

The effect of (Val)ganciclovir on hearing in children with congenital cytomegalovirus infection: A prospective controlled trial

E. De Cuyper^a, F. Acke, A. Keymeulen, E. De Leenheer, H. Van Hoecke, A. Boudewyns, A. Gilles, M. Muylle, R. Kuhweide, L. Royackers, C. Desloovere, M. Verstreken, I. Schatteman, I. Dhooge
^a Department of Head and Skin, Ghent University, Ghent, Belgium

Introduction and aim: Congenital cytomegalovirus (cCMV) infection is a major cause of sensorineural hearing loss during childhood. A beneficial effect of valganciclovir on hearing outcome is assumed but not unequivocally proven. The aim was to assess the effect of (val)ganciclovir on hearing outcome.

Material and methods: This prospective controlled trial presents multicentric data of the Flemish CMV registry (Belgium) collected over 16 years. Treated and untreated cCMV-infected children with a minimal 4-year audiological follow-up were included. Primary outcome was hearing evolution. Exact matching for risk factors of spontaneous hearing evolution was performed between the treated and untreated group. The average marginal treatment effect was calculated using a pooled regression model.

Results: Of the 525 children, 98 (18.7%) were treated. Antiviral therapy did not significantly result in more hearing improvement (RR, 1.56; 95% CI, 0.48 to 4.93) or less hearing deterioration (RR, 0.89; 95% CI, 0.61 to 1.25). Treatment of children with unilateral congenital hearing loss with valganciclovir for 6 weeks prevented contralateral late-onset hearing loss compared to untreated children (RR, 2.49×10^{-8} ; 95% CI, 9.19×10^{-9} to 7.71×10^{-8}). Similarly, late-onset hearing loss could be prevented in symptomatic children with bilateral normal hearing treated with ganciclovir for six weeks (RR, 3.65×10^{-7} ; 95% CI, 2.16×10^{-7} to 6.21×10^{-7}).

Conclusions: Treating cCMV-infected children with (val)ganciclovir for six weeks prevented late-onset hearing loss. No additional benefit of a 6-month therapy was found. These novel findings can aid in treatment decision making and improve patient care and clinical practice. Further research investigating the effect of valganciclovir on long-term neurological outcome is needed.

Neurodevelopmental impact of congenital cytomegalovirus in children with cochlear implants

M. Reynders¹, K. Kerkhofs², A. Heyndrickx², K. Noerens², I. Foulon^{1,2}

1. Department of Otorhinolaryngology and Head & Neck Surgery, Vrije Universiteit Brussels, University Hospital UZ Brussel, Brussels Health Campus, Belgium
2. De Poolster, Rehabilitation Centre, Brussels, Belgium

Introduction and aim

Congenital cytomegalovirus (cCMV) can lead to hearing loss in 12.7% of children. Unmanaged severe sensorineural hearing loss (SNHL) may result in speech disorders and cognitive disability. Likewise, cCMV can induce vestibular and neurological deficits. This study aims to compare the developmental impact of cCMV-related deafness with non-cCMV congenital deafness.

Material and methods

This retrospective study compared cCMV-infected children with SNHL to a control group with non-cCMV-related SNHL who received bilateral cochlear implantation (CI) between 2003-2023. Audiological assessments and vestibular results were collected. Cognition was examined through intellectual quotient (IQ) and Bayley-Scales-Infant-Development-II (BSID-II). Language development was assessed by the Nederlandstalige NonSpeech Test (NNST) and Reynell Taalontwikkelingsschalen (RTOS). The motoric skills were examined by Peabody developmental Motor Scales II (PDMS-II). Data on received therapy, education, and neurological outcomes were collected.

Results

A significant difference in abnormal vestibular testing was found between the cCMV group and the control group (66% vs. 20%, $p < 0.05$). Likewise, the neurological outcomes were significantly different between cCMV patients and the control group (44 % vs. 0%, $p < 0.05$). No significant differences were found in cognition, language, or motoric skills between cCMV patients versus controls. Regarding education, one-third of the cCMV patients could attend mainstream education.

Conclusions

Although the vestibular and neurological outcomes in the cCMV group were significantly higher compared to the control group, similar developmental milestones could be achieved. This suggests that with intensive physical therapy, children affected by cCMV-related deafness can make significant developmental progress.

Effects of childhood hearing loss on the subcortical and cortical representation of speech

A. Calcus^{1,2,3} & S. Rosen¹

¹ *Department of Speech, Hearing and Phonetic Sciences, UCL, London WC1N 1PF, UK*

² *Laboratoire des Systèmes Perceptifs, CNRS UMR 8248, École Normale Supérieure, Paris Sciences et Lettres Research University, Paris, France*

³ *Center for Research in Cognition & Neurosciences (CRCN), ULB Neuroscience Institute (UNI), Université Libre de Bruxelles (ULB), Brussels, Belgium*

Introduction and aim: Little is known about the effects of childhood mild-to-moderate sensorineural hearing loss (MMHL) on the function of the auditory pathway. We aimed to examine the effect of childhood MMHL and the benefit of frequency-specific amplification on both subcortical and cortical auditory processing, and to relate it to speech-perceptual abilities.

Material and method:s We recorded subcortical and cortical responses to speech syllables in nineteen children with congenital MMHL (unamplified and amplified), and sixteen children with normal hearing (unamplified sounds only). Speech perception was measured behaviourally.

Results: Congenital HL led to smaller subcortical and cortical responses to unamplified speech sounds. There was a significant benefit of amplification on subcortical and early, but not late, cortical responses, with some effects differing across age. No relationship was found between the neural and behavioural measures. Childhood MMHL affects both subcortical and cortical processing of speech. Amplification mostly benefits subcortical processing of speech in younger children.

Conclusions: Childhood HL leads to functional changes in the processing of sounds, with amplification differentially affecting subcortical and cortical levels of the auditory pathway.

Instrumental balance assessment and study of electrophysiological correlates for central processing of vestibular stimuli in elderly people without balance disorders.

Z. Demerdziev, M. Bourguignon, G. Naeije, M. Niesen, M. Damien, N. Senese, P. Coemelck, E. Ravez, J. Meignant, M. Vander Ghinst

Erasmus Hospital HUB, Ear Nose and Throat Department, Brussels, Belgium

Introduction: Balance disorders in the elderly are a major public health problem. The functional impact of the posterior labyrinth ageing on balance disorders in the elderly remains controversial. Unlike cortical processing in the visual and auditory systems, little is known about the cerebral mechanisms of vestibular processing in humans. The aim of this study is to determine whether subjects over the age of 60 with no balance disorders show a functional impact of physiological ageing of the vestibule. In addition, we will attempt to determine, using EEG during postural tasks, whether an age-related decrease in vestibular system function is reflected by a change in alpha band power.

Material and method: 36 young subjects (18-35 years) and 31 elderly subjects (> 63 years) were included in the study. Each participant underwent a neuro-vestibular physical examination, an auditory assessment, and an instrumental balance assessment: oculomotor examination, vestibulo-ocular reflex, subjective visual vertical and Equitest. In addition, electroencephalographic data were recorded under four conditions: with and without visual input, on a stable and unstable support.

Results: With regard to the instrumental balance testing, the elderly subjects showed a significant reduction compared with the young subjects in : the gain in rapid eye pursuit ($p=0.0041$), the gain of the vestibulo-ocular reflex for the posterior semicircular canals ($p=0.049$), the composite score ($p=0.014$) and the vestibular score ($p=0.0133$) of the Equitest. No significant difference in the oscillatory activity of the alpha band has been demonstrated.

Conclusion: This study confirms a slight physiological decline in the vestibular function over the age of 60, with earlier damage to the posterior semicircular canals. However, we were unable to identify any alteration in the indicators of central processing of vestibular information in the elderly during postural tasks.

Study of the impact of aging on proprioceptive acuity, vestibular function and central processing of proprioceptive data in postural control

- **Authors:** L. Abi-Khalil, M. Hoornaert, S. Mongold, M. Bourguignon, M. Vander Ghinst. MD. Master degree in medicine.
- **Institution:** *Hôpital Universitaire de Bruxelles*, site : Erasme Hospital – ENT departement ; Brussels, Belgium. *Université Libre de Bruxelles*, Laboratory of Neurophysiology and Movement Biomechanics ; Brussels ; Belgium
- **Abstract body:**

Introduction and aim: Falls arising from instability pose a significant public health concern among the elderly. While the aging of several systems contributes to this stability disorder(s?), the precise functions of the vestibular and proprioceptive systems remain unclear. This study aims to assess the influence of physiological aging on vestibular function, proprioceptive acuity (PA), and the central processing of proprioceptive afferents through cortico-kinematic coherence (CKC) during postural maintenance.

Material and method: 33 young participants (19 to 31 years old) and 37 elderly participants (65 to 85 years old) were tested. They received an anamnesis, a neurovestibular clinical examination, an audiometry, a Video Head Impulse Test (VHIT), and a Joint Position Reproduction Test (JPRT). Electroencephalographic recordings under four different balance conditions on a force plate were performed to determine CKC and postural sway.

Results: The vestibulo-ocular reflex (VOR) gain of the posterior semicircular canal (pCSC) obtained at VHIT (pncorr=0.0298) and PA (p=0.0229) are significantly decreased in the elderly. Postural sway (p<0.0001) and CKC (p=0.0009) are significantly increased with age. Postural sway correlates with PA in conditions involving proprioception. There was no statistical correlation between CKC and PA, nor between postural sway and pCSC gain.

Conclusion: Aging is associated with impaired PA and postural maintenance that may be explained by neuromuscular degeneration. Furthermore, our study indicates an increased CKC with age suggesting increased cortical processing of proprioceptive inputs in the elderly, possibly as a compensatory mechanism for their declining PA. While the age-related reduction in the RVO gain of pCSC may occur, it is not a direct contributor to postural instability.

