patients with CRSsNP in response to stimulation with *Aspergillus fumigatus* extract.

Conclusion:

These data suggest a role for sinonasal epithelial cell-derived IL-33 and an IL-33-responsive innate lymphoid cell population in the pathophysiology of CRSwNP demonstrating the functional importance of innate lymphoid cells in Th2-mediated inflammatory disease.

GERD in rhinosinusitis

S. Steinsvag¹

¹ Dept. of ORL, Haukeland University Hospital, Bergen, Norway

Abstract: ERS-1324

Session: GERD in rhinosinusitis

Session Time: 25-06-14

Location: Hall F

Gastroesophageal reflux and chronic rhinosinusitis are both common disorders. Thus a coexistence is to be expected in a number of patients. To what extent there is a casual relationship between the two is a matter of great controversy. During this pro and con session the existing data on this will be presented and directions for further research will be discussed.

Comparison of optical and electromagnetic tracking for navigated lateral skull base surgery

H. Riechelmann¹, W. Freysinger¹, F. Kral¹

¹ Department of Otorhinolaryngology, Medical University, Innsbruck, Austria

Abstract: ERS-1275

Session: Technical advances in treatment of CRS

Session Time: 24-06-14, 10:15

Location: Hall K

Chair person: M. Caversaccio

Background and Aims: While navigation is clinical routine for sinus surgery, it is less well established for surgery of the lateral skull base. Navigation with optical tracking is sometimes hampered by line-of-sight problems in cluttered operating theatres; the accuracy of electromagnetic tracking is influenced by ferromagnetic surgical equipment. We compared electromagnetic with optical tracking under controlled conditions for the lateral skull base.

Methods: Six anatomical specimens were dissected to measure the target registration error (TRE) in and around the petrous bone in a wet laboratory to simulate an intraoperative setting. Specimens were registered with passive optical and electromagnetic tracking. Results: Overall accuracy was better using optical tracking than electromagnetic tracking (0.22 mm; 0.07–0.48 vs 0.99 mm; 0.56–1.27 mm; median, lower and upper quartiles, respectively; $p < 0.001$).

Conclusion: The accuracy of optical tracking was near the resolution of the camera system, whereas the accuracy of electromagnetic tracking was lower. Currently, only optical tracking allows for application accuracy suitable for lateral skull base surgery.

Inflammatory patterns in upper airway disease in the same geographical area may change over time

P. Tantilipikorn¹, N. Sookrung², S. Muangsomboon³, B. Pinkaew¹, T. Suwannavej¹, J. Lumyongsatien¹, A. Bedavanija¹, P. Assanasen¹, C. Bunnag¹

¹ Otolaryngology, Mahidol University Siriraj Hospital, Bangkok, Thailand

² Research, Mahidol University Siriraj Hospital, Bangkok, Thailand

³ Pathology, Mahidol University Siriraj Hospital, Bangkok, Thailand

Abstract: ERS-1244

Session: Prognostic factors in Rhinosinusitis

Session Time: 23-06-14, 12:00

Location: Hall I

Chair person: A. Sama

Introduction

Inflammation of nose and paranasal sinus or rhinosinusitis (RS) is a very common disease and causes a significant health problem that effect socio-economy. Chronic rhinosinusitis (CRS) has an obscure etiology comparing to the acute rhinosinusitis (ARS). The essential component of chronic inflammation is still confined to the dysregulation of T lymphocyte^{1, 2}. CRS can be subclassified into CRS with nasal polyp (CRSwNP) and CRS without nasal polyp (CRSsNP)³. CRSwNP shows predominant T helper 2 (Th2) with eosinophil inflammation, and CRSsNP shows predominant Th1 inflammation^{4,5}. Sinus mucosa of CRSwNP cases mostly shows abundant eosinophils, especially the specimens from European countries³. Recently the data from China show distinct immunopathologic by presented noneosinophilic inflammation of over half of CRSwNP⁶.

Material and methods

Ninety patients were included in this study. Clinical data (especially allergic status, asthmatic status and computerized tomography (CT) grading) were collected. Mucosa from 49 patients with CRSwNP, 18 patients with CRSsNP, and 25 patients with CR were obtained for histological and transcription factors analysis.

Result

Median eosinophilic count was 1128.56/high power field (HPF). Forty percent of nasal polyp specimens were non-eosinophilic polyp (eosinophil less than 10/HPF). Nasal polyp had statistical significant higher level of Th2 transcription factor (GATA3) than mucosa of CRS; 0.079 ± 0.175 vs 0.009 ± 0.009 (95%CI : 0.028-0.130 vs 0.004-0.014).

Conclusion

Non-eosinophilic polyp was less than half of specimens. From the transcription factors analysis, the inflammatory profile of nasal polyp from Thailand showed the Th2-predominant type of inflammation.

Treatment of smell disorders

D. Leopold¹, D. Hornung²

¹ Surgery, University of Vermont, Burlington, USA

² Biology, St Lawrence University, Canton, USA

Abstract: ERS-1248

Session: Smell disorders, diagnosis and treatment

Session Time: 23-06-14, 10:06

Location: Hall C

Chair person: D. Simmen

Olfactory losses related to chronic sinonasal infection or inflammation can usually be treated with therapies for that condition, including high volume saline lavage, antibiotics, oral and topical steroids and possibly surgery. Olfactory losses that occur after an upper respiratory infection or head trauma occasionally improve spontaneously, but only in a small percentage of cases, and rarely back to pre-injury levels. Olfactory training exercises may improve olfactory ability in a few people, but there is no currently available treatment that will provide full recovery. There is also no treatment for those patients who have a congenital loss. Orally administered zinc, other minerals, and vitamins are not effective, and possibly harmful.

Some patients will have a distortion of their olfactory ability or abnormal perceptions. Patients may say that inhaled odorants are described as being "different than remembered" (parosmia), or they may describe odor perception where there is no odorant in the environment (phantosmia). There is no known therapy for these distortions and abnormal perceptions, although gabapentin, anti-seizure and anti-depressant medications have been described as being helpful for some patients. These conditions sometimes resolve within a year or two, but they can continue longer. Patients who get relief with nostril occlusion can sometimes get relief with saline drops applied while the head is inverted. Phantosmia patients may receive short-term (but not long-term) relief with topical cocaine therapy. The interruption of peripheral input to the more central olfactory neurons in phantomsics opens possibilities for understanding the neurophysiology of this condition.

Immunodeficiencies in Pediatrics

I. Meyts¹

¹ Department of Pediatrics Primary Immunodeficiencies, University Hospitals Leuven, Leuven, Belgium

Abstract: ERS-1249

Session: Pediatric Chronic Rhinosinusitis

Session Time: 25-06-14, 12:00

Location: Hall A

Chair person: I. Tasca

Primary Immunodeficiencies result from inherited defects in one or more components of the immune system, resulting in increased susceptibility to infection but also to auto-immune manifestations and malignancy. In the majority of primary immunodeficiencies, infections with encapsulated organisms are an important disease burden. Moreover, 70-98% of patients with the most common form of primary immunodeficiency present with infections in the ENT region. 60% of adults and children with ENT infection have one or another form of primary immunodeficiency. Therefore, multilevel diagnostic testing is necessary in patients, children but also adults, with recurrent NET infection.

When should we perform surgery in pediatric CRS

M. Cornet¹, W. Fokkens¹

¹ Otorhinolaryngology, Emma Children's Hospital/Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1250

Session: Pediatric Chronic Rhinosinusitis

Session Time: 25-06-14, 11:45

Location: Hall A

Chair person: I. Tasca

Chronic rhinosinusitis (CRS) in children is a multifactorial disease. Diagnosis of CRS in children can be challenging because of overlap of symptoms of other nasal childhood diseases. Also the exact relation of abnormalities on CT scan with symptoms of rhinosinusitis remains unclear. Therefore the diagnosis should be generally made on clinical grounds in combination with endoscopy and CT scan. What is clear is that CRS in children leads to an impaired quality of life. Treatment for children with CRS should firstly consist of maximal medical therapy. If this fails, surgical intervention can be considered combined with postoperative medical therapy. There are a few absolute indications for FESS in children, such as complete nasal obstruction due to massive polyposis, inverted papilloma or orbital abscesses. FESS is seldom needed in children. We will discuss the relative indications and advice always to use the sandwich therapy.

Surgeon level data and outcomes

C. Hopkins¹

¹ ENT, Guy's and St Thomas' NHS Trust, London, United Kingdom

Abstract: ERS-1253

Session: Outcome assessment on CRS

Session Time: 26-06-14

Location: Hall B, 09:00

Chairperson: C. Georgalas

While randomised controlled trials represent the gold standard in research, the tightly controlled inclusion criteria, strictly defined care and checks on patient compliance with treatment may result in results that are not applicable to the wider patient population. Outcome research captures the results of real life care, and when large numbers of patients are studied, permits controlling for co-morbidities and other variables that may introduce bias.

There is a paucity of randomised controlled trials evaluating the effectiveness of endoscopic sinus surgery (ESS). This risks ESS being included in procedures shown to be of limited clinical effectiveness, to which access may be rationed in state funded healthcare systems. In contrast there is a growing body of evidence from outcome research that demonstrate the impact of sinusitis, benefits from treatment, and help to identify both patient and operative factors that may influence outcomes.

Data may be collected as a prospective cohort study; the UK Audit of Surgery for Chronic Rhinosinusitis and Nasal Polyps collected data on 3128 patients who have been followed up for 5 years. Key findings of this and other cohorts will be discussed. There is also large volumes of data collected routinely by healthcare providers, primary care databases and administrative bodies, and we will also discuss the value of data freely available to us.

Headache and the Rhinologist - Rhinogenic or Not

M. Setzen¹

¹ Rhinology Section, North Shore University Hospital, NY, USA

Abstract: ERS-1255

Session: Facial pain and Headache

Session Time: 26-06-14, 10:15

Location: Hall I

Chair person: M. Barnes

Physicians of all specialties including Otolaryngologists and their patients are confused by the fact that most “sinus headaches” are indeed due to migraine. Migraine can also cause nasal congestion, nasal discharge, itchy nose and tearing, further confusing the problem.

In order to determine if the cause is rhinogenic, the otolaryngologist must take a detailed history, perform nasal endoscopy and, if necessary, perform a CT scan of the sinuses.

Contact point areas seen on nasal endoscopy or CT may be responsible for headache. So, rhinogenic headache is indeed an entity, and it can occur either due to acute sinusitis or contact point.

If one suspects contact points as a cause, anesthetize the contact point topically or with injection of 1% Lidocaine and see if this alleviates the pain.

Most referrals to an otolaryngologist for sinus headache are due to migraine, and therefore, the otolaryngologist should be able to manage migraine.

Therapy for rhinogenic headache is primarily medical, and if medical therapy has been exhausted, one can consider limited functional nasal surgery in the form of limited endoscopic sinus surgery, correction of concha bullosa and a septal spur.

Prior to surgery failed medical therapy must have been exhausted with referral to the appropriate medical specialist and render a lengthy discussion with respect to risks, benefits and alternatives. The patient must be that surgery may not alleviate the facial pain and/or headache. Many studies do show that surgery can relieve rhinogenic headache, but this may only be a temporary relief. There is also poor correlation with sinus headaches and CT scans and headache is a weak predictor of sinusitis.

Over-diagnosis of sinus headaches occurs including the overuse of antibiotics. The otolaryngologist must only operate on the appropriate patient-if not one will have an unhappy patient.

Draf 3 reasons for revision

S. Reinartz¹, F. Hansen¹, G. Adriaensen¹, C. Georgalas¹, W. Fokkens¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1256

Session: The frontal sinus

Session Time: 23-06-14, 10:06

Location: Hall A

Chair person: V. Lund

The Draf III procedure, also known as endoscopic modified Lothrop or frontal drillout procedure, has many indications, e.g. in a very selected group of CRSwNP/CRSsNP patients, benign tumors, mucoceles, complications of acute rhinosinusitis, and in order to gain access to the anterior skull base in case of CSF leak or anterior skull base tumors.

The key to successful outcomes of this procedure lies in preservation of mucosa of the frontal recess and in creating an adequate size neo-ostium. Analysis of a large series of Draf III procedures in our hospital showed that 90% of primary cases ended up with a patent neo-ostium. Restenosis of the neo-ostium occurs more often in severe mucosal disease and is associated with the presence of allergy, asthma, cystic fibrosis, and previous frontal sinus surgery. Anatomical limitations are the distance from anterior to posterior frontal sinus wall, the intercanthal distance, and the size of the nasofrontal beak. Large mucosal defects in frontal sinus and/or recess can cause extensive scarring, which can be prevented by reconstruction with a mucosal flap.

Furthermore, the analysis showed that some patients with complete restenosis of the neo-ostium remain symptomfree, whereas others with a small neo-ostium may be symptomatic. Reasons for revision surgery are assessed based on patients symptoms, signs on nasendoscopy and/or imaging, and response to medical therapy. Revision surgery may include widening of the neo-ostium, removing neo-osteogenesis, and preventing restenosis by use of local chemotherapeutic or cytostatic agents. If this is not possible, frontal sinus obliteration remains the alternative.

Intraorbital tumours, diagnostic approaches and treatment options

P. Saeed¹

¹ Ophthalmology, Orbital center, Amsterdam, Netherlands

Abstract: ERS-1257

Session: Surgery of the Orbit and lacrimal pathways

Session Time: 23-06-14, 09:30

Location: Hall K

Chair person: M. Bernal-Sprekelsen

Background:

Accessing orbital apex and periorbital skull base lesions can be difficult because of anatomic constraints. For medially based orbital apex lesions, the visualization in the orbital apex through a direct orbital approach is limited. Intraconal lesions are not as easily approached endoscopically alone because they require transit across the extraocular muscles and intermuscular septa. We describe a new approach for removal of large medially located orbital tumors with involvement of paranasal sinuses.

Methods:

Five patients underwent surgical intervention through a combined endonasal endoscopic and medial transconjunctival orbitotomy approach for removal of their tumor.

Results:

Three adults and two children underwent this combined procedure. Two patients with fibrous dysplasia, 2 osteomas and 1 Rhabdomyosarcoma underwent successful excision of their tumor.

Conclusion:

The medial transconjunctival approach, also referred to as the transcaruncular approach, when combined with an inferior fornix incision and endoscopic endonasal approach increase the surgical visualization of larger tumors involving the paranasal sinuses and deep orbit.

Comprehensive imaging of the nasal cavity and paranasal sinuses

R. Maroldi¹

¹ Radiology, University of Brescia, Brescia, Italy

Abstract: ERS-1258

Session: Surgical approaches to the maxillary (or sphenoid) sinus

Session Time: 24-06-14

Location: Hall C

Flying through congested airspaces: imaging of chronic rhinosinusitis

The development of endonasal surgical techniques during the last two decades has been made possible by the detailed pre-operative information provided by CT and MR. Recently, high-resolution Cone Beam Computed Tomography (CBCT) has demonstrated to be able to supply excellent details (up to 100 micron) about the thin osseous sinonasal walls with a considerable reduction of radiation exposure. Due to their resolution, both CBCT and CT are the techniques of choice to draw the individual anatomy of the bone framework of nose and paranasal sinuses. It is on the basis of this internal map that endonasal surgery for rhinosinusitis is planned. CBCT and CT evaluation of patients complaining of **chronic rhinosinusitis and nasal polyposis** is essentially focused on the accurate delineation of the extent of inflammatory mucosal changes and on predisposing anatomic factors that may impair mucociliary drainage or increase the risk of the endoscopic procedure.

Though the volume acquired by CT/CBCT can be conventionally "frozen" in a series of thin (1mm) coronal/axial/sagittal images, anatomy details of critical relevance are better understood via an interactive flight through the volume: i.e. simultaneous analysis of the three planes. Key structures as the whole course and ossification of the anterior ethmoidal artery channel or the common lamina for middle/superior/supreme turbinates are more easily identified with this approach.

Anatomic landmarks demonstrated by Imaging are of remarkable importance in planning surgical procedures in patients already treated, especially in relapsing polyposis.

Non-invasive fungal rhinosinusitis (high content of calcium, iron and manganese within fungal hyphae: hyperdensity on CT, hypointensity on MR) sparing the mucosa lining the sinusal cavity or invasive forms (mucosa and bone invaded) can be thoroughly mapped by Imaging.

Nasal growth after pediatric septoplasty at long-term follow-up

I. Tasca¹, G. Ceroni Compadretti¹

¹ E.N.T., Imola Hospital, Imola, Italy

Abstract: ERS-1259

Session: Nasal obstruction in children and adults

Session Time: 24-06-14, 10:15

Location: Hall B

Chair person: R. Poulblon

Background:

Septoplasty in children is still a matter of open discussion, since it is thought that a surgical procedure on a developing structure can produce some adverse effects on the normal nasal growth. Clinical investigations fail to provide good evidence for accepted practice due to the lack of studies with longitudinal follow-up conducted with objective methods.

Objective:

The goal of this retrospective study is to evaluate the effects of pediatric nasal septum surgery in a long term follow up by means of anthropometry.

Methods:

Forty-four Italians, 25 males and 19 females, undergoing septoplasty during childhood using the endonasal approach, were reassessed after a mean follow-up of 12.2 years. Anthropometric recordings were used to identify any growth retardation due to the operation by a comparison with previously published age-specific normative data of North American Caucasians. Nasal measurements consisted of 5 linear parameters, 3 angular parameters, and 3 proportional index.

Results:

There are no significant differences between any of the measures of the sample and the normal ones population ($P > 0.1$) in both sexes with the exception of the nasolabial angle measurement. Indeed, the nasolabial angle of the females had significantly lower values compared to normal ones ($P = 0.04$), whereas those of the males had lower values compared to normal ones ($P = 0.08$). This finding seems to be determined by the influence of the type of operation on this measurement, since it has been noted that the values of the patients treated surgically by extracorporeal septoplasty were significantly lower than those of the patients treated surgically by conservative septoplasty.

Conclusion:

Pediatric septoplasty may be indicated in selected cases of obstructing nasal septum deformities. The operation, performed via endonasal approach, does not interfere with the normal growing nasal process.

Endoscopic anterior skull base resection and reconstruction: evolution of technique over years

I. Herzallah¹

¹ Otolaryngology, King Abdullah Medical City, Makkah, Saudi Arabia

Abstract: ERS-1260

Session: Defects of the Anterior Skull Base, filling the gap

Session Time: 25-06-14, 10:06

Location: Hall I

Chair person: C. Georgalas

Reliable construction of a skull base defect is of paramount importance for an expanded endonasal approach to be a valid option. In the last decade, anterior skull base reconstruction options have developed owing to improvements in endoscopic techniques together with introduction of local vascular flaps, biomaterials and image guidance. This development has facilitated more radical tumor management via the endoscopic transnasal route. Indeed, successful reconstruction requires thorough understanding of the anatomy, familiarity with different repair options, as well as a multidisciplinary team between otolaryngologists and neurosurgeons. Our talk focuses on the evolution of different techniques that currently made the endoscopic approach an established option for partial as well as complete anterior skull base reconstruction. Factors influencing the choice of reconstruction method are also discussed. Different developments are highlighted including the nasoseptal flap, turbinate pedicled flaps and alloplastic materials. The developments of other concepts such as subdural graft placement, barrier and support dressing are also briefly covered.

Outcomes analysis in epistaxis management: development of a therapeutic algorithm

E. Holbrook¹, J. Shargorodsky¹, B. Bleier¹, J. Cohen¹, N. Busaba¹, R. Metson¹, S. Gray¹

¹ Department of Otolaryngology, Massachusetts Eye and Ear Infirmary/Harvard Medical School, Boston, USA

Abstract: ERS-1172

Session: Severe Epistaxis

Session Time: 24-06-14, 11:39

Location: Hall K

Chair person: S. Reinartz

Background

Epistaxis is a common problem presenting with variable frequency and severity but contributes a significant cost to the health care system. Management often consists of conservative measures by the patient, primary care physician, or emergency room physician with good success. However, when patients are referred to tertiary care otolaryngologists, more aggressive measures are used. Clear algorithms at this level are lacking which likely reflects the variable nature of presenting patients in terms of location, frequency, and severity of the bleeding.

Methods

We performed a retrospective review of adult patients presenting with epistaxis to the Massachusetts Eye and Ear Infirmary emergency room or rhinology clinic from May 2005 to June 2011. Outcomes of different treatment modalities including cauterization, tamponade with packing, and proximal vascular control were analyzed to determine best practice strategies for anterior and posterior locations of bleeding.

Results

A total of 147 subjects were analyzed. Of all methods of hemostasis analyzed, non-dissolving packing demonstrated the highest failure rate with recurrent bleeding of 57.4%. Recurrence was not effected by length of time packing remained in place (3-5 days). Inpatient stay was shorter in patients who underwent cautery or proximal vascular control after failing initial management compared to those with packing only. No treatment failures were identified following surgical arterial ligation.

Conclusion

Based on our results, an algorithm for management of epistaxis presenting to a tertiary care otolaryngologist has been created to guide practitioners and improve efficacy.

Hyperreactivity in allergic and non-allergic rhinitis

C. Segboer¹, C.T. Holland¹, S.M. Reinartz¹, T. I.¹, A. Gevorgyan¹, P.W. Hellings¹, W.J. Fokkens¹

¹ Otolaryngology, Emma Children's Hospital/Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1262

Session: Nasal Hyperreactivity/nonallergic rhinitis

Session Time: 25-06-14, 09:45

Location: Hall C

Chair person: D. Milosevic

Nasal hyper-reactivity is an increased sensitivity of the nasal mucosa to various nonspecific stimuli both physical and chemical, such as sudden temperature changes, cigarette smoke or chemical pollutants. These nonspecific stimuli result in symptoms of rhinitis like rhinorrhea, nasal obstruction or sneezing.

Nasal hyper-reactivity can be found in different types of rhinitis, varying from common cold to both allergic and nonallergic chronic rhinitis. Recent data show that there are no quantitative or qualitative differences in nasal hyperreactivity between allergic and non-allergic rhinitis.

Hyper-reactivity can be objectively determined with either direct (histamine, methacholine, capsaicin) or indirect cold dry air (CDA) provocation stimuli. CDA provocation, contrary to histamine, is able to distinguish patients with hyper-reactivity from healthy controls and is considered a golden standard to objectively assess nasal hyperreactivity. Recent data show that short nasal CDA provocation is equally reliable in demonstrating nasal hyperreactivity in rhinitis patients as the conventional CDA provocation as described by Braat et al.

The underlying mechanism of nasal hyper-reactivity is unclear. Suggested is a dysfunction of sensory nerves in the nasal mucosa. Stimulation of afferent nerves by aspecific stimuli result in release of inflammatory neurogenic mediators such as substance P or calcitonin gene related protein (CGRP) with neurogenic inflammation as result.

Nasal hyperreactivity can effectively be treated by means of capsaicin in cases of idiopathic rhinitis. Treatment of the underlying cause or rhinitis symptoms is indicated in case of nasal hyperreactivity symptoms in patients with rhinitis of identifiable etiology (infection, allergic inflammation).

Allergen provocation in LAR

C. Rondon¹

¹ Allergy Unit, Regional University Hospital of Málaga IBIMA UMA, Malaga, Spain

Abstract: ERS-1263

Session: Nasal provocation tests

Session Time: 23-06-14, 09:30

Location: Hall F

Chair person: P. Stjarne

Local allergic rhinitis (LAR) is a new phenotype of allergic rhinitis characterized by the presence of a nasal Th2 inflammatory response during natural exposure to aeroallergens with local production of specific IgE (sIgE) antibodies, and a positive response to a nasal allergen provocation test (NAPT), in patients with both negative skin prick-test (SPT) and serum sIgE. After the description of LAR the diagnostic approach of allergic rhinitis has changed. The use of SPT and serum determination of sIgE is not sufficient for differentiation between LAR and non-allergic rhinitis (NAR) patients, and a nasal allergological study including a NAPT and/or nasal detection of sIgE are recommended.

The NAPT is considered the gold standard in the diagnosis of LAR, and has provided to be very useful for the study of the immunologic mechanism involved, and for the evaluation of the clinical and immunological response to specific immunotherapy in LAR patients.

The NAPT reproduces the allergic reaction, including both immediate and late response, occurring during natural exposure to the allergen, demonstrating both the presence of local allergen-specific IgE and the role of the allergen in the symptoms. This technique is not available in many centers, needs well trained personnel and it is time consuming. However a new protocol of NAPT with multiple aeroallergens (NAPT-M) administrated in a single session has succeeded in shortening the procedure without impairing the sensitivity, specificity and reproducibility of the test. This new protocol has been a breakthrough in screening of LAR and non-allergic rhinitis.

Difficult to treat patients with CRS: how to reach control

S. Reinartz¹, C. Georgalas¹, G. Adriaensen¹, W. Fokkens¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1264

Session: Management of the patient who has failed FESS

Session Time: 26-06-14

Location: Hall A, 09:30

Chairperson: P.J. Wormald

First choice therapy in CRS is medical therapy, consisting of local corticosteroids, local and systemic antibiotics, oral corticosteroids, and, importantly, nasal douching. In case of allergic disease, additional therapy with antihistamines is advised. If this does not sufficiently control the symptoms, surgery is indicated. Many patients with CRS can be controlled by a primary FESS, and subsequently continuing nasal corticosteroids and douching.

A minority of CRS patients will be symptomatic despite medical and surgical therapy. Reasons for insufficient control include underlying disease, inadequate previous surgery, sinonasal colonization with pathogens, and biofilm formation. Other diagnoses than CRS may be considered if symptoms persist, e.g. midfacial pain. Patients education about the disease and the importance of compliance to therapy, also for comorbidity, is mandatory.

The following diagnoses should be considered in difficult to control CRS patients, and treated accordingly: aspirin intolerance (Samer's triad), immunodeficiencies, auto-immune diseases (such as Wegener's granulomatosis or Churg-Strauss syndrome), defects in mucociliary clearance (such as Primary Ciliary Dyskinesia or Cystic Fibrosis), and occupational exposure to irritants.

Individual assessment of the reasons for insufficient control, whether the problem is diagnosis-, treatment-, environment-, or patient-related, is very important. New treatment modalities include the use of topical agents in the nasal douching.

Novel Insight into treatment of LAR

C. Rondon¹

¹ Allergy Unit, Regional University Hospital of Málaga IBIMA UMA, Malaga, Spain

Abstract: ERS-1265

Session: Latest update on AR treatment (in collaboration with EAACI)

Session Time: 24-06-14, 11:30

Location: Hall I

Chair person: C. Cingi

Local allergic rhinitis (LAR) is a new phenotype of allergic rhinitis (AR) affecting rhinitis patients with negative skin prick test (SPT) and serum specific IgE (sIgE). It is a common respiratory disease with persistent and moderate-severe symptoms frequently associated with conjunctivitis and asthma.

The differentiation between LAR and non-allergic rhinitis is a key point for the management of this new entity. The treatment of LAR includes allergen avoidance measures and pharmacologic treatment. Allergens avoidance is unfortunately not always possible, and the frequent persistence of nasal symptoms and association to conjunctivitis and asthma forces patients to make long lasting pharmacologic treatment with different drugs. At this point an important question is if patients with LAR could benefit from specific anti-allergic treatment, such as immunotherapy.

Results from a pilot study carried out in LAR patients sensitized to grass pollen demonstrated that a course of 6 months of pre-seasonal grass allergen-specific subcutaneous immunotherapy induced an increase in the nasal tolerance to the allergen and a significant clinical improvement. Patients treated with immunotherapy achieved a consistent reduction of nasal symptoms and rescue medication, and increase in the number of days free of treatment compared with the control group of patients treated with rescue medication. After these results two phase II double-blind, placebo-controlled clinical trials were designed to evaluate the efficacy of allergen specific immunotherapy in LAR with grass and house dust mite allergens.

Nasal provocation testing

C. Rondon¹

¹ Allergy Unit, Regional University Hospital of Málaga IBIMA UMA, Malaga, Spain

Abstract: ERS-1266

Session: Nasal provocation testing

Session Time: 25-06-14

Location: Hall I

The nasal provocation tests aim at eliciting a nasal response, by delivering appropriate allergens to the nose. The purpose of the nasal allergen specific provocation is to reproduce at the reaction occurring during the natural exposure to allergens. Thus, nasal allergen challenges allow demonstrating both the presence of allergen-specific IgE and the causal role of the allergen. It is indicated in the diagnostic confirmation of allergic rhinitis and when discrepancies or difficulties exist in the assessment of a patient's medical history and the results of skin and/or serological tests.

It is the gold standard in the differential diagnosis between local allergic rhinitis and non-allergic rhinitis. The technique is also applied to evaluate sensitivity to the allergen, the efficacy and safety profile of treatment, and in research on the pathophysiological mechanisms of nasal response to allergens.

The nasal provocation test also provides information on the etiology of occupational respiratory diseases of allergic origin.

In this session the methodology, monitoring, and assessment of allergen-specific nasal provocation test will be discussed in order to provide a practical and up-to-date review of the technique.

Inverted Papillomas

S. Reinartz¹, W. Fokkens¹, C. Georgalas¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1267

Session: Inverted Papillomas

Session Time: 23-06-14

Location: Hall D

Treatment of inverted papilloma (IP) is necessary because these neoplasms can be locally aggressive, expanding intraorbitally or intracranially, and are associated with malignant transformation. Most common site of origin of IP is the lateral nasal wall, but it can originate from any site in the nose and sinuses.

Diagnostic imaging of IP should include CT and MRI, to optimize the pre-operative plan. Treatment consists of radical surgical removal; incomplete resection leads to residual disease.

Goals of an adequate surgical procedure include allowing sufficient exposure for complete subperiosteal excision of all diseased mucosa around the origin of the tumor, providing an unobstructed view for postoperative surveillance of the cavity, and minimizing functional disabilities and cosmetic deformities.

Endoscopic visualization of the tumor has many advantages over external approach. This instructional course will focus on the endoscopic management of inverted papilloma, with special emphasis on the medial maxillectomy technique.

Clinical characteristics and implication for treatment in NAR

S. Joe¹

¹ Department of Otolaryngology-Head and Neck Surgery, University of Illinois at Chicago, Chicago, USA

Abstract: ERS-1268

Session: Treatment options in NAR

Session Time: 25-06-14, 11:15

Location: Hall D

Chair person: H. Saleh

Background and Aims

Though the sinonasal symptoms and presentation of nonallergic rhinitis (NAR) are similar to allergic rhinitis, the assessment and treatment approaches for each differ.