Feasibility of Virtual Reality to induce and measure optokinetic after-nystagmus (OKAN) in healthy patients

M. Reynders¹, L. Van Der Sypt¹, J. Bos², V. Topsakal¹

¹ENT departement, Vrije Universiteit Brussel, Hospital UZ Brussel, Brussels Health Campus, Belgium ²Departement of Human Movement Sciences, Vrije Universiteit Amsterdam, the Netherlands.

Introduction and aim

Optokinetic after-nystagmus (OKAN) is a phenomenon where nystagmus gradually decreases after sudden termination of visual optokinetic stimulation. Recent studies put forward OKAN as an objective measure for visual dependency-related conditions like persistent postural-perceptual dizziness (PPPD). However, OKAN assessment historically required complex setups, making its clinical implementation cumbersome. This pilot study explores the feasibility of using Virtual Reality (VR) to measure OKAN.

Methods and Materials

This prospective interventional study involved seventeen healthy participants. Ethical committee approval was obtained, and informed consent was collected from each participant. Inclusion criteria were: >18 years old, no vestibular or central pathologies, no benzodiazepine use, no epilepsy, or ophthalmological conditions. Audiological and vestibular data were gathered. A commercially available VR hardware with a custom-designed application incorporated was used. Eye-tracking within the VR recorded the eye movements of the participants. Optokinetic after-nystagmus (OKAN) was assessed using the time constant (TC, sec), derived from exponential curve fitting to average slow-phase velocity over time based on eye angle position.

Results

The average age of the 17 participants was 42±22 years (with 58% females). Audiological results were normal in all patients. All vestibular testing was within normal range. Out of 17 participants, five (29%) showed signs of optokinetic after-nystagmus (OKAN). The average TC for OKAN was 18,21 ± 6.11 seconds.

Discussion

This study suggests that VR can effectively induce while simultaneously record OKAN in healthy individuals. The OKAN TC in healthy subjects in this study was comparable to previous findings (Zasorin et al. 23.4 seconds; Bertolini et al. 13.95 seconds). However, the prevalence of OKAN in this study (29%) was lower compared to other studies (e.g., Bertolini et al. 72%). Future research will evaluate the use of OKAN in patients suffering from visual dependence due to vestibular disorders.

Intratympanic cholesteatoma : Case Report and a review of the current literature

Author(s) : S. VanProoyen, C. Kieffer

Institution(s) : Clinique Saint Jean, Bruxelles, Belgium

Introduction and aim:

Intratympanic cholesteatoma was first described in 1863 by Hinton. Since then, a few cases have been reported in the literature. It is a rare form of cholesteatoma. It takes the form of a rounded, whitish mass that develops inside the tympanic membrane. Most often asymptomatic, it is discovered incidentally in children. It should not be confused with congenital mesotympanic cholesteatoma, which develops in the middle ear. The origin and natural evolution of intratympanic cholesteatomas remain poorly understood, and several hypotheses have been put forward in the literature.

Case report:

A 15-month-old girl presented to the consultation for recurrent acute otitis media (3 episodes unperforated).

Her first otoscopy revealed a whitish, infra millimetric mass in the anterosuperior region of the right eardrum. The rest of the otoscopy was normal. A sequela of otitis was initially suspected. We choose to monitor and control. She returned for the follow-up visit 2 months later, and the mass was still present. A congenital cholesteatoma was then suspected.

The patient had no history of otorrhea, trauma or otological surgery. Her tympanometry was type A bilaterally, and the otoemission PASS on both sides.

A CT scanner of the rocks was performed in November 2023. It revealed that there was no evidence of a congenital cholesteatoma, but confirmed the presence of a millimetric focal thickening of the right tympanic membrane, in the pars tensa, of non-calcified appearance. The rest of the anatomy of the 2 rocks was strictly normal.

The tympanic pearl was surgically removed under general anesthesia later in November. It was resected in its entirety and in one piece, using a spatula. The fibrous layer of the eardrum was intact. Anatomopathological analysis revealed an exclusive keratin stratum composition, compatible with a cholesteatoma.

Conclusion:

This child's case with a review of the existing literature on similar cases of intratympanic cholesteatoma is going to be presented

- **Title : Biologics for Eosinophilic Otitis Media: Our Experience at University Hospital of Liège**

- Authors : M. Czajkowski, F. Rogister, P. Lefebvre

- Institution : CHU Sart-Tilman, Liège

- Abstract

Background : Eosinophilic otitis media (EOM) is a difficult-to-treat otitis media characterized by eosinophilic accumulation in the middle ear mucosa and effusion. It is resistant to conventional treatments and strongly associated with asthma and chronic rhinosinusitis with nasal polyps (CRSwNP). Since the diagnostic criteria of EOM were established in 2011 by Lin, the concept of EOM has been known worldwide. EOM is caused by Type 2 inflammation in the respiratory tract, similar to bronchial asthma and CRSwNP. With the appreciation of Type 2 inflammatory diseases, the gold standard in treatment consists on systemic and topical administration of corticosteroids. Recently, several retrospective studies have demonstrated the effectiveness of biological treatments on EOM. In this report, we share our experience regarding response to EOM following the use of biologics.

Material and methods : It is a retrospective observational study involving patients affected by refractory EOM and in treatment with different biologics (benralizumab, omalizumab, mepolizumab, dupilumab) for concomitant severe eosinophilic asthma and/or severe uncontrolled CRSwNP. We also included the prospective follow-up of a patient presenting with EOM associated with bronchial asthma and CRSwNP who initiated treatment with mepolizumab. Treatment effectiveness regarding EOM severity was measured using the medical Global Evaluation of Treatment Effectiveness (GETE).

Conclusion : The results of our small sample agree with those found in the literature and show control of EOM by biologics. We need a larger multicentric sample and a methodology to be able to confirm these results and compare effectiveness of different biologics.

Steps toward the first case of fully robotic cochlear implant surgery

J. Abari¹, P. Van de Heyning² and V. Topsakal¹

¹Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital UZ Brussel, Vrije Universiteit Brussel, Brussels, Belgium

²Department of Otorhinolaryngology, Head and Neck Surgery, Antwerp University Hospital, University of Antwerp, Antwerp, Belgium

Introduction: Robot-assisted cochlear implantation surgery (RACIS) involves drilling a surgical keyhole trajectory through the middle ear and into the inner ear, avoiding an enlarged mastoidectomy. High-resolution imaging and the use of neuromonitoring as a safety protocol are of great importance for conventional surgery and much more for RACIS. For this purpose, a customized facial nerve monitoring (FNM) device was developed and validated in an animal model study, employing both active mono- and bipolar stimulation. The aim is to validate the clinical performance of FNM in patients who underwent RACIS and to report which steps were made towards the first case of fully RACIS.

Materials and methods: Intra-operative imaging was performed with a mobile cone-beam CT with a 0.1 mm spatial resolution. A customized FNM device was used, employing both active mono- and bipolar stimulation. Linear regression analysis, binary logistic regression analysis and receiver operating characteristic analysis was used for statistical analysis. The first case of fully RACIS included both robotic middle and inner ear access, followed by robotic electrode insertion of a FLEX28 electrode at an insertion speed of 0.1 mm/s.

Results: The results were statistically significant for the monopolar ($p < 0.001$) and bipolar 3 ($p < 0.004$) stimulation configuration meaning that a prediction of the intra-operative distance could be made using the stimulation thresholds. The sensitivity to predict distances greater than or equal to 0.4 mm for the monopolar and bipolar 3 configuration is 100% and 86.5% respectively. In no case was there any structural nor functional damage to the facial nerve. There were no intra-operative nor post-operative complications in the first case of fully RACIS. Post-operative imaging confirmed a full insertion at an insertion depth of 591°.

Conclusion: FNM will alert the surgeon when the drilling trajectory comes too close to the facial nerve in RACIS and is thus indispensable. The combination of high-resolution imaging and the use of neuromonitoring as a safety protocol allowed us to successfully perform the first case of fully robotic cochlear implantation.

Cognitive improvement up to 4 years after cochlear implantation in older adults: a prospective longitudinal study using the RBANS-H.

Authors: T. Vandenbroeke, E. Andries, M. J. Lammers, P. Van de Heyning, A. Hofkens-Van den Brandt, O. Vanderveken, V. Van Rompaey, G. Mertens
Department of Otorhinolaryngology, Head and Neck Surgery, Antwerp University Hospital (UZA), Edegem, Belgium
Resonant labs Antwerp, Dept. of Translational Neurosciences, Faculty of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium

Aim: Hearing loss is a worldwide health problem that currently affects around 20% of the world population. Untreated hearing loss can have a significant impact on daily life. Furthermore, older adults with hearing impairment have a higher risk for accelerated cognitive decline compared to normal-hearing individuals. Previous research indicated a positive effect of cochlear implantation on Health-related Quality of life (HRQoL) and cognitive functioning one year after cochlear implantation. The aim of this study was to evaluate the long-term effect of cochlear implantation on cognition and HRQoL in older adults with severe-to-profound hearing loss.

Study design and participants: All included subjects were 55 years or older with postlingual, bilateral, severe-to-profound hearing loss, and received a unilateral cochlear implant (CI). Cognition was evaluated using the Repeatable Battery for the Assessment of Neuropsychological Status for Hearing Impaired Individuals (RBANS-H), and HRQoL was evaluated using the following five questionnaires; Nijmegen Cochlear Implant Questionnaire (NCIQ); Hearing Implant Sound Quality Index (HISQUI); Speech, Spatial, and Qualities of Hearing Scale (SSQ12); Hospital Anxiety and Depression scale (HADS); and Type D questionnaire (DS14). Individuals were evaluated preoperatively, and annually up to four years after CI activation.

Results: One year after cochlear implantation a significant improvement was observed in the total RBANS-H score and subdomain scores “Immediate Memory”, “Attention”, and “Delayed memory”. When comparing preoperative results with four years postoperative results, a significant improvement was observed in “Immediate Memory” and a significant decline was observed in “Visuospatial Memory”. Four years after implantation, no significant improvement was observed in the total RBANS-H score. A significant improvement was observed for the HRQoL questionnaires one year after cochlear implantation.

Conclusion: Unilateral cochlear implantation in an adult population with bilateral severe-to-profound SNHL has a positive effect on cognitive functioning and HRQoL one year after activation. This positive effect on cognitive functioning was no longer observed four years after cochlear implantation.

Exploring the impact of auditory, visual, and cognitive abilities on cochlear implant outcome

D. Ceuleers¹, H. Keppler^{2,3}, N. Baudonck², F. Swinnen², K. Kestens³, and I. Dhooge^{1,2}

¹Department of Head and Skin, Ghent University, Ghent, Belgium; ²Department of Otorhinolaryngology, Ghent University Hospital, Ghent, Belgium; ³Department of Rehabilitation Sciences, Ghent University, Ghent, Belgium

Introduction and aim: Speech understanding outcomes after cochlear implantation (CI) exhibit considerable variability [1, 2]. The process of speech understanding is considered a bi-modal and bi-directional process, whereby also visual information (speechreading) and cognitive functions (top-down processes) are involved [3, 4]. Given the complexity of speech understanding, it is suggested to consider a broader variety of factors than only auditory factors in the follow-up of CI-candidates. Therefore, the current study aimed to evaluate the outcome for auditory, visual, and cognitive abilities on the short- (three months and six months) and long-term (twelve months) after implantation.

Material and methods: Twenty-six CI-candidates, according to the Belgian criteria for reimbursement, were assessed before implantation, and at three, six, and twelve months post-implantation. Auditory abilities were evaluated using pure-tone audiometry, speech audiometry in quiet and in noise, while the (audio-)visual speech processing was assessed using the Test for (Audio-)Visual Speech Perception [5]. Cognitive assessments included the Letter-number sequencing task [6], Letter Detection Test [7], and an auditory Stroop test [8]. Hearing-related quality of life was investigated using the hearing-related quality of life questionnaire for Auditory-Visual, COgnitive and Psychosocial functioning (hAVICOP) [9]. Descriptive parameters were established and the effect of test moment was investigated statistically with Linear Mixed Models.

Results: Preliminary findings show overall improvement in auditory, visual, and cognitive abilities post-implantation, with the most significant gains observed between pre-implantation and three months post-implantation. Furthermore, a large improvement is seen in hearing-related quality of life after implantation. Currently, data analysis is ongoing. The final results will be presented at the at the Spring Meeting of B-ORL.

Conclusion: This study aimed to investigate the outcome for auditory, visual, and cognitive abilities after CI. As such, more insight in the different abilities contributing to speech understanding could be provided. In the future, these results could provide useful information for the counseling and rehabilitation after CI.

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The effect of auditory stimulation through hearing aids on tinnitus in high-frequencies hearing loss: a retrospective study

V. Van Kelecom (MD)^{1,2}, K. Kheirkhah¹, V. Verhaegen³, M. Leblans¹, J. van Dinther¹, G. De Greve¹, E. Offeciers¹, A. Zarowski¹

¹ *European Institute for Otorhinolaryngology, Antwerp, Belgium*

² *University of Ghent, Ghent, Belgium*

³ *Hoorcentrum Melakos, Antwerp, Belgium*

Introduction and aim:

Up till this day, it is still unclear what the effect of auditory stimulation on tinnitus is for patients with high-frequencies hearing loss, and if it can sufficiently reduce tinnitus. This study retrospectively investigated the effect of auditory stimulation through hearing aids (HA) on tinnitus impact in patients with high-frequencies hearing loss. The objective of this study was to contribute to the understanding of the mechanisms of action to reduce and/or suppress tinnitus.

Material and methods:

A clinic database of 161 patients with tinnitus using a HA was consulted. 58 subjects with high-frequencies hearing loss, defined as a pure tone average at 2 and 4 kHz higher than 40 dB hearing loss, and minimum 6 months experience with the HA, were extracted. Patient demographics, audiograms, tinnitus outcomes pre- and post-amplification describing impact, loudness and annoyance rated on the Visual Analogue Scale (VAS), and post-amplification tinnitus questionnaire (TQ) scores of 35 patients were collected and retrospectively analyzed by descriptive statistics.

Results:

In approximately 33% of the HA users the tinnitus impact, loudness and annoyance could be completely or almost completely suppressed by acoustic stimulation. Another 1/3 of the patients showed significant improvement, while no effect was observed in the remaining 1/3 patients. These results were comparable to the results obtained with electrical stimulation in unselected CI-patients with tinnitus (our previous study).

Conclusions:

The study illustrates the possibility of efficient tinnitus suppression with HA in patients with high-frequency hearing loss. Since these results are comparable to the effects of electrical stimulation in unselected CI-patients with tinnitus, we can conclude that any efficient stimulation of the auditory pathways would reduce tinnitus in the majority of the patients. Acoustic stimulation may be used in patients with serviceable hearing while electrical stimulation is the option for patients with insufficient amplification by HA.

Multidisciplinary follow-up of a hearing impaired children cohort: language development and particular focus on the age rehabilitation started.

B. Devroede^{1,2}, R. Ciardelli¹, I. Courtmans¹, C. Laurent³ and C. Ligny¹

¹ Centre Comprendre et Parler, Brussels, Belgium, ² ENT Department HUB-Queen Fabiola University Children's Hospital, Brussels, Belgium, ³ ENT Department HUB-Erasme Hospital, Brussels, Belgium

Introduction and aim: Adequate rehabilitation of hearing loss in children remains challenging and depends on diverse factors. A good understanding of these factors by the involved professionals is essential to ensure successful treatment. The objective of this study is to compare the receptive and expressive language abilities and some demographic characteristics of children whose rehabilitation treatment for their hearing loss started early or late.

Material and Methods : We conducted a retrospective study including 171 children under the age of 13 with different degrees of congenital hearing loss and hearing rehabilitation at « Centre Comprendre et Parler ». Participants were divided in 2 groups according to their age at the start of the multidisciplinary approach.

The variables studied are as follows : presence or absence of neonatal hearing screening, age of hearing loss identification, mother level of education, family involvement and language skills. These data were compared between children who started treatment before or after the age of 6 months.

Results : 47% of children began rehabilitation after the age of 6 months. All children who did not benefit from newborn hearing screening belonged to the late care group. Children who could benefit from early intervention demonstrated significantly better language scores than children who started treatment after 6 months of age. The level of family involvement and the mother's level of education were both significantly higher in the early intervention group.

Conclusion : Diagnosis of neonatal hearing loss through newborn hearing screening enables rapid referral of the child to a rehabilitation center so treatment can be started quickly.

The higher the level of maternal education and family involvement the sooner the child will be admitted to the appropriate care structure.

Early intervention allows a normal language development in comprehension in 70% of the children who undergo multidisciplinary rehabilitation for their hearing loss.

Cricotracheal resection for subglottic stenosis: complications and outcomes

J. Meulemans, L. Mouqni

UZ Leuven, KULeuven, Leuven, Belgium

Introduction and aim:

Subglottic stenosis (SGS) is a rare inflammatory disease causing progressive obstruction of the subglottic area and the first 2 tracheal rings. Although endoscopic procedures are frequently preferred as first-line treatment, cricotracheal resection (CTR) offers the most durable results.

Material and methods:

For this retrospective and prospective monocentric case series, the files of 37 patients with SGS who underwent CTR in a tertiary referral center were reviewed. Patient- and stenosis-characteristics along with postoperative outcomes and complications were analyzed using descriptive statistics.

Results:

The majority of patients were female (95%), which reflects the high incidence of idiopathic SGS in our patient group (89.2% versus 2.7% postintubation SGS versus 8.1% SGS related to systemic inflammatory disease). Most patients presented with a stenosis grade II (35.1%) and III (54.1%) according to the Cotton-Myer classification, with a mean craniocaudal stenosis length of 17.5 mm. 89.2% of patients had prior endoscopic procedures. The most common complication after CTR was fibrinogen deposit/granulation tissue formation at the anastomotic site (n=15, 40.5%). Other complications were rare, with anastomotic dehiscence, postoperative haemorrhage and vocal cord paralysis in 1 patient (2.7%), temporary tracheostomy in 2 patients (5.4%), and wound infection in 3 patients (8.1%). During follow-up, only 2 patients (5.4%) developed restenosis which was successfully salvaged by endoscopic procedures. No patients were long-term tracheostomy dependent. Post-operative mean peak expiratory flow percentage showed 43.73% incline compared to pre-operative. For the mean maximum inspiratory flow at 50% this incline was 1.33 L/s. VHI (voice handicap index) scores increased significantly from baseline preoperative score (27.48 +- 23.70) to a mean value of 54.89 +- 18.70 (P = .002) 1-month postoperatively but decreased below preoperative scores after 2 years (22.19 +- 18.12, P = .036).

Conclusions:

In our patient series, CTR proved to be an efficient treatment for SGS, with low complication rates and low rate of long-term restenosis.

Treatment of hyoid bone syndrome with surgical excision: our monocentric experience in the past five years

J. Mortier, S. Mariën
University Hospital of Antwerp

INTRODUCTION AND AIM

In 1968, Steinmann described the hyoid bone syndrome as a form of insertion tendinosis, a degenerative and inflammatory phenomenon due to the constant motion of the hyoid complex during speech, swallowing etc. The treatment management is commonly divided into conservative or more definitive surgical methods. Our aim is to assess the pre-operative conditions, operative procedure and post-operative outcome of a hyoid bone resection procedure.