Methods

This presentation will review the clinical characteristics of NAR and their implications for its treatment

Results

A logical approach to the evaluation process, with particular attention to the patient's medical and exposure history, will define the potential contributors to the patient's diagnosis

Conclusion

In NAR, systematic assessment of the patient's history commonly leads to logical approaches in the treatment in of NAR

DCR

M. Naraghi¹

¹ Division of Rhinology & Facial Plastic Surgery Department of Otorhinolaryngology-Head and Neck Surgery, Tehran University of Medical Sciences, Tehran, Iran

Abstract: ERS-1269

Session: Surgery of the Orbit and lacrimal pathways

Session Time: 23-06-14, 09:45

Location: Hall K

Chair person: M. Bernal-Sprekelsen

The goal of dacryocystorhinostomy is creation a lacrimal drainage pathway into the nasal cavity in order to reestablish the permanent drainage of a previously obstructed lacrimal system. In the last two decades, endonasal endoscopic dacryocystorhinostomy has gained popularity as a minimally invasive alternative to the conventional techniques. Although preliminary reports revealed less success in comparison with external approaches, recent endonasal endoscopic surgeries on various types of DCR have shown similar success rate with preserving advantages of this technique. In this presentation, author's simple technique on endonasal endoscopic will be presented with results, mentioning the main advantages of it including possibility to do it even in acute phase. The maxillary crest was the best landmark in our cases, eliminating the need for light pipe. The mucosa over the sac was elevated by a triangular elevator. After exposure of the bony crest this bone was removed by a sharp punch forceps. After total exposure of the sac, the medial wall of the sac was removed. The opening is made so large, exposing the lateral wall of sac, observing openings of canaliculus into the sac. The nasal mucosal flap was incised to laying it over the sac. By the final trim of flap up to the remaining sac wall, fine approximating of the edges is done. The latter step is very important in preventing post-operative granulation and should be done meticulously. The procedure needs no tenting by lacrimal probe and no stenting of the lacrimal system. Step by step technique will be presented.

Innate lymphoid cells - new players in the epithelium

K. Golebski¹, C. van Drunen¹, W. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Center University of Amsterdam, Amsterdam, Netherlands

Abstract: ERS-1270

Session: The epithelial barrier

Session Time: 25-06-14, 10:15

Location: Hall E

Chair person: N. Zhang

Structural and specialized immune cells within local tissues detect and respond to potential environmental threats by production of mediators that help shape an appropriate immune response. Upon invasion of a pathogen, a rapid innate and non-specific response is triggered through activation of local epithelial cells and the recruitment of innate immune cells (NK, mast cells, neutrophils, etc.), together with a slower but more specific adaptive response involving T and B cells. Dendritic cells have long been considered the only relevant player able to bridge the gap between innate and adaptive immunity by polarizing T cells development into pathogen-specific IFN- γ producing Th1 (anti-viral), IL-4 producing Th2 (anti-parasitic), or IL-17 secreting Th17 cells.

Innate lymphoid cells (ILCs) are newly characterized members of the innate immune response that resemble T-lymphocytes, but that lack rearranged antigen-specific T cell receptors. ILCs are categorized into three flavors that are comparable to that of T cells. ILC1s, innate equivalents of Th1, produce IFN- γ and TNF, and are closely related to ILC3s subtype - cells resembling Th17/Th22 are dependent on ROR γ t and capable of production of IL-17A and IL-22. ILC2s, just like Th2 cells, secrete type 2 cytokines and play an important role in allergen-specific airway inflammation and asthma. Although relatively little is known about the role of ILCs in human disease it should be noted that ILC2s are highly enriched in patients with nasal polyposis and that ILCs could be a new gap-filling bridge between innate (rapid and non-specific response) and adaptive (mediators production pattern) immunity.

Crucial role of the septum in rhinoplasty

R. Xavier¹

¹ Otolaryngology, Hospital da Arrabida, Porto, Portugal

Abstract: ERS-1271

Session: All you need to know about septal correction

Session Time: 23-06-14, 11:30

Location: Hall B

Chair person: D. Simmen

“As the septum goes, so goes the nose!” This aphorism, well known by every nasal surgeon, emphasizes the crucial role of the nasal septum to nasal functioning as well as to the aesthetic features of the nasal pyramid.

In architecture it has been said that form follows function and this certainly also applies to the nose and, in particular, to the nasal septum. The shape and position of the nasal septum is of utmost importance to ensure a proper function of the nose, as the septum not only dictates the patency of the nasal airway but also directs the airflow into the nasal cavities and sinuses, thereby enabling the nasal mucosa to interact with the inhaled air.

But the septum is also the central pillar of the nasal pyramid and any deformity or weakness of the septum may be the most important factor leading to a deviated nose, to a crooked nose, to a saddle nose, to a short nose or to an asymmetry of the nasal tip. To address a patient with any of these nasal deformities, correcting the septum is crucial. Rebuilding the nasal framework with a strong septum positioned exactly in the midline where the upper and lower lateral cartilages can be anchored is the first and often the most important step to achieve a good aesthetic and functional surgical result.

It is often said, in rhinoplasty, “he who masters the tip, masters the nose”. I would rather say “he who masters the septum, masters the nose”!

Preoperative assessment of rhinoplasty patients

R. Xavier¹

¹ Otolaryngology, Hospital da Arrabida, Porto, Portugal

Abstract: ERS-1272

Session: Preoperative assessment of rhinoplasty patients

Session Time: 23-06-14

Location: Hall B

Successful rhinoplasty consists of proper diagnosis, appropriate planning, perfect execution and profound knowledge about limitations and complications of the surgical techniques. This is particularly true in secondary cleft lip rhinoplasty where restoration of an acceptable appearance combined with the best nasal function remains a challenge. Nasal appearance may be quite different. High expectation is the rule but high satisfaction rate is also a characteristic of the cleft lip rhinoplasty patient. Nasal tip work-up usually needs complex grafting procedures in cleft lip patients: columellar strut, alar batten, alar strut, alar rim, crushed cartilage often are performed. Lateral crural steal technique allows to give a better definition of the tip and lateral strut allows to deal with the tendency of the lateral part of the lower lateral cartilage to be flattened and medially displaced. Postoperative care is also specific for the cleft lip patient. Characteristics of the bilateral and unilateral cleft lip nose as well as the usual surgical techniques will be described in this lecture with a special focus on the lower lateral cartilage which represents the main target and the biggest challenge in these patients.

Factors affecting time to revision sinus surgery for nasal polyps

R. Sacks¹, R. Harvey¹, P.L. Sacks²

¹ Macquarie University, Australian School of Advanced Medicine, Sydney, Australia

² University of New South Wales, St Vincents Hospital, Sydney, Australia

Abstract: ERS-1273

Session: Prognostic factors in Rhinosinusitis

Session Time: 23-06-14, 11:15

Location: Hall I

Chair person: A. Sama

Aim:

This paper describes the current concepts in the pathogenesis of chronic rhino sinusitis with polyposis, its diagnosis and management. Management of nasal polyposis typically requires a combination of medical and surgical treatment, careful post-operative care and close follow-up. The ultimate goal of therapy is patient symptom control. Special patient populations at risk of developing inflammatory airways disease recalcitrant to surgical interventions are discussed.

Background:

This paper will analyse the important preventable and non preventable factors which influence the short and long term effects of surgery on nasal polyposis.

Identification and importance of the tissue type, particularly eosinophilic versus neutrophilic polyposis will be highlighted and a histological synoptic report will be presented. Other factors such as associated osteitis, presence or absence of associated other respiratory inflammatory conditions such as Asthma, Churg-Strauss, etc will be discussed.

The exact surgical approaches and techniques required in order to effect long term control will be highlighted including patient, surgeon and institution factors.

Finally the importance of post operative therapy and the role of long term topical therapies will be discussed.

Conclusion:

The management of sinonasal polyposis is challenging and should be undertaken with good understanding of the underlying pathology and patient symptoms. Tissue profiling can help to tailor and predict responses to medical treatment. Surgery should be reserved for patients who have failed maximal medical therapy. The goal of surgery is to create a functional wide open common sinus cavity to enable maximal delivery of topical therapy.

Side effects of local and systemic corticosteroids

E. Margaritis¹

¹ A ENT department Medical School, Hippokraton Hospital, Athens, Greece

Abstract: ERS-1274

Session: Drugs, allergies and other (un)desirable effects

Session Time: 25-06-14, 10:00

Location: Hall D

Chair person: L. Kalogjera

Background and aims

Steroids are a frequent and helpful medication in rhinology either per os or especially intranasally. Thus their safety profile is of great interest.

Methods

Study of literature

Results

Short courses of systemic steroids, less than 20 days and low doses, less than 10mg prednisolone per day have no serious side-effects apart from the simultaneous suppression of immune response. Treatment of longer period or of higher doses carries risks of significant long term suppression of the normal hypothalamic-pituitary-adrenal (HPA) axis, susceptibility to infections, hyperglycemia, glaucoma, peptic ulceration, osteoporosis, behavioral disorders and others. On the other hand topical steroids are much safer. Most of them have no high systemic bioavailability and do not affect HPA axis. Some nasal steroids have no effect on children growth while there are no clear data for others. The majority of intranasal steroids do not increase ocular pressure and do not cause cataract. Furthermore their long-term use is not associated with high bleeding rate or nasal atrophy.

Conclusions

Nasal and short term systemic steroids are a safe and satisfactory treatment for many rhinologic diseases. Nevertheless doctor supervision and patient counseling are of great importance due to the need of long period medication.

3-D Imaging in CRS

J. Pallanch¹

¹ ENT, Mayo Clinic, Rochester, USA

Abstract: ERS-1275

Session: Technical advances in treatment of CRS

Session Time: 24-06-14, 10:00

Location: Hall K

Chair person: M. Caversaccio

All surgeons know the advantage of acquiring a thorough knowledge of their patient's anatomy before proceeding with surgery. 3D image analysis tools have surpassed tri-planar views for pre-surgical planning and enhanced visualization of anatomy for Rhinologic procedures. They are also now readily available.

The purpose of this presentation is to bring sinus surgeons up to date on the available 3-D tools for pre-operative planning and their application in Rhinologic surgery to enable them to safely and more efficiently navigate the sinuses.

Methods

4 different software platforms for 3-D image analysis were tested extensively over the last 6 years in over 200 patients for pre-operative analysis and planning for surgery in and around the paranasal sinuses.

Summary of results: 3 tools were found to be the most useful for enhancing understanding of complex anatomy, demarcation of areas of risk, and integration into the surgical procedure, including utilization with image guidance. These were - volume rendering, segmentation, and virtual endoscopy. These will be discussed. Examples will demonstrate how each tool can facilitate deciphering complex anatomic relationships including the frontal recess. Methods for bringing this information to the OR to outline the surgical plan and demarcate areas of danger will be shown. This includes incorporating the 3-D information into image guidance at the time of surgery.

Conclusion

3-D image analysis tools can enhance understanding of complex anatomy and awareness of the relative location of areas of higher risk. They integrate well in the OR in executing a surgical plan.

3-D imaging in CRS and facial plastic surgery

J. Pallanch¹

¹ ENT, Mayo Clinic, Rochester, USA

Abstract: ERS-1276

Session: 3D anatomy and surgery

Session Time: 25-06-14, 10:15

Location: Hall F

Chair person: H. Braun

3-D image analysis tools can help us attain some of our patient care goals in Rhinology and Facial Plastic Surgery by providing tools: for telling when a therapeutic intervention works; to be able to rebuild a deficit that a patient has suffered; and to be able to do individualized planning for each patient so that our surgical procedures can be optimally safe and efficient.

To demonstrate rhinologic applications of 3-D, three studies are summarized: 3-D volumetric staging; Prosthetic closure of large nasal septal perforations with 3D sizing; and 3-D image analysis for pre-operative planning.

For facial plastic surgery applications of 3-D, we describe: 3-D cameras; 3D photography in the objective analysis of volume augmentation including fat augmentation and changes with rhinoplasty; 3D analysis of dentofacial deformities; 3D in vivo optical skin imaging for intense pulsed light and fractional ablative resurfacing; and 3D volume assessment techniques for CAD and manufacturing for preoperative fabrication.

Results

3-D tools provided superior objective assessment of the results of surgical or medical intervention for CRS and facial plastic procedures. They enhanced our ability to successfully reconstruct deficits. 3-D tools proved useful in pre-operative planning for facilitating understanding of the optimal approach to individual patient's anatomy, and execution of an efficient surgical plan.

Summary

Everything surgeons do is in 3D. In both rhinologic and facial plastic surgery applications, 3-D tools enhanced; assessment of treatment, successful reconstruction, and surgical plan execution. 3-D surgical planning offers the potential for greater efficiency and safety

Preoperative assessment of CT Scan

N. Freling¹, G. Adriaensen²

¹ Radiology, AMC, Amsterdam, Netherlands

² ENT surgery, AMC, Amsterdam, Netherlands

Abstract: ERS-1277

Session: Preoperative assessment of CT scan

Session Time: 24-06-14, 12:03

Location: Hall C

Epistaxis is a common emergency in the general population, and can be severe or even fatal. This pathology affects approximately 60% of the population at some stage of their lives. Epistaxis has a number of local and systemic etiological factors, but 85% of the cases are said to be idiopathic - in the remainder anticoagulation therapy is one of the most common causes. The clinical approach of epistaxis is patient dependent and can include an adjustment of anticoagulant therapy or an active treatment with cauterization, anterior or posterior nasal pack, ligature of the artery sphenopalatine or embolisation. As in older patients there often exists an important comorbidity and polymedication, the epistaxis in this patient group can be severe, can recur frequently and can require different therapeutic strategies. Current knowledge about side effects of medicines and interactions of medicines mutually or interactions between medicines and alimentation is very extensive. Contrary to this, with regard to epistaxis there are only few studies published which examined the pharmacological profile of patients with severe epistaxis. This lecture aims at providing an evidence based overview of the role of comorbidities, polymedication, drug interaction in the group of severe epistaxis and if these patients require different therapeutic strategies. Secondly it will feature a retrospective study at a tertiary care hospital in 125 patients with severe epistaxis between 2005 and 2012. The results of this study underline the high number of cardiovascular comorbidities and recent changes in the pharmacological profile. In this group an overall 5-year mortality rate of 18% was observed.

Endoscopic surgery for inverted papilloma: which are the limits?

T. Onerci¹

¹ Otorhinolaryngology, Hacettepe University Faculty of Medicine, Ankara, Turkey

Abstract: ERS-1278

Session: Inverted papilloma

Session Time: 25-06-14, 11:30

Location: Hall K

Chair person: P. Streck

Inverted papillomas are the most common neoplasms with unique histologic appearance which arise from the lining membranes of the nose and paranasal sinuses. The common site of origin is the lateral nasal wall in the region of the middle meatus and ethmoid cells and often secondarily extend into one of the paranasal sinuses, 82% of the time. Inverted papilloma most commonly involves the maxillary sinus(69%), followed by the sphenoid sinus(11%-20%) and frontal sinus(11%-16). Due to the possibility of IP spread by metaplastic extension to adjacent structures, the treatment of choice is excision with adequate margins.

The advantages of endoscopes are superior magnification, illumination, and angled visualization. Endoscopic approach avoids external scar, allows inspection of the tumour bed, and preserves the superstructure of the nose. An endoscopic medial maxillectomy is possible. Recurrences tend to occur at the buttress between the maxillary antrostomy and the lamina papyracea which is an area easily visible with endoscopes.

The key in the success of IP surgery is complete visualization, identifying the attachments of the tumour, removal of the whole mucosa with underlying periosteum and drilling of the bone at these areas. If the tumour is attached to the bony medial orbital wall, the bone should be removed, leaving orbital periosteum intact. A cavity should be created wide enough which enables the surgeon to inspect endoscopically during long-term follow-up.

Malignant skull base tumours: the limits of endoscopic surgery

P. Nicolai¹

¹ Otorhinolaryngology- Head and Neck Surgery, Spedali Civili University of Brescia, Brescia, Italy

Abstract: ERS-1279

Session: Endoscopic approach to anterior skull base tumour

Session Time: 23-06-14, 11:51

Location: Hall A

Chair person: C. Georgalas

Malignancies of the sinonasal tract are rare, accounting for 3% of all cancers of the head and neck. The mainstay for treatment has traditionally included surgery; historically, the introduction in 1963 by Ketcham of anterior craniofacial resection resulted in a dramatic improvement of the survival of these patients. In the last two decades, endoscopic surgery has obtained more and more expanded indications in managing malignant lesions, thanks to a rapidly growing expertise in the field, refinements in imaging diagnosis, and impressive technological advances in surgical instruments. Currently, all T1-2 and selected T3-4a-b lesions of the nasoethmoidal complex can be resected by an endoscopic approach.

Contraindications for exclusive endoscopic management of these tumors are: involvement of the anterior wall or lateral portion of the frontal sinus; invasion of the lacrimal pathways, of the antero-medial wall of the maxillary sinus and of the hard palate; involvement of the nasal bones or nasal spine; massive transdural extension; dural involvement over the orbital roof; invasion of the orbital content.

External approaches to nasopharyngeal tumours

J. Kanagalingam¹

¹ Otolaryngology - Head and Neck Surgery, Mount Elizabeth Novena Hospital, Singapore, Singapore

Abstract: ERS-1280

Session: External approaches to the sinus

Session Time: 25-06-14, 12:00

Location: Hall I

Chair person: P. Maragkoudakis

The external approach to the nasopharynx still remains the gold standard against which minimal access surgery is compared. This is particularly so in the resection of malignant disease where achieving microscopically negative margins is important. The approaches to the nasopharynx are varied and include the lateral approach (described by Fisch), transfacial and transoral approaches. There is no single approach that suits all neoplasms of the nasopharynx.

In this paper, we review the evolution of surgery for the nasopharynx. In Southeast Asia, nasopharyngeal carcinoma (NPC) is endemic and surgery for salvage of residual or recurrent disease following radiotherapy is sometimes indicated. The nasopharynx may be resected via a lateral rhinotomy, mid-facial degloving or maxillary-swing approach. We describe the pros and cons of these approaches and review the literature on the maxillary swing procedure – which is by far the most common of these external approaches.

Finally, we describe refinements to this approach which has helped reduce surgical morbidity, and highlight innovations including robotic nasopharyngectomy for which early results are available. Whilst endoscopic approaches are rapidly becoming popular, the external approach to the nasopharynx remains central in the treatment of malignant disease.

Orbital Decompression

H. Welkoborsky¹, S. Grass¹

¹ Dept. of Otorhinolaryngology Head and Neck Surgery, Nordstadt Clinic - Academic Hospital, Hannover, Germany

Abstract: ERS-1281

Session: Surgery of the Orbit and lacrimal pathways

Session Time: 23-06-14, 10:15

Location: Hall K

Chair person: M. Bernal-Sprekelsen

Orbital decompression is defined as an operative procedure to reduce increased intraorbital pressure. It is indicated i.e. in cases of acute hemorrhage and in Grave´s ophthalmopathy. In Grave´s ophthalmopathy orbital decompression is performed in cases with inactive disease for cosmetic purposes, and in cases with active disease when rapid vision loss occurs (acute dysthyroid optic nerve neuropathy, DON).

The following procedures can be distinguished:

- bony decompression with partial resection of one or more orbital walls via a transantral/transethmoidal or lateral approach
- removing of peri- and retrobulbar fatty tissue via a transpalpebral approach.

Which procedure is indicated in Grave´s ophthalmopathy depends on preoperative MRT imaging: When massive increase of the periorbital muscles are predominant for the increase of intraorbital pressure a bony decompression including the orbital apex should be performed. If an increase of the fatty tissue is predominant, resection of fatty tissue via a transpalpebral approach might be sufficient. In many cases both procedures are combined.

This lecture gives an overview on the indications of orbital decompression. Different approaches (endoscopic 2-wall transethmoidal approach with and without slitting of the periorbit vs. balanced decompression) are presented. The effect of particular procedures on decrease of intraorbital pressure is shown. The functional and cosmetic results of the procedure particular in Grave´s ophthalmopathy (i.e. decrease of exophthalmus; increase of visual acuity; decrease of lid retraction; healing of corneal ulcers) are discussed. Finally some tips and tricks are shown, along with probable complications and how to manage them.

Complications in endonasal sinus surgery: a 5-year retrospective study of 2,596 patients

A. Leunig¹, V. von Holzschuher²

¹ ENT-Clinic, Center for Rhinology, Munich-Bogenhausen, Germany

² Clinic, ENT, Munich-Solln, Germany

Abstract: ERS-1282

Session: Avoid the Worst Case Scenario in sinus surgery

Session Time: 24-06-14, 11:30

Location: Hall A

Chair person: P. Hellings

The data of 2,596 patients with acute or chronic rhinosinusitis who underwent surgery between 2000 and 2005 using FESS according to the school of Graz (W. Messerklingen and H. Stammberger) were analysed. The results showed 3.1 % minor complications (minor bleedings, perforation of the lamina papyracea), 0.9 % major complications (severe bleedings, cerebrospinal fluid (CSF) leaks, lesion of the ductus lacrimalis), and one (0.04 %) serious complication (meningitis). Comparing these figures with those of reports from the late 90s by correlating opacification, type of operation, the surgeon's experience and employing CAS with the outcome, we did not find a distinct improvement in the rate of postoperative complications. Serious complications and those resulting in permanent harm such as carotid artery injury, cerebral deficit or death have, however, become very rare. A grading into I (minor), II (major) and III (serious) complications is proposed, to point out this critical grade-III proportion, which should not exceed 0.1 %.

Vasculitis, diagnosis between lymphoma and cocaine

M. Trimarchi¹, G. Bertazzoni¹

¹ Otorhinolaryngology and Head and Neck Surgery, San Raffaele Scientific Institute, Milan, Italy

Abstract: ERS-1283

Session: Wegener and other vasculitis - when to suspect in CRS

Session Time: 24-06-14, 09:45

Location: Hall I

Chair person: A. Danielsen

Patient presenting with midline destructive lesions should undergo a thorough diagnostic process to identify the possible cause of the lesion such as infection, neoplasms, lymphomas, systemic diseases and exposure to chemicals. Both sinonasal NK/T lymphomas and cocaine-induced midline destructive lesions (CIMDL) tend to present with an high degree of local destruction and, before the advent of immunohistochemistry, these diseases were collectively grouped under the "lethal midline granuloma syndrome" definition. Because of the high degree of local destruction, necrosis and inflammation, biopsy specimens are often inadequate to identify NK/T lymphomas. Moreover, CIMDL and NK/T lymphomas share clinical features with Granulomatosis with Polyangiitis (GPA, former Wegener's Granulomatosis). Differential diagnosis of GPA, CIMDL and NK/T lymphomas is therefore challenging.

A diagnostic work-up for CIMDL, GPA and NK/T lymphomas is presented highlighting key diagnostic points and pitfalls regarding biopsy procedure, laboratory tests, histopathological analysis and drug abuse evaluation. Future perspectives in the differential diagnosis of midline destructive lesions are then discussed.

Differential diagnosis of NK/T lymphomas, GPA and CIMDL is challenging and many different aspects regarding biopsy technique and other diagnostic tests and procedure need to be considered not to miss or delay diagnosis.

Management of hereditary haemorrhagic telangiectasia (HHT)

V. Lund¹

¹ Professorial Unit, Royal National Throat Nose and Ear Hospital, London, United Kingdom

Abstract: ERS-1284

Session: Hereditary haemorrhagic telangiectasia

Session Time: 24-06-14

Location: Hall F

Data on a cohort of 429 patients with HHT have been prospectively collected. All fulfilled the Curacao criteria for diagnosis and all suffered from epistaxis of varying severity. As well as supportive measures such as iron supplements and blood transfusions, a range of treatments have been employed comprising coagulating laser, septodermoplasty, hormone manipulation and nasal closure. Additional treatments include topical nasal lubricants, septal buttons, dietary restrictions, clotting agents and in extremis embolization/arterial ligation.

300 (70%) have undergone KTP (or argon) laser between 1 and 18 times. 101 (24%) have had septodermoplasty which has been bilateral in 30%. Hormone modulation was undertaken with high dose oral oestrogen (8), medoxyprogesterone (15) and tamoxifen (60). Tamoxifen is well tolerated and has been continued by 54/60 patients with 3 stopping due to side effects and 3 due to lack of efficacy.

78 (18%) have undergone nasal closure, bilateral in 65, which was staged in 5. Eight have required revision with primary closure or nasolabial flaps. Complete closure was achieved in 62/65 (95%) and was associated with complete cessation of nasal bleeding in 60/62 (97%).

Patients may receive several different treatments during the course of their disease, dependant on an algorithm based on severity of bleeding and the need for blood transfusions. The majority of treatments reduce severity and frequency of bleeding whilst closure may be anticipated to stop epistaxis completely and is therefore associated with the greatest improvement in clinical parameters and quality of life.

Management of CRSsNP the evidence

V. Lund¹

¹ University College London, University College London, London UK, United Kingdom

Abstract: ERS-1285

Session: EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment

Session Time: 24-06-14, 10:00

Location: Hall A

Chair person: W. Fokkens

The evidence base for the treatment of CRSsNP is less than that for CRSwNP and is hampered by the heterogeneous pathogenesis of the condition. There is level I evidence for the use of topical steroids, oral antibiotics and saline irrigation but also a wide range of medications for which the evidence from clinical trials is negative or lacking. These include oral and topical anti-fungals, mucolytics, proton pump inhibitors, decongestants, phytotherapy, topical antibiotics, oral antihistamines and immunomodulation.

RCTs are lacking for surgical interventions but several prospective cohorts with long-term follow-up confirm significant benefit which can be maintained by continued post-operative medical therapy such as topical steroids and nasal irrigation likely due to the presence of a surgical cavity and reduction of inflammatory load.

A management scheme has been developed based on severity of symptoms to assist therapeutic choice, accepting significant inter-individual variation in response. This is recognised in the concept of 'difficult-to-treat' rhinosinusitis and endotyping of CRS. The EPOS approach highlights the gaps in our knowledge and has been instrumental in stimulating clinical trials to address these deficiencies

When all treatment fails

V. Lund¹

¹ University College London, University College London, London UK, United Kingdom

Abstract: ERS-1286

Session: Hereditary hemorrhagic telangiectasia (HHT)

Location: Hall F

Time: 23-06-14, 11:45

Chair person: J. Rimmer

Data on a cohort of 429 patients with HHT have been prospectively collected. All fulfilled the Curacao criteria for diagnosis and all suffered from epistaxis of varying severity which started between 3 and 68 years of age, and gets worse with age. All patients are screened for pulmonary arteriovenous malformations (PAVMs) with a CT scan though the presence of a PAVM did not correlate with the severity of the epistaxis.

As well as supportive measures such as iron supplements and blood transfusions, a range of treatments have been employed of which nasal closure is the most effective for severe bleeding requiring regular blood transfusions. Additional treatments hormone manipulation with tamoxifen and in extremis embolization/arterial ligation.

Seventy eight (18%) have undergone nasal closure, bilateral in 65, which was staged in 5. Eight have required revision with primary closure or nasolabial flaps. Complete closure was achieved in 62/65 (95%) and was associated with complete cessation of nasal bleeding in 60/62 (97%). Occasionally laser of the tongue may be required due to dryness of the mouth but no other complications have been encountered.

Patients may receive several different treatments during the course of their disease, dependant on an algorithm which has been developed based on severity of bleeding and the need for blood transfusions. The majority of other treatments reduce severity and frequency of bleeding whilst closure may be anticipated to stop nasal bleeding completely and is therefore associated with the greatest improvement in clinical parameters and quality of life.

Novel treatment strategies in upper airway inflammation

P. Howarth¹

¹ Clinical and Experimental Sciences, University of Southampton, Southampton, United Kingdom

Abstract: ERS-1289

Session: Novel treatment options in allergic upper and lower airway disease: Their roles and limitations

Session Time: 24-06-14, 09:00

Location: Hall A

Chairperson: P. Hellings

The 21st century has seen the emergence and establishment of combination product inhalers containing a glucocorticosteroid and a long-acting β_2 -adrenoceptor agonist for the maintenance therapy of asthma and their positioning within the management guidelines. The advent this year of an inhaler delivering the combination of Fluticasone furoate and Vilanterol has allowed the development of a novel once a day one inhalation only therapy through a breath activated dry powder inhaler. The challenge to gain asthma control is now at the more severe end of the asthma spectrum. Several drugs are under development that modify the activity of interleukin 5 (IL-5), a key signalling molecule in eosinophil progenitor development and maturation. The most advanced of these is Mepolizumab, which significantly reduces disease exacerbation in asthma. Tralokinumab and Benralizumab (non fucosylated IL-5R α MoAb) are also in clinical development. Dupilumab, that targets the IL-4R α subunit of the IL-4 Type I and II heterodimeric receptors involved in both IL-4 and IL-13 signalling has had encouraging phase II results and Lebrikizumab, that targets IL-13 has also reported benefit in asthma that is identified as being TH2 "high". The reporting that the anti-IgE monoclonal antibody, Omalizumab, has benefit in non-atopic asthma suggests that the classification of asthma into atopic and non-atopic phenotypes does not reflect the underlying pathophysiology and highlights the need for studies to focus on new approaches to phenotyping and endotyping severe asthma. The identification of reflective biomarkers will help stratify patients in the application of these novel therapeutic strategies.

Objective nasal airway assessment - rhinomanometry, acoustic rhinometry or peak nasal airflow?

R. Eccles¹

¹ Common Cold Centre, Cardiff University, Cardiff, United Kingdom

Abstract: ERS-1290

Session: Objective Nasal Airway assessment

Session Time: 24-06-14

Location: Hall D

If you wish to measure how blocked the nose is which method do you use?

RHINOMANOMETRY, ACOUSTIC RHINOMETRY or PEAK NASAL AIRFLOW?

This session will look at these methods of assessing nasal obstruction from a PRACTICAL point of view¹. I have used all of these methods to assess the nasal cycle and physiology of the nose, to determine the benefits of nasal surgery, and in numerous clinical trials on nasal decongestants and nasal dilator strips. The advantages and disadvantages of each method and the common problems encountered will be discussed. The procedures I use for large clinical trials will be discussed, especially as regards rhinomanometry². The three methods will be compared in a study on healthy volunteers and the results demonstrate the reliability and reproducibility of all three methods of assessing the nasal airway.