MATERIAL AND METHODS

A retrospective case study was performed. The study patients were consecutively included at the laryngology clinic in the University Hospital of Antwerp from 2018 until 2023. They presented to our clinic and were diagnosed with the hyoid bone syndrome based on anamnesis and clinical examination. Pre-operative CT imaging was performed to evaluate for anatomical changes and fiberoptic laryngoscopy was performed to exclude other causes for chronic throat pain. Pre- and postoperative VAS scores for pain were questioned.

RESULTS

Fifteen patients were operated, two of them bilaterally. All patients had pain located to the hyoid bone, and half of patients (n = 6) had dysphagia. On imaging 10 patients had an elongated styloid process and 7 had calcification of the stylohyoid ligament. All patients underwent resection of the major horn of the hyoid bone, 11 patients underwent resection of the stylohyoid ligament and in 9 patients the superior process of the thyroid cartilage was removed. Mean pre-operative VAS pain score was 9 (/10) and mean postoperative score was 0.73 (/10).

CONCLUSION

Our preliminary results show a good clinical effect of the surgical excision procedure and offers insight in the hyoid bone syndrome. In the future, more validated questionnaires can be used for pre- and postoperative patient evaluation.

Title: Holmium:YAG laser-assisted sialolithotripsy in the management of submandibular and parotid sialolithiasis: indications, procedure and outcomes.

Authors: L. Mathot, S. Van der Vorst, G. Delahaut, O. Desgain, S. Hassid, M. Hoste, V. Bachy

Institution: Department of Otorhinolaryngology and Head and Neck Surgery, CHU UCL Namur, Yvoir, Belgium

Introduction and aim: Sialendoscopy has significantly contributed to the management of salivary stones, offering a minimally invasive approach. However, despite its advantages, certain limitations persist. Since the 1990s, sialolithotripsy emerges as a valuable solution, overcoming these limitations and providing an effective alternative for challenging cases. The aim of this presentation is to discuss the place of Holmium:YAG laser in the management of sialolithiasis.

Material and methods: This presentation will be based on literature data and the experience gained since 2021 at CHU UCL Namur, where we initiated the use of the Holmium:YAG laser, following a decade of experience with sialendoscopy procedure. The presentation will be based on real-life cases, illustrated with intraoperative videos.

Results: In our experience at CHU UCL Namur, between January 2021 and today, sialolithotripsy has prevented invasive glandular excision in 9 patients with inaccessible non-floating sialoliths that could not be removed by pure sialendoscopic means. Literature data confirm the interest of sialolithotripsy for a conservative management of non-floating, hilar, and impalpable stones.

Conclusions: Holmium:YAG laser-assisted sialolithotripsy is a non-invasive, effective, and safe method for the management of non-floating, impalpable, and hilar submandibular or parotid sialolithiasis.

Endoscopic posterior cricoid split and costal cartilage graft insertion in children with posterior glottic stenosis

Dr. H. Oscé, Prof. Dr. G. Hens, Prof. Dr. J. Meulemans
UZ Leuven, Belgium

Introduction and aim: Endoscopic posterior cricoid split with rib graft insertion (EPCS/RG) is a minimally invasive procedure for the treatment of subglottic stenosis, posterior glottic stenosis (PGS) or bilateral vocal fold immobility. EPCS/RG expands the posterior glottic opening by dividing the posterior cricoid lamina endoscopically with a CO₂ laser and inserting a rib cartilage graft through the laryngoscope. With this case series we aimed to evaluate a single-institutional experience using EPCS/RG in the treatment of pediatric patients with PGS.

Material and methods: Retrospective chart review of all patients who underwent EPCS/RG at a tertiary-care ENT referral center between June 2022 and January 2024. As all patients underwent preoperative tracheotomy, decannulation was the primary outcome measure. Secondary endpoints included surgery duration, complications, postoperative laryngeal function (resolution of stridor and dyspnea, prevention of aspiration), length of hospitalization and the need for additional airway surgery.

Results: A total of four patients underwent EPCS/RG, of whom one patient is still recovering from surgery. Age range at time of surgery was 17 months to 8 years. Successful decannulation was obtained in all three patients. Postoperatively, we noted mild restenosis due to the formation of granulation tissue around the graft in one patient. All patients needed adjunctive airway surgery: resection of a suprastomal granuloma (n = 2), laser resection of granulation tissue around the graft (n = 1) and/or endoscopic balloon dilation (n = 2). Mean length of postoperative hospitalization was 14 days. Mean procedure time was 3h45m. We eventually noted resolution of dyspnea and stridor in all patients. There were no major complications or deterioration of voice or feeding postoperatively.

Conclusions: This single institutional case series demonstrates that EPCS/RG is a safe and effective surgical procedure for treating PGS in selected pediatric patients. All patients could be successfully decannulated after this minimally invasive procedure.

Case report and review of the different types of laryngeal and pharyngeal vascular malformations and their management:

Author(s) : V. Moens, S. Van Prooyen, D. Moens
Institution(s): Clinique Saint Jean

Introduction and aim:

The aim of this oral presentation is to talk about the clinical features and management of the vascular anomalies that we can meet in the pharyngeal and laryngeal regions. Throughout this case, we will discuss about different vascular entities, their classifications based on histopathological findings and their management.

Case Report:

A 25-year-old young woman who was initially presented to her family doctor with a one-day history of odynophagia and right otalgia when swallowing. Furthermore, she had explained that she saw a blue dot in the back of her throat right sided that was confirmed during the consultation. The patient was therefore referred to our ENT department for more in-depth assessment. To the anamnesis, the patient said that it was the second time that she got pain in the throat with no explanations. She never had dyspnea nor expectorations of blood. She was known with no other comorbidities. On clinical examination, a bluish mass at the lower pole of the right tonsil is found. A nasofibroscope is performed and shows a right sided extension of the mass to the ventricle, pyriform sinus and ventricular band. The vocal cords remain mobile, and the respiratory tract remains free. On investigation, a computed tomography (CT) with iodine injection of her head and neck is carried out and shows a right pharyngeal and laryngeal enhancing mass that extend to the infraglottic visceral space. Some phleboliths are also associated with the mass. A diagnosis of venous malformation is announced. Because of the respiratory risk linked to the location of the venous malformation, we referred the patient to the university hospital "Clinique Saint Luc" for adequate care in a specialized vascular malformations department. An MRI is asked and will be performed on the 26th of February. The treatment will be decided after the MRI...

Conclusion:

Venous malformations are the most common type of vascular malformations in the body and more than forty percent of those are found in the head and neck region, but in this region, they are only taking the third place after infantile haemangiomas and lymphatic malformations. The presentation can be vicious and therefore knowledge of those diseases is important.

Observation of the temporal dynamics of the initiation of the pharyngeal phase of swallowing: Correlation of FEES and sEMG measurements in a group of healthy subjects

C. Waldbillig¹, M. Bourguignon², JS. Lecat, M³. Vander Ghinst¹, N. Roper¹

¹ Université Libre de Bruxelles (ULB), Hôpital Universitaire de Bruxelles (HUB), CUB Hôpital Erasme, service d'ORL, Belgium. ² Faculté des sciences de la motricité, Belgium. ³ HELORA Site Jolimont, Belgium.

Introduction

Oropharyngeal dysphagia is the impairment of swallowing which can have a significant impact on patients' quality of life and health. One of the difficult phases to describe during assessment is the initiation of the pharyngeal phase. And more precisely, being able to know when this moment is delayed, if it is pathological or not. Many definitions of a « delayed » initiation of the pharyngeal phase exist in terms of bolus location or time duration without consensus. This question arises as well for videofluoroscopic assessment than for Fiberoptic Endoscopic Evaluation of Swallowing (FEES). Although FEES is increasingly used, it lacks objectively measurable criteria. In this study, we aim to characterise temporally the initiation of the pharyngeal phase by means of endoscopy and electromyography.

Materials and Methods

The study involved 30 healthy participants (aged 20 to 58 years old). Swallowing was assessed by FEES with boluses of varying volumes and textures. Boluses were given randomly, and results categorized based on bolus visualization during the pharyngeal phase. Suprahyoid muscle activity was measured using surface electromyography (sEMG) to obtain temporal descriptions of their activity during swallowing.

Results

Out of 810 bolus trials, 35.2% allowed visualization during the pharyngeal phase. Duration of bolus visualization increased with age, texture (IDDSI 0), and order of textures (IDDSI 2-0-4) ($p < 0.01$). sEMG analysis revealed significantly prolonged suprahyoid muscle contraction ($p < 0.01$). A pathological temporal threshold was defined as a duration of bolus visualization at the pharyngeal level of 1.45 seconds or more.

Conclusions

Bolus visualization occurred in 35.2% of trials, influenced by age and texture. sEMG analysis indicated prolonged suprahyoid muscle contraction during visualization. Based on these findings, we recommend a 1.45-second threshold and varying textures (IDDSI 0-2-4) for clinical assessment of pharyngeal phase initiation using FEES.

Title: Modern management of unilateral vocal fold paralysis: how we do it

Authors: E. Lavrysen, O. Peetermans, K. Deben, S. Janssens de Varebeke, O.

Vanderveken, G. Desuter

Institutions: Jessa Hospital, Hasselt, Belgium

Antwerp University Hospital, Antwerp, Belgium

Abstract body:

Introduction and aim

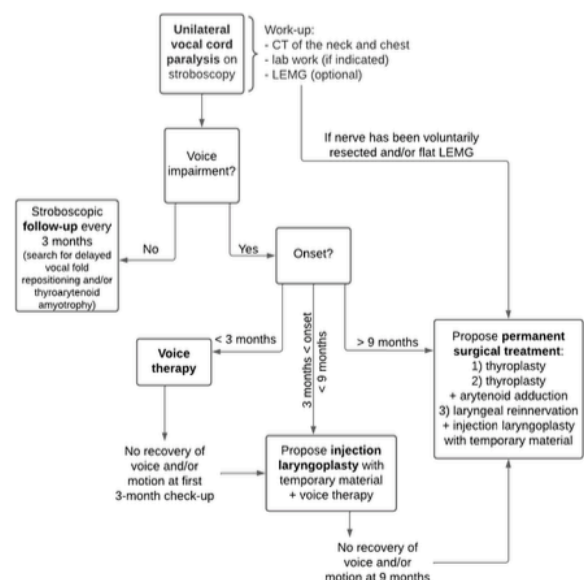
Unilateral vocal fold paralysis (UVFP) is a relatively common condition. Treatment options include vocal therapy, injection laryngoplasty, adduction thyroplasty with or without arytenoid adduction, and laryngeal reinnervation. This presentation summarizes modern standards in the management of UVFP.