References

1. Nathan RA, Eccles R, Howarth PH, Steinsvag SK, Togias A. Objective monitoring of nasal patency and nasal physiology in rhinitis. *J Allergy Clin Immunol.* 2005;115(3 Pt 2):S442-459.
2. Eccles R. A guide to practical aspects of measurement of human nasal airflow by rhinomanometry. *Rhinology.* 2011;49(1):2-10.

Remodeling in CRSwNP

L. Pujols¹, F.B. Callejas¹, J. Mullol²

¹ Clinical and Experimental Respiratory Immunology CELLEX 2B, IDIBAPS, Barcelona, Spain

² Clinical and Experimental Respiratory Immunology CELLEX 2B, IDIBAPS Unitat de Rinologia i Clínica de l'Olfacte Servei d'Otorrinolaringologia Hospital Clínic, Barcelona, Spain

Abstract: ERS-1291

Session: Basic research in CRS

Session Time: 24-06-14, 09:45

Location: Hall C

Chair person: K. van Drunen

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a subgroup of chronic rhinosinusitis (CRS) and a heterogeneous group of inflammatory diseases of unknown aetiology, characterized by inflammatory and remodelling processes of the nasal and paranasal sinus mucosa. Nasal polyps (NPs) are characterized by loose connective tissue, low collagen and pseudocyst formations with albumin accumulation, oedema, and infiltration of inflammatory cells. NPs show a predominant Th2-type eosinophilic inflammation in Western patients and a Th1/Th17-skewed T cell response, essentially neutrophilic, in Asian patients. Despite these different inflammatory patterns, the tissue remodelling patterns of Western and Asian patients are similar. Remodelling of CRSwNP is characterised by: 1) epithelial alterations, including epithelial hyperplasia, epithelial metaplasia, glandular hypertrophy, or epithelial shedding; 2) angiogenesis, increased vascular permeability, and oedema, and 3) extracellular matrix degradation, caused by low levels of TGF- β , lack of Treg function, and increased matrix metalloproteinases (MMPs) activity with low levels of tissue inhibitors of MMPs (TIMPs). Recent findings suggest that remodelling occurs in parallel, rather than subsequent to inflammation. In addition, new markers have been recently reported in CRSwNP that may explain the differential remodelling patterns occurring in CRSwNP, as compared to CRS without NP. This lecture aims to provide an updated view of the current knowledge on remodelling in CRSwNP.

Increased expression of the epithelial cell-derived cytokines in eosinophilic chronic rhinosinusitis with nasal polyps

H. Kouzaki¹, I. Tojima¹, S. Shimizu¹, T. Shimizu¹

¹ Otorhinolaryngology, Shiga University of Medical Science, Otsu, Japan

Abstract: ERS-1292

Session: The epithelial barrier

Session Time: 25-06-14, 09.45

Location: Hall E

Chair person: N. Zhang

Background

The epithelial cell-derived cytokines, TSLP, IL-25, and IL-33 induce T helper 2 cytokine-dependent immune responses and play key roles in allergic airway inflammation. Eosinophilic chronic rhinosinusitis (ECRS) represents a subtype of chronic rhinosinusitis with nasal polyps (CRSwNP), is characterized by profound eosinophil infiltration and is difficult to treat. This study was performed to elucidate the roles of TSLP, IL-25, and IL-33 in ECRS pathophysiology.

Methods

Nasal tissue specimens were collected from CRS patients, and assayed for TSLP, IL-25, and IL-33 by RT-PCR, ELISA, and immunofluorescence staining. Cytokine productions from CRS patient-derived cultured nasal epithelial cells (PNECs) were also examined by ELISA.

Results

The mRNA expression of TSLP and IL-25 and the concentrations of IL-25 and IL-33 were significantly increased in PNECs from ECRS patients. Immunohistochemical staining demonstrated that TSLP, IL-25, and IL-33 were localized in the epithelial cells of nasal polyps, and the expression levels were increased in ECRS patients. The mRNA expression levels of TSLP and IL-25 were correlated with the clinical severity of ECRS, as per the Lund-Mackey CT score. Airborne allergen-induced cytokines were significantly increased in cultured PNECs from the ECRS patients. The mRNA and tissue expression levels of protease activated receptor (PAR)-2 and P2Y2 receptor (P2Y2R) were significantly increased in cultured PNECs and nasal polyps from ECRS patients.

Conclusion

The results indicate that TSLP, IL-25, and IL-33 are induced from nasal epithelial cells upon stimulation with airborne allergens and proteases, and both increased induction and expression of these cytokines contribute to the pathophysiology of ECRS.

Unmet needs in CRS

R. Schlosser¹

¹ Otolaryngology - Head and Neck Surgery, Medical University of South Carolina, Charleston, USA

Abstract: ERS-1293

Session: New treatment options for CRS

Session Time: 25-06-14, 10:15

Location: Hall A

Chair person: D. Kennedy

Chronic rhinosinusitis (CRS) is a heterogeneous disorder that is defined primarily by clinical symptoms and objective findings, including endoscopy and CT staging. Treatment success is typically measured using overall disease specific quality of life instruments. Evidence surrounding our current treatment algorithms is limited by several factors. First, a more precise classification of CRS based upon clinical factors, as well as local biomarkers, will enable clinicians to better understand the underlying pathophysiology of this disease. These definitions will enable us to tailor our therapies to given populations. Second, improved definitions of clinical success, using a combination of objective metrics and specific symptoms will provide prognostic information regarding likelihood of clinical improvement for a given treatment. Third, improved local immune modifying therapies in patients who currently have CRS will help to restore health while avoiding systemic side effects. Finally, identification of genetic and environmental factors that predispose patients to development of CRS will allow us to treat them pre-emptively and hopefully avoid much of the impaired quality of life seen with CRS.

What to do when all treatment fails

R. Moesges¹

¹ IMSIE, University Hospital Cologne, Cologne, Germany

Abstract: ERS-1294

Session: Latest update on AR treatment (in collaboration with EAACI)

Session Time: 24-06-14, 11:45

Location: Hall I

Chair person: C. Cingi

The ARIA-guideline in its latest version of 2008 introduced a stepwise treatment algorithm for the medical therapy of allergic rhinitis. The new aspect was a consequent step-up / step-down procedure using first-line antihistamines, second-line nasal steroids and third-line remedies like nasal decongestants, oral steroids or leukotriene receptor antagonists.

In case, that the patient's symptoms should still be inadequately controlled at the end of this therapeutic pathway, several options remain to be chosen:

- A full course of three years allergen immunotherapy,
- A complete diagnostic work-up with reconsideration of the initial diagnosis
- A surgical intervention targeting the primary symptom of nasal blockage.

Going beyond current guideline recommendations other forms of treatment like acupuncture, the IgE-antagonist Omalizumab or Tetrachlorodecaoxide infusions will be discussed.

Novel treatment strategies in upper airway inflammation

C.A. Akdis¹

¹ Director, Swiss Institute of Allergy and Asthma Research, Davos, Switzerland

Abstract: ERS-1295

Session: Novel treatment options in allergic upper and lower airway disease: Their roles and limitations

Session Time: 24-06-14, 08:30

Location: Hall A

Chairperson: P. Hellings

Affecting approximately one billion people, asthma and allergies have become the most common chronic diseases in the world with a rising prevalence in developing countries. Currently existing therapies are relatively safe and effective in controlling symptoms, but do not change the chronic course of disease. There is no established way of prevention and the major unmet needs include better control of severe diseases and curative therapies. Two major groups of treatment for asthma and allergy are currently being developed, and new advances and challenges for future therapeutic development in these two areas will be discussed in this review. The first approach, allergen-specific immunotherapy aims to induce specific immune tolerance and has a long-term disease modifying effect. In contrast, the second approach of biological immune response modifiers aims to decrease the pathological immune response by blocking of cytokines, chemokines and cell surface molecules that play a role in the pathophysiology of allergy and asthma. Combination strategies using both of these approaches may also provide a route for addressing the unmet clinical needs in these allergic diseases. Unmet needs in treatment and advances in molecular biology and immunology have also spurred the development of new biological immune response modifiers to treat allergy and asthma. Biologicals include therapeutic antibodies, soluble receptors, cytokines, small molecules and the combinations of these approaches that can target effector molecules at various points along the immune/inflammatory pathways on different immune cells. So far over 30 monoclonal antibodies have been approved for various indications, especially for autoimmune disorders, organ transplantation, infectious diseases and cancer. More than 300 biologicals are currently in clinical trials and some researchers have suggested that there will be a switch from chemicals to biologicals in drug development within the next 10 years.

The future of immunotherapy

C. Akdis¹

¹ Director, Swiss Institute of Allergy and Asthma Research, Davos, Switzerland

Abstract: ERS-1296

Session: Immunotherapy update 2014

Session Time: 26-06-14, 10:18

Location: Hall D

Chair person: E. Prokopakis

Although it has been performed for 100 years, allergen-SIT faces several problems related to its limited efficacy, side effects, low patient adherence and the high costs due to long duration (3 to 5 years) of treatment. The approaches to improve the efficacy and safety of vaccine-based allergen-SIT can be classified into 6 groups. The first approach is targeting T cells to induce T cell tolerance and bypassing IgE binding to avoid IgE-mediated side effects. The second approach is the use of recombinant allergens or their mixtures, with the aim of partially reconstituting an allergen extract. The third approach is to physically couple allergens to stimulators of the innate immune response. The fourth approach is varying routes of vaccine administration, such as epicutaneous and intra lymph node. A meta-analysis of the double-blind, placebo-controlled trials of sublingual immunotherapy (SLIT) that have been carried out indicates that SLIT shows clinical efficacy with a treatment benefit of approximately half that achieved with subcutaneous SIT. Sustained disease-modifying effects of this type of therapy have been established in large-scale randomized, double-blind, placebo-controlled trials in adults as well as in children. The fifth strategy is the fusion of allergens to immune modifiers. In addition to physical fusion, conventional and novel methods of allergen-SIT may also be combined with immune response modifiers. Although there has been some progress in improving the efficacy and safety of allergen-SIT, which is still the only approach for curing allergic diseases, there is still the potential to make further improvements, which are hoped to improve the application of SIT to both allergic diseases as well as to other diseases related to dysregulation of the immune system.

Control of local inflammation is useful for olfactory nerve recovery following injury

M. Kobayashi¹, K. Tamari¹, T. Miyamura¹, K. Takeuchi¹, R.M. Costanzo²

¹ Department of Otorhinolaryngology-Head and Neck Surgery, Mie University Graduate School of Medicine, Tsu, Japan

² Department of Physiology and Biophysics, Virginia Commonwealth University School of Medicine, Richmond, USA

Abstract: ERS-0725

Session: Smell disorders, diagnosis and treatment

Location: Hall C

Time: 23-06-14, 10:18

Chair person: D. Simmen

Presenting author: M. Kobayashi

Background

The olfactory system has a remarkable capacity for neural regeneration and recovery following injury. Clinically, however, prognosis of olfactory dysfunction by head injury is reported to be poor. We investigated to find factors that influence the degree of recovery.

Methods

First, using transgenic (OMP-tau-lacZ) mice, we studied mild and severe injury models obtained by performing olfactory nerve transection (NTx) using flexible and rigid blades. Histological assessment was made for regenerating olfactory nerves (ON), astrocytes and macrophages.

Results

With mild injury we observed less injury-associated tissue and better ON regeneration. At 42 days recovery, more astrocytes and macrophages were observed with severe injury. Dexamethazone sodium phosphate (DXM)- or anti-IL-6 receptor antibody-injected mice with severe injury showed less injury-associated tissue, better ON recovery and fewer astrocytes and macrophages. Additionally, patients with head injury usually discover their olfactory dysfunction several weeks or months after the injury, which may be a factor in poor recovery. Therefore, we examined the term of effect of anti-inflammatory treatment. With severe injury models, DXM injection was started at 7, 14, 28 and 42 days after the NTx. DXM was effective until 7 days but ineffective 14 days or longer after head injury.

Conclusion

These results indicate that ON recovery depends on the severity of injury and that treatment with anti-inflammatory drug is effective in improving recovery outcome during an acute phase of head injury, but not in a chronic phase, suggesting that different therapeutic strategy from inhibition of inflammation may be needed for traumatic olfactory dysfunction in a chronic phase.

Microbiome and managing dysbiosis in CRS

V. Ramakrishnan¹, L. Hauser¹, L. Feazel², D. Ir², C. Robertson³, D. Frank²

¹ Otolaryngology, University of Colorado, Aurora, USA

² Medicine Division of Infectious Diseases, University of Colorado, Aurora, USA

³ Molecular Cellular and Developmental Biology, University of Colorado, Boulder, USA

Abstract: ERS-1298

Session: From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology

Session Time: 24-06-14, 12:03

Location: Hall D

Chair person: R. Schlosser

Background

Chronic rhinosinusitis (CRS) is a prevalent multifactorial disease process, in which bacteria are believed to play a role in the propagation of inflammation. Multiple subtypes of CRS have been described based on clinical and pathologic features, but a detailed examination of the sinus microbiota in CRS and its subtypes has yet to be performed.

Objective

To examine the resident microbiota of CRS subtypes, and determine if bacterial diversity is a predictor of disease outcomes.

Methods

Sinus swabs from CRS and healthy subjects collected during endoscopic sinus surgery were analyzed by 16S rDNA pyrosequencing. Taxonomy based and taxonomy-independent approaches were used for analysis.

Results

56 CRS patients and 26 healthy subjects were studied. Alpha-diversity indices were similar between groups. Particular CRS subtypes were associated with significant alterations in microbial community composition. In 27 CRS patients who were followed postoperatively, diversity indices and the presence of characteristic bacteria were predictors of surgical outcome.

Conclusions

Analysis of microbiota in a large cohort reveals that particular CRS phenotypes have unique alterations in bacterial community composition. We found that bacterial diversity is a predictor of surgical outcome, promoting the concept of community ecology in CRS.

Cold dry air provocation in the diagnosis of NAR

C. Holland¹, C.L. Segboer¹, C. Georgalas¹, C.M. van Drunen¹, W.J. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Centre, Amsterdam, Netherlands

Abstract: ERS-1299

Session: Nasal provocation tests

Session Time: 23-06-14, 10:15

Location: Hall F

Chair person: P. Stjarne

The diagnosis of Occupational Rhinitis (OR) is based on a detailed medical history and a history of the exposure at work, physical examination, allergy testing (skin prick tests and specific IgE levels) and, if possible, nasal allergen challenge tests. Allergy testing is not usually helpful in irritant induced OR diagnosis because the mechanism of airway reactivity is not immunological. Physical examination should include full otorhinolaryngology examination and nasal endoscopy, as well as lung function tests in patients with combined lower and upper airway symptoms in order to diagnose potential Occupational Asthma (OA).

Local nasal challenge tests can be performed with allergens that are not irritating. If irritants are tested, an inhalation challenge test is recommended. Placebo tests should be performed first, before the active agents so as to exclude false positive reactions. Challenge tests are most effective when allergens are well characterized, providing the ability to demonstrate the occupational origin of the patient's rhinitis and asthma.

As with occupational rhinitis, the diagnosis of OA includes careful documentation of symptom and work history, physical examination and allergy testing. Additional objective testing includes lung function tests with methacholine challenge if necessary to determine level of bronchial reactivity, serial peak flow recordings, and specific inhalation challenge tests are performed when possible. To improve diagnostic accuracy and to decrease costs, a multidisciplinary approach to occupational airway diseases is recommended to organize simultaneous evaluations of both nasal and bronchial reactions in occupational inhalation challenges.

MicroRNA profiles in nasal mucosa of patients with allergic and nonallergic rhinitis and asthma

E. Toskala¹, H. Suojalehto², I. Lindström², M. Majuri³, C. Mitts³, H. Alenius³, M. Kilpelainen⁴, J. Sipila⁵

¹ Department of ORL-HNS, Temple University, Philadelphia, USA

² Control of Hypersensitivity Diseases Team, Finnish Institute of Occupational Health, Helsinki, Finland

³ Unit of immunotoxicology, Finnish Institute of Occupational Health, Helsinki, Finland

⁴ Department of Pulmonary Diseases and Allergology, University of Turku, Turku, Finland

⁵ Department of ORL-HNS, University of Turku, Turku, Finland

Abstract: ERS-1300

Session: Lessons from Molecular biology in rhinitis

Session Time: 23-06-14, 11:30

Location: Hall C

Chair person: N. Zhang

Background

Rhinitis and asthma commonly coexist and are often regarded as “unified airways disease”. Evidence exists that microRNAs are important in controlling inflammatory processes, but little is known about their role in airway inflammation. The present study evaluated the inflammatory profiles of patients with allergic rhinitis (AR), with and without concomitant asthma, and of patients with non-allergic rhinitis (NAR).

Methods

We analyzed inflammatory cells, cytokines and microRNAs from nasal biopsies and measured nasal nitric oxide (nNO) levels in 159 young adult subjects subdivided into four groups: 1) AR 2) AR+asthma 3) NAR and 4) controls.

Results

We observed the up-regulation of Th2 cytokines and the trend of elevation of nNO levels in AR patients compared to controls. Subjects with current AR symptoms had increased levels of miR-155, miR-205 and miR-498 but reduced levels of let-7e. In addition, patients with positive skin prick test (SPT) reactions exhibited increased miR-155 and miR-205 expression and a decreased level of let-7e, compared to subjects with negative SPT findings. Concomitant asthma had little effect on the inflammatory profile of AR. No significant changes in inflammatory markers were found in NAR patients compared to healthy controls.

Conclusions

Our results suggest that microRNAs miR-155, miR-205, miR-498 and let-7e may be important in the allergic inflammation present in nasal mucosa. As regards NAR, our findings support the view that mechanisms other than inflammation are pivotal.

What causes facial pain in sinusitis

N. Busaba¹

¹ Otolaryngology - Head And Neck Surgery, Harvard Medical School And Massachusetts Eye And Ear Infirmary, Boston,

Abstract: ERS-1301

Session: Facial pain and Headache

Session Time: 26-06-14, 09:45

Location: Hall I

Chair person: M. Barnes

Background and aims

A multitude of etiologies may cause facial pain. The objectives of this review are to discuss the pathogenesis, differential diagnosis, and clinical work-up of sinogenic facial pain, and the role of surgery in treating the pain.

Methods

Review of the medical literature plus a retrospective case series.

Results

There are several mechanisms to explain the origin of sinogenic pain. The otolaryngologist needs to be knowledgeable of the differential diagnosis, and willing to work with other specialists to diagnose and treat these patients. Clinical workup includes detailed medical history, physical examination with office nasal endoscopy, and imaging or other laboratory data. Physical examination encompasses anterior rhinoscopy and nasal endoscopy. CT became the gold standard method of imaging; however, the CT abnormality must correspond to the site of pain to be clinically relevant. Surgery is offered after adequate counseling of the patient and once several criteria are met and can be effective for appropriately selected patients. However, it is not uncommon for the pain to worsen post-operatively.

Conclusion

patients need education about the etiology and the differential diagnosis of facial pain and non-sinogenic etiologies are to be discussed. paranasal sinus disease is not the likely etiology for facial pain when the pain is the only presenting symptom, especially if severe and requiring narcotics for control. Endoscopic sinus surgery may be curative when performed for the appropriate indication. However, counseling the patients about the potential of persistent, worsened, or new onset of pain following the surgery is advisable.

Frontal obliteration or cranialisation, do they still have a place in treatment of frontal disease

N. Busaba¹, J. Silverman², S. Gray³

¹ Otolaryngology - Head And Neck Surgery, Harvard Medical School And Massachusetts Eye And Ear Infirmary, Boston, USA

² Otolaryngology - Head And Neck Surgery, SUNY Downstate Medical Center, Brooklyn, USA

³ Otolaryngology - Head And Neck Surgery, Massachusetts Eye And Ear Infirmary And Harvard Medical School, Boston, USA

Abstract: ERS-1302

Session: External approaches to the sinus

Session Time: 25-06-14, 11:45

Location: Hall I

Chair person: P. Maragkoudakis

Background and aims

Determine the indications for osteoplastic frontal sinus obliteration (OFSO) for the treatment of inflammatory frontal sinus disease.

Methods

Retrospective case series from a single tertiary care facility.

Thirty-four patients who underwent OFSO for chronic frontal sinusitis (n=23) and frontal sinus mucocele (n=11) comprised our study group. Data reviewed included demographics, history of prior frontal sinus operation(s), imaging, diagnosis, and operative complications.

Results

The age range was 19 to 76 years. Seventy percent of patients with chronic frontal sinusitis underwent OFSO as a salvage surgery after previous frontal sinus surgery failures, while 30% underwent OFSO as a primary surgery. For those in whom OFSO was a salvage procedure, the failed surgeries were endoscopic approaches to the frontal sinus (69%), Lynch procedure (12%), and OFSO outside this study period (19%). For patients with frontal sinus mucocele, 72% had OFSO as a first line surgery. Within the total study population, 15% of patients presented for OFSO with history of prior obliteration, with a range of 3 to 30 years between re-presentation.

Conclusions

Osteoplastic frontal sinus obliteration remains a key surgical treatment for chronic inflammatory frontal sinus disease both as a salvage procedure and first-line surgical therapy.

The role of biofilms in CRS

A.J. Psaltis¹, P.J. Wormald¹, S. Vreugde¹

¹ Otolaryngology and Head and Neck Surgery, The University of Adelaide, Adelaide, Australia

Abstract: ERS-1303

Session: Immunotherapy update 2014

Session Time: 26-06-14, 10:06

Location: Hall F

Chair person: J. Vokurka

Biofilms are highly complex microbial organisations implicated in many chronic diseases including chronic rhinosinusitis (CRS). Through altered gene expression, they exhibit a phenotype highly resistant to conventional antibiotic therapies. This presentation will summarise the current evidence for the role of biofilms in CRS and in particular focus on the new and experimental treatment options available. Topical treatments discussed will include mupirocin, manuka honey, corticosteroids, liposome encapsulated nitric oxide, bacteriophage and colloidal silver.

Reasons for clinical treatment of epistaxis

T. Van Zele¹

¹ Ear- Nose- and Throat department, University Hospital Ghent, Ghent, Belgium

Abstract: ERS-1304

Session: Severe Epistaxis

Session Time: 24-06-14, 12:03

Location: Hall K

Chair person: S. Reinartz

Epistaxis is a common emergency in the general population, and can be severe or even fatal. This pathology affects approximately 60% of the population at some stage of their lives. Epistaxis has a number of local and systemic etiological factors, but 85% of the cases are said to be idiopathic - in the remainder anticoagulation therapy is one of the most common causes. The clinical approach of epistaxis is patient dependent and can include an adjustment of anticoagulant therapy or an active treatment with cauterization, anterior or posterior nasal pack, ligature of the artery sphenopalatine or embolisation. As in older patients there often exists an important comorbidity and polymedication, the epistaxis in this patient group can be severe, can recur frequently and can require different therapeutic strategies. Current knowledge about side effects of medicines and interactions of medicines mutually or interactions between medicines and alimentation is very extensive. Contrary to this, with regard to epistaxis there are only few studies published which examined the pharmacological profile of patients with severe epistaxis. This lecture aims at providing an evidence based overview of the role of comorbidities, polymedication, drug interaction in the group of severe epistaxis and if these patients require different therapeutic strategies. Secondly it will feature a retrospective study at a tertiary care hospital in 125 patients with severe epistaxis between 2005 and 2012. The results of this study underline the high number of cardiovascular comorbidities and recent changes in the pharmacological profile. In this group an overall 5-year mortality rate of 18% was observed.

The multi-faceted role of allergen exposure to the local airway mucosa

K. van Drunen¹, M. van Kuijen¹, A. Vroling¹, K. Golebski¹, W. Fokkens¹

¹ Otorhinolaryngology, Academic Medical Center, Amsterdam, Netherlands

Abstract: ERS-1305

Session: Lessons from Molecular biology in rhinitis

Session Time: 23-06-14, 11:45

Location: Hall C

Chair person: N. Zhang

An allergen triggers a clinical response in affected patients and not in healthy controls. However this is not true at the molecular level when allergens come into contact with the nasal mucosa. Previously we have shown that epithelial cells from health individuals respond very strongly when exposed to house dust mite (HDM) allergen (1). Through this response the nasal epithelium is able to initiate and influence a correct local immune response (2). The response in HDM-allergic patients is different than the response in health individuals and this seems largely a consequence of an activated state of the epithelial cells of HDM-allergic patients at baseline. This observation has led to the identification of negative regulators of epithelial allergen induced responses (3). We have extended these observations for grass pollen (GP) allergen by studying the molecular response triggered by grass pollen extract (3). The similarities and differences between the HDM and GP-induced responses will help us to understand why people develop an allergy for only HDM or GP, while other individuals would become allergic to both allergens.

References

- (1) Vroling AB, et al. *Am J Respir Cell Mol Biol*. 2008, 38(3):293-9.
- (2) Golebski K, et al. *Allergy*. 2013, 68(2):152-60.
- (3) van Kuijen AM et al. *Clin Exp Immunol*. 2012, 167(3):413-21.

Tricks and hints in ear reconstruction

T.J. Woolford¹

¹ Ear Nose & Throat Surgery, Manchester Royal Infirmary, Manchester, United Kingdom

Abstract: ERS-1306

Session: Pitfalls in facial plastic surgery

Session Time: 23-06-14, 10:06

Location: Hall B

Chair person: P. Palma

In this presentation a number of aspects of ear reconstruction will be discussed. Of key importance is 'joined-up thinking' between the reconstructive surgeon and the otologist, particularly with regard to the placement of scars and implants for bone anchored hearing aids. Percutaneous implants are commonly placed too close to the microtic ear, making the reconstruction more difficult or on occasion impossible. A multi-disciplinary approach is required.

Although prosthetic ears certainly have a place in the management of microtia, any decision to excise the ear lobe and thin the skin for an implant retained implant should ideally be delayed until the patient is old enough to give informed consent, and this issue will be discussed.

Finally technical aspects of ear reconstruction using autogenous rib will be described including the presenter's personal move from a 4 stage reconstruction using a 2 piece framework as described by Brent, to a 2 stage reconstruction using a more complex 5 piece framework.

The rhinological side-effects of systemic drugs

T.J. Woolford¹, M. Dowling¹

¹ Ear Nose & Throat Surgery, Manchester Royal Infirmary, Manchester, United Kingdom

Abstract: ERS-1307

Session: Drugs, allergies and other (un)desirable effects

Session Time: 25-06-14, 10:15

Location: Hall D

Chair person: L. Kalogjera

Patients often present to otolaryngologists with nasal symptoms where no cause is apparent. A number of patients seen in outpatient departments are taking medication for other conditions and the adverse affects of these drugs may potentially be the source of these symptoms.

We will offer a practical overview of the more common drugs that may be responsible for rhinological symptoms, and outline the possible mechanisms where these are known.

Clinicopathological features of patients with inverted papilloma in nasal cavity and paranasal sinuses

H. Kawauchi¹, I. Morikura¹, N. Aoi¹, Y. Shimizu¹, T. Fuchiwaki¹

¹ Dept. of Otorhinolaryngology, Shimane University, Faculty of Medicine, Izumo City

Abstract: ERS-1308

Session: Inverted papilloma

Session Time: 25-06-14, 11:15

Location: Hall K

Chair person: P. Strek

We investigated the clinical outcomes of 20 patients with nasoparanasal sinus inverted papilloma, who had been admitted and undergone intensive treatments. Out of 17 patients who underwent preoperative biopsy for the histopathological examination, inverted papilloma was confirmed in biopsied specimens. This finding suggests that preoperative histopathological examination with biopsied specimen is useful for making an appropriate treatment protocol for these patients. Consistency of the occupied lesion determined by MRI before surgery was compared with the intraoperative findings or postoperative histopathology. As a result, the consistency rate was 85.7%, suggesting that MRI is useful for a preoperative diagnosis in order to properly evaluate the extending occupied lesion of inverted papilloma or combined squamous cell carcinoma. The serum SCC Ag level increased in 11 of 12 patients. But on the other hand, The CYFRA21-1 level increased in 3 patients, and cancer complication was noted in 2 of these. SCC-Ag may be a useful marker for diagnosis of this tumor as reported by other researchers. In addition, CYFRA21-1 may also serve as a useful marker for patients with cancer complication. The outcomes of treatments were examined particularly in a consideration of occupied lesions and the corresponding surgical intervention. Postoperative recurrence was noted in 4 of the 20 patients. In 3 of these, limited operation had been performed without histopathological examination. In conclusion, very importantly, for the better prognosis of these patients, we should pay much attention to select and prepare an appropriate surgical procedure after definite preoperative pathological diagnosis and image (CT & MRI)-guided localization of the extending tumor lesions as well.

Secondary Rhinoplasty in the cleft lip patient

Ph. Rombaux¹

¹ Otorhinolaryngology, Cliniques universitaires Saint Luc, Brussels, Belgium

Abstract: ERS-1316

Session: The cleft lip

Session Time: 23-06-14, 11:15

Location: Hall K

Chair person: M. Holmstrom

Successful rhinoplasty consists of proper diagnosis, appropriate planning, perfect execution and profound knowledge about limitations and complications of the surgical techniques. This is particularly true in secondary cleft lip rhinoplasty where restoration of an acceptable appearance combined with the best nasal function remains a challenge. Nasal appearance may be quite different. High expectation is the rule but high satisfaction rate is also a characteristic of the cleft lip rhinoplasty patient. Nasal tip work-up usually needs complex grafting procedures in cleft lip patients: columellar strut, alar batten, alar strut, alar rim, crushed cartilage often are performed. Lateral crural steal technique allows to give a better definition of the tip and lateral strut allows to deal with the tendency of the lateral part of the lower lateral cartilage to be flattened and medially displaced. Postoperative care is also specific for the cleft lip patient. Characteristics of the bilateral and unilateral cleft lip nose as well as the usual surgical techniques will be described in this lecture with a special focus on the lower lateral cartilage which represents the main target and the biggest challenge in these patients.

Smell and taste testing

Ph. Rombaux¹, C. Huart¹

¹ Otorhinolaryngology, Cliniques Universitaires Saint Luc, Brussels, Belgium

Abstract: ERS-1310

Session: Smell and taste testing

Session Time: 23-06-14

Location: Hall F

Evaluation of olfactory and/or taste function in humans remained poorly explored for a long time. This was mostly due to the difficulty of producing selective and controlled olfactory and/or taste stimuli. Recently, the development of reliable techniques to investigate olfactory and/or gustatory systems has led to an increasing interest on the research in this field. Precise clinical work-up is mandatory in patients suffering from olfactory and taste dysfunction, in order to (1) accurately assess their olfactory and/or their taste deficit and, hence, provide them appropriate counseling and prognosis, (2) assess recovery from or progression of the olfactory and/or taste dysfunction, (3) evaluate a therapeutic success. Self assessment of olfactory and/or taste function is not correlated to the results of the psychophysical testing. In psychophysical evaluation, it is important to evaluate both orthonasal and retronasal olfactory function. Psychophysical testings are semi-objective techniques and might be subject to patient's bias. Electrophysiological techniques are widely used to provide a relatively unbiased evaluation of the olfactory and gustatory systems. Related to the type of the stimulus and to the type of the stimulators, it is possible to record both in research and in clinic olfactory, trigeminal and/or gustatory even related potentials.

Finally, MRI is the imaging modality of choice to evaluate the olfactory apparatus, the olfactory and taste pathways and the cortical areas involved in the chemosensory perception.

Sinus surgery in cystic fibrosis patients

H. Saleh¹

¹ Rhinology, Charing Cross and Royal Brompton Hospitals, London, United Kingdom

Abstract: ERS-1311

Session: Cystic Fibrosis

Session Time: 23-06-14, 11:45

Location: Hall D

Chair person: V. Ramakrishnan

Cystic Fibrosis (CF) is a life shortening autosomal recessive multisystem disease with an incidence of 1/ 2400 live births in the UK. There is a generalized exocrinopathy associated with mutations in the gene that encodes the CF transmembrane regulator (CFTR). This impairment in the CFTR protein causes electrolyte transport disturbances, resulting in thick mucus formation. Sinonasal mucous gland impairment and mucociliary clearance are affected thereby predisposing to the development of CRSsNP and CRSwNP. The underdevelopment of sinus cells, in particular frontal cells with various degrees of hypoplasia further predispose to sinus disease. Both symptomatic and asymptomatic sinonasal disease in these patients has a high impact on pulmonary disease by promoting mucosal stasis and encouraging bacterial overgrowth thus the importance to achieve a definitive sinus disease control is the aim in the majority of the cases.

For the last 14 years the author has worked closely with the Department of Cystic Fibrosis in the Royal Brompton Hospital in London. 20% of CF patients will eventually require sinus surgery and can be categorised into those requiring it for CRSwNP and those for CRSsNP or both simultaneously. Disease recurrence and persistence of infection, in particular *Pseudomonas aeruginosa*, is a common occurrence. On occasions radical surgery has been justified to allow for effective sinus rinsing. I will present my experience with is surgery for cystic fibrosis and our policy with their management.

Etiopathology of Juvenile Angiofibroma

M. Tewfik¹

¹ Otolaryngology - Head & Neck Surgery, McGill University Health Centre, Montreal, Canada

Abstract: ERS-1312

Session: Juvenile Angiofibroma

Session Time: 25-06-14, 09:30

Location: Hall B

Chair person: O. Ogretmenoglu

Juvenile nasopharyngeal Angiofibroma is a benign but locally aggressive tumour affecting adolescent males. With a propensity for postoperative recurrence, the deep location of these tumours can present challenges to the treating surgeon. The focus of this presentation is to understand the known etiopathologic factors of these tumours, to review their anatomic and histologic origin, as well as to consider the role of host endocrinology and genetics in tumour development.

Endoscopic treatment of meningo- and encephaloceles

E. Pasquini¹, P. Farneti², V. Sciarretta², P. Tarchini², G. Gramellini², M. Zoli³, D. Murri²,
D. Mazzatenta³, G. Frank⁴

¹ Surgical Department - AUSL Bologna, ENT Metropolitan Unit, Bologna, Italy

² Sant'Orsola-Malpighi University Hospital, ENT Department, Bologna, Italy

³ IRCCS Neurological Science Bologna, Neurosurgical Department, Bologna, Italy

⁴ Skull Base Endoscopic Center, Neurosurgical Department, Bologna, Italy

Abstract: ERS-1313

Session: Defects of the Anterior Skull Base, filling the gap

Session Time: 25-06-14, 09:30

Location: Hall I

Chair person: C. Georgalas

Aims

Endoscopic surgery can offer many advantages such as; - a precise localization of the CSF leak under direct vision; - the ability to perform an appropriate preparation of the CSF leak site and positioning of the reconstruction flaps; - a lower morbidity rate especially if compared to other approaches such as the intracranial one.

Methods

In the period between June 1998 and February 2014, 166 endoscopic surgical operations for a basi-cranium CSF leak have been performed. Most of them were spontaneous (50%), post-traumatic (24%), iatrogenic (21%) or tumoral (5%). We also performed 1491 surgical operations for sellar or parasellar pathologies. In 387 cases (26%) a intraoperative surgical basi-cranium reparation. The proposed techniques provide the use of autologous materials with an algorithm based on the dural defect grade.

Results

The success percentage has been of 97.4% with mean follow up of 42 months for elective CSF-leak. Only 40 (2,7%) patients treated for a sellar or parasellar pathology manifested csf rhinorea soon after the surgical operations: a second surgical endoscopic procedure operations was performed within 24/72 hours with a success rate of 97.5%. Only one patient treated for a meningioma needed a further surgical operation for persistence of CSF leak

Conclusions

According to the results, the trans-nasal endoscopic approach can be considered the gold standard among many different intra and extracranial techniques to repair basi-cranium CSF leaks. The high percentage of success, low morbidity, have given to this technique more and more space in the ENT field.

Characteristics of nonallergic vasomotor rhinitis

L. Van Gerven¹, B. Steelant², I. Kortekaas², P. Hellings¹

¹ Otorhinolaryngology Head & Neck Surgery, University Hospital Leuven, Leuven, Belgium

² Laboratory of Clinical Immunology, KULeuven, Leuven, Belgium

Abstract: ERS-1314

Session: Nasal Hyperreactivity/nonallergic rhinitis

Session Time: 25-06-14, 10:15

Location: Hall C

Chair person: D. Milosevic

Background

We recently showed the correlation between the therapeutic efficacy of capsaicin nasal spray in idiopathic rhinitis (IR) and the ablation of the TRPV1-Substance P nociceptive signaling pathway (Van Gerven et al., JACI 2013). The functional consequences of capsaicin treatment on nasal nerve activation remain elusive.

Methods

A RCT with capsaicin nasal spray was performed involving 25 IR patients. Before, at 4, 12 and 26 w after treatment, nasal mucosal potentials (NMP) were evoked by exposing the nasal mucosa of IR patients and 14 HC to an aerosol with increasing doses of the TRPA1/V1-agonist mustard oil (MO). The threshold for each irritant was determined for each individual. The NMP measurements were evaluated in parallel with clinical symptoms.

Results

At baseline, the threshold for evoking changes in NMPs by MO was significantly lower for IR compared to HC ($P=0.037$). Capsaicin treatment induced a shift towards higher MO-thresholds in IR at 4 and 12 w ($P=0.027$ and $P=0.086$ resp.). The shift in MO-threshold correlated inversely with changes in VAS major symptom. IR patients with a low MO-threshold (MO 5 mM) and self-reported nasal hyperreactivity (NHR) at baseline were significantly better responders to capsaicin compared to patients with higher thresholds to MO and no NHR ($P=0.044$ and $P=0.014$ respectively).

Conclusion

The lower MO-threshold to induce NMP changes in IR patients than HC, as well as the shift in MO threshold by capsaicin treatment in IR patients, provide a functional confirmation of the TRPV1 and TRPA1 channels being of high pathophysiological importance in IR.

Closure of skull base defects after expanded endoscopic skull base surgery

I. Alobid¹

¹ Department of Otolaryngology, Hospital Clinic, Barcelona, Spain

Abstract: ERS-1313

Session: Defects of the Anterior Skull Base, filling the gap

Session Time: 25-06-14, 09:54

Location: Hall I

Chair person: C. Georgalas

Cerebrospinal fluid (CSF) leaks may be continuous or intermittent. Dura and arachnoid membranes need to be interrupted and usually there is a bony defect too. With the advent of extended endoscopic skull base resections, the need for large reconstructions has increased, including those of high pressure/high flow leaks communicating with the 3rd ventricle. Patients with a skull base defect are at risk of suffering ascending bacterial meningitis by over 10% per year, independently of the size or location of that defect. Endoscopic surgery for closure of any type of skull base defect is the gold standard approach. The size of the defects does not play a significant role in the success rate. Fascia lata and mucoperiosteum allow a reconstruction of small/mid-sized defects. For larger skull base defects, a combination of fat, fascia lata and pedicled flaps provide a successful reconstruction. Pedicled nasoseptal flaps and lateral nasal wall are most adequate for the reconstruction of larger defects which happen after tumor removal.

Running a successful cleft lip team

G. Hens¹, V. Vander Poorten¹

¹ Multidisciplinary Cleft Lip and Palate Team, University Hospitals Leuven, Leuven, Belgium

Abstract: ERS-1316

Session: The cleft lip

Session Time: 23-06-14, 11:15

Location: Hall K

Chair person: M. Holmstrom

About one in 700 babies is born with a cleft lip and/or palate (CLP), the most common congenital condition in the craniofacial area. CLP has a wide spectrum of severity and may be associated with speech problems, impaired facial growth, dental anomalies, hearing disorders and problems with psychosocial well-being. In addition, associated syndromes may complicate the clinical picture. High-standard CLP treatment aims at the best aesthetic and functional outcome, with a minimum of procedures and optimal cost-effectiveness. This obviously involves surgical repair of the complex primary and secondary deformities by well-trained and experienced surgeons. But comprehensive cleft care is much broader and addresses the full spectrum of cleft-related problems, including speech and hearing revalidation, dental care, orthodontics, genetic counseling and psychological and social assistance. Providing coordinated, continuous and comprehensive cleft care can only be achieved by a multidisciplinary team of experts, who collaborate in an egalitarian structure. Ideally, the team not only takes responsibility for all aspects of patient care, but also commits to collecting data for outcome measurement (quality control) and research, and provides education and training. On a national level, we believe that centralization of cleft care and provision of adequate financial resources to recognized cleft centers are of primary importance for a successful management of CLP patients.

Crosstalk of microbial antigens and COX metabolism in the pathogenesis of CRS

M. Okano¹, T. Higaki¹, S. Kariya¹, T. Haruna¹, Y. Noyama¹, K. Uraguchi¹, A. Torigoe¹, K. Nishizaki¹

¹ Otolaryngology-Head & Neck Surgery, Okayama University, Okayama, Japan

Abstract: ERS-1317

Session: Immunotherapy update 2014

Session Time: 26-06-14, 10:18

Location: Hall F

Chair person: J. Vokurka

Background and aims

Microbes including viruses, fungi, and bacteria can elicit cellular responses in CRSwNP. CRSwNP is often associated with asthma and aspirin sensitivity. In the present study, we sought to investigate the effect of bacterial toxins on cellular responses and its relationship with COX metabolism, especially PGE₂, in ex vivo model of CRSwNP.

Methods

Dispersed nasal polyp cells (DNPCs) were cultured with or without *Staphylococcus aureus*-derived exotoxins including superantigenic enterotoxin B (SEB) and non-superantigenic alpha-toxin (AT) in the presence or absence of Gram-negative bacteria-derived endotoxin (LPS), after which the levels of cytokines within the supernatant were measured. The role of PGE₂ was examined by the treatment with COX inhibitor (diclofenac) and E-prostanoid receptor-specific agonists as well as PGE₂ itself.

Results

DNPCs produced IL-5, IL-13, IFN- γ , and IL-17A following the exposure to both SEB and AT. COX inhibition augmented IL-5, IL-13 and IFN- γ production whereas suppressed IL-17A production. The addition of PGE₂ and EP2/EP4 receptor-selective agonists reversed these alterations. On the other hand, LPS induced COX and PGE₂ expression in DNPCs. LPS induced IL-5, IL-13 and IFN- γ production by diclofenac-treated DNPCs, while the addition of EP2/EP4 receptor-selective agonists, as well as PGE₂ itself, inhibited IL-5 and IL-13 production. Interestingly, pretreatment with LPS inhibits SEB-induced cytokine production, and COX-derived PGE₂ displays a crucial role in the inhibitory effect.

Conclusions

The crosstalk of bacterial toxins and PGE₂ contributes to the pathogenesis of CRS. These results may suggest that the recent increase of eosinophilic CRS can be explained by the hygiene hypothesis.

Drug allergy, what an otorhinolaryngologist has to know

I. Terreehorst¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1318

Session: Drugs, allergies and other (un)desirable effects

Session Time: 25-06-14, 09:30

Location: Hall D

Chair person: L. Kalogjera

Most reactions to drugs can be considered side effects or type A reactions. They are predictable and usually not very serious. Drug hypersensitivity reactions and true drug allergy, both belonging to the type B reactions, are much less common, are usually not predictable and can be very serious and sometimes even lethal. When patients report an adverse reaction to a drug, the most common approach is to avoid the drug. However, literature shows that in many cases proper evaluation of the reaction disproves the drug as cause of the reaction. This is particularly true for maculopapular exanthema in children.

Furthermore, in case the drug is the cause of the reaction, this evaluation can also identify alternatives for the culprit drug, e.g COX II inhibitors in case of NSAID intolerance. Thirdly, if the culprit drug is very important for the patient, for instance if there is no alternative for the culprit drug or the alternative is much less effective, desensitization for the drug can be a useful option. This can be done for NSAIDs and antibiotics but also for chemotherapeutics.

Evaluation for adverse drug reactions include skin testing, specific IgE and in many cases provocation testing. Furthermore, it should ideally be done within 12 months after the reaction because many patients lose the reactivity in time. Although avoidance seems the easier option, unnecessary avoidance can lead to the use of less effective and more expensive drugs.

Differential diagnosis of nasal obstruction in children

D. Van Rompaey¹

¹ ENT, University Hospital Antwerp, Antwerp, Belgium

Abstract: ERS-1319

Session: Nasal obstruction in children and adults

Session Time: 24-06-14, 09:45

Location: Hall B

Chair person: R. Poublon

A child with nasal obstruction, acute or chronic, is a common referral for the otolaryngologist. Nasal obstruction is a symptom not a diagnosis. To evaluate nasal obstruction we have objective and subjective measures. Children begin life as obligate nose breathers and nasal obstruction in neonates can present as a dramatic airway insult. As the child ages, nasal obstruction (NO) is a symptom commonly attributed to simple rhinitis or adenoid hypertrophy. Essentially 4 etiological groups of NO in children can be differentiated; congenital-, tumoral-, inflammatory- and trauma etiology.

The age of the child, syndromic or non-syndromic patient, persistent or reversible NO, uni- or bilateral NO will be indications for diagnosis. Proper evaluation of the patient by anterior rhinoscopy and fiberoptic endoscopy is the most effective method of initial evaluation. Ct scan can be helpful to evaluate structural/bony deformities and MRI, because of its soft tissue detail, is better suited for evaluating the integrity of the dura or certain nasal masses. Associated symptoms (epistaxis, unilateral nasal discharge, proptosis, diplopia, glue ear, nasal speech or regurgitation, respiratory compromise) will indicate about polyfactorial etiology.

Combined SPT and Oral device therapy

O. Vanderveken¹, M. Dieltjens²

¹ ENT Head and Neck Surgery, Antwerp University Hospital, Antwerp, Belgium

² Special Care Dentistry, Antwerp University Hospital, Antwerp, Belgium

Abstract: ERS-1321

Session: Positional therapy/new surgeries for severe to extreme OSAS

Session Time: 23-06-14, 10:15

Location: Hall D

Chair person: A. Marzetti

Aim

The objective of this randomized controlled trial was to assess the additional effect of a chest-worn sleep position trainer (SPT) in patients with supine-dependent OSA (sdOSA) under mandibular advancement device (OA_m) therapy.

Methods

Baseline and follow-up polysomnography with OA_m were performed. Twenty patients with sdOSA under OA_m therapy underwent 2 consecutive randomized polysomnographies: one with SPT and one with combination of SPT + OA_m. Data are presented as median (Quartile 1, Quartile 3).

Results

The SPT reduced the time spent in supine sleeping position compared to baseline and OA_m therapy. Both OA_m and SPT were individually effective in reducing the overall apnea/hypopnea index (AHI) significantly when compared to baseline, from 20.8 (15.1; 33.6)/h at baseline to 11.0 (6.7; 13.8)/h and to 11.1 (3.5; 17.7)/h with OA_m or SPT respectively. The combination of SPT + OA_m further reduced the overall AHI to 5.7 (3.6; 7.4), which was significantly lower than with OA_m alone ($p < 0.001$) and SPT alone ($p < 0.008$) respectively.

Conclusions

The results of this feasibility study indicate that combination of SPT + OA_m leads to a higher mean disease alleviation in patients with sdOSA under OA_m therapy when compared to one of the treatment modalities alone.

Rhino-neurosurgery: a match made in heaven or a difficult relationship?

C. Georgalas¹

¹ Otolaryngology, AMC, Amsterdam, Netherlands

Abstract: ERS-1322

Session: Rhino neurosurgery

Session Time: 24-06-14, 08:30

Location: Hall B

Chairperson: A. Stamm

Skull base surgery has gone through significant changes with the development of extended endoscopic endonasal approaches over the last decade. Initially used for the transphenoidal removal of hypophyseal adenomas, the endoscopic transnasal approach gradually evolved into a way of accessing the whole ventral skull base. Improved visualization, avoidance of brain retraction, the ability to access directly tumours with minimal damage to critical neurosurgical structures as well lack of external scars are among its obvious benefits. However, it presents the surgeons with a number of challenges, including the need to deal endoscopically with potential arterial bleeding, complicated reconstruction requirements as well as the need for a true team approach. In this review drawing from our experience as well as published series, we present an overview of current indications, challenges and limitations of the expanded endonasal approaches to the skull base.

Aspirin provocation tests and inducing tolerance

I. Terreehorst¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1323

Session: Aspirin provocation tests and inducing tolerance

Session Time: 25-06-14

Location: Hall I

Aspirin and other NSAIDs belong with antibiotics to the most used forms of medication. They are also responsible for both a high number of side effects and reactions due to intolerance. True allergic reactions are rare. Apart from its function as a pain killer and anti inflammatory drug, aspirin is one of the cornerstones in the treatment in cardiovascular disease. Furthermore, data suggest that aspirin has additional value in the treatment of NERD (NSAID exacerbated respiratory disease) patients.

To enable patients in this last group to use aspirin on a daily basis, a desensitisation procedure is necessary. Carefull selection and preparation of patients is mandatory before proceeding in order to avoid complications during the procedure and in the maintenance phase. This includes a pulmonary work up, assessing the cardiovascular status and other potential complicating comorbidities, and addressing the risk of long term complications.

Furthermore, the patient needs to be instructed about the potential side effects and how to handle when they appear. Lastly, the patient needs to be aware of the fact that omitting to take the aspirin for several days for whatever reason, means the procedure needs to be repeated since tolerance will be lost.

Management of severe epistaxis

A.C. Swift¹

¹ Department of Otorhinolaryngology Head Neck and Thyroid Surgery, Aintree University Hospital, Liverpool, United Kingdom

Abstract: ERS-1324

Session: Management of severe epistaxis

Session Time: 25-06-14

Location: Hall B

Epistaxis is a common problem within the community, but a heavy acute bleed often leads to hospital attendance. The patient is normally assessed and treated in the Accident and Emergency department prior to specialist ENT review. However, the early management of the acute bleed is typically by trainees of varying stages of experience, without the pro-active support of a senior otorhinolaryngologist.

This scenario is a common experience but leads to inconsistent methods of management and has the potential to lead to a potentially dangerous assumption that acute epistaxis is not a serious medical condition that can lead to serious morbidity or death. Another important aspect of severe epistaxis is the frequency of hospital admission and prolonged hospital stay in an era where hospital beds are a scarce resource but costly commodity.

This instructional session will present a resume of key information about the disorder before going on to discuss some of the important decisions that are necessary in the management of the acute bleed. Specific topics will include the various techniques of controlling bleeding such as nasal packs, diathermy, the application of thrombotic agents, arterial ligation and embolization will be discussed. Clinical case scenarios that clearly display the real-life decisions and difficulties experienced with arterial ligation and embolization will be presented. The complexity of managing the acute bleeding problem and the common association with other co-morbidities will be demonstrated.

The electronic nose: options in the lower and upper airways

M. van der Schee¹

¹ Respiratory Medicine, Academic Medical Centre, Amsterdam, Netherlands

Abstract: ERS-1325

Session: European Respiratory Society - The relation between upper and lower airways

Session Time: 26-06-14, 09:30

Location: Hall C

Chair person: TBC

Volatile Organic Compounds (VOCs) are volatile end products of human metabolism. As such they are potential biomarkers for the metabolic changes that are associated with disease. These VOCs are emitted from skin, feces, urine and breath and as such can be analyzed non-invasively. Recent years have therefore seen extensive research into the value of VOCs as biomarkers to differentiate between health and disease. During this presentation an overview will be provided with respect to the concept and origins of these markers and the analytical techniques suited for their analysis such as the electronic nose. Current advances of this field in lower airways disease will be used to provide an outlook off the possibilities for VOC-analysis in upper airways disease which are numerous; Firstly VOCs are associated with the presence of upper airway pathogens such as staphylococcus aureus and rhinovirus. Secondly neoplastic disease both in and outside the lungs have shown to affect these biomarkers. Furthermore VOCs have been associated with chronic inflammatory diseases such as asthma which affect both lower and upper airways. At the end of this talk the attendee will understand the basic concepts of VOCs, their origins and their analytical methods as well as the possibilities and challenges with respect to the monitoring and diagnosis of both upper and lower airways diseases.

Nuances in the management of the soft tissue envelope of the nose

A. D'Souza¹

¹ Otolaryngology, University Hospital Lewisham - London, London, United Kingdom

Abstract: ERS-1326

Session: Pitfalls in facial plastic surgery

Session Time: 23-06-14, 09:42

Location: Hall B

Chair person: P. Palma

Adequate management of skin soft tissue envelope of the nose is essential in optimizing the aesthetic outcome, of Rhinoplasty and other types of nasal surgery. This involves certain pre, intra, and postoperative measures. These measures include simple skin care, surgical reduction of soft tissues as well other measures such as lasers. This presentation discusses my personal philosophy and nuances on the subject with clinical examples.

Evolution and development: a way to understand the nose

R. Jankowski¹

¹ ORL, Université de Lorraine - Faculté de Médecine, Nancy, France

Abstract: ERS-1327

Session: Evolution and development: a way to understand the nose

Session Time: 25-06-14

Location: Hall D

Evolution helps to understand how the nasal septum has formed by arrangement of a quadrangular cartilage set in a bony frame composed of a perpendicular plate and two vomer bones, and why the lateral wall of the nasal fossa shows such a complex superimposition of many bones. Evolution and development show that three organs gather to form the "rhinosinus" organ. The olfactory nose, which gives rise to the alar and septolateral cartilages, develops by invagination of the olfactory placodes into the skull base within a structure named ethmoid (the origin of which is the anterior end of the chord of the chordates) to connect with the rhinencephale. The respiratory nose develops later under the olfactory nose by a "tubular-like" rearrangement of the secondary palate bones. The paranasal (maxillary, sphenoidal and frontal) sinuses develop only after birth by the mechanism of pneumatization, which is independent of ethmoid bone formation. Evolution and development suggest that the ethmoid structure is not a paranasal sinus but is a bone of the anterior skull base in which the olfactory mucosa is spread out. In the evo-devo approach, nasal polyposis is not anymore a disease of the paranasal sinuses or of the respiratory nose but a disease of the olfactory nose, and specific diseases develop in the different subcompartments of the nose because of their different origins (respiratory epithelial adenomatoid hamartomas and woodworkers' adenocarcinomas in the olfactory clefts, antro- or sphenoidal or fronto-choanal polyps in the paranasal sinuses, allergic rhinitis in the respiratory nose,...).

More extended surgery: an option for patients who fail FESS?

R. Jankowski¹

¹ ORL, Université de Lorraine - Faculté de Médecine, Nancy, France

Abstract: ERS-1328

Session: Management of the patient who has failed FESS

Session Time: 26-06-14

Location: Hall A, 09:45

Chairperson: P.J. Wormald

The principle on which FES is based is restoration of ventilation and drainage of the sinuses with mucosal preservation. According to evo-devo, the ethmoidal labyrinth is not a sinus; the ethmoid is a bone of the anterior skull base in which the olfactory mucosa is protected. In humans, the olfactory mucosa is located in the olfactory clefts while vestigial olfactory mucosa occupies the ethmoidal labyrinths, which are not sinuses. Thus, restoration of ventilation and drainage with preservation of the vestigial olfactory mucosa is probably not enough surgery in nasal polyposis, a specific disease of the olfactory nose.

Sphenopalatine clipping: indications and outcomes

A.C. Swift¹, S. Derbyshire¹

¹ Department of Otorhinolaryngology Head Neck and Thyroid Surgery, Aintree University Hospital, Liverpool, United Kingdom

Abstract: ERS-1329

Session: Severe Epistaxis

Session Time: 24-06-14, 11:51

Location: Hall K

Chair person: S. Reinartz

The procedure of sphenopalatine clipping has been an established operative technique for the management of epistaxis for a number of years and the operation is now part of standard practice. However, the operation is normally performed mostly by trainees / junior surgeons as an emergency operation, often being done out of normal daytime working hours. This can lead to variability in the indications, standard of performance and outcome of the procedure.

The specific indications with regard to the management of acute epistaxis and as a mean of preventing haemorrhage during extended endonasal endoscopic surgery will be discussed. Outcomes will include the use of post-operative nasal packs, hospital stay and re-bleed rates. These various factors will be demonstrated by presenting key information from a recent 5-year audit of sphenopalatine clipping at Aintree University Hospital, Liverpool. This audit demonstrates that most surgery was performed as an emergency by the trainees but the procedure was highly effective in controlling the epistaxis.

Indications for Draf III

J. Palmer¹

¹ ORL:HNS, University of Pennsylvania, Philadelphia, USA

Abstract: ERS-1330

Session: The frontal sinus

Session Time: 23-06-14, 09:30

Location: Hall A

Chair person: V. Lund

The Draf III, also called “frontal sinus drill-out” “median frontal sinus drainage”, “modified endoscopic lothrop”, or “transseptal frontal sinus drainage” has many names and slight variations, but it is best known as the procedure described by Wolfgang Draf in the early 90's. While removing the frontal sinus floor and the superior portion of the septum is often a long and arduous procedure, in the right situation it can provide excellent results. In this session we will explore the correct times and indications to employ this procedure, as well as step-by-step review of “how I do it”

SLIT or SCIT, does it make a difference?

I. Terreehorst¹

¹ ENT, AMC, Amsterdam, Netherlands

Abstract: ERS-1331

Session: Immunotherapy update 2014

Session Time: 26-06-14, 09:42

Location: Hall D

Chair person: E. Prokopakis

Patients with rhinoconjunctivitis are firstly treated with topical and systemic medication as well as advice who to avoid contact with the allergen. When this does not suffice, immunotherapy is suggested as a way for permanent symptom reduction. However, subcutaneous immunotherapy (SCIT) is time consuming since the patient has to come to the office to get injections, and the risk of serious side effects also detain patients from entering this course of action. Sublingual immunotherapy by means of drops or tablets is much more attractive to a patient since it can be taken at home at the patients convenience.

SLIT has shown effectiveness in many studies; however some questions remain to be solved.

- is SLIT equally effective as SCIT?
- is SLIT safe enough or do we need to prescribe medication for adverse effects in SLIT, such as adrenalin auto injectors?
- how do we ensure that patients prescribed SLIT take it to schedule?
- Is the position of SLIT the same as SCIT in the ARIA treatment model or can we use it earlier in the treatment?

The true challenge of rhinoplasty: The patient's perspective

P. Palma¹

¹ Otorhinolaryngology Head Neck, University of Insubria, Varese, Italy

Abstract: ERS-1332

Session: The ultimate challenge of rhinoplasty

Session Time: 23-06-14, 08:30

Location: Hall B

Chair person: H. Stammberger

Patients can often be influenced in their idea of what constitutes a beautiful nose or face by fashion, mass media, and the experience of other patients in the Internet. The chasm between what is surgically possible or scientifically desirable and what the patient wants creates one of the most challenging scenarios in rhinoplasty. This situation can lead to frustration on both sides of the consultation table, as the surgeon seeks to guide the patient towards the realities of rhinoplasty, and scientifically proven criteria of beauty, while the patient has developed a fixed notion of what a beautiful nose or face should look like. At times, what the patient wants is so far removed from the possibilities of surgery that giving in to their wishes could result in facial deformity and a lifetime of misery for both sides. The experienced surgeon will certainly not give into any whim that has crossed the patient's mind. We know that a nose that has an "operated" look has less aesthetic value than a pre-operative nose. The chasm between the 2 sides can only be bridged with careful counselling, and considered distance between the interviews for rhinoplasty. At times, even the most experienced surgeon must be ready and willing to reject a patient's request until such time that the patient has reconsidered the situation. In many cases, the patient's misconceptions may be corrected with the aid of clinical photography, computer simulations, and other patient's pre and postoperative pictures. Above all, the patient should enter the operating room with a realistic idea of what lies ahead.

How to be a clinician scientist in ENT

A. Schilder¹

¹ University College London, Royal National Throat, Nose and Ear Hospital

Abstract: ERS-1333

Session: Is an academic career in Rhinology for you?

Session Time: 23-06-14

Location: Hall C

Clinician scientists bridge the gap between the worlds of clinical practice and biomedical research, and as such have an exciting role in building a more science-based medicine.

This workshop provides the opportunity for those early in their career to learn about the demands (e.g. funding, finding protected time, maintaining one's medical and surgical skills) of this dual role as well as its rewards (plenty), and how to carve your own career as a clinician scientist. Those well established in their clinical-scientific career are invited to share their tips and tricks.