Material and methods

A literature review was conducted, selecting all articles pertaining UVFP. An overview of the different techniques will be given with indications, contraindications, advantages and disadvantages. A comparison between thyroplasty and laryngeal reinnervation will also be provided.

Results

We propose a flowchart giving guidance in the management of UVFP. If the patient does not experience any symptoms due to adequate contralateral vocal fold compensation, a wait-and-see policy is advised. If patients experience voice impairment during the first 3 months after the onset of UVFP, voice therapy is the gold standard. 3 and 9 months after onset, an injection laryngoplasty with temporary material with the continuation of vocal therapy should be proposed. If voice impairment persists 9 months after the onset of UVFP, definitive surgical procedures should be considered, since spontaneous recovery after this time period is rare.



Conclusions

In conclusion, UVFP is a common condition that every otolaryngologist will encounter. Personalized care should be offered, taking into account the resultant disability experienced by the patient, the time after the onset of UVFP, the prognosis of the underlying cause, and the age and expectations of the patient. In a good proportion of patients with UVFP, voice recovery will occur with conservative treatment, regardless of whether the vocal motion returns. If there is an unsatisfactory voice improvement after 3 months, early injection laryngoplasty must be proposed to reduce the need for permanent intervention at the probabilistic term of natural recovery. If voice impairment persists, an adduction thyroplasty is usually proposed, with or without arytenoid adduction. Laryngeal reinnervation can also be proposed according to the patient's wishes.

Title: Salivary analysis of gastro-pancreatic-duodenal enzymes as potential biomarkers for laryngopharyngeal reflux: A prospective study

Authors: M. El Ayoubi, A. Rodriguez, D. Dequanter, M. Verhasselt, S. Saussez, J. Lechien

Institution: Saint-Pierre University Hospital, ENT and head and neck surgery department, Brussels, Belgium

Abstract:

Introduction and aim: This study aims to analyze salivary levels of specific gastro-pancreatic-duodenal enzymes and assess their potential as novel biomarkers for laryngopharyngeal reflux (LPR).

Material and methods: Sixty-seven patients exhibiting signs of LPR based on endoscopic images, graded by Reflux Sign Assessment (RSA), were selected. They underwent 24-hour hypopharyngeal-esophageal impedance-pH monitoring (HEMII-pH) after referral to gastroenterology. Salivary samples were collected using saliva collecting device (Salivette®) prior to the examination for patients (off PPIs) and 27 asymptomatic individuals.

Salivary samples were analyzed using Enzyme Linked Immuno Sorbent Assay (ELISA) to study the concentration of gastro-pancreatic-duodenal enzymes and pH. Patients with confirmed LPR diagnosis through HEMII-pH underwent a 3-month treatment with proton pump inhibitors (PPIs), alginate, or magaldrate based on their LPR profile (acidic, weakly acidic, or non-acidic). Additionally, a hygienic-dietary regimen was recommended. Treatment response was evaluated by comparing clinical scores (RSA and Reflux Symptom Score (RSS)) at the time of diagnosis and 3 months post-treatment.

Results: A total of 67 patients (42 females and 25 males) with LPR symptoms were recruited. Statistically significant differences in pH values and salivary elastase concentration were observed between LPR patients and the control group ($p=0.001$). No significant differences in other enzymes were found between the two groups. There is evidence of a positive correlation between salivary pH and episodes of esophageal reflux ($p=0.035$), and between pH and salivary elastase concentration ($p=0.009$).

Conclusions: Salivary elastase may be an interesting tool to confirm LPR diagnosis. Further investigations with larger cohorts through controlled prospective studies are needed to confirm its use.

spring meeting of the royal belgian society for ear, nose, throat, head and neck surgery 2024 – abstract

Title: Role of upper airway evaluation in the multidisciplinary management of obstructive sleep apnea in children below two years of age.

Authors: H. Blancke, C. Platteau, E. Slosse, S. Verhulst, S. Installé, N. Jouret, K. Van Hoorenbeeck, A. Boudewyns

Institutions: University of Antwerp Belgium (Faculty of Medicine and Health Sciences, Faculty of Medicine and Translational Neurosciences), Antwerp University Hospital Belgium (Department of Pediatrics and Otorhinolaryngology, Head and Neck Surgery)

Introduction and aim: Diagnosis and treatment of obstructive sleep apnea (OSA) in infants and young children is challenging because of its clinical heterogeneity and lack of age-specific guidelines. We report the management and treatment outcome of OSA in children below two years of age. Treatment decisions were based upon the pattern of upper airway (UA) obstruction, clinical presentation and OSA severity.

Methods: Retrospective, non-randomized observational cohort study at a tertiary center. Children with OSA who underwent an UA evaluation (drug-induced sleep endoscopy or direct laryngoscopy) were included.

Results: We studied 100 patients, 57 boys and 43 girls, with a median age of 0.72 years (range 0.0-2.0) and OSA confirmed by polysomnography. Multilevel UA collapse was present in 26%, (adeno)tonsillar hypertrophy in 31% and 21% had laryngomalacia. Laryngomalacia was more common in children below six months of age and adenotonsillar hypertrophy was observed mainly in children > 1.5 year of age. Surgical and non-surgical treatment guided by UA findings, improved OSA severity at group level with a significant reduction in obstructive apnea/hypopnea index from 10.8/h (range, 2.1-99.1) to 1.7/h (range, 0.0-73.0) ($p<0.001$), an improvement in mean oxygen saturation from 96.9% (range, 88.9-98.4) to 97.4% (range, 92.3-99.0) ($p<0.001$), in minimal oxygen saturation from 85.4% (range, 37.0-96.0) to 88.8% (range, 51.0-95.5) ($p<0.001$) and lastly in oxygen desaturation index from 5.1/h (range, 0.2-52.0) to 1.3/h (range, 0.0-47.8) ($p<0.001$).

Conclusion: Multidisciplinary management of young children with OSA guided by the pattern of UA obstruction and OSA severity, reduces OSA severity. The pattern of UA obstruction changes in the first two years of life from a dynamic collapse to structural abnormalities.

A Strategic Approach to the Management of Sleep Disordered Breathing in Multiple System Atrophy

¹Ghent University, Belgium

²Ghent University Hospital, Department of Pneumology, Belgium

³Ghent University Hospital, Department of Otorhinolaryngology, Head and Neck Surgery, Belgium

⁴Ghent University Hospital, Department of Neurology, Belgium

I. Abstract

INTRODUCTION AND AIM: Multiple System Atrophy (MSA) is a rare neurodegenerative disorder characterized by an autonomic dysfunction associated with a combination of cerebellar, parkinsonian, or pyramidal signs. Sleep-related breathing disorders such as stridor, obstructive sleep apnea (OSA) and central sleep apnea (CSA) are common in MSA and can impact survival. Several studies have evaluated treatment modalities. However, the optimal treatment modality often remains unclear in these patients. This review aims to provide an overview of the current evidence on treatment of SDB in MSA. **MATERIAL AND METHODS:** Systematic review of the current literature through combined keyword search in PubMed, Embase, the Cochrane Library and cited references: multiple system atrophy, stridor, sleep apnea syndrome, sleep disordered breathing, Shy Drager syndrome. **RESULTS:** Twenty-nine papers on SDB in MSA patients were included, with a total of 692 MSA patients with SDB. Treatment modalities are: continuous positive airway pressure (CPAP); tracheostomy; tracheostomy invasive ventilation (TIV); non-invasive positive pressure ventilation (NPPV); adaptive servo-ventilation (ASV); vocal cord surgery; botulinum toxin injections; oral appliance (OA) therapy; cervical spinal cord stimulation (SCS); selective serotonin reuptake inhibitors (SSRIs). **CONCLUSIONS:** Conflicting results on survival are found for CPAP therapy. Tracheostomy has a proven survival benefit. Most beneficial outcomes are seen with TIV. CPAP, other types of PAP and tracheostomy can adequately control symptoms of OSA. However, CPAP may exacerbate central sleep apnea. More controlled ventilation options such as ASV or TIV are preferable. Some MSA patients exhibit a floppy epiglottis and require a different approach. In conclusion, due to the complex characteristics of SDB in MSA, an individualized and multidisciplinary approach is mandatory.

The effect of supraglottoplasty on OSA severity in children with sleep-dependent laryngomalacia

A. Boudewyns, [M. Jansen](#), and [X. Vanaken](#).

Antwerp University Hospital, Drie Eikenstraat 655, 2650 Edegem, Antwerp, Belgium.

Introduction and aim: Sleep-dependent laryngomalacia is defined as a clinical entity causing obstructive sleep apnea (OSA) in children, beyond the neonatal period or the first year of life. This condition is increasingly reported as a cause of persistent OSA after adenotonsillectomy. The diagnosis is typically established by drug-induced sleep endoscopy. Supraglottoplasty is the first line treatment for sleep-dependent laryngomalacia. The aim of this study is to investigate the outcome of supraglottoplasty on OSA severity documented by full night polysomnography (PSG) in children with sleep-dependent laryngomalacia.

Material and Methods: Retrospective analysis of patient data from all patients between 1-18 years of age undergoing supraglottoplasty for sleep-dependent laryngomalacia. A diagnosis of OSA was confirmed by PSG and the sleep study was repeated three months after surgery. Laryngomalacia was diagnosed by drug-induced sleep endoscopy and surgery performed by cold steel instruments.

Results: Pre-and postoperative data are available for 14 patients. 64.3% are male with a mean age of 6.0 (± 4.6) years. These patients had severe OSA with an obstructive apnea/hypopnea index (oAHI) of 19.03 ($\pm 16.13/h$). None of them was obese, 64.3% had trisomy 21 as comorbid condition. Three children had primary laryngomalacia and in 11 cases, laryngomalacia was the cause of persistent OSA after (adeno)tonsillectomy. The mean time between surgery and post-op PSG was 3.0 ± 1.4 months. Supraglottoplasty resulted in a significant improvement of OSA severity with a reduction in oAHI from $19.03 \pm 16.13/h$ to $8.70 \pm 9.13/h$ ($p=0.029$). There was no significant change in mean or minimum oxygen saturation, oxygen desaturation index or sleep parameters. Despite the significant improvement in oAHI, persistent moderate to severe OSA was documented in 64% of the patients. Two patients were successfully treated (oAHI between 2-5/h) and three were cured (oAHI < 2/h).

Conclusion: Supraglottoplasty resulted in a significant improvement of OSA severity in children with sleep-dependent laryngomalacia, but persistent OSA is documented in more than half of the cases. More patients are needed to investigate outcome of supraglottoplasty for sleep-dependent laryngomalacia as a function of age, body mass index or comorbidity such as trisomy 21.

Acetazolamide as add-on therapy following barbed reposition pharyngoplasty in obstructive sleep apnea: a randomized controlled trial.

S. Hellemans, MD^{1,2}, E. Van De Perck, MD, PhD^{1,2}, D. Van Loo, MSc², J. Verbraecken, MD, PhD^{1,3}, SA. Sands, PhD⁴, A. Azarbarzin, PhD⁴, M. Dieltjens, PhD^{1,2}, S. Op de Beeck, PhD¹, A. Vroegop, MD, PhD^{1,2} and O. M. Vanderveken^{1,2,3}

1. Faculty of Medicine and Health Sciences, University of Antwerp. 2. ENT, Head and Neck Surgery, Antwerp University Hospital (UZA). 3. Multidisciplinary Sleep Disorders Centre, UZA. 4. Brigham and Women's Hospital, Harvard Medical School, USA.

Introduction and aim

Surgical interventions, like barbed reposition pharyngoplasty (BRP), are a valuable alternative for patients with obstructive sleep apnea (OSA) who are unable to tolerate continuous positive airway pressure (CPAP).

However, surgical results remain variable. This might be due the contribution of non-anatomical traits, such as ventilatory control instability, in the pathogenesis of OSA. Previous studies have demonstrated that ventilatory control instability (high loop gain) is a predictor of poor surgical response. Therefore, acetazolamide, known to stabilize respiratory drive, may play a role as an add-on therapy for the standard OSA therapies.

Material and methods

This double-blind, parallel group randomized controlled trial evaluates the efficacy of acetazolamide as an add-on therapy to BRP for OSA. Twenty-six patients with moderate to severe OSA undergoing BRP were randomized to receive either acetazolamide or placebo post-surgery for 16 weeks (age 52.0 [Q1-Q3, 38.0-61.0] years; BMI 28.6 [26.3-30.2] kg/m²; apnea-hypopnea index (AHI) baseline 24.2 [20.0-36.1] /hour sleep). The primary outcome was AHI reduction. Secondary outcomes included other polysomnographic parameters, sleep apnea specific hypoxic burden (SASHB), patient-reported outcome measures and OSA endotypes.

Results

The acetazolamide group showed a significantly greater reduction in AHI compared to the placebo group (69.4% [59.9-77.7] vs. 35.1% [19.1-50.0], $p < 0.01$, Fig. 1). A high baseline loop gain was associated with less pronounced reductions in AHI ($r^2: 0.52$, $p = 0.02$) in the placebo group. This association, however, was not observed in the acetazolamide group.

Conclusions

Acetazolamide, which has the ability to stabilize ventilatory drive, shows promise as add-on therapy following BRP surgery for improving outcomes in OSA patients.

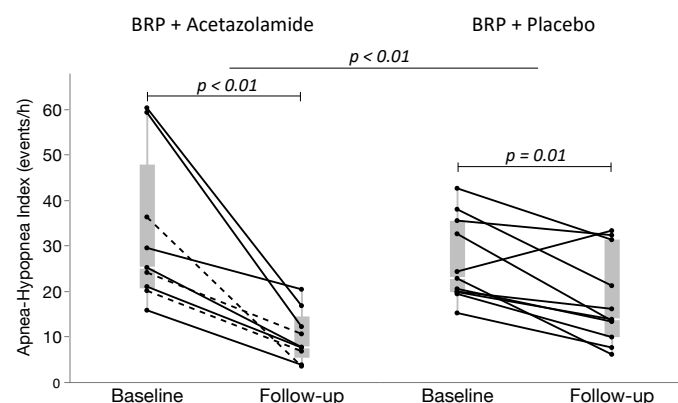


Figure 1 Apnea-hypopnea index before and after treatment for both groups (left: BRP + acetazolamide; Right: BRP + placebo). The AHI reduced significantly in both treatment arms. The reduction in AHI is significantly greater in the group receiving acetazolamide ($p < 0.01$). Dotted lines represent patients in whom medication dose was reduced to a single dose each day. Abbreviations: AHI: Apnea-hypopnea Index; BRP: Barbed Reposition Pharyngoplasty.

Title: Cochlear implant for single sided deafness: The importance of a limited frequency-to-place mismatch

Authors: F.Radermecker, G.Gersdorff, P.P.Lefebvre

Institution : *Dept. of otorhinolaryngology of Centre hospitalier universitaire (CHU) de Liège.*

Introduction and aim :

During CI activation, a standard procedure of assigning auditory frequencies is applied to each patient based on the specific implant model. However, due to the natural variability of cochlear anatomy, this frequency assignment may not align with the cochlea's natural tonotopy. As a result, there is a discrepancy between the default frequency assigned to an electrode and the actual frequency of the stimulated neurons. This phenomenon is commonly referred as the frequency-to-place mismatch.

The aim of this retrospective study is to investigate the influence of the frequency-to-place mismatch on the hearing performance of patients presenting a SSD by comparing the anatomical frequency mapping defined by OTOPLAN® and the default mapping at the time of CI activation.

Materials and methods:

This retrospective study included patients with post-lingual deafness implanted unilaterally with MEDEL CI. The inclusion criteria were age >18 years and unilateral post-lingual hearing loss eligible for CI implantation in the deaf ear with a normal hearing in the contralateral ear.

The patients were interviewed to fill a satisfaction questionnaire.

We analysed post-operative CBCT images with OTOPLAN and MAESTRO 9.0 determined a frequency allocation that followed the natural tonotopic map of the cochlea.

We compared the default frequency allocation with the frequency defined by OTOPLAN®.

Results:

The closer the match was between the adjusted and predicted frequencies, the higher total score of the 5 questions on the subjective perception is after CI activation. In addition, the speech intelligibility was higher when the mismatch was smaller.

Conclusion:

we have demonstrated a systematic mismatch between the default frequencies assigned with those established based on the anatomical values defined in OTOPLAN®. The mismatch between frequency and place could explain the variability of results in tests in noise or in localisation tests.

Effective management of intraoperative gusher during stapedotomy : a case report. Could minor syndrome trigger gusher ?

V. Dehareng, P. Levie, N. Deggouj
St-Anne St-Remi Clinic, CHIREC, Brussels, Belgium

Introduction and Aim

Stapedotomy is a surgical procedure commonly employed to address conductive hearing loss, particularly caused by otosclerosis. In some cases, the surgical intervention may encounter unexpected complications such as the phenomenon known as "gusher." Gusher can be linked to a malformation of the inner ear or can result from genetic causes. This abstract presents a case report of a 37-year-old man with conductive deafness on the left side who underwent stapedotomy, during which a gusher occurred. The aim of this report is to discuss the presentation, management, and outcomes of this rare but significant intraoperative complication.

Case Report

A 37-year-old male presented with conductive deafness on the left side, with audiometric results indicating a loss of 40dB. Stapedial reflexes were absent on the left side. A CT scan revealed bilateral otosclerosis, prompting the decision for stapedotomy. During the surgical procedure, following platinotomy, a sudden leakage of perilymph was observed, indicative of a gusher. Immediate measures were undertaken to manage the gusher and complete the stapedotomy procedure. Careful attention was paid not to apply excessive suction during the procedure. The fluoroplastic prosthesis was inserted, and resorbable gelfoam was placed around it to seal the platinotomy. The patient was prescribed corticoids, piracetam, and acetazolamide to manage postoperative symptoms.

Results

The prompt identification and management of the gusher allowed to successfully complete the stapedotomy. Intraoperative measures, including controlled suction and the application of resorbable gelfoam, helped mitigate the gusher. Postoperative assessment indicated an absence of vertigo or nausea in the patient. Audiological evaluation showed an improvement in hearing thresholds, with a significant reduction in conductive deafness, enhancing the patient's auditory function and quality of life. Subsequent CT scan revisions unveiled vestibular dehiscence into the internal auditory meatus.

Conclusions

The occurrence of a gusher during stapedotomy poses challenges but can be effectively managed with prompt intervention and meticulous surgical technique. This case underscores the importance of vigilance, preparedness, and intraoperative adaptability in dealing with unexpected complications in otological surgery. Further research and accumulation of cases are warranted to refine surgical strategies and improve outcomes in managing gusher events during stapedotomy procedures.