More extensive surgery, better outcomes?

R. Harvey¹

¹ Rhinology and Skull Base, UNSW and Macquarie University, Sydney, Australia

Abstract: ERS-1334

Session: New treatment options for CRS

Session Time: 25-06-14, 09:45

Location: Hall A

Chair person: D. Kennedy

Recent literature in chronic rhinosinusitis with nasal polyps(CRSwNP) has focused on inflammatory mechanisms underlying the disease. Endotyping the histopathological features of the disease, rather than simple clinical phenotypes, reflects a change in our understanding of the disease and approach to management. This is paralleled by renewed evidence for the need for wide post-surgical access and topical anti-inflammatory therapy .

Recent research into patterns of dysfunction in innate immunity suggests a crucial role of respiratory epithelium in mediating the inflammatory response. Elevated IL-25 and IL-33 from sinus mucosa in CRSwNP and their interaction via innate lymphoid cells may represent the link between the host-environment interface and T-helper 2(Th2) dominated inflammation that characterises CRSwNP. While thorough immunological profiling of CRSwNP represents the ultimate in defining disease, classification of CRS as eosinophilic(ECRS) or non-eosinophilic(non-ECRS) correlates with disease severity and prognosis. The practice and utility of endoscopic sinus surgery to create a single neo-sinus for topical corticosteroid delivery is a logical conclusion founded on the inflammatory basis of CRSwNP/ECRS.

There is mounting evidence for CRSwNP as a predominantly inflammatory disease and not a disease of poor ventilation or obstruction of ostia.. Even simple histopathological classification based on degree of tissue eosinophilia reflects the underlying pathogenic mechanisms with diagnostic and prognostic implications. Optimal treatment involves topical anti-inflammatory therapy delivered locally via a wide, post-surgical corridor.

Management of CRSwNP the evidence

R. Harvey¹

¹ Rhinology and Skull Base, UNSW and Macquarie University, Sydney, Australia

Abstract: ERS-1335

Session: EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment

Session Time: 24-06-14, 10:00

Location: Hall A

Chair person: W. Fokkens

Recent literature in chronic rhinosinusitis with nasal polyps(CRSwNP) has focussed on inflammatory mechanisms underlying the disease. Endotyping the histopathological features of the disease, rather than simple clinical phenotypes, reflects a change in our understanding of the disease and approach to management. This is paralleled by renewed evidence for the need for wide post-surgical access and topical anti-inflammatory therapy .

Recent research into patterns of dysfunction in innate immunity suggests a crucial role of respiratory epithelium in mediating the inflammatory response. Elevated IL-25 and IL-33 from sinus mucosa in CRSwNP and their interaction via innate lymphoid cells may represent the link between the host-environment interface and T-helper 2(Th2) dominated inflammation that characterises CRSwNP. While thorough immunological profiling of CRSwNP represents the ultimate in defining disease, classification of CRS as eosinophilic(ECRS) or non-eosinophilic(non-ECRS) correlates with disease severity and prognosis. The practice and utility of endoscopic sinus surgery to create a single neo-sinus for topical corticosteroid delivery is a logical conclusion founded on the inflammatory basis of CRSwNP/ECRS. There is evidence from systematic review of RCT on the use of INCS in CRS that surgical state plays an important role in effective topical therapy.

There is mounting evidence for CRSwNP as a predominantly inflammatory disease rather than condition of poor ventilation or obstruction.. Even simple histopathological classification based on degree of tissue eosinophilia reflects the underlying pathogenic mechanisms with diagnostic and prognostic implications. Optimal treatment involves topical anti-inflammatory therapy delivered locally via a wide, post-surgical corridor.

The outside in technique

R. Harvey¹

¹ Rhinology and Skull Base, UNSW and Macquarie University, Sydney, Australia

Abstract: ERS-1336

Session: The frontal sinus

Session Time: 23-06-14, 09:54

Location: Hall A

Chair person: V. Lund

Drilling in modified endoscopic Lothrop (MELP) is traditionally described as commencing from the frontal recess (FR). This is challenging when the FR is involved by tumor, inflammatory disease or scarring. The outside-in-MELP, where the limits of the sinusotomy are defined at the beginning is described. In this approach, the 1st olfactory neurone is identified, the perisotium of the nasofrontal skin laterally, bone is removed between these landmark with a zero degree endoscope and 15deg diamond burr.

Patients undergoing MELP, using the standard or outside-in approach, for inflammatory disease or endoscopic skull base surgery (ESBS) were assessed. Operative time was calculated from intra-operative video recording.

30 patients (67% female) with a mean (SD) age of 56.0 ± 10.8 years underwent MELP (24 outside-in, 6 standard). Time for completion of Lothrop was shorter for outside-in MELP (30.60 ± 14.10 min versus 69.66 ± 64.52 min, $p=0.002$)

Amongst outside-in MELPs, mean time to frontal sinus floor discovery was 8.41 ± 6.29 min, to recess connected 26.50 ± 12.45 min, and were similar regardless of pathology. The time for completion of Lothrop cavity was shorter for tumor cases (24.63 ± 6.49 min) than for CRSsNP (35.87 ± 20.18 min) and CRScNP (34.62 ± 11.56 min) ($p=0.05$).

The outside-in MELP is technically feasible and safe. Its advantage is a wide-approach to the frontal sinus with of the Lothrop cavity en route resulting in short and predictable operative times. Defining the limits of the dissection early provides a robust and efficient approach. The approach is very safe as the frontal sinus and recess are always between surgeon and skull base.

The frontal sinus

R. Harvey¹

¹ Rhinology and Skull Base, UNSW and Macquarie University, Sydney, Australia

Abstract: ERS-1337

Session: The frontal sinus

Session Time: 25-06-14

Location: Hall B

Drilling in modified endoscopic Lothrop (MELP) is traditionally described as commencing from the frontal recess (FR). This is challenging when the FR is involved by tumor, inflammatory disease or scarring. The outside-in-MELP, where the limits of the sinusotomy are defined at the beginning is described. In this approach, the 1st olfactory neurone is identified, the peristium of the nasofrontal skin laterally, bone is removed between these landmark with a zero degree endoscope and 15deg diamond burr.

Patients undergoing MELP, using the standard or outside-in approach, for inflammatory disease or endoscopic skull base surgery (ESBS) were assessed. Operative time was calculated from intra-operative video recording.

30 patients (67% female) with a mean (SD) age of 56.0 ± 10.8 years underwent MELP (24 outside-in, 6 standard). Time for completion of Lothrop was shorter for outside-in MELP (30.60 ± 14.10 min versus 69.66 ± 64.52 min, $p=0.002$)

Amongst outside-in MELPs, mean time to frontal sinus floor discovery was 8.41 ± 6.29 min, to recess connected 26.50 ± 12.45 min, and were similar regardless of pathology. The time for completion of Lothrop cavity was shorter for tumor cases (24.63 ± 6.49 min) than for CRSsNP (35.87 ± 20.18 min) and CRScNP (34.62 ± 11.56 min) ($p=0.05$).

The outside-in MELP is technically feasible and safe. Its advantage is a wide-approach to the frontal sinus with of the Lothrop cavity en route resulting in short and predictable operative times. Defining the limits of the dissection early provides a robust and efficient approach. The approach is very safe as the frontal sinus and recess are always between surgeon and skull base.

Neuro-immune mechanisms involved in allergic and non-allergic rhinitis including capsaicin treatment

L. Van Gerven¹, B. Steelant², I. Callebaut², I. Kortekaas², E. Dekimpe¹, M. Jorissen¹, P. Hellings¹

¹ Otorhinolaryngology Head & Neck Surgery, University Hospital Leuven, Leuven, Belgium

² Laboratory of Clinical Immunology, KULeuven, Leuven, Belgium

Abstract: ERS-1338

Session: Treatment options in NAR

Session Time: 25-06-14, 11:30

Location: Hall D

Chair person: H. Saleh

Idiopathic rhinitis (IR) is a subgroup of non-allergic non-infectious rhinitis, in literature variously referred to as 'vasomotor rhinitis' or 'non-allergic non-infectious perennial rhinitis'. IR patients often report nasal hyperreactivity (NHR) as key feature. This implies that nasal symptoms are induced upon encounter of environmental stimuli, such as smoke, temperature/humidity changes, strong odors, etc. Patients with allergic rhinitis or infectious rhinitis can also experience (prolonged) nasal hyperreactivity during/after the allergen season or during/after an infectious problem. In contrast to the prevalent problem of NHR, demonstration of NHR is largely neglected in clinical practice and little is known about the underlying pathophysiology and as a consequence about the treatment options. Different diagnostic tools are currently available. Nasal provocations with hyperosmolar solutions, histamine, cold dry air (CDA) and capsaicin are described in literature to diagnose NHR. Amongst those, CDA represents the most tolerated stimulus and with a recently validated short protocol with high sensitivity and specificity to diagnose NHR.

TRPV1 and TRPA1 nociceptors are of high pathophysiologic importance in NHR. Capsaicin nasal treatment reduces NHR in parallel with a reduction of TRPV1-overexpression in IR. Therefore, novel insight into the therapeutic effect of capsaicin allows us to better understand the pathophysiology of NHR.

Intralymphatic immunotherapy

L. Hellkvist¹, T. Hylander², U. Peterson Westin³, L.O. Cardell¹

¹ Ear- Nose- and Throat Department, Karolinska University Hospital, Stockholm, Sweden

² Department of Clinical Science Intervention and Technology, Karolinska Institute, Stockholm, Sweden

³ Ear- Nose- and Throat Department, Skånes University Hospital, Malmö, Sweden

Abstract: ERS-1340

Session: Immunotherapy update 2014

Session Time: 26-06-14, 09:30

Location: Hall D

Chair person: E. Prokopakis

Allergic rhinitis is an increasing health problem. Allergen specific immunotherapy (SIT) not only gives symptom relief but also acts disease-modifying. Too few patients undergo immunotherapy mainly due to the time-consuming process with up to 50 doctor appointments with subcutaneous injections over 3 years. An alternative to subcutaneous immunotherapy is sublingual treatment in which the patient takes a tablet under the tongue every day for three years without the need of medical supervision. However, there is a problem with long-term patient adherence. Hence, it is natural to look for a more efficient way to administer immunotherapy.

In a study from Zürich in 2008 it was shown that only three doses of allergen injections into a lymph node could induce symptom relief comparable to that after SIT. The theory behind this intralymphatic immunotherapy (ILIT) is that the subcutaneous route only allows small fractions of the allergen to reach the B- and T-cells in the lymph nodes whereas ILIT allows high concentrations of allergen to be delivered to the immune system.

These results are disputed since a danish group did not experience clinical improvement but noted more local allergic reactions after ILIT using shorter dose-intervals. In a small randomized controlled study we have confirmed positive results with symptom relief upon nasal provocation after ILIT with birch- or grasspollen.

The aim of our future studies is to explore the mechanisms behind immunotherapy and to see if the dose regimen can be modified to improve efficacy without unacceptable side-effects.

Compliance and adherence in different treatment modalities

M. Ravesloot¹, N. de Vries²

¹ Department of Otorhinolaryngology, Amsterdam Medical Centre and Sint Lucas Andreas Ziekenhuis, Amsterdam, Netherlands

² Department of Otorhinolaryngology, Sint Lucas Andreas Ziekenhuis, Amsterdam, Netherlands

Abstract: ERS-1341

Session: Positional therapy/new surgeries for severe to extreme OSAS

Session Time: 23-06-14, 09:45

Location: Hall D

Chair person: A. Marzetti

Background

Although continuous positive airway pressure (CPAP) is the gold standard in the treatment of obstructive sleep apnea (OSA), its effectiveness depends on hours of use. Therefore, CPAP compliance should be considered when the efficacy of CPAP is discussed, especially since compliance rates are often poor.

Aims

Compare non-optimal use of optimal therapy (CPAP) with optimal use of often non-optimal therapy (surgery).

Methods

Using mathematical formulas we calculated and compared the effectiveness of CPAP and surgery taking compliance into consideration.

Results

The more severe the AHI, the more percentage of total sleep time (TST) CPAP must be used to significantly reduce the AHI. Patients with moderate OSA reduce the AHI by 33.3% to 48.3% when using CPAP 4 hours per night (AHI 0-5 respectively). The required nightly percentage use rises as one reduces the AHI target to < 5. CPAP must be used 66.67% to 83.33% per night to reduce the AHI below 5 (AHI of 0 whilst using CPAP).

Conclusions

Compliance needs to be taken into account when comparing CPAP to alternative treatment methods, especially to those with 100% compliance (e.g. surgery). Using a mean AHI in CPAP therapy is more realistic than using arbitrary compliance rates, which, in fact, hide insufficient reductions in AHI.

DISE as a selection tool for upper airway stimulation

O.M. Vanderveken¹

¹ Department of ENT Head and Neck Surgery Faculty of Medicine and Health Sciences, Antwerp University Hospital University of Antwerp, Antwerp, Belgium

Abstract: ERS-1342

Session: Drug induced sleep endoscopy (DISE)

Session Time: 25-06-14, 12:00

Location: Hall C

Chair person: E. Hamans

Objective

To study the possible predictive value of drug-induced sleep endoscopy (DISE) in assessing therapeutic response to implanted upper airway stimulation (UAS) for obstructive sleep apnea (OSA).

Methods

During DISE, artificial sleep is induced by midazolam and/or propofol, and the pharyngeal collapse patterns are visualized using a flexible fiberoptic nasopharyngoscope. The level (palate, oropharynx, tongue base, hypopharynx/epiglottis), the direction (antero-posterior, concentric, lateral), and the degree of collapse (none, partial, or complete) were scored in a standard fashion.

Results

We report on the correlation between DISE results and therapy response in 21 OSA patients (apnea-hypopnea index [AHI] $38.5 \pm 11.8/h$; body mass index [BMI] $28 \pm 2 \text{ kg/m}^2$, age $55 \pm 11 \text{ y}$, 20 male/1 female) who underwent DISE before implantation of a UAS system. Statistical analysis revealed a significantly better outcome with UAS in patients ($n = 16$) without palatal complete concentric collapse (CCC), reducing AHI from $37.6 \pm 11.4/h$ at baseline to $11.1 \pm 12.0/h$ with UAS ($p < 0.001$). No statistical difference was noted in AHI or BMI at baseline between the patients with and without palatal CCC. In addition, no predictive value was found for the other DISE collapse patterns documented.

Conclusion

The absence of palatal CCC during DISE may predict therapeutic success with implanted UAS therapy. DISE can be recommended as a patient selection tool for implanted UAS to treat OSA.

Flying through congested airspaces: imaging of chronic rhinosinusitis

R. Maroldi¹

¹ Radiology DSMC, University of Brescia, Brescia, Italy

Abstract: ERS-1343

Session: Comprehensive imaging of the nasal cavity and paranasal sinus

Session Time: 24-06-14, 10:00

Location: Hall C

Chair person: A. Swift

The development of endonasal surgical techniques during the last two decades has been made possible by the detailed pre-operative information provided by CT and MR. Recently, high-resolution Cone Beam Computed Tomography (CBCT) has demonstrated to be able to supply excellent details (up to 100 micron) about the thin osseous sinonasal walls with a considerable reduction of radiation exposure. Due to their resolution, both CBCT and CT are the techniques of choice to draw the individual anatomy of the bone framework of nose and paranasal sinuses. It is on the basis of this internal map that endonasal surgery for rhinosinusitis is planned.

CBCT and CT evaluation of patients complaining of **chronic rhinosinusitis and nasal polyposis** is essentially focused on the accurate delineation of the extent of inflammatory mucosal changes and on predisposing anatomic factors that may impair mucociliary drainage or increase the risk of the endoscopic procedure.

Though the volume acquired by CT/CBCT can be conventionally "frozen" in a series of thin (1 mm) coronal/axial/sagittal images, anatomy details of critical relevance are better understood via an interactive flight through the volume: i.e. simultaneous analysis of the three planes. Key structures as the whole course and ossification of the anterior ethmoidal artery channel or the common lamina for middle/superior/supreme turbinates are more easily identified with this approach.

Anatomic landmarks demonstrated by Imaging are of remarkable importance in planning surgical procedures in patients already treated, especially in relapsing polyposis.

Non-invasive fungal rhinosinusitis (high content of calcium, iron and manganese within fungal hyphae: hyperdensity on CT, hypointensity on MR) sparing the mucosa lining the sinusal cavity or invasive forms (mucosa and bone invaded) can be thoroughly mapped by Imaging.

Simulation in rhinologic training

A.S. Carney¹, K. Reynolds², E. Ooi¹, G. Ruthenbeck², R. Sacks³, C. Woods¹

¹ Otolaryngology - Head & Neck Surgery, Flinders University, Adelaide, Australia

² Engineering, Flinders University, Adelaide, Australia

³ Otolaryngology - Head & Neck Surgery, Macquarie University, Sydney, Australia

Abstract: ERS-1344

Session: Technical advances in treatment of CRS

Session Time: 24-06-14, 09:30

Location: Hall K

Chair person: M. Caversaccio

There is evidence to suggest that endoscopic surgical trainees benefit from opportunities to develop manual skills prior to operating on real patients 1. Computer based virtual reality simulation can provide access to virtually unlimited numbers of simulated patients and scenarios 2. Until recently however, the available technology has limited the realism of the key interactions; realistic simulated tissues that can be cut and touched using precision force feedback (haptic) devices have not been available.

A surgical simulation's effectiveness is determined by its ability to accurately reproduce key interactions 3. Here we focus on accurately simulating the interaction of the surgeon with the sinus tissues via a number of common surgical instruments.

This FESS simulator has now been validated and shown to be able to distinguish junior trainees from those with more advanced training.

This workshop will describe the construction and evolution of the simulator and give participants hands-on experience with a twin-haptic laptop-based simulator.

References

1. R Aggarwal, J Ward, I Balasundaram, P Sains, T Athanasiou, A Darzi (2007) Proving the effectiveness of virtual reality simulation for training in laparoscopic surgery *Ann Surgery* 246:771-9
2. G S Ruthenbeck (2010) Interactive Soft Tissue for Surgical Simulation. PhD Thesis. Flinders University of South Australia.
3. K E A Abou-Elhamd, A I Al-Sultan, U M Rashad (2010) Simulation in ENT medical education *JLO* 124:237-241.

Sinus surgery virtual reality simulation

A.S. Carney¹, K. Reynolds², E. Ooi¹, G. Ruthenbeck², R. Sacks³, C. Woods¹

¹ Otolaryngology - Head & Neck Surgery, Flinders University, Adelaide, Australia

² Engineering, Flinders University, Adelaide, Australia

³ Otolaryngology - Head & Neck Surgery, Macquarie University, Sydney, Australia

Abstract: ERS-1345

Session: Sinus surgery virtual reality simulation

Session Time: 23-06-14

Location: Hall C

There is evidence to suggest that endoscopic surgical trainees benefit from opportunities to develop manual skills prior to operating on real patients¹. Computer based virtual reality simulation can provide access to virtually unlimited numbers of simulated patients and scenarios². Until recently however, the available technology has limited the realism of the key interactions; realistic simulated tissues that can be cut and touched using precision force feedback (haptic) devices have not been available.

A surgical simulation's effectiveness is determined by its ability to accurately reproduce key interactions³. Here we focus on accurately simulating the interaction of the surgeon with the sinus tissues via a number of common surgical instruments.

This FESS simulator has now been validated and shown to be able to distinguish junior trainees from those with more advanced training.

This workshop will describe the construction and evolution of the simulator and give participants hands-on experience with a twin-haptic laptop-based simulator.

References

1. R Aggarwal, J Ward, I Balasundaram, P Sains, T Athanasiou, A Darzi (2007) Proving the effectiveness of virtual reality simulation for training in laparoscopic surgery *Ann Surgery* 246:771-9
2. G S Ruthenbeck (2010) Interactive Soft Tissue for Surgical Simulation. PhD Thesis. Flinders University of South Australia.
3. K E A Abou-Elhamd, A I Al-Sultan, U M Rashad (2010) Simulation in ENT medical education *JLO* 124:237-241.

Rhino neurosurgery more efficient

S.K. Ahmed¹, A.L. McDermott², L. McClelland¹, S. Rose¹, R. Finn², A. Paluzzi³, R. Mitchell³

¹ ENT, University Hospital Birmingham, Birmingham, United Kingdom

² ENT, Birmingham Childrens' Hospital, Birmingham, United Kingdom

³ Neurosurgery, University Hospital Birmingham, Birmingham, United Kingdom

Abstract: ERS-1346

Session: Rhino neurosurgery more efficient

Session Time: 25-06-14, 17.00

Location: Hall K

Rhinology has seen an evolution of approaches largely aided by advancing technologies. One of the most notable in the past 4 decades is in endoscopic visualization that has allowed procedures within the nose, sinuses, and brain to be performed entirely via an endoscopic endonasal approach (EEA). An EEA approach adds a new dimension to rhinology and has given birth to a new surgical discipline: "Rhino neurosurgery."

Rhino neurosurgery has, in the past decade undergone rapid advancement moving from pituitary operations to suprasellar tumours. Currently the surgery has extended from the posterior wall of the frontal sinus and cribriform plate to C2 vertebrae to the petrous apex and infratemporal fossa.

Rhino neurosurgery can take many hours and often involves multiple surgeons. Specialist theatre equipment, such as intraoperative image guidance, transnasal drills/burs, and long transnasal instruments are vital to the success of this surgery. Familiarity of this specialist equipment is not only important for the operating surgeon but also for the entire scrub team to ensure a smooth operation. Proper preparation of all this equipment before the patient enters the theatre environment can save 30-40 minutes at the beginning of the case.

Correct theatre ergonomics can also substantially reduce surgical time by optimizing the performance of the surgical team and reducing fatigue. By optimizing placement of all the theatre equipment for rhino neurosurgery cases approximately 10% more floor space can be created.

These changes not only result in increased efficiency but also improved patient and staff safety in rhino neurosurgery.

3-D endoscopy skull base surgery

A. Nassimizadeh¹, M. Nassimizadeh¹, J. Muzaffar¹, A. Paluzzi², [S.K. Ahmed](#)¹

¹ ENT, University Hospital Birmingham, Birmingham, United Kingdom

² Neurosurgery, University Hospital Birmingham, Birmingham, United Kingdom

Abstract: ERS-1347

Session: 3D anatomy and surgery

Session Time: 25-06-14, 10:15

Location: Hall F

Chair person: H. Braun

Background

We describe our initial operative experience in skull base surgery using a three dimensional high definition (3D HD) endoscopic endonasal approach involving a pituitary adenoma resection and provide a case series of our experience.

Methods

Most current endoscopic endonasal techniques involve the surgeon working within a two-dimensional (2D) environment which creates drawbacks, specifically with regard to a lack of stereopsis impairing depth perception. In order to mitigate this there has been the introduction of new three-dimensional (3D) endoscopes and cameras. These 3D endoscope systems initially had worse image clarity compared to 2D HD, until recently when an updated high definition 3D system was released.

Results

Although research evidence remains limited, there are no significant negative peri-operative or post-operative outcomes when compared to 2D endoscopic techniques. In our experience narrow operating corridors of endoscopic surgery cannot be addressed with 3D endoscopic techniques. However, the new 3D HD endoscope creates image quality similar to conventional 2D HD systems and gives additional stereoscopic cues allowing the brain to better appreciate tissue depth.

Conclusion

Three-dimensional high definition visualisation in endoscopic endonasal surgery provide an exciting new avenue, effectively addressing potential depth perception difficulties with current two-dimensional systems.

Long-term recovery of olfactory disorders

A. Welge-Lüssen¹, A. Hilgenfeld², T. Meusel³

¹ Department of Otorhinolaryngology Head and Neck Surgery, University Hospital Basel, Basel, Switzerland

² HNO, Ärztezentrum Sihlcity, Zürich, Switzerland

³ Department of Otorhinolaryngology Head and Neck Surgery, University of Erlangen Medical School, Erlangen, Germany

Session: Smell & Taste

Session Time: 25-06-14, 10:15

Location: Hall K

Chair person: S. Lacroix

Background

Olfactory disorders are known to recover spontaneously. Recovery rate, however, depends on several factors such as etiology of the disorder, age and gender of the patient, duration of the disorder and the presence or absence of parosmia. While the prognostic value of some of these factors is generally accepted the prognostic value of others such as parosmia is discussed controversially within the literature. Spontaneous recovery is usually expected to take place within the first two years after beginning of the disorder. Data regarding long-term observation in larger groups are rare.

Methods

Olfactory function (Sniffin´ Sticks Test Battery, each nostril tested separately) was examined twice in a large group of patients with posttraumatic olfactory disorders (38 men, 29 women, mean age: 40 years, range: 17-66). The first examination took place on average 16 months after trauma; the second one 74 months after trauma.

Results

According to the better side initially 37 patients were anosmic, 27 hyposmic and 3 normosmic. At the second examination 25 patients were anosmic, 35 hyposmic and 7 normosmic. Mean TDI scores of the better side increased from 16.7 to 19.4 ($p < 0.001$).

Conclusions

Almost 30% of all patients with posttraumatic disorders improved over a time period of 74 months. The general observation time of two years in these disorders might be too short to determine final recovery. Implication of these data regarding medico-legal aspects and counselling of patients are discussed in context to the literature; factors of prognostic values are identified and discussed as well.

Evidence in NAR treatment

A. Gevorgyan¹, C. Segboer², R. Gorissen², C.M. van Drunen², W.J. Fokkens²

¹ Otolaryngology - Head and Neck Surgery, Lakeridge Health, Oshawa, Canada

² Otorhinolaryngology, Academic Medical Centre, Amsterdam, Netherlands

Abstract: ERS-1349

Session: Treatment options in NAR

Session Time: 25-06-14, 11:45

Location: Hall D

Chair person: H. Saleh

Background and aims

The objective of this study was to perform a Cochrane systematic review and meta-analysis to assess the effectiveness of capsaicin in non-allergic rhinitis (NAR).

Methods

We searched several databases and selected randomised controlled trials of adult patients with NAR, treated with intranasal capsaicin and compared to placebo or other therapies. Two authors independently assessed trial quality and extracted data.

Results

We included 4 studies (5 publications) involving 303 patients with idiopathic NAR. A meta-analysis was not possible. One study reported improvement of overall nasal symptoms compared to placebo at 2, 12 and 36 weeks after treatment. Another study reported that 4 µg of capsaicin per puff had a risk ratio (RR) of 2.00 (95% CI 0.81 to 4.93) over placebo for Daily Record Chart symptoms. One study compared capsaicin to budesonide and found no differences in nasal obstruction; however, patient treated with capsaicin had a better aggregate relief score compared to those treated with budesonide (mean differences of 2.50, 95% CI 1.06 to 3.94). One study compared two different regimens of capsaicin administration and found no difference in symptoms comparing 5 treatments in one day vs. 5 treatments given every 2-3 days during 2 weeks. Finally, one of the studies compared three doses of capsaicin and found a dose-response relationship.

Conclusions

Capsaicin may be included in the treatment of idiopathic NAR. It appears to have beneficial effects on overall nasal symptoms up to 12 weeks after treatment, based on the results of individual studies.

3D anatomy what is different

A. Gevorgyan¹, W.J. Fokkens²

¹ Otolaryngology - Head and Neck Surgery, Lakeridge Health, Oshawa, Canada

² Otorhinolaryngology, Academic Medical Centre, Amsterdam, Netherlands

Abstract: ERS-1350

Session: 3D anatomy and surgery

Session Time: 25-06-14, 09:45

Location: Hall F

Chair person: H. Braun

After the advent of endoscopy into sinus and skull base surgery, it has allowed to revolutionize what is considered safe in transnasal surgery, and has converted many procedures into day surgery or overnight stay cases. The arrival of 3D endoscopy is heralded as the next revolution in rhinology. It is being now actively utilized in skull base cases in some centres. However, the routine use of 3D endoscopy in endoscopic sinus surgery for inflammatory disease remains limited.

We have performed a cadaveric study to explore the utility of 3D endoscopy in endoscopic sinus surgery. We will convey our experience, specifically as it relates to teaching of sinus surgery, development of "3D thinking" and on whether this technology will establish a permanent foothold in inflammatory disease surgery.

What is the evidence for the use of mucosal flaps in Draf III procedures?

A. Sama¹

¹ Nottingham University Hospital, Derby Road, Nottingham, UK

Abstract: ERS-1351

Session: The frontal sinus

Session Time: 23-06-14, 10:18

Location: Hall A

Chair person: V. Lund

Since its original description in 1991, the Draf III or endoscopic modified Lothrop procedure has become the established procedure of choice for failed frontal sinus drainage procedures and for endoscopic access to neoplastic lesions of the frontal sinus. However, despite the procedure providing unparalleled endoscopic access to frontal sinus disease, it carries a notable rate of restenosis. A recent meta-analysis by Anderson et al. reviewed 18 studies and 612 patients who underwent Draf III procedures reported in the literature until 2009 and found that 19% of patients had stenotic or closed frontal sinus ostia at the last clinical follow-up and that surgical revision was required in 14% of patients. The literature suggests that osteitic bone acts as an inflammatory center, initiating mucosal edema and hypertrophy leading to narrowing of the frontal recess. It would therefore be not unreasonable to consider that postoperative stenosis of the frontal neo-ostium following an endoscopic Draf III could result from scarring, adhesions and neo-osteogenesis. In principle, this could be reduced by providing mucosal cover for the exposed, osteitic raw bone. In recent years, there has been increased exploration of techniques to minimize this inflammation by covering this raw bone with mucosal grafts. Although the concept appears sound in principle and the limited series published show potential reduction in revision rates, there is inadequate evidence to state conclusively that this technique will improve the results of Draf III procedures in all surgical hands. The author will provide a review of the techniques described and the literature on the efficacy of these techniques.