Pulsatile tinnitus and idiopathic intracranial hypertension: vascular causes, interventional neuroradiology management, implications for the otolaryngologist and case reports

Adrien Guenego, MD^{1, 2, 3} ; Boris Lubicz, MD¹

¹: Interventional Neuroradiology Department, Hôpital Universitaire Erasme – ULB - Brussels - BELGIUM

²: Diagnostic Neuroradiology Department, Hôpital Universitaire Erasme – ULB - Bruxelles - BELGIUM

³: NeuroVascu lab Brussels

Abstract

Introduction and aim

Pulsatile tinnitus (PT), the perception of sound synchronous to the cardiac rhythm accounts for 10% of all tinnitus, affecting millions of patients. Approximately 1/3 of PT are of venous origin, diminishing by manual compression of the ipsilateral internal jugular vein. Otoloscopic and audiologic examinations are normal. Venous sinus stenosis is associated with PT yet, careful diagnostic evaluation guides the appropriate treatment strategy.

Idiopathic intracranial hypertension (IIH) is a disorder characterized by raised intracranial pressure, often affecting young obese patients, causing headaches, papilledema, PT and visual field loss. Pathogenesis is complex, a stenosis of the transverse and sigmoid sinuses (intrinsic or extrinsic cause) has been recognized in the majority of patients.

Case Reports

We present the case of a 44 YO male presenting with a right sided typical PT. MRI depicted a dominant right lateral sinus with an intrinsic stenosis caused by an arachnoid granulation. After 2 years of misdiagnosis, the patient was addressed to a neurointerventionalist and multidisciplinary meeting. An angiogram was performed under local anesthesia, a 8x30 stent (Fig1) was deployed under dual antiplatelet therapy to reopen the venous sinus. The PT disappeared instantaneously and no recurrence occurred.

We present the case of a 33 YO female presenting with a left sided PT, headaches and decreased vision with a bilateral papilledema. MRI showed a mild bilateral venous sinus stenosis, signs of IIH (Fig2). Lumbar opening pressure was of 30mmH2O. Despite adequate medication and weight loss, the situation did not improved. Under local anesthesia, an angiogram and venous pressure measurement showed an increased pressure and 9-10mmH2O gradient across both sinus stenoses (Fig3). After a multidisciplinary meeting, a 8x40 stent was deployed across the left stenosis (Fig4). PT disappeared, visual acuity and headaches improved within a week.

Conclusion

In selected patients, stenting offers durable resolution of PT caused by lateral sinus stenosis. Proper clinical and imaging (CT and MRI) work-up are necessary. Stenting of sinus stenosis in selected IIH patients improves symptoms of intracranial hypertension and papilledema in multiple retrospective studies, prospective trials are needed.

Key-Words

Idiopathic Intracranial Hypertension ; Pulsatile Tinnitus ; Stenting ; Venous stenosis

Conflict of interest

Adrien GUENEGO has no relevant conflict of interest. Adrien GUENEGO is consultant for Rapid Medical, Phenox, Qapel, Acandis

Glossary

IIH: Idiopathic Intracranial Hypertension; PT: Pulsatile Tinnitus

Figures legend

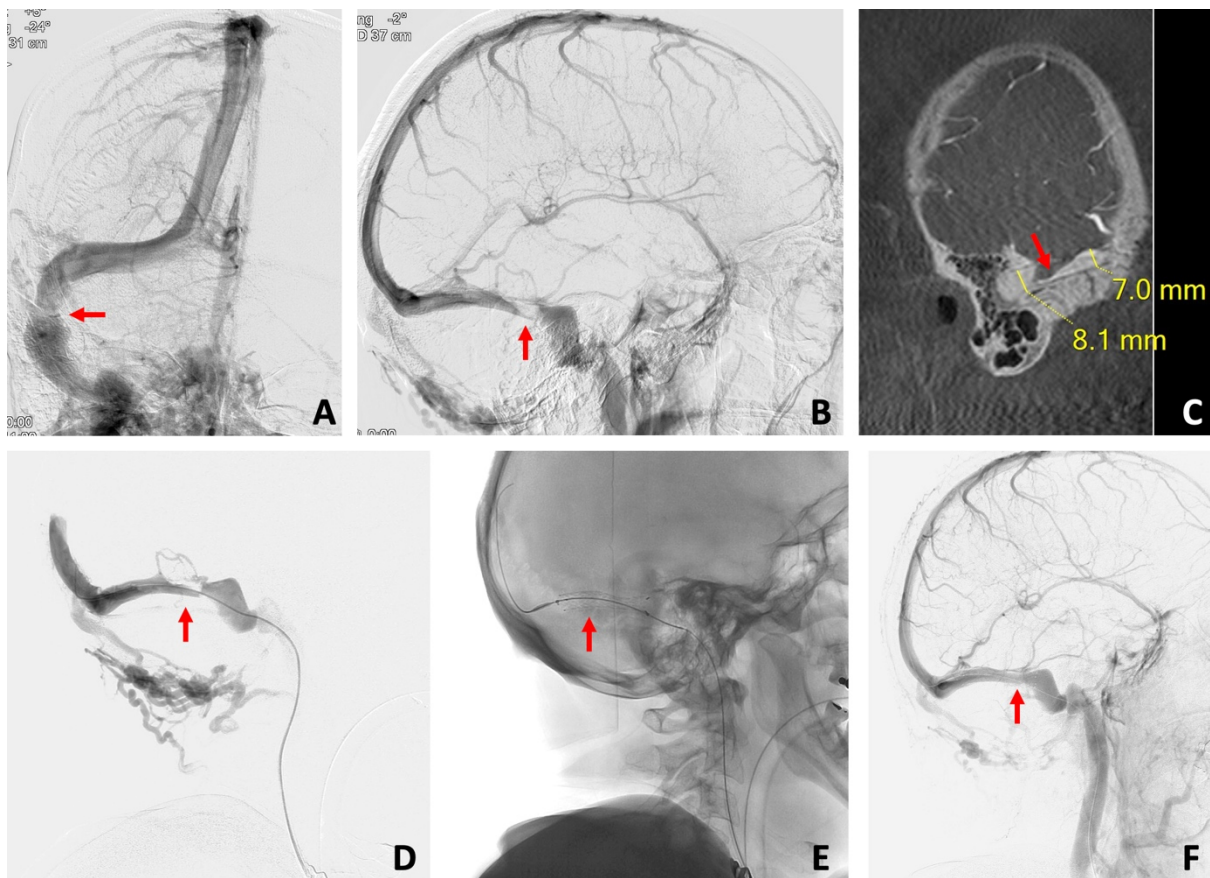


Figure 1 :

A 44 YO male presented with a right sided typical PT. MRI depicted a dominant right lateral sinus with an intrinsic stenosis caused by an arachnoid granulation. After 2 years of misdiagnosis, the patient was addressed to a neurointerventionalist and multidisciplinary meeting. An angiogram was performed under local anesthesia showing a severe stenosis of the lateral and sigmoid sinus junction (antero-posterior (A) and lateral (B) angiography view, 3D measurement (C) of the stenosis). D shows the catheterization of the sinus using a microcatheter, then a guiding catheter, then a 8x30 balloon mounted stent (E) was deployed under dual antiplatelet therapy to reopen the venous sinus (F). The stenosis was treated and no significant irregularity remained. The PT disappeared instantaneously and no recurrence occurred.

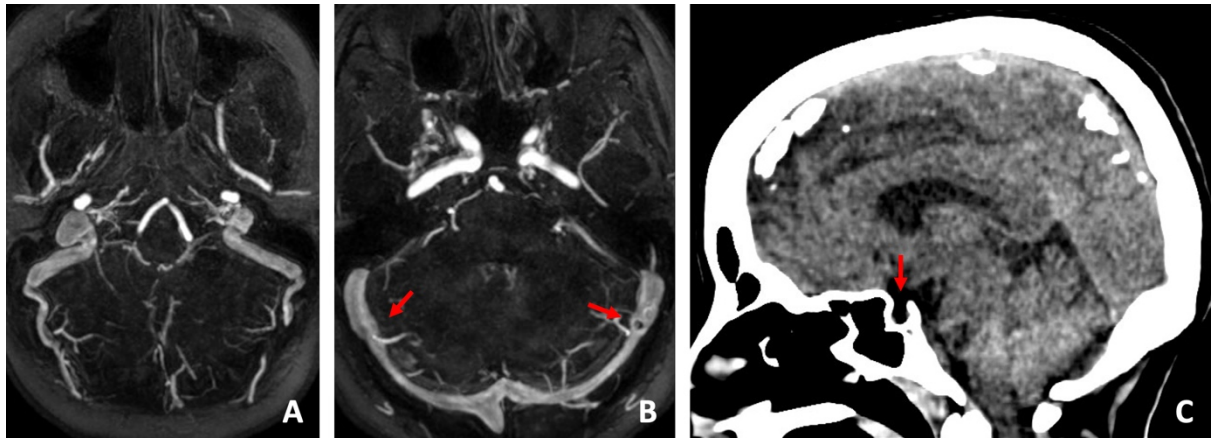


Figure 2 :

Figure 2 shows an axial reconstruction of venous phase on MRI showing a mild bilateral venous sinus stenosis (A) at the junction of the lateral and sigmoid sinus (B). The sagittal CT reconstruction shows an empty sella (C) and mild protrusion of cerebellar amygdala in the magnum foramen, signs of IIH.

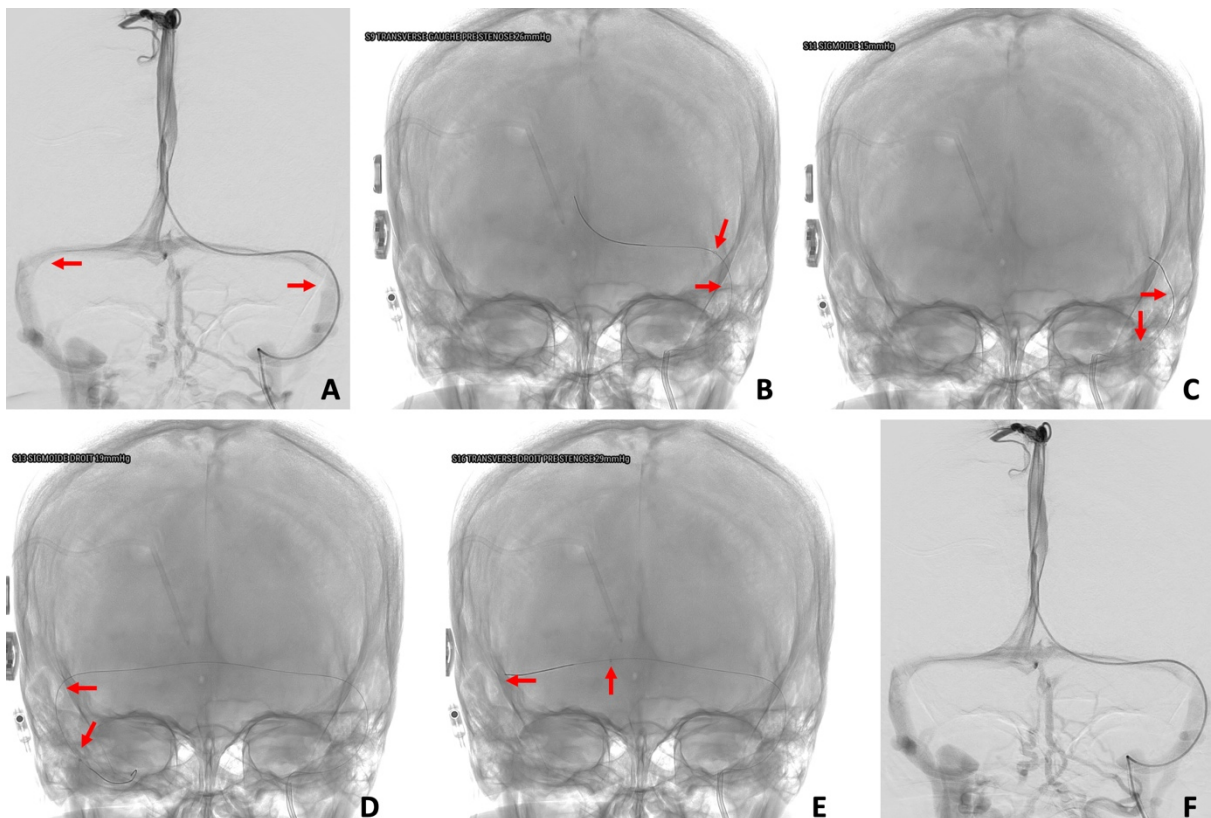


Figure 3 :

Under local anesthesia, an angiogram and venous pressure measurement were performed, the left internal jugular vein was catheterized using a microcatheter and microwire. The microcatheter was placed in the superior sagittal sinus, left (A to C) and right (D to F) lateral and sigmoid sinus, before and after the stenoses. Pressure were measured across the stenoses showing an increased pressure (>20) and 9-10mmH₂O gradient across both sinus stenoses, confirming the significant impact of the stenoses on the venous flow.

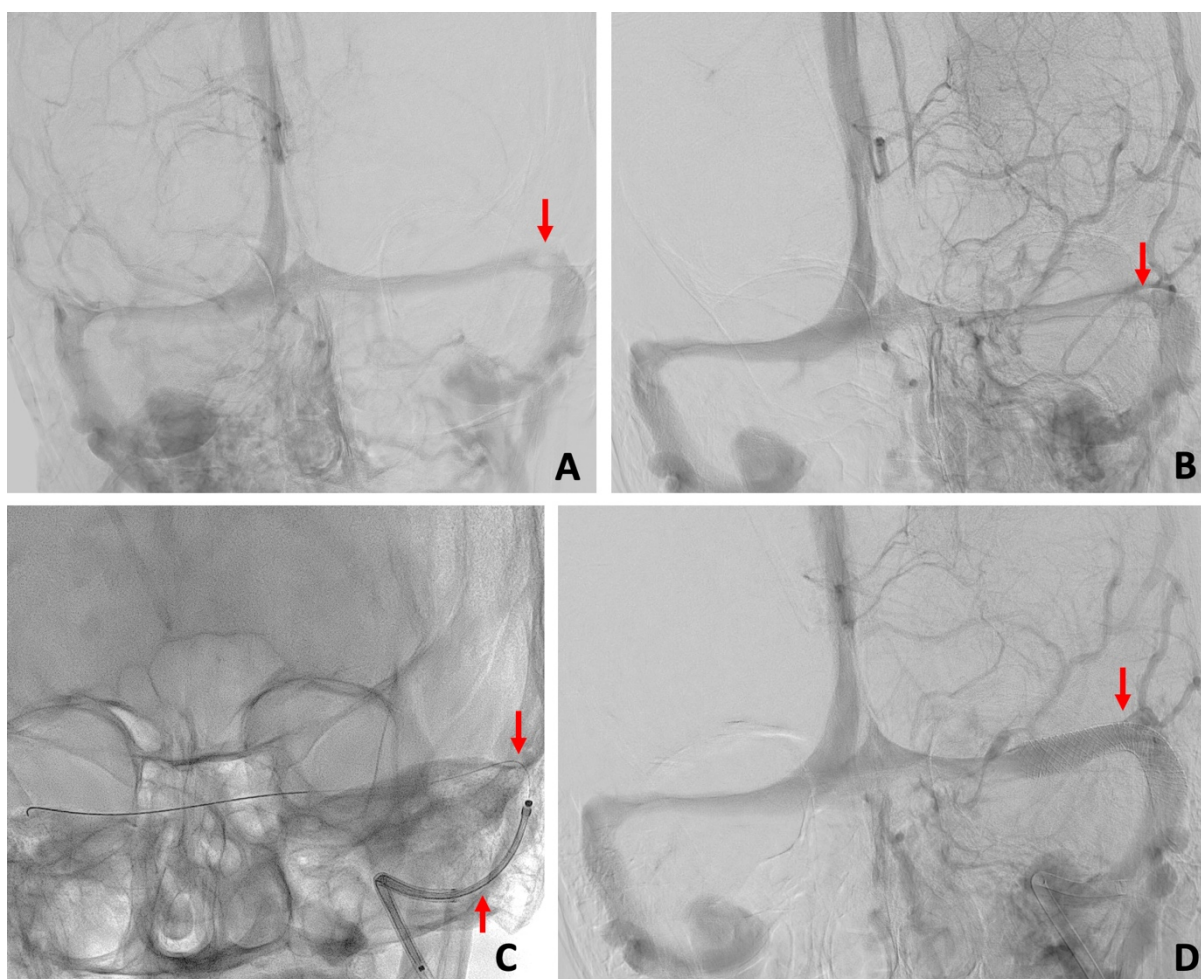


Figure 4 :

After a multidisciplinary meeting we decided to start with the stenting of one stenosis and evaluate its efficiency before stenting the second stenosis, the left stenosis was the more narrowed (A). Under local anesthesia and dual antiplatelet therapy, the left sigmoid and lateral sinus were catheterized (B), a 8x40 self-expanding stent was deployed (C) across the left stenosis. The stenosis was treated and no significant irregularity remained (D).

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Could H.I.N.T.S. misdirect the management of acute vestibular syndrom?

S. Benmechri¹, S. Tainmont¹, J-P. Duterme¹, Q. Mat¹

1. CHU Charleroi- Chimay HUMANI, ULB, Belgium

INTRODUCTION

Acute vestibular syndrome (AVS) is defined by a rapid onset and persistent vertigo or dizziness (lasting more than 24 hours) accompanied by nausea/vomiting, nystagmus, and head motion intolerance.

There are two main causes of AVS. Vestibular neuritis, which is the most common, and vertebrobasilar stroke, which can be life-threatening.

H.I.N.T.S. (Head-Impulse-Test (HIT) – Nystagmus – Test-of-skew) is a three-step oculomotor exam used to differentiate peripheral from central causes in AVS. Video Head-Impulse-Test (vHIT) is also a useful complementary test in AVS.

CASE REPORT

A 51-year-old woman came to our Vertigo Clinic for continuous unsteadiness with rotatory vertigo, right hearing loss and tinnitus. All those symptoms appeared suddenly 6 days ago.

H.I.N.T.S. test showed a left spontaneous horizonto-rotatory nystagmus, a normal test-of-skew and an abnormal HIT when the head was impulsed to the right in the plane of the horizontal semicircular canal. vHIT demonstrated a reduced vestibulo-ocular reflex gain for the three right semicircular canals with numerous catch-up saccades. These results suggested a peripheral vestibular etiology.

Pure tone audiometry revealed a severe right neurosensorial hearing loss. Reason why an emergency diffusion-weighted cerebral magnetic resonance imaging (MRI) was performed. Recent ischaemic lesions in the territory of the anteroinferior and posteroinferior cerebellar arteries (AICA and PICA) were described.

CONCLUSION:

H.I.N.T.S. and vHIT are effective to differentiate peripheral and central causes of AVS. H.I.N.T.S. can identify a stroke with a higher sensitivity than MRI in the first 72 hours of symptoms onset (96.5% vs 86%).

However, in AVS induced by labyrinthine infarction, H.I.N.T.S. can misdirect the diagnosis toward a peripheral vestibular disorder.

In 2013, H.I.N.T.S PLUS hearing loss was introduced as a new sign that could increase diagnostic accuracy of AVS, allowing better detection of stroke in the AICA territory.

As suggested by some authors, we recommend using H.I.N.T.S PLUS instead of H.I.N.T.S. in the management of AVS in order not to miss a labyrinthine infarction.

Title:

Staphylococcus Epidermidis Isolated Sphenoiditis: A Rare Cause of Orbital Apex Syndrome

Author(s):

G. Fayad, G. Cavelier, M. Verhasselt, A. Rodriguez, M. Horoi

Institution(s):

Department of Otolaryngology, CHU