Immunotherapy to biologics: current and future perspectives in allergy therapeutics

R. Pawankar¹

¹ Dept. of Pediatrics, Nippon Medical School, Tokyo, Japan

Abstract: ERS-1352

Session: Allergic rhinitis

Session Time: 25-06-14, 11:45

Location: Hall B

Chair person: P. Hellings

Most therapeutic approaches for allergic diseases focus primarily on symptom control and suppressing inflammation. Allergen immunotherapy (AIT) is the only disease-modifying treatment for allergic rhinitis (AR) and asthma where the benefits may persist years after treatment is discontinued. Allergen immunotherapy has been used for almost a century as a desensitizing therapy for allergic diseases. Administration of appropriate concentrations of standardized purified allergen extracts has been shown to be reproducibly effective in carefully selected patients. Studies suggest that AIT induces a reduction in inflammation, nonspecific hyperresponsiveness, and prevents new sensitivities and progression of allergic rhinitis to asthma. Allergen Specific Immunotherapy (AIT) also has the capacity for long-term clinical effects and plays a protective role against the development of further allergies and symptoms. The potential disease-modifying effects of AIT are particularly compelling in children, considering their likely long duration of allergic symptoms, which require years of medications. In addition to the benefit of sustained remission of symptoms, AIT may offer a significant cost-benefit due to reductions in medication and other costs. However, this treatment is limited by its drawbacks of safety concerns and the inconvenience of repeated clinic visits over several years to receive the injections. Therefore, many attempts are underway to improve on the safety and convenience while still retaining the benefits of subcutaneous immunotherapy (SCIT). Sublingual immunotherapy (SLIT) appears to be one of these forms of immunotherapy associated with mostly minor local adverse effects, and safe enough to allow for home administration.

After more than 20 years of clinical trials, post-marketing surveys, and mechanistic studies, sublingual immunotherapy (SLIT) is nowadays regarded as a real step forward in the management of AR. The clinical efficacy has been shown for the most common allergens in numerous clinical trials, and confirmed in meta analyses in adult and paediatric populations. In the recent large clinical trials conducted with grass tablets, have consistently shown the dose-dependency of the clinical effects of SLIT. Most recent studies in the US have shown the positive efficacy of SLIT and FDA approved SLIT for the treatment of certain grass pollen allergies. It is also important to consider the effects of SLIT in a broader sense in that of the preventive effects of SLIT, in particular in reducing the risk of inception of asthma in children with allergic rhinitis. A controlled study on this aspect, conducted in more than 200 children, receiving either SLIT or drugs only for 3 years, showed a 40% reduction of the onset of persistent asthma in the SLIT-treated subjects, associated with a significant decrease of the onset of new sensitisations. In conclusion, SLIT should be regarded as an additional effective therapeutic option for the treatment of AR. WAO has recently updated its SLIT Consensus in 2013 updating the most recent evidences in the literature.

Most recent developments in the field of allergy and immunology have led to a variety of novel therapeutic strategies as biologics. Some of these agents are in use in clinical practice like anti-IgE mAb, omalizumab in patients with severe asthma, and several others are at various stages of clinical trials or under study. Among these new approaches are anti-IL-5 mAb, anti-IL-13mAb, anti-IL-4Ra antagonist, toll-like receptor agonists, and transcription factor modulators targeting syk kinase, peroxisome proliferator-activated receptor gamma, and nuclear factor kappa B. However, one has to also look at their efficacy, adverse effects, cost efficacy as well as their utility in multiorgan diseases like asthma, rhinitis and chronic urticaria etc, their disease modifying effects, especially in the long term.

Epithelial cell as immunomodulators in allergic airway disease - beyond barrier function

R. Pawankar¹

¹ Dept. of Pediatrics, Nippon Medical School, Tokyo, Japan

Abstract: ERS-1353

Session: The epithelial barrier

Session Time: 25-06-14, 10:00

Location: Hall E

Chair person: N. Zhang

Conventionally, airway epithelial cells which are the first barrier impacted by inhaled environmental factors, such as allergens, pathogens, and pollutants were thought to serve only as a mucosal barrier to protect against exposures to potentially harmful inhaled substances and microbial pathogens. However, it is now clear that airway epithelial cells are a central player in the Th2-cell sensitization process via its interactions with other immune cells and by influencing their functions

Activation of epithelial cells by allergens, viruses, bacteria or cytokines/ chemokines released from other cells induces upregulation of inflammatory mediators and cell surface receptors in epithelial cells. Epithelial cells interact with immune cells either through the release of cytokines, chemokines and other inflammatory mediators or through direct cell-cell interactions. These cause inflammatory changes in the target organ and recruitment of immune cells into epithelium that in turn interact with epithelial cells to initiate and sustain airway inflammatory diseases such as allergic rhinitis (AR) or asthma. Airway epithelial cells induce DC migration into epithelium via CCL20 (MIP-3?) and TSLP production. Upon the recruitment of immune cells including dendritic cells (DC), T cells and B cells into the proximity of epithelium, epithelial cells enhance adaptive immunity through interactions with these immune cells. Epithelial-derived cytokines, like TSLP, IL-33 and BAFF, regulate the infiltration and activation of Th2 responses and B cell immunoglobulin production. TSLP induces massive infiltration of eosinophils and other inflammatory cells, goblet cell hyperplasia and airway hyperresponsiveness.

Epithelial cells express HLA-DR, CD 86 and the alpha and gamma chains of the FcepsilonRI. In vitro studies demonstrated that epithelial cells can present antigen to T cells demonstrating that epithelial cells can potentially serve as antigen presenting cells and indicating important epithelial cell-T cell interactions. Eosinophil-epithelial cell interactions also make a major contribution to asthmatic airway inflammation. Nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and other members of the neurotrophin family are now recognized to support the survival and activation of immune cells. NGF levels are increased in the bronchoalveolar lavage fluid during allergic asthma and in the nasal mucosa of patients with allergic rhinitis. The subepithelial fibrosis component of airway remodeling in asthma is mediated through induction of transforming growth factor-beta1 (TGF-beta1) expression with consequent activation of myofibroblasts to produce extracellular matrix proteins. Chemokines from airway epithelial cells like RANTES induce the recruitment of mast cells into the allergic airway epithelium and RANTES and IL-8 cause airway smooth muscle (ASM) cell migration and might potentially play a role in the process of airway remodeling in asthma. Moreover, epithelial-mesenchymal transition (EMT) has been recognized as a source of mesenchymal cells. EMT is induced by various growth factors, such as transforming growth factor (TGF)-?1, and enhanced by inflammatory cytokines. Epithelial cells are also downstream targets of molecules that activate IL-13R and EGFR and are responsible for mucus production.

Improved understanding of the function of epithelial cells in maintaining the integrity of the airways and its dysfunction in asthma and allergic airway disease provides important mechanistic insights that could lead to developing new therapeutic strategies that prevent exacerbations and alter the natural course of the disease

Type III frontal sinusotomy: indications and limitations

P. Eloy¹

¹ ENT department, CHU Dinant- Godinne, Belgium

Abstract: ERS-1354

Session: The frontal sinus

Session Time: 23-06-14, 09:42

Location: Hall A

Chair person: V. Lund

Type III frontal sinusotomy also called as modified Lothrop procedure consists of creating a wide communication between both frontal sinuses and the nasal cavities. The procedure comprises the resection of the superior nasal septum and the intersinus septum combined with the drilling of both frontal floors.

Indications for such an extended frontal sinus surgery are the following:

1. Uni or bilateral obstructive frontal sinusitis caused by postoperative scar formation, neoosteogenesis or lateralized middle turbinate remnant
2. postoperative frontal mucocele (some cases)
3. fungus ball of the frontal sinus
4. osteoma of the frontal sinus (some cases)
5. inverted papilloma extending from the anterior ethmoid to the floor of the frontal sinus.
6. Need for surgical access (treatment of type 3 or 4 frontal cell, intersinus septal cell)
7. step during an endoscopic endonasal craniofacial resection for tumor.

Contraindications or limitations are:

Small frontal sinus

Extremely narrow A-P diameter, heavy thick nasofrontal beak

Severe bilateral neo-osteogenesis, proliferative osteitis, complicated chronic infection

Lesions requiring access to the lateral aspect of a well-pneumatized frontal sinus

The authors comment these indications and limitations with their own clinical cases.

Pathophysiology of CRS for clinicians

R. Kern¹

¹ Department of Otolaryngology-Head and Neck Surgery, Northwestern University, Feinberg School of Medicine, USA

Abstract: ERS-1355

Session: EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment **Session Time:**

Session Time: 24-06-14, 09:30

Location: Hall A

Chair person: W. Fokkens

CRS is a broad clinical syndrome defined by persistent symptomatic mucosal inflammation. The etiopathogenesis is typically idiopathic, with only a small subset occurring in association with a discrete event or known systemic disease. Multiple environmental agents and host factors have been implicated, and although the relative importance of each remains unclear, consensus exists on two points: (1) specific factors likely vary in importance in individual patients and (2) CRS is typically an antegrade process triggered by exogenous agents inhaled through the nose. Overall, this leads to the concept that CRS pathogenesis is best described as a dysfunctional interaction that occurs at the site of interface between the host and the environment. The working hypothesis is that a combination of genetic factors and environmental events creates a predisposition to the development of chronic inflammation when the nasal mucosa is subsequently challenged by otherwise innocuous exogenous agents

The CRS syndrome actually consists of multiple clinical phenotypes driven by one or more biologic pathways with the most widely accepted classification system dividing CRS based on the presence (CRSwNP) or absence (CRSsNP) of nasal polyps. CRSwNP is closely associated with Th2 inflammation and eosinophilic infiltration while CRSsNP has much less Th2 skewing, less eosinophilia and relatively more prominent neutrophilia. These statements are only generally true and provide little insight into the biological processes that take place. This presentation will describe current research from our laboratory and others that demonstrate evidence for an innate immune barrier defect that broadly predisposes to the development of CRS. Secondly, evidence will be presented demonstrating an exaggerated B cell and immunoglobulin response in the polypoid form of CRS. Third, remodeling changes associated with the deposition of fibrin associated with the Th2 skewed form of CRS. Remodeling changes associated with the deposition of collagen are associated with the non-Th2 skewed form of CRS.

In summary, a CRS model begins to emerge wherein multiple, possibly overlapping, biological pathways or endotypes translate environmental stimuli into tissue damage. As the upstream processes of mucosal challenge to tissue infiltration are dissected at the molecular level, the potential will exist to identify the endotypes operative in an individual patient, and then interdict the recruitment of pathologically relevant effector cells.

Pitfalls of nasal tip surgery during rhinoplasty

A. Mesbahi¹

¹ Facial Plastic Surgery, Ordibehesht Hospital, Shiraz, Iran

Abstract: ERS-1356

Session: Pitfalls in facial plastic surgery

Session Time: 23-06-14, 09:54

Location: Hall B

Chair person: P. Palma

Rhinoplasty is one of the most common facial plastic surgery in all parts of the world . The goals surgery are to create for the patients, beautiful nose, with good function and in harmony with all other facial features . One of the most challenging aspects of this operation is regarding tip surgery .Since many years ago we heard regarding different techniques for the correction of nasal tip deformities. As we know long term results for rhinoplasty are very important . Unfortunately some of the techniques for nasal tip surgery work for short period of time but will not work for ever . So the surgeons must know different techniques for nasal tip surgery to choose the best ways that can correct specific tip pathology and will be effective of ever . During this session I will share with audience about the most common pitfalls that may occur after tip plasty . I will focus on the best non aggressive techniques that can corrects most common nasal tip deformities.

Con

A. Mesbahi¹

¹ Facial Plastic Surgery, Ordibehesht Hospital, Shiraz, Iran

Abstract: ERS-1357

Session: The Big Debate: Morphing in Rhinoplasty

Session Time: 25-06-14, 17:20

Location: Hall A

Chair person: P. Hellings

Before rhinoplasty operation the surgeon must discuss with the patient about the results after surgery. As we know there are some limitations during surgery that may affect the results after operation. The patients must know the most common complications regarding their surgery. They must know that there is no any guarantee regarding the results, as the healing process is unpredictable also. I am agreeing for a very good pre operation consultation but I don't agree with the pre operation morphing. During the session I will share my ideas in this regard.

Vestibulum stenosis in cleft lip patients

G. Rettinger¹

¹ Oto-Rhino-Laryngology Department, University Hospital, Germany

Abstract: ERS-1359

Session: The cleft lip

Session Time: 23-06-14, 12:00

Location: Hall K

Chair person: M. Holmstrom

While in bilateral cleft-lip deformities a stenosis of the nasal vestibulum is rare, it is a common finding in unilateral clefts. Due to developmental and surgical factors the surface of the inner lining of the nasal vestibule is deficient, resulting in the typical depression of the alar rim and the „plica vestibularis“. Many surgical procedures to correct the nasal base in unilateral clefts of the lip/alveolous are described. They can be divided in three groups:

- 1.repositioning of the soft tissues and the alar cartilage
- 2.resections and repositioning
- 3.grafting and repositioning

Analyzing the typical unilateral cleft lip deformity reveals a more or less pronounced lack of inner surface of the nasal vestibule. The asymmetry makes a complete mobilisation of the components involved necessary: external skin, lateral crus and dome of the alar cartilage, vestibular skin. In many cases a lateral defect of vestibular skin remains after repositioning without any tension. This defect can be reconstructed with a composite graft from the concha of the auricle. This graft has three effects:

- 1.reconstruction of inner lining
- 2.concavity of the lateral vestibular wall
- 3.support to lateral crus

Technique and results are presented

Subjective versus objective tools to evaluate the success of immunotherapy

Y. Okamoto¹

¹ Dept. of Otorhinolaryngology, Graduate School of Medicine, Chiba University, Japan

Abstract: ERS-1360

Session: Immunotherapy update 2014

Session Time: 26-06-14, 10:18

Location: Hall D

Chair person: E. Prokopakis

Background

The placebo effects are highly observed and the biomarkers that show the clinical effect objectively, have not been clarified yet in immunotherapy for allergic rhinitis. In particular, the evaluation of the efficacy in pollinosis is difficult as scattering pollen amount and climatic conditions vary every year.

Methods

A large double-blind, randomised comparative study in multi-institutes to examine the efficacy of sublingual immunotherapy using the Japanese cedar pollen extract was conducted over two consecutive Japanese cedar pollen seasons from 2010 to 2012 in Japan. Totally 481 patients completed the study. The total nasal symptom and medication score (TNSMS) and QOL scores were evaluated. An electronic diary system to record their symptoms in detail and the Japanese Allergic Rhinitis QOL Standard Questionnaire for assessment of total QOL scores were used. In addition, the number of cedar pollen specific T cells were examined as the candidates biomarkers in the participants (n=40) of our institute.

Results

The annual counts of cedar pollen were the highest for 20years in 2011, however were lower than the average pollen counts in 2012. The mean TNSMS was significantly lower in the SLIT group compared with the placebo group at the peak pollen season in both 2011 and 2012. The patients with a score of TNSM less than four points during peak pollen dispersal season were observed in 12.1% and 19.9% in placebo and SLIT groups respectively in 2011, compared with 39.4% and 61.0% respectively in 2012. 20.3% of patients in the placebo group and 28.0% in the SLIT group did not have any severe symptom days in 2011, compared with 49.8% and 73.4% respectively in 2012. Total QOL score was significantly ameliorated in the SLIT group. 44.6% in SLIT group and 5.8% in placebo group replied to be The specific IgE and IgG4 increased in the SLIT group, however, neither showed the correlation with the clinical efficacy. Although the number of cedar pollen specific Th2 cells increased during pollen season in the placebo group and in the poor responders in the SLIT group, the increase was inhibited in the good responders in the SLIT group. fine or good as their general state at the peak of pollen dispersal week in 2012. However, the some participants with low TNSMS replied to be crying or bad as their general state and there was no correlation between QOL score and TNSMS.

Conclusion

The TNSMS and QOL scores showed a discrepancy. The change of the level of allergen specific Th2 cells could be expected as an objective biomarker for immunotherapy.

Oral and short presentations

Surname	First name	Topic	Abstract no.
Abd Elfattah	Ahmed	Short Presentations: Pediatric rhinology	ERS-0627
Abdel Hak	Balegh	Short Presentations: Orbit lacrimal system	ERS-0362
Abergel	Avraham	Short Presentations: Orbit lacrimal system	ERS-0428
Abo- Khatwa	Mohamed	Oral Presentations: Simulation and training	ERS-0621
Abu-Ghanem	Sara	Short Presentations: CRS miscellaneous	ERS-0429
Ahmadi	Nazanin	Oral Presentations: Rhinitis, Clinical 1	ERS-0690
Ahmed	Shahzada	Short Presentations: Skull base surgery 3	ERS-0951
Ahmed	Shahzada	Short Presentations: Skull base surgery 3	ERS-0953
Akazawa	Hitoshi	Oral Presentations: Fungal sinusitis	ERS-0441
Al-Qudah	Mohannad	Short Presentations: CRS miscellaneous	ERS-0645
Alanin	Mikkel	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0416
Alinasab	Babak	Short Presentations: Orbit lacrimal system	ERS-0818
Alinasab	Babak	Oral Presentations: Rhinopasty and facial plastic surgery	ERS-0820
Alkofide	Eman	Oral Presentations: Pediatric rhinology	ERS-0358
Aloulah	Mohammad	Oral Presentations: Management of CRS	ERS-0892
Aloulah	Mohammad	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0893
Alromaih	Saud	Short Presentations: Complications in rhinology	ERS-0787
Alromaih	Saud	Short Presentations: CRS Basic 2	ERS-0856
Alves	Sdivia	Short Presentations: Skull Base Surgery 2	ERS-1064
Amarillo Espitia	Viviana Elizabeth	Short Presentations: Olfaction	ERS-0793
Amarillo Espitia	Viviana Elizabeth	Short Presentations: Skull base surgery 3	ERS-0796
Amin	Nikul	Short Presentations: Complications in rhinology	ERS-0805
Anghel	Ion	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0654
Anghel	Ion	Short Presentations: CRS Basic 2	ERS-0659
Anmolsingh	Rajesh	Short Presentations: Rhinopasty and facial plastic surgery	ERS-0947
Anselmo-Lima	Wilma	Oral Presentations: Prognostic factors in CRS	ERS-0754
Anselmo-Lima	Wilma	Oral Presentations: United airways	ERS-0764
Anselmo-Lima	Wilma	Short Presentations: Rhinitis basic	ERS-0827
Araujo-Martins	Jose	Oral Presentations: Nasal flow and resistance measurements	ERS-1019
Aranjo Mohana Pinheiro	LaDza	Short Presentations: CRS Basic 2	ERS-1035
Aranjo Rjgo	Raimundo Vinicius	Short Presentations: CRS miscellaneous	ERS-0843
Asako	Mikiya	Short Presentations: United airways	ERS-0993
Atfeh	Mihiar	Short Presentations: Orbit lacrimal system	ERS-0424
Atfeh	Mihiar	Short Presentations: Rhinopasty and facial plastic surgery	ERS-0425
Awakura	Hideyuki	Short Presentations: CRS miscellaneous	ERS-0590
Bachert	Claus	Oral Presentations: Rhinitis, Clinical 1	ERS-0760
Bachert	Claus	Short Presentations: Rhinitis clinical	ERS-0762
Bachert	Claus	Oral Presentations: Rhinitis, Clinical 2	ERS-0771
Bachmann-Harildstad	Gregor	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0623
Bae	Jung Ho	Short Presentations: Rhinopasty and facial plastic surgery	ERS-0448
Bae	Woo Yong	Short Presentations: Management of CRS	ERS-0673
Baek	Byoung Joon	Short Presentations: Fungal sinusitis	ERS-0701
Bahgat	Mohammed	Short Presentations: Skull Base Surgery 2	ERS-0693
Ball	Stephen	Short Presentations: CRS Basic 3	ERS-0418
Banglawala	Sarfaraz	Oral Presentations: CRS Miscellaneous	ERS-0973
Barbosa	Leonel	Short Presentations: Orbit lacrimal system	ERS-0862
Barnes	Martyn	Oral Presentations: Simulation and training	ERS-0350
Basak	Hazan	Short Presentations: Skull base surgery 4	ERS-0842
Bastier	Pierre-louis	Oral Presentations: CSF leak and skull base	ERS-0819
Bell	Philip	Oral Presentations: Epidemiology	ERS-0458
Bell	Philip	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0459
Bell	Philip	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0460
Bella	Zsolt	Short Presentations: Management of CRS	ERS-0838
Benninger	Michael	Oral Presentations: United airways	ERS-0426
Berings	Margot	Short Presentations: Rhinitis basic	ERS-0939
Berkhout	Maaike	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0720
Bertazzoni	Giacomo	Short Presentations: CRS Basic 2	ERS-1013
Bertazzoni	Giacomo	Oral Presentations: Rare diseases in the nose and sinuses	ERS-1014
Beton	Suha	Oral Presentations: Malignant tumours	ERS-0848
Beule	Achim	Oral Presentations: Nasal flow and resistance measurements	ERS-0825
Bewick	Jessica	Short Presentations: Management of CRS	ERS-1051
Biggs	Timothy	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0367
Bilde	Anders	Oral Presentations: Benign tumours	ERS-0853
Blanchford	Hannah	Oral Presentations: Epistaxis	ERS-0663
Bleier	Benjamin S.	Oral Presentations: Pathophysiology CRSwNP	ERS-0638
Blumen	Marc	Oral Presentations: OSAS	ERS-0869
Bogdanov	Vasyl	Short Presentations: Olfaction	ERS-0483
Bogdanov	Vasyl	Oral Presentations: Olfaction	ERS-0604
Bogdanov	Vasyl	Short Presentations: Olfaction	ERS-0675
Bogdanov	Vasyl	Short Presentations: Olfaction	ERS-0828
Bradshaw	Tim	Oral Presentations: Olfaction	ERS-0806
Braverman	Itzhak	Short Presentations: OSAS	ERS-0995
Budi	Ashadi	Short Presentations: Skull base surgery 3	ERS-0520
Budu	Vlad	Oral Presentations: Benign tumours	ERS-0999
Bulger	Jenna	Oral Presentations: Rhinopasty and facial plastic surgery	ERS-0889
Burduk	Pawel	Short Presentations: Management of CRS	ERS-0443
Burduk	Pawel	Short Presentations: Orbit lacrimal system	ERS-0444
Burduk	Pawel	Short Presentations: Skull Base Surgery 2	ERS-0449
Burduk	Pawel	Short Presentations: Skull base surgery 3	ERS-0455
Calus	Lien	Oral Presentations: Prognostic factors in CRS	ERS-0902
Carr	Simon	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0812
Carr	Simon	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0954
Carrasco	Marina	Short Presentations: OSAS	ERS-0857
Castillo	Jos	Oral Presentations: United airways	ERS-0475
Catalano	Peter	Short Presentations: Imaging	ERS-0851
Catalano	Peter	Short Presentations: Management of CRS	ERS-0854
Catana	Andreea	Short Presentations: CRS Basic 3	ERS-0529
Cerejeira	Rui	Oral Presentations: Epidemiology	ERS-0477
Ceroni	Giacomo	Oral Presentations: Septal surgery and turbinate reduction	ERS-0920
Chan	Ching Yee	Short Presentations: Complications in rhinology	ERS-0404
Chaturvedi	Jagdish	Short Presentations: Imaging	ERS-0948
Cheang	Chloe Ann	Short Presentations: Skull Base Surgery 2	ERS-0871
Cheang	Chloe Ann	Short Presentations: Management of CRS	ERS-0873

Chen	Yu-cheng	Short Presentations: Fungal sinusitis	ERS-0691
Chiesa Estomba	Carlos	Short Presentations: Skull base surgery 4	ERS-0885
Chiesa Estomba	Carlos	Short Presentations: CRS miscellaneous	ERS-0910
Chiesa Estomba	Carlos	Oral Presentations: Epistaxis	ERS-1060
Chin	David	Short Presentations: Skull base surgery 4	ERS-0442
Chin	David	Oral Presentations: CSF leak and skull base	ERS-0674
Cho	Kyu-Sup	Oral Presentations: Rhinitis Basic	ERS-0468
Chou	Mark Ying-Liang	Oral Presentations: Rhinitis Basic	ERS-1015
Chung	Young-Jun	Oral Presentations: Management of CRS	ERS-0501
Chung	Seung-Kyu	Oral Presentations: Rhinitis, Clinical 1	ERS-0719
Cobzeanu	Mihail Dan	Oral Presentations: Imaging	ERS-0502
Cornet	Marjolein	Oral Presentations: CRS basic 1	ERS-0611
Cornet	Marjolein	Oral Presentations: Pediatric rhinology	ERS-0679
Costello	Rhodri	Oral Presentations: Epistaxis	ERS-0629
Costello	Rhodri	Oral Presentations: CRS Miscellaneous	ERS-0641
Costello	Rhodri	Oral Presentations: CRS Miscellaneous	ERS-0723
Crosbie	Robin	Oral Presentations: Epistaxis	ERS-0521
Cardenas	Maria Paulina	Short Presentations: OSAS	ERS-1046
Cardenas	Maria Paulina	Short Presentations: OSAS	ERS-1058
Dabrowska-Bien	Justyna	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0584
Damiani	Valerio	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0478
Damiani	Valerio	Short Presentations: Pediatric rhinology	ERS-0525
Damiani	Valerio	Short Presentations: Rhinitis basic	ERS-0526
Davydov	Roman	Short Presentations: Skull base surgery 3	ERS-0979
De Bonnecaze	Guillaume	Short Presentations: Skull Base Surgery 2	ERS-0926
De Bonnecaze	Guillaume	Short Presentations: Skull Base Surgery 2	ERS-1001
De Bont	Anais	Oral Presentations: Olfaction	ERS-0736
De Schryver	Els	Short Presentations: CRS Basic 2	ERS-0922
Debevc	David	Oral Presentations: Septal surgery and turbinate reduction	ERS-0394
Decq Mota	Sofia	Short Presentations: Skull Base Surgery 2	ERS-0865
Demir	Uygar Levent	Oral Presentations: NAR	ERS-1044
Denguezli	Myriam	Short Presentations: Rhinitis clinical	ERS-0879
Devyani	Lal	Oral Presentations: Fungal sinusitis	ERS-0683
Dhong	Hun-Jong	Oral Presentations: Fungal sinusitis	ERS-0574
Do Hyun	Kim	Short Presentations: OSAS	ERS-0447
Dotlic	Jelena	Short Presentations: Rhinitis clinical	ERS-0962
Dumitru	Mihai	Short Presentations: Imaging	ERS-0454
Durao	Carolina	Oral Presentations: Imaging	ERS-0803
Durao	Carolina	Oral Presentations: Malignant tumours	ERS-0808
Dzhafarova	Maryam	Short Presentations: CRS miscellaneous	ERS-0527
Egro	Francesco Maria	Oral Presentations: Management of CRS	ERS-0937
El Damaty	Ahmed	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-1011
El-Anwar	Mohammad	Oral Presentations: Pediatric rhinology	ERS-0361
Erbek	Selim	Short Presentations: OSAS	ERS-0631
Erskine	Sally	Oral Presentations: Outcomes in CRS	ERS-0655
Erskine	Sally	Oral Presentations: Epidemiology	ERS-0845
Farmer	Sarah	Short Presentations: Imaging	ERS-0658
Fejza Bulaj	Jetmira	Oral Presentations: Prognostic factors in CRS	ERS-0746
Ferrelli	Fabio	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0798
Fishpool	Samuel	Oral Presentations: Epistaxis	ERS-0462
Fishpool	Samuel	Short Presentations: Management of CRS	ERS-0835
Fishpool	Samuel	Oral Presentations: Skull Base Surgery 1	ERS-0840
Fokkens	Wytse	Short Presentations: Rhinitis clinical	ERS-0768
Frenth	Martin	Short Presentations: United airways	ERS-0695
Fruth	Kai	Oral Presentations: Management of CRS	ERS-0439
Fujieda	Shigeharu	Short Presentations: Management of CRS	ERS-0568
Gacesa	Dejan	Short Presentations: Fungal sinusitis	ERS-0385
Gade	Soren	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0830
Ganesan	Shanmugam	Short Presentations: Pediatric rhinology	ERS-0931
Geyton	Thomas	Oral Presentations: CRS Miscellaneous	ERS-0660
Giotakis	Aristeidis	Short Presentations: Skull base surgery 3	ERS-0763
Glien	Alexander	Oral Presentations: NAR	ERS-1056
Gluck	Ofer	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0419
Golebski	Kornel	Oral Presentations: Rhinitis Basic	ERS-0692
Gotlib	Tomasz	Oral Presentations: CRS Miscellaneous	ERS-0844
Grigore	Raluca	Short Presentations: Fungal sinusitis	ERS-0780
Guedner	Christian	Oral Presentations: Imaging	ERS-0536
Guedner	Christian	Oral Presentations: Imaging	ERS-0537
G[un]nel	Ceren	Short Presentations: CRS Basic 2	ERS-0371
G[un]nel	Ceren	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0901
Hamada	Satoko	Short Presentations: Rhinitis basic	ERS-0997
Hammarin-Malmi	Sari	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0730
Hansen	Fleur	Oral Presentations: Management of CRS	ERS-0887
Haruna	Takenori	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0743
Harvey	Richard	Oral Presentations: CRS Miscellaneous	ERS-0667
Hasan	Wael	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0547
Hastan	Deniz	Oral Presentations: Epidemiology	ERS-1045
Hastan	Deniz	Oral Presentations: Epidemiology	ERS-1047
Haunschild	Jutta	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0603
Haxel	Boris	Oral Presentations: Management of CRS	ERS-0381
Hayes	Stephen	Short Presentations: CRS Basic 2	ERS-0369
Hellings	Peter	Short Presentations: Rhinitis clinical	ERS-0765
Hellings	Peter	Short Presentations: Rhinitis clinical	ERS-0775
Heo	Sung Jae	Oral Presentations: OSAS	ERS-0938
Hey	Shiyng	Oral Presentations: Epistaxis	ERS-0813
Hirakawa	Satoshi	Short Presentations: Pediatric rhinology	ERS-0940
Hirschberg	Andor	Oral Presentations: Pathophysiology CRSwNP	ERS-0705
Holzmann	David	Short Presentations: Skull base surgery 3	ERS-0613
Honda	Kohei	Short Presentations: CRS Basic 3	ERS-0606
Hong	Seok-Chan	Oral Presentations: Pediatric rhinology	ERS-0507
Hopkins	Claire	Oral Presentations: Outcomes in CRS	ERS-0861
Hopkins	Claire	Oral Presentations: Outcomes in CRS	ERS-0867
Hrabe	Vladan	Short Presentations: United airways	ERS-0929
Hrabe	Vladan	Short Presentations: United airways	ERS-1063
Huang	Tung-Tsun	Short Presentations: CRS surgical techniques	ERS-0753
Husain	Salina	Short Presentations: Skull Base Surgery 2	ERS-0976

Hikansson	Kire	Junior Member Symposium: Airway mucosa	ERS-0610
Ichimura	Keiichi	Oral Presentations: Epistaxis	ERS-0992
Iinuma	Tomohisa	Short Presentations: CRS Basic 3	ERS-0509
Ikeda	Katsuhisa	Short Presentations: CRS miscellaneous	ERS-0392
Ikemiyagi	Yoshihiro	Short Presentations: CRS Basic 3	ERS-0585
Imoto	Yoshimasa	Short Presentations: Rhinitis basic	ERS-0714
Ishida	Akihiro	Short Presentations: CRS Basic 2	ERS-0440
Ito	Shin	Short Presentations: Skull base surgery 4	ERS-0925
Jalessi	Maryam	Oral Presentations: CSF leak and skull base	ERS-0998
Jalessi	Maryam	Short Presentations: Skull base surgery 4	ERS-1000
Jang	Min Seok	Short Presentations: Skull base surgery 4	ERS-0423
Jawad	Samir	Oral Presentations: Prognostic factors in CRS	ERS-0382
Jeon	Sea-Yuon	Short Presentations: CRS Basic 2	ERS-0420
Jiang	Rong-San	Oral Presentations: Olfaction	ERS-0482
Joergensen	Gita	Short Presentations: Management of CRS	ERS-0403
Jones	Bethan	Oral Presentations: Benign tumours	ERS-0823
Kaliadzich	Zhanna	Short Presentations: OSAS	ERS-0596
Kalogjera	Livije	Short Presentations: Management of CRS	ERS-0602
Kalyoussef	Evelyne	Short Presentations: Skull Base Surgery 2	ERS-1076
Kalyoussef	Evelyne	Short Presentations: CRS miscellaneous	ERS-1077
Kamijo	Atsushi	Short Presentations: Olfaction	ERS-0577
Kara	Naveed	Oral Presentations: Prognostic factors in CRS	ERS-1062
Kariya	Shin	Oral Presentations: United airways	ERS-0481
Karligkiotis	Apostolos	Short Presentations: Skull Base Surgery 2	ERS-0800
Karligkiotis	Apostolos	Oral Presentations: Malignant tumours	ERS-0807
Kase	Yasuhiro	Short Presentations: Imaging	ERS-0464
Katayama	Naomi	Short Presentations: Olfaction	ERS-0919
Kawabata	Masaki	Short Presentations: Rhinitis basic	ERS-0669
Kawauchi	Hideyuki	Short Presentations: Fungal sinusitis	ERS-0975
Kawauchi	Hideyuki	Oral Presentations: Immunotherapy	ERS-0981
Kawauchi	Hideyuki	Short Presentations: Rhinitis basic	ERS-0982
Keh	Siew Min	Oral Presentations: Epistaxis	ERS-0651
Keh	Siew Min	Short Presentations: Pediatric rhinology	ERS-0847
Khalil	Hisham Saleh	Short Presentations: Orbit lacrimal system	ERS-0650
Khan	Imran	Oral Presentations: Epidemiology	ERS-0395
Khan	Maha	Oral Presentations: OSAS	ERS-0860
Khorolskaia	Marina	Short Presentations: Rhinitis clinical	ERS-0472
Kilty	Shaun	Short Presentations: Management of CRS	ERS-0829
Kilty	Shaun	Oral Presentations: CRS basic 1	ERS-0891
Kim	Kyung-Su	Short Presentations: CRS Basic 2	ERS-0386
Kim	Yong-Dae	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0398
Kim	Sang-Wook	Oral Presentations: CRS basic 1	ERS-0405
Kim	Jin Kook	Short Presentations: CRS Basic 3	ERS-0437
Kim	Sung Wan	Short Presentations: OSAS	ERS-0498
Kim	Chang-Hoon	Short Presentations: CRS surgical techniques	ERS-0546
Kim	Young Ha	Short Presentations: Rhinitis clinical	ERS-0554
Kim	Yong Wan	Oral Presentations: Pathophysiology CRSwNP	ERS-0583
Kim	Ji Heui	Short Presentations: CRS Basic 2	ERS-0588
Kim	Yong Min	Oral Presentations: Pathophysiology CRSwNP	ERS-0681
Kim	Jeong-Whun	Oral Presentations: OSAS	ERS-0863
Kim	Young Hyo	Oral Presentations: Rhinitis Basic	ERS-0899
Kim	Kyung-Su	Short Presentations: CRS Basic 2	ERS-0924
Kim	Jung Soo	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0941
Kim	Suil	Oral Presentations: CRS Miscellaneous	ERS-0989
Komatsuzaki	Toshimitsu	Short Presentations: Rhinitis basic	ERS-0566
Kondo	Kenji	Oral Presentations: Olfaction	ERS-0552
Konstantinidis	Iordanis	Oral Presentations: Prognostic factors in CRS	ERS-0824
Konstantinidis	Iordanis	Short Presentations: CRS miscellaneous	ERS-1037
Koo	Soo Kweon	Short Presentations: OSAS	ERS-0517
Kopacheva Barsova	Gabriela	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0715
Koskinen	Anni	Oral Presentations: Balloon sinuplasty and other developments	ERS-0635
Kouzaki	Hideaki	Short Presentations: CRS Basic 3	ERS-0450
Kozulina	Maria	Short Presentations: OSAS	ERS-0615
Kral	Florian	Short Presentations: Skull base surgery 3	ERS-0751
Kuryga	Dorota	Short Presentations: Complications in rhinology	ERS-1004
Kwon	Samhyun	Short Presentations: Skull base surgery 3	ERS-0677
Kwon	Jae Hwan	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0737
Kyo	Yoshiyuki	Oral Presentations: Outcomes in CRS	ERS-0591
Kynnecke	Michael	Short Presentations: CRS Basic 3	ERS-0476
K[redacted]hnel	Thomas	Short Presentations: CRS surgical techniques	ERS-0884
Langdon	Cristobal	Oral Presentations: Benign tumours	ERS-0473
Lange	Bibi	Short Presentations: Management of CRS	ERS-0422
Laulajainen-Hongisto	Anu	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0717
Lavor	Milena	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0875
Le Guellec	Sandrine	Short Presentations: CRS Basic 2	ERS-0648
Lee	Heung-Man	Short Presentations: CRS Basic 3	ERS-0365
Lee	Heow Pueh	Short Presentations: Olfaction	ERS-0378
Lee	Jae Yong	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0457
Lee	Heung-Man	Oral Presentations: Rhinitis, Clinical 2	ERS-0513
Lee	Seung Hoon	Oral Presentations: OSAS	ERS-0561
Lee	woohyun	Oral Presentations: OSAS	ERS-0587
Lee	Dong Hoon	Short Presentations: Skull base surgery 4	ERS-0688
Lee	Kyungchul	Oral Presentations: OSAS	ERS-0702
Lee	Hyun Jong	Oral Presentations: OSAS	ERS-0870
Lee	Jivianne	Short Presentations: CRS Basic 3	ERS-0933
Lehrer	Eduardo	Oral Presentations: Olfaction	ERS-0809
Lehrer	Eduardo	Oral Presentations: Olfaction	ERS-0811
Li	Chunwei	Oral Presentations: Pathophysiology CRSwNP	ERS-0491
Li	Chunwei	Short Presentations: Rhinitis clinical	ERS-0503
Liam Masterson	Liam	Oral Presentations: Epidemiology	ERS-0956
Lim	Sung Chul	Short Presentations: Fungal sinusitis	ERS-0686
Linke	Robert	Oral Presentations: CRS basic 1	ERS-0415
Lusy Indrawati	Luh Putu	Short Presentations: CRS Basic 3	ERS-0598
Machado Jnior	Almiro Jos'	Short Presentations: OSAS	ERS-0408
Malas	Samer	Short Presentations: Complications in rhinology	ERS-0684
Manea	Claudiu	Short Presentations: CRS miscellaneous	ERS-0776

Mardassi	Ali	Short Presentations: Fungal sinusitis	ERS-0396
Mardassi	Ali	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0397
Margulis	Ariel	Short Presentations: CRS miscellaneous	ERS-0532
Margulis	Ariel	Short Presentations: CRS surgical techniques	ERS-0533
Mario	Rigante	Short Presentations: Orbit lacrimal system	ERS-1059
Mario	Rigante	Oral Presentations: Skull Base Surgery 1	ERS-1071
Markowski	Jaros?aw	Short Presentations: Pediatric rhinology	ERS-0964
Markowski	Jaros?aw	Oral Presentations: Pediatric rhinology	ERS-0965
Markowski	Jaros?aw	Short Presentations: Pediatric rhinology	ERS-0968
Mashinetc	Olga	Short Presentations: Rhinitis clinical	ERS-0895
Mason	E	Oral Presentations: Septal surgery and turbinate reduction	ERS-0855
Matsune	Shoji	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0608
Meco	Cem	Oral Presentations: CSF leak and skull base	ERS-0826
Meco	Cem	Oral Presentations: Skull Base Surgery 1	ERS-0836
Meyer	Jens	Short Presentations: Skull base surgery 4	ERS-0791
Michel	Justin	Oral Presentations: Malignant tumours	ERS-0985
Michel	Justin	Short Presentations: CRS surgical techniques	ERS-1005
Mickielewicz	Aleksandra	Short Presentations: Management of CRS	ERS-1054
Milosevic	Dusanka	Short Presentations: Rhinitis clinical	ERS-0913
Minovi	Amir	Short Presentations: Olfaction	ERS-0794
Miyashita	Keiichi	Short Presentations: Rhinitis basic	ERS-0900
Mo	Ji-Hun	Oral Presentations: Rhinitis Basic	ERS-0788
Moesges	Ralph	Short Presentations: Rhinitis clinical	ERS-0757
Mogoanta	Carmen-Aurelia	Short Presentations: CRS Basic 2	ERS-1053
Mollol	Joaquim	Short Presentations: Rhinitis clinical	ERS-0769
Mollol	Joaquim	Oral Presentations: Rhinitis, Clinical 2	ERS-0772
Montserrat-Gili	Joan Ramon	Oral Presentations: Septal surgery and turbinate reduction	ERS-0452
Moura	Ivo Miguel	Short Presentations: Skull base surgery 4	ERS-0849
Mueller	Christian	Short Presentations: Olfaction	ERS-0488
Mun	Sue Jean	Short Presentations: Skull base surgery 3	ERS-0876
Nagafuji	Hiroshi	Oral Presentations: Rhinitis, Clinical 1	ERS-0589
nagouas	chloe	Short Presentations: Skull base surgery 4	ERS-0802
Nairn	Jonathan	Short Presentations: Pediatric rhinology	ERS-1026
Naraghi	Mohsen	Short Presentations: Orbit lacrimal system	ERS-1030
Naraghi	Mohsen	Short Presentations: Skull base surgery 3	ERS-1031
Naraghi	Mohsen	Short Presentations: Skull Base Surgery 2	ERS-1034
Naraghi	Mohsen	Short Presentations: Pediatric rhinology	ERS-1039
Naraghi	Mohsen	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-1041
Naraghi	Mohsen	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-1043
Naraghi	Mohsen	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-1048
Nayan	Smriti	Oral Presentations: Management of CRS	ERS-0670
Nechyporenko	Alina	Oral Presentations: Nasal flow and resistance measurements	ERS-0656
Nemati	Shadman	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0402
Ng	Chew Lip	Oral Presentations: Malignant tumours	ERS-0524
Nguyen	Duc Trung	Oral Presentations: Benign tumours	ERS-0543
Nishiike	Suetaka	Short Presentations: CRS surgical techniques	ERS-0375
Nomura	Kazuhiro	Short Presentations: CRS surgical techniques	ERS-0571
Nomura	Kazuaki	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0882
Nour	Yasser	Short Presentations: Complications in rhinology	ERS-0729
Nour	Yasser	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0731
Noyama	Yasuyuki	Short Presentations: CRS Basic 3	ERS-0795
O'Rourke	Colin	Oral Presentations: Imaging	ERS-0634
O'Rourke	Colin	Oral Presentations: Rhinoplasty and facial plastic surgery	ERS-0639
Ohta	Nobuo	Short Presentations: United airways	ERS-0557
Ohta	Nobuo	Oral Presentations: Outcomes in CRS	ERS-0558
Okamoto	Yoshitaka	Oral Presentations: Immunotherapy	ERS-0500
Okano	Mitsuhiro	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0504
Okpala	Nnaemeka	Oral Presentations: Rhinitis, Clinical 2	ERS-0970
Okuni	Tsuyoshi	Short Presentations: Rhinitis basic	ERS-0894
Oliveira	Henrique	Short Presentations: Pediatric rhinology	ERS-0549
Oliveira	Vitor	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0969
Olzowy	Bernhard	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0508
Olzowy	Bernhard	Oral Presentations: Septal surgery and turbinate reduction	ERS-0676
Ota	Yasushi	Oral Presentations: Prognostic factors in CRS	ERS-0389
Ottaviano	Giancarlo	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0516
Owden	Kris	Oral Presentations: Prognostic factors in CRS	ERS-0734
Ozono	Yoshiyuki	Short Presentations: Complications in rhinology	ERS-0711
Park	Dong-Joon	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0506
Park	Se Jin	Short Presentations: CRS Basic 2	ERS-0511
Park	ChanHum	Oral Presentations: Balloon sinuplasty and other developments	ERS-0560
Park	Seong Kook	Short Presentations: CRS Basic 3	ERS-1078
Patron	Vincent	Oral Presentations: CSF leak and skull base	ERS-0653
Peksis	Kaspars	Short Presentations: Fungal sinusitis	ERS-0928
Penttiln	Matti	Short Presentations: Management of CRS	ERS-0496
Peric	Aleksandar	Oral Presentations: United airways	ERS-0384
Pillai	Suresh	Short Presentations: Imaging	ERS-1012
Pilolli	Francesco	Oral Presentations: Rhinoplasty and facial plastic surgery	ERS-1018
Pimentel	JoTo	Oral Presentations: Malignant tumours	ERS-0834
Plascak	Jasmina	Short Presentations: Imaging	ERS-0374
Plaza	Guillermo	Oral Presentations: OSAS	ERS-0694
Plaza	Guillermo	Oral Presentations: Management of CRS	ERS-0696
Plzak	Jan	Short Presentations: OSAS	ERS-0545
Poirrier	Anne-Lise	Oral Presentations: Outcomes in CRS	ERS-0567
Poirrier	Anne-Lise	Short Presentations: Fungal sinusitis	ERS-0903
Postelnicu	Vlad Claudiu	Short Presentations: Pediatric rhinology	ERS-0801
Potter	Christian	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0370
Poulios	Aristotelis	Oral Presentations: Septal surgery and turbinate reduction	ERS-0562
Prameswari	Karisma	Short Presentations: CRS surgical techniques	ERS-0770
Price	David	Oral Presentations: Rhinitis, Clinical 2	ERS-0724
Price	David	Short Presentations: Rhinitis clinical	ERS-0767
Price	David	Oral Presentations: Rhinitis, Clinical 2	ERS-0773
Proimos	Efklidis	Oral Presentations: Olfaction	ERS-0435
Prulliere Escabasse	Virginie	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0984
Pujols	Laura	Oral Presentations: Pathophysiology CRSwNP	ERS-0850
Pusateri	Alessandro	Oral Presentations: CSF leak and skull base	ERS-0617
Pusateri	Alessandro	Oral Presentations: Epistaxis	ERS-0619

Pusateri	Alessandro	Oral Presentations: Skull Base Surgery 1	ERS-0620
Pusinskaite	Sigita	Short Presentations: Rhinitis basic	ERS-1042
Qureshi	Ali	Short Presentations: Imaging	ERS-0967
Ramakrishnan	Yujay	Oral Presentations: Skull Base Surgery 1	ERS-0664
Ramakrishnan	Yujay	Oral Presentations: Epistaxis	ERS-0784
Ranga	Nisha	Oral Presentations: Rhinoplasty and facial plastic surgery	ERS-0832
Rautiainen	Markus	Oral Presentations: Balloon sinuplasty and other developments	ERS-0728
Rautiainen	Markus	Oral Presentations: Balloon sinuplasty and other developments	ERS-0930
Rennie	Catherine	Oral Presentations: Nasal flow and resistance measurements	ERS-1074
Reshetnikov	Sergey	Short Presentations: OSAS	ERS-0950
Reynolds	Karen	Oral Presentations: Simulation and training	ERS-0551
Rha	Ki-Sang	Oral Presentations: Fungal sinusitis	ERS-0678
Rhee	Chae-Seo	Oral Presentations: CRS Miscellaneous	ERS-0594
Roh	Hwan-Jung	Short Presentations: Skull base surgery 4	ERS-0555
Romano	Fabrizio	Oral Presentations: CRS basic 1	ERS-0666
Roongpuvapaht	Boonsam	Short Presentations: Skull base surgery 3	ERS-0733
Rupert	Ricks	Oral Presentations: Simulation and training	ERS-0519
Rusetsky	Yury	Oral Presentations: Pediatric rhinology	ERS-0535
Rusetsky	Yury	Short Presentations: Pediatric rhinology	ERS-1010
Sabaru	Iulia	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0643
Sahin-Yilmaz	Asli	Short Presentations: Pediatric rhinology	ERS-0774
Saibene	Alberto Maria	Short Presentations: Complications in rhinology	ERS-0538
Saibene	Alberto Maria	Short Presentations: Complications in rhinology	ERS-0539
Saibene	Alberto Maria	Short Presentations: Olfaction	ERS-0540
Saito	Hidekazu	Short Presentations: CRS Basic 3	ERS-0672
Sakurai	Daiju	Short Presentations: Rhinitis basic	ERS-0618
Santos	Maria JoTo	Short Presentations: OSAS	ERS-0797
Santos	Tiago Soares	Short Presentations: Skull base surgery 3	ERS-0839
Santos	Tiago Soares	Short Presentations: Skull Base Surgery 2	ERS-0841
Sardjana	Andriana	Short Presentations: Rhinitis clinical	ERS-0372
Sasaki	Daisuke	Short Presentations: Rhinitis clinical	ERS-0556
Savovic	Slobodan	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0493
Segal	Nili	Short Presentations: CRS miscellaneous	ERS-0961
Segboer	Christine	Oral Presentations: NAR	ERS-0880
Segboer	Christine	Oral Presentations: NAR	ERS-0881
Seong	Sang Yeob	Short Presentations: CRS Basic 2	ERS-0592
Serrano	Elie	Oral Presentations: Benign tumours	ERS-0944
Sethi	Neeraj	Oral Presentations: Rhinoplasty and facial plastic surgery	ERS-0407
Shah Wali	Shah	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0363
Shaikh	Ahmed	Oral Presentations: Fungal sinusitis	ERS-0890
Shakeel	Muhammad	Short Presentations: Rhinitis clinical	ERS-0952
Shankar	Amit	Oral Presentations: Fungal sinusitis	ERS-0735
Shi	Li	Oral Presentations: Pathophysiology CRSwNP	ERS-0413
Shikina	Takashi	Short Presentations: CRS Basic 3	ERS-0738
Shimizu	Takeshi	Oral Presentations: CRS basic 1	ERS-0432
Shin	Myungseok	Short Presentations: OSAS	ERS-0357
Shin	Seung	Short Presentations: Rhinitis basic	ERS-0430
Shushan	Sagit	Short Presentations: Olfaction	ERS-0616
Siau	Derrick	Oral Presentations: Olfaction	ERS-0642
Siau	Derrick	Short Presentations: Orbit lacrimal system	ERS-1052
Singh	Rohit	Short Presentations: Fungal sinusitis	ERS-0438
Sintobin	Ina	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0943
Slovick	Anna	Oral Presentations: Immunotherapy	ERS-0607
Snidwongs	Kornkiat	Short Presentations: Rhinitis clinical	ERS-0918
Soo Whan	Kim	Short Presentations: Rhinitis basic	ERS-0563
Soyka	Michael	Short Presentations: Rhinoplasty and facial plastic surgery	ERS-0390
Soyka	Michael	Oral Presentations: Epistaxis	ERS-0391
Sproat	Rhona	Short Presentations: Imaging	ERS-1028
Stern	Sagit	Short Presentations: Microbiology in rhinosinusitis 2	ERS-0652
Su	William Wang-Yu	Oral Presentations: NAR	ERS-0722
Sugizaki	Kazuki	Short Presentations: United airways	ERS-0580
Suh	Jeffrey	Short Presentations: Skull Base Surgery 2	ERS-1079
Surda	Pavol	Oral Presentations: Rhinoplasty and facial plastic surgery	ERS-0624
Suzuki	Yasuhiro	Short Presentations: Skull base surgery 4	ERS-0685
Syed	Irfan	Short Presentations: Skull base surgery 3	ERS-0630
Syed	Irfan	Short Presentations: Complications in rhinology	ERS-0633
Takano	Kenichi	Short Presentations: Pediatric rhinology	ERS-0934
Tan	Neil	Short Presentations: Olfaction	ERS-0958
Tan	Neil	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0959
Tan	Neil	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0960
Tanaka	Shota	Oral Presentations: CRS basic 1	ERS-0393
Tang	Tian	Short Presentations: CRS Basic 3	ERS-0914
Teles	Rafaela	Oral Presentations: Prognostic factors in CRS	ERS-0484
Teles	Rafaela	Oral Presentations: Malignant tumours	ERS-0486
ten Dam	Ellen	Oral Presentations: CSF leak and skull base	ERS-0387
Tewfik	Marc	Oral Presentations: Simulation and training	ERS-0822
Thanaviratananich	Sanguansak	Oral Presentations: Imaging	ERS-0749
Thorley	Richard	Oral Presentations: Simulation and training	ERS-0872
Tojima	Ichiro	Oral Presentations: Rhinitis Basic	ERS-0614
Toma	Shamim	Short Presentations: Management of CRS	ERS-0712
Tomazic	Peter Valentin	Oral Presentations: Balloon sinuplasty and other developments	ERS-0888
Torigoe	Akiko	Oral Presentations: Rhinitis, Clinical 1	ERS-0480
Triamrchi		Oral Presentations: Rare diseases in the nose and sinuses	ERS-0721
Tripodi	Caterina	Oral Presentations: Pediatric rhinology	ERS-0632
Tsuda	Takeshi	Short Presentations: CRS surgical techniques	ERS-0412
Turri-Zanoni	Mario	Oral Presentations: Skull Base Surgery 1	ERS-0474
Tqth	Eszter	Short Presentations: CRS Basic 3	ERS-0778
Uraguchi	Kensuke	Oral Presentations: United airways	ERS-0479
van Maanen	Peter	Positional therapy/new surgeries for severe to extreme OSAS	ERS-0698
Van Zele	Thibaut	Oral Presentations: Epistaxis	ERS-0935
Varadarajan	Vinay	Oral Presentations: Epistaxis	ERS-0727
Varadarajan	Vinay	Short Presentations: Complications in rhinology	ERS-0804
Varadharajan	Kiran	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0966
Varini	Alessandro	Short Presentations: Skull base surgery 4	ERS-0858
Vent	Julia	Short Presentations: OSAS	ERS-0380
Vento	Seija	Short Presentations: Management of CRS	ERS-0494

Verbeurgt	Christophe	Oral Presentations: Olfaction	ERS-1006
Virk	Ramandeep	Oral Presentations: Fungal sinusitis	ERS-0534
Virkkula	Paula	Short Presentations: CRS miscellaneous	ERS-0469
Vital	Domenic	Oral Presentations: Microbiology in rhinosinusitis 1	ERS-0470
Vital	Domenic	Oral Presentations: United airways	ERS-0471
Vlaminck	Stephan	Oral Presentations: Outcomes in CRS	ERS-0644
Vlaminck	Stephan	Oral Presentations: CRS Miscellaneous	ERS-0781
Vogt	Klaus	Short Presentations: Pediatric rhinology	ERS-0758
Vogt	Klaus	Oral Presentations: Nasal flow and resistance measurements	ERS-0783
Vogt	Klaus	Short Presentations: OSAS	ERS-0817
Volpi	Luca	Oral Presentations: Skull Base Surgery 1	ERS-0649
Wada	Kota	Short Presentations: Imaging	ERS-0600
Wakayama	Nozomu	Short Presentations: CRS Basic 2	ERS-0709
Wang	Hongtian	Oral Presentations: Rhinitis, Clinical 2	ERS-0360
Wardani	Retno	Short Presentations: United airways	ERS-0756
Wardani	Retno	Short Presentations: Skull Base Surgery 2	ERS-0766
Wardani	Retno	Oral Presentations: Rare diseases in the nose and sinuses	ERS-0816
Warman	Meir	Short Presentations: Pediatric rhinology	ERS-0628
Warner	Laura	Oral Presentations: Epistaxis	ERS-0414
Wolf	Axel	Short Presentations: Olfaction	ERS-0492
Wong	Eugene HC	Oral Presentations: Nasal flow and resistance measurements	ERS-0595
Wong	Eugene HC	Oral Presentations: Nasal flow and resistance measurements	ERS-0597
Woo	Hyun-Jae	Oral Presentations: Septal surgery and turbinate reduction	ERS-0485
Xie	Yanqing	Short Presentations: Rhinitis basic	ERS-0936
Xu	Zheng-min	Oral Presentations: Pediatric rhinology	ERS-0383
Yanagi	Kiyoshi	Oral Presentations: Outcomes in CRS	ERS-0671
Yang	Chulwon	Oral Presentations: Immunotherapy	ERS-0974
Yang	Chulwon	Oral Presentations: Immunotherapy	ERS-0988
Yaromenka	Yuliya	Short Presentations: CRS miscellaneous	ERS-0593
Ye	Mikyung	Short Presentations: Olfaction	ERS-0406
Yildirim	Omursen	Oral Presentations: Immunotherapy	ERS-0785
Yonekura	Syujii	Oral Presentations: Rhinitis, Clinical 2	ERS-0601
Yoon	Joo-Heon	Oral Presentations: Rhinitis Basic	ERS-0559
Yum	Gunhwee	Oral Presentations: OSAS	ERS-0553
Zabolotnyi	Dmytro	Short Presentations: Septal Surgery and Turbinate Reduction	ERS-0456
Zaharia	Klodiana	Short Presentations: CRS miscellaneous	ERS-1017
Zelenik	Karol	Short Presentations: CRS miscellaneous	ERS-0436
Zhou	Bing	Oral Presentations: Benign tumours	ERS-1008
Ziglinas	Panagiotis	Oral Presentations: Imaging	ERS-0680

Invited Speakers

Adriaensen	Gwijde	Inverted papilloma	ERS-1202
Adriaensen	Gwijde	New treatment options for CRS	ERS-1233
Aeneas	Kasper	Cystic Fibrosis	ERS-1168
Agache	Ioana	Latest update on AR treatment (in collaboration with EAACI)	ERS-1211
Agius	Adrian M.	Facial pain and Headache	ERS-1167
Ahmed	Shahz	Rhino neurosurgery more efficient	ERS-1346
Ahmed	Shahz	3D anatomy and surgery	ERS-1347
Akdis	Cezmi	Novel treatment options in allergic upper and lower airway disease: Their roles and limitations	ERS-1295
Akdis	Cezmi	Immunotherapy update 2014	ERS-1296
Alobod	Isam	Defects of the Anterior Skull Base, filling the gap	ERS-1315
Armengot	Miguel	Mucociliary dysfunction from diagnosis to treatment	ERS-1154
Bachert	Claus	Prognostic factors in Rhinosinusitis	ERS-1214
Bachmann-Harildstad	Gregor	Hereditary hemorrhagic telangiectasia (HHT)	ERS-1201
Baroody	Fuad	Pediatric Chronic Rhinosinusitis	ERS-1217
Berkhout	Maaike	Cystic Fibrosis	ERS-1231
Bernal-Sprekelsen	Manuel	Juvenile Angiofibroma	ERS-1164
Bernal-Sprekelsen	Manuel	Juvenile Angiofibromas	ERS-1232
Beule	Achim	Nasal obstruction in children and adults	ERS-1238
Bleier	Benjamin S.	Junior Member Symposium: CRS and Endoscopic surgery	ERS-1156
Bleier	Benjamin S.	From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology	ERS-1157
Briner	Hans Rudolf	Smell & Taste	ERS-1216
Briner	Hans Rudolf	Surgical approaches to the maxillary (or sphenoid) sinus	ERS-1236
Busaba	Nicolas	Facial pain and Headache	ERS-1301
Busaba	Nicolas	External approaches to the sinus	ERS-1302
Calus	Lien	Junior Member Symposium: Airway mucosa	ERS-1169
Carney	Simon	Technical advances in treatment of CRS	ERS-1244
Carney	Simon	Sinus surgery virtual reality simulation	ERS-1245
Carrasco	Marina	Drug induced sleep endoscopy (DISE)	ERS-1179
Caversaccio	Marco	Wegener and other vasculitis -when to suspect in CRS	ERS-1162
Cohen	Noam	From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology	ERS-1212
Constantinidis	Jannis	Juvenile Angiofibroma	ERS-1222
Cornet	Marjolein	Pediatric Chronic Rhinosinusitis	ERS-1250
D'Souza	Alwyn	Pitfalls in facial plastic surgery	ERS-1326
de Vries	Nico	Drug induced sleep endoscopy (DISE)	ERS-1204
Dhong	Hun-Jong	Management of the patient who has failed FESS	ERS-1177
Eccles	Ron	Objective Nasal Airway assessment	ERS-1290
Eloy	Philippe	The frontal sinus	ERS-1354
Fokkens	Wytske	Update and future perspectives in rhinology	ERS-1246
Freling	Nicole	Comprehensive imaging of the nasal cavity and paranasal sinus	ERS-1174
Freling	Nicole	Preoperative assessment of CT scan	ERS-1277
Georgalas	Christos	Rhino neurosurgery	ERS-1322
Gevaert	Philippe	New treatment options for CRS	ERS-1221
Gevorgyan	Artur	Treatment options in NAR	ERS-1349
Gevorgyan	Artur	3D anatomy and surgery	ERS-1350
Golebski	Kornel	Junior Member Symposium: Airway mucosa	ERS-1181
Golebski	Kornel	The epithelial barrier	ERS-1270
Harvey	Richard	New treatment options for CRS	ERS-1234
Harvey	Richard	The frontal sinus	ERS-1336
Harvey	Richard	The Frontal sinus	ERS-1337
Hellkvist	Laila	Immunotherapy update 2014	ERS-1340
Hens	Greet	The cleft lip	ERS-1316
Herzallah	Islam R.	Defects of the Anterior Skull Base, filling the gap	ERS-1260
Holbrook	Eric	Severe Epistaxis	ERS-1261
Holland	Carlijn	Nasal provocation tests	ERS-1239
Holzmann	David	Cystic Fibrosis	ERS-1223

Hopkins	Claire	Outcome assessment on CRS	ERS-1253
Howarth	Peter	Novel treatment options in allergic upper and lower airway disease: Their roles and limitations	ERS-1289
Hummel	Thomas	Smell disorders, diagnosis and treatment	ERS-1159
Hummel	Thomas	Smell & Taste	ERS-1160
Hyttinen	Maija	All you need to know about septal correction	ERS-1208
Ingels	Koen	Pitfalls in facial plastic surgery	ERS-1206
Jankowski	Roger	Evolution and development: a way to understand the nose	ERS-1327
Jankowski	Roger	Management of the patient who has failed FESS	ERS-1328
Joe	Stephanie	Treatment options in NAR	ERS-1268
Jovancevic	Liljana	Nasal Hyperreactivity/nonallergic rhinitis	ERS-1195
Kalogjera	Livije	Latest update on AR treatment (in collaboration with EAACI)	ERS-1205
Kanagalingam	Jeeve	External approaches to the sinus	ERS-1280
Katsunuma	Sayaka	Smell disorders, diagnosis and treatment	ERS-1200
Kawauchi	Hideyuki	Inverted papilloma	ERS-1308
Kern	Robert	EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment	ERS-1355
Kim	Young Hyo	Nasal provocation tests	ERS-1218
Kim	Dae Woo	Basic research in CRS	ERS-1228
Kim	Dae Woo	Basic research in rhinosinusitis	ERS-1229
Kjeldsen	Anette	Hereditary hemorrhagic telangiectasia (HHT)	ERS-1215
Kobayashi	Masayoshi	Smell disorders, diagnosis and treatment	ERS-1189
Konstantinidis	Iordanis	Management of the patient who has failed FESS	ERS-1180
Kouzaki	Hideaki	The epithelial barrier	ERS-1292
Kuhnel	Thomas	Hereditary hemorrhagic telangiectasia (HHT)	ERS-1193
Laudien	Martin	Wegener and other vasculitis -when to suspect in CRS	ERS-1186
Lekakis	Philio	Nasal obstruction in children and adults	ERS-1320
Leopold	Don	Smell disorders, diagnosis and treatment	ERS-1248
Leunig	Andreas	Avoid the Worst Case Scenario in sinus surgery	ERS-1282
Liu	Zheng	Lessons from Molecular biology in rhinitis	ERS-1192
Lopatin	Andre	Allergic rhinitis	ERS-1163
Lund	Valerie	EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment	ERS-1285
Lund	Valerie	Hereditary hemorrhagic telangiectasia (HHT)	ERS-1286
Luo	Zhang	Mucociliary dysfunction from diagnosis to treatment	ERS-1207
Luong	Amber	Junior Member Symposium: CRS and Endoscopic surgery	ERS-1241
Lynch	Susan	The microbiome in CRS	ERS-1235
Margaritis	Eleftherios	Drugs, allergies and other (un)desirable effects	ERS-1274
Maroldi	Roberto	Comprehensive imaging of the nasal cavity and paranasal sinuses	ERS-1258
Maroldi	Roberto	Comprehensive imaging of the nasal cavity and paranasal sinus	ERS-1343
Maurer	Joachim	Positional therapy/new surgeries for severe to extreme OSAS	ERS-1213
Menif	Emna	Comprehensive imaging of the nasal cavity and paranasal sinus	ERS-1198
Menif	Emna	Advanced Radiology of the skull base	ERS-1227
Mesbahi	Alireza	Pitfalls in facial plastic surgery	ERS-1356
Mesbahi	Alireza	The Big Debate: Morphing in Rhinoplasty	ERS-1357
Meyts	Isabelle	Pediatric Chronic Rhinosinusitis	ERS-1249
Moesges	Ralph	Latest update on AR treatment (in collaboration with EAACI)	ERS-1294
Mullol	Joachim	EPOS, The European Position Paper on Rhinosinusitis: Evidence in diagnosis and Treatment	ERS-1209
Mullol	Joachim	Drugs, allergies and other (un)desirable effects	ERS-1210
Naraghi	Mohsen	Surgery of the Orbit and lacrimal pathways	ERS-1269
Nguyen	Chau	Facial pain and Headache	ERS-1220
Nicolai	Pierro	Endoscopic approach to anterior skull base tumour	ERS-1279
Nonaka	Manabu	European Respiratory Society - The relation between upper and lower airways	ERS-1183
Okamoto	Yoshitaka	Immunotherapy update 2014	ERS-1360
Okano	Mitsuhiro	Basic research in rhinosinusitis	ERS-1317
Onerci	Metin	Inverted papilloma	ERS-1278
Pallanch	John	Technical advances in treatment of CRS	ERS-1275
Pallanch	John	3D anatomy and surgery	ERS-1276
Palma	Pietro	The ultimate challenge of rhinoplasty	ERS-1332
Palmer	James	The frontal sinus	ERS-1330
Pasquini	Ernesto	Defects of the Anterior Skull Base, filling the gap	ERS-1313
Patel	Kalpesh	All you need to know about septal correction	ERS-1240
Paun	Santdeep	What do we learn from our mistakes in rhinoplastic surgery	ERS-1225
Pawankar	Ruby	Allergic rhinitis	ERS-1352
Pawankar	Ruby	The epithelial barrier	ERS-1353
Pfaar	Oliver	Immunotherapy update 2014	ERS-1176
Poirrier	Anne-Lise	Junior Member Symposium: CRS and Endoscopic surgery	ERS-1161
Psaltis	Alkis	Basic research in rhinosinusitis	ERS-1303
Pujols	Laura	Basic research in CRS	ERS-1291
Ramakrishnan	Vijay	Junior Member Symposium: Airway mucosa	ERS-1297
Ramakrishnan	Vijay	From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology	ERS-1298
Ravesloot	Madeline	Positional therapy/new surgeries for severe to extreme OSAS	ERS-1341
Reinartz	Susanne	The frontal sinus	ERS-1256
Reinartz	Susanne	Management of the patient who has failed FESS	ERS-1264
Reinartz	Susanne	Inverted Papillomas	ERS-1267
Rettinger	Gerhard	The cleft lip	ERS-1359
Riechelmann	Herbert	Technical advances in treatment of CRS	ERS-1243
Roithmann	Renato	Surgery of the Orbit and lacrimal pathways	ERS-1199
Rombaux	Philippe	The cleft lip	ERS-1309
Rombaux	Philippe	Smell and taste testing	ERS-1310
Rondon	Carmen	Nasal provocation tests	ERS-1263
Rondon	Carmen	Latest update on AR treatment (in collaboration with EAACI)	ERS-1265
Rondon	Carmen	Nasal provocation testing	ERS-1266
Rudmik	Luke	Junior Member Symposium: CRS and Endoscopic surgery	ERS-1185
Sacks	Raymond	Prognostic factors in Rhinosinusitis	ERS-1273
Saeed	Peerooz	Surgery of the Orbit and lacrimal pathways	ERS-1257
Saleh	Hesham	Cystic Fibrosis	ERS-1311
Sama	Anshul	The frontal sinus	ERS-1351
Schilder	Anne	Is an academic career in Rhinology for you?	ERS-1333
Schlosser	Rod	New treatment options for CRS	ERS-1293
Schmidt	Thomas	Defects of the Anterior Skull Base, filling the gap	ERS-1166
Schmidt	Thomas	Endoscopic Pituitary Surgery	ERS-1170
Segboer	Christine	Nasal Hyperreactivity/nonallergic rhinitis	ERS-1262
Serrano	Elie	Inverted papilloma	ERS-1234
Setzen	Michael	Facial pain and Headache	ERS-1225
Shimizu	Takeshi	Basic research in CRS	ERS-1178
Singh	Rohit	Rhinosporidiosis & Rhinoscleroma	ERS-1219
Smith	Pete	Nasal Hyperreactivity/nonallergic rhinitis	ERS-1188
Snidvongs	Kornkiat	Prognostic factors in Rhinosinusitis	ERS-1190

Soyka	Michael	Severe Epistaxis	ERS-1172
Steinsvag	Sverre	GERD in rhinosinuitis	ERS-1242
Stjarne	Par	Pediatric Chronic Rhinosinuitis	ERS-1194
Swift	Andrew	Management of Severe epistaxis	ERS-1324
Swift	Andrew	Severe Epistaxis	ERS-1329
Takabayashi	Tetsuji	Basic research in rhinosinuitis	ERS-1165
Tanttilipikorn	Pongsakorn	Prognostic factors in Rhinosinuitis	ERS-1244
Tasca	Ignazio	Nasal obstruction in children and adults	ERS-1259
Ten Brinke	Anneke	European Respiratory Society - The relation between upper and lower airways	ERS-1182
Terreehorst	Ingrid	Drugs, allergies and other (un)desirable effects	ERS-1318
Terreehorst	Ingrid	Aspirin provocation tests and inducing tolerance	ERS-1323
Terreehorst	Ingrid	Immunotherapy update 2014	ERS-1331
Tewfik	Marc	Juvenile Angiofibroma	ERS-1312
Tomazic	Peter Valentin	Junior Member Symposium: CRS and Endoscopic surgery	ERS-1158
Toppila-Salmi	Sanna	The epithelial barrier	ERS-1155
Toskala	Elina	Nasal provocation tests	ERS-1299
Toskala	Elina	Lessons from Molecular biology in rhinitis	ERS-1300
Trimarchi	Mateo	Wegener and other vasculitis -when to suspect in CRS	ERS-1283
van der Schee	Marc	European Respiratory Society - The relation between upper and lower airways	ERS-1325
van Drunen	Kees	Lessons from Molecular biology in rhinitis	ERS-1305
Van Gerven	Laura	Nasal Hyperreactivity/nonallergic rhinitis	ERS-1314
Van Gerven	Laura	Treatment options in NAR	ERS-1338
Van Rompaey	Diane	Nasal obstruction in children and adults	ERS-1319
Van Zele	Thibaut	Severe Epistaxis	ERS-1304
Vanderveken	Olivier	Positional therapy/new surgeries for severe to extreme OSAS	ERS-1321
Vanderveken	Olivier	Drug induced sleep endoscopy (DISE)	ERS-1342
von Buchwald	Christian	Mucociliary dysfunction from diagnosis to treatment	ERS-1184
Vroegop	Anneclaire	Drug induced sleep endoscopy (DISE)	ERS-1237
Wang	Dehui	Juvenile Angiofibroma	ERS-1224
Wang	Dehui	Lessons from Molecular biology in rhinitis	ERS-1226
Weber	Rainer	External approaches to the sinus	ERS-1175
Welcoborsky	Hans J.	Surgery of the Orbit and lacrimal pathways	ERS-1281
Welge-Lüssen	Antje	Smell & Taste	ERS-1348
Woodworth	Bradford	Junior Member Symposium: Airway mucosa	ERS-1196
Woodworth	Bradford	From the ARS - Bringing Basic Science Research to the Clinical Practice of Rhinology	ERS-1197
Woolford	Tim	Pitfalls in facial plastic surgery	ERS-1306
Woolford	Tim	Drugs, allergies and other (un)desirable effects	ERS-1307
Wormald	Peter John	Frontal Sinus	ERS-1171
Wormald	Peter John	Treatment options in NAR	ERS-1173
Wright	Erin	Endoscopic Pituitary Surgery	ERS-1187
Xavier	Rui	All you need to know about sepal correction	ERS-1271
Xavier	Rui	Preoperative assessment of rhinoplasty patients	ERS-1272
Yoshida	Naohiro	Wegener and other vasculitis -when to suspect in CRS	ERS-1230
Zhang	Nan	Basic research in CRS	ERS-1203

e-Poster

Abulfateh	Fatima	Treatment of Allergic Rhinitis	ERS-0740
Adali	Musrafa Kemal	Diagnosis of Chronic Rhinosinuitis	ERS-0530
Adali	Musrafa Kemal	Diagnosis of Chronic Rhinosinuitis	ERS-0531
Adnan	Mustafa	Nasal surgery in children	ERS-1021
Agius	Adrian M.	Facial Pain	ERS-0376
Agius	Adrian M.	Facial Pain	ERS-0377
Ahn	Byung Hoon	Rhinoplasty	ERS-0550
Al Dousary	Surayie	Management of CRS surgically	ERS-0915
Al-Qudah	Mohannad	Skull base surgery miscellaneous	ERS-0646
Aleksic	Aleksandra	Rhinology miscellaneous	ERS-1100
Anghel	Ion	Preoperative assessment of rhinoplasty patients and selection of patients for surgery	ERS-0657
Anmolsingh	Rajesh	Rhinoplasty	ERS-0946
Araujo Da Costa	Ana Sofia	Skull base surgery miscellaneous	ERS-0908
Attlmayr	Bernhard	Rhinology miscellaneous	ERS-1142
Babu	Satish	Facial Pain	ERS-0495
Balica	Nicolae Constantin	Acute Rhinosinuitis	ERS-0710
Balica	Nicolae Constantin	Rhinology miscellaneous	ERS-0713
Bell	Philip	Snoring and OSAS	ERS-0461
Bernic	Ana	Endoscopic Surgery of skull base tumours	ERS-1024
Bijoor	Pooja	Tipsurgery	ERS-1073
Binnie	Alexander	Facial surgery beyond the nose	ERS-0661
Caixa	Mónica	Nasal surgery, techniques	ERS-0971
Cantone	Elena	Rhinology miscellaneous	ERS-1111
Cantone	Elena	Rhinology miscellaneous	ERS-1112
Carr	Simon	Septal and turbinate surgery including septal perforations	ERS-0955
Carvalho	Tatiana	Endoscopic Surgery of skull base tumours	ERS-0810
Chahed	Houda	Rhinology miscellaneous	ERS-1130
Chahed	Houda	Rhinology miscellaneous	ERS-1132
Chahed	Houda	Rhinology miscellaneous	ERS-1133
Chahed	Houda	Rhinology miscellaneous	ERS-1134
Chahed	Houda	Rhinology miscellaneous	ERS-1135
Chahed	Houda	Rhinology miscellaneous	ERS-1137
Chahed	Houda	Rhinology miscellaneous	ERS-1140
Chen	Fenghong	Preoperative assessment of rhinoplasty patients and selection of patients for surgery	ERS-1096
Chen	Fenghong	Orbit and lacrimal system	ERS-1097
Cheon	Yong-il	Management of CRS surgically	ERS-0932
Chiesa Estomba	Carlos	Acute Rhinosinuitis	ERS-0886
Chittaloor	Madhusudan Rao	Management of CRS surgically	ERS-1090
Chittaloor	Madhusudan Rao	Management of CRS surgically	ERS-1091
Chmielewski	Rafal	Septal and turbinate surgery including septal perforations	ERS-0994
Cobzeanu	Mihail Dan	Nasal surgery, techniques	ERS-0622
Cosgarea	Marcel	Endoscopic Surgery of skull base tumours	ERS-0732
Costello	Rhodri	Treatment of Allergic Rhinitis	ERS-0636
Cardenas	Maria Paulina	Skull base surgery miscellaneous	ERS-1067
Cardenas	Maria Paulina	Skull base surgery miscellaneous	ERS-1087
Damiani	Valerio	Management of CRS medically	ERS-0399
Damiani	Valerio	Treatment of Allergic Rhinitis	ERS-0400
Derbyshire	Stephen	Septal and turbinate surgery including septal perforations	ERS-1138

Derbyshire	Stephen	Preoperative assessment of rhinoplasty patients and selection of patients for surgery	ERS-1145
Deus	Joana	Rhinology miscellaneous	ERS-0864
Di Lieto	Cristiana	Rhinology miscellaneous	ERS-1003
Di Maria	Domenico	Facial Pain	ERS-0510
Dietz de Loos	Dirk	Outcome assessment in CRS	ERS-1098
Dietz de Loos	Dirk	Outcome assessment in CRS	ERS-1099
Do Hyun	Kim	Facial plastic surgery miscellaneous	ERS-0446
Dobre	Marioara	Nasal surgery, techniques	ERS-1131
Doros	Caius	Nasal surgery, techniques	ERS-0703
Doros	Caius	Nasal surgery, techniques	ERS-0704
Dotlic	Jelena	Outcome assessment in CRS	ERS-0963
Duarte	Ana Catarina	Orbit and lacrimal system	ERS-0866
Durao	Carolina	Pediatric Rhinology	ERS-0814
Egro	Francesco Maria	Management of CRS surgically	ERS-1104
Erbek	Selim	Snoring and OSAS	ERS-1113
Estivito	Roberto	Rhinology miscellaneous	ERS-0916
Estivito	Roberto	Rhinology miscellaneous	ERS-0917
Fejza Bulaj	Jetmira	Rhinosinusitis in children	ERS-0662
Fejza Bulaj	Jetmira	Rhinosinusitis miscellaneous	ERS-0789
Fiorini	Francesca Romana	Rhinology miscellaneous	ERS-1128
Giopanou	Maria	Rhinology miscellaneous	ERS-0991
Giotakis	Aristeidis	Management of Severe Epistaxis	ERS-0782
Glavan	Matic	Nasal surgery, techniques	ERS-0417
Gorin	Dmitry	Balloon sinuplasty	ERS-0647
Grigore	Raluca	Nasal surgery, techniques	ERS-0411
Grigore	Raluca	Septal and turbinate surgery including septal perforations	ERS-0777
Grigore	Raluca	Nasal surgery, techniques	ERS-0786
Grubor	Andrej	Rhinitis miscellaneous	ERS-0427
Grubor	Andrej	Snoring and OSAS	ERS-0581
Gunel	Ceren	Management of Severe Epistaxis	ERS-0421
Gunel	Ceren	Facial plastic surgery miscellaneous	ERS-1009
Haubner	Frank	Orbit and lacrimal system	ERS-1105
Hawisa	Samia	Rhinosinusitis miscellaneous	ERS-0868
Henriques	Vania	Management of CRS surgically	ERS-1061
Henriques	Vania	Facial Pain	ERS-1065
Huang	Lilleen	Snoring and OSAS	ERS-1126
Husain	Salina	Endoscopic Surgery of skull base tumours	ERS-0977
Husain	Salina	Rhinosinusitis miscellaneous	ERS-0980
Hydzik-Sobocinska	Karolina	Rhinology miscellaneous	ERS-1136
Hytönen	Maija	Acute Rhinosinusitis	ERS-0716
Ishibashi	Atsushi	Rhinology miscellaneous	ERS-0572
Islam	Shafqat	Rhinoplasty	ERS-0409
Islam	Shafqat	Rhinoplasty	ERS-0410
Ivaska	Justinas	Rhinology miscellaneous	ERS-1032
Jakimovska	Frodita	Rhinoplasty	ERS-1066
Johari	Shirish	Orbit and lacrimal system	ERS-0878
Jung	Jae-Hoon	Facial surgery beyond the nose	ERS-0927
Kacker	Ashutosh	Rhinosinusitis miscellaneous	ERS-0599
Kalyoussef	Evelyne	Orbit and lacrimal system	ERS-1075
Kanaya	Takeo	Nasal surgery, techniques	ERS-0699
Kaprana	Antigoni	Septal and turbinate surgery including septal perforations	ERS-1121
Keh	Siew Min	Facial plastic surgery miscellaneous	ERS-0625
Khorov	Oleg	Nasal surgery in children	ERS-1036
Killick	Neil	Septal and turbinate surgery including septal perforations	ERS-1022
Kim	Suil	Rhinitis miscellaneous	ERS-0990
Kochetkov	Petr	Orbit and lacrimal system	ERS-1106
Konstantinidis	Iordanis	Balloon sinuplasty	ERS-0821
Kopacheva Barsova	Gabriela	Nasal surgery in children	ERS-0708
Lazarevich	Irina	Pathophysiology of CRS	ERS-0996
Lazarova	Lepa	Facial Pain	ERS-0512
Lazecka	Katarzyna	Management of CRS surgically	ERS-0518
Lazecka	Katarzyna	Management of CRS surgically	ERS-0522
Lechot	Amandine	Septal and turbinate surgery including septal perforations	ERS-0626
Lee	Jae-Hoon	Rhinoplasty	ERS-0465
Lee	Jae-Hoon	Nasal obstruction in children (including newborn)	ERS-0466
Lee	Jae-Hoon	Diagnosis of Chronic Rhinosinusitis	ERS-0467
Lee	Jung Yup	Management of CRS surgically	ERS-0578
Lekatompeyy	Michael	Snoring and OSAS	ERS-0779
Lieder	Anja	Rhinoplasty	ERS-1086
Lim	Sang-Chul	Facial Pain	ERS-0687
Lim	Dae-Jun	Treatment of Allergic Rhinitis	ERS-1092
Limantaite	Vaida	Rhinology miscellaneous	ERS-1120
Lucidi	Daniela	Pathophysiology of CRS	ERS-1110
Manganaris	Argyrios	Facial plastic surgery miscellaneous	ERS-1124
Manganaris	Argyrios	Rhinology miscellaneous	ERS-1125
Marinkovic	Bojan	Septal and turbinate surgery including septal perforations	ERS-0359
Mario	Rigante	Balloon sinuplasty	ERS-1068
Marioo Sanchez	Franklin	Nasal obstruction in children (including newborn)	ERS-0957
Markou	Konstantinos	Nasal surgery, techniques	ERS-1118
Markou	Konstantinos	Skull base surgery miscellaneous	ERS-1122
Markowski	Jarosław	Rhinology miscellaneous	ERS-1094
Markowski	Jarosław	Orbit and lacrimal system	ERS-1095
McNamara	Kate	CSF-leak and Management of Anterior Skull Base defects	ERS-0897
Mehdi	Rana	Upper Airway Inflammation in Children	ERS-0665
Melendez	Amarilis	Rhinology miscellaneous	ERS-1127
Mickielewicz	Aleksandra	Management of CRS surgically	ERS-0565
Mickielewicz	Aleksandra	Management of CRS surgically	ERS-0569
Mickielewicz	Aleksandra	Management of CRS surgically	ERS-0576
Milev	Samuil	Nasal surgery, techniques	ERS-0983
Milkov	Mario	Snoring and OSAS	ERS-0909
Millington	Alex	Rhinosinusitis miscellaneous	ERS-0883
Mirea	Daniel	Skull base surgery miscellaneous	ERS-0759
Mocanu	Bogdan	Nasal surgery in children	ERS-1115
Mocanu	Bogdan	CSF-leak and Management of Anterior Skull Base defects	ERS-1116
Mocanu	Bogdan	Skull base surgery miscellaneous	ERS-1117
Monsanto	Rafael	Rhinosinusitis miscellaneous	ERS-0906

Monsanto	Rafael	Rhinology miscellaneous	ERS-0907
Morales Minovi	Carolina	Management of CRS medically	ERS-0831
Moura	Ivo Miguel	Rhinology miscellaneous	ERS-0859
Mulazimoglu	Selcuk	Endoscopic Surgery of skull base tumours	ERS-1129
Naraghi	Mohsen	Rhinoplasty	ERS-1020
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1027
Naraghi	Mohsen	Rhinoplasty	ERS-1049
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1144
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1146
Naraghi	Mohsen	Snoring and OSAS	ERS-1147
Naraghi	Mohsen	Rhinology miscellaneous	ERS-1148
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1149
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1151
Naraghi	Mohsen	Orbit and lacrimal system	ERS-1152
Naraghi	Mohsen	Rhinology miscellaneous	ERS-1153
Neagos	Adriana	Snoring and OSAS	ERS-0434
Nguyen	Duc Trung	Facial Pain	ERS-0542
Ohki	Motofumi	Treatment of Allergic Rhinitis	ERS-0463
Oliveira	Henrique	Nasal obstruction in children (including newborn)	ERS-0972
Oliveira	Vitor	Acute Rhinosinusitis	ERS-1016
Ottaviano	Giancarlo	Pathophysiology of CRS	ERS-0515
Ozergin Coskun	Zerrin	Rhinology miscellaneous	ERS-1139
Penttilin	Matti	Balloon sinuplasty	ERS-0815
Peric	Branislav	Rhinosinusitis miscellaneous	ERS-0373
Peric	Branislav	Septal and turbinate surgery including septal perforations	ERS-0609
Perkasa	Fadjar	Nasal surgery in children	ERS-0689
Phua	Chu Qin	Rhinosinusitis miscellaneous	ERS-0987
Pilavakis	Yiannis	CSF-leak and Management of Anterior Skull Base defects	ERS-0544
Piotrowska-Seweryn	Agnieszka	Outcome assessment in CRS	ERS-1050
Piskunov	Gennadiy	Rhinology miscellaneous	ERS-1107
Piskunov	Gennadiy	Management of CRS surgically	ERS-1108
Piskunov	Gennadiy	Rhinosinusitis miscellaneous	ERS-1109
Poenaru	Marioara	Rhinology miscellaneous	ERS-0739
Poenaru	Marioara	Local allergic rhinitis	ERS-0742
Poenaru	Marioara	Rhinology miscellaneous	ERS-0744
Popescu	Bogdan	Facial surgery beyond the nose	ERS-0833
Popescu	Bogdan	Acute Rhinosinusitis	ERS-0837
Popescu	Bogdan	Acute Rhinosinusitis	ERS-0852
Poulios	Aristotelis	Rhinology miscellaneous	ERS-0564
Punagi	Abdul Qadar	Nasal surgery, techniques	ERS-0682
Reshetnikov	Sergey	Rhinitis miscellaneous	ERS-0949
Rocha Pereira	Paulo	Nasal surgery in children	ERS-0846
Rodrigues	Hugo	Rhinosinusitis miscellaneous	ERS-1040
Rodrigues	Filipe	Orbit and lacrimal system	ERS-1141
Rodrigues	Filipe	Orbit and lacrimal system	ERS-1143
Rodrigues	Hugo	Rhinology miscellaneous	ERS-1150
Rombaux	Phillippe	Management of CRS medically	ERS-1082
Saibene	Alberto Maria	Tissue engineering	ERS-0541
Samarx	Laura	Rhinosinusitis miscellaneous	ERS-0896
Samarx	Laura	Smell & Taste and trigeminal function	ERS-0898
Schalek	Petr	Facial Pain	ERS-0401
Shankar	Amit	Skull base surgery miscellaneous	ERS-0761
Shimano	Takashi	Rhinosinusitis miscellaneous	ERS-0388
Shin	Ji-Hyeon	Pediatric Rhinology	ERS-0548
Sotoodeh Jahromi	Abdolreza	Rhinosinusitis in children	ERS-1084
Sotoodeh Jahromi	Abdolreza	Rhinosinusitis in children	ERS-1085
Stevandic	Nenad	Skull base surgery miscellaneous	ERS-1114
Surda	Pavol	Rhinology miscellaneous	ERS-0453
Suzuki	Yusuke	Rhinosinusitis miscellaneous	ERS-0431
Syed	Irfan	Endoscopic Surgery of skull base tumours	ERS-0640
Tang	Yuedi	Nasal surgery in children	ERS-0905
Tavares	Sara	Rhinology miscellaneous	ERS-1023
Teles	Rafaela	Management of CRS surgically	ERS-0487
Teles	Rafaela	Rhinology miscellaneous	ERS-0489
Teles	Rafaela	Acute Rhinosinusitis	ERS-0490
Thanasumpun	Thunchai	Rhinology miscellaneous	ERS-0945
Thanaviratnanich	Sanguansak	Rhinology miscellaneous	ERS-0750
Toguzbayeva	Dinara	Diagnosis of Chronic Rhinosinusitis	ERS-0911
Tonuzi	Orjeta	Orbit and lacrimal system	ERS-0747
Tonuzi	Orjeta	Orbit and lacrimal system	ERS-0752
Trindade Soares	Mafalda	Orbit and lacrimal system	ERS-1029
Türkmen	Mehmet Turgay	Acute Rhinosinusitis	ERS-0528
Varadarajan	Vinay	Management of Severe Epistaxis	ERS-0790
Vaz de Castro	Joana	Rhinology miscellaneous	ERS-1072
Vicheva	Dilyana	Rhinosinusitis in children	ERS-0570
Vicheva	Dilyana	Treatment of Allergic Rhinitis	ERS-0575
Villarreal Patioo	Ithzel Maria	Rhinology miscellaneous	ERS-1055
Vishniakov	Victor	Rhinology miscellaneous	ERS-1123
Vlaminck	Stephan	Management of CRS surgically	ERS-0706
Vlaminck	Stephan	CSF-leak and Management of Anterior Skull Base defects	ERS-0718
Vlaminck	Stephan	Nasal obstruction in children (including newborn)	ERS-0755
Vogt	Klaus	Snoring and OSAS	ERS-0799
Vokhidov	Ulugbek	Management of CRS medically	ERS-1093
Vranjes	Dalibor	Rhinology miscellaneous	ERS-1101
Wang	Mingjie	Rhinology miscellaneous	ERS-1083
Wang	Tengchin	Rhinology miscellaneous	ERS-1088
Wang	Tengchin	Acute Rhinosinusitis	ERS-1089
Wong	Kian Boon	Septal and turbinate surgery including septal perforations	ERS-0792
Xie	Min-Qiang	Skull base surgery miscellaneous	ERS-0978
Yatsenka	Vitali	Rhinology miscellaneous	ERS-1119
Yeon	Jeyeob	Management of CRS surgically	ERS-1102
Young J. Juhn	Young	Outcome assessment in CRS	ERS-1007
Zakiah	Azmi Mirah	Management of CRS surgically	ERS-0697
Zgheib	Georges	Diagnosis of Chronic Rhinosinusitis	ERS-0366
Zhu	Jianhua	The cleft lip	ERS-0379
Wengen x	Daniel	Rhinoplasty	ERS-1033

Wengen x
Wengen x
Wengen x

Daniel
Daniel
Daniel

Snoring and OSAS
Management of CRS surgically
Management of CRS surgically

ERS-1038
ERS-1069
ERS-1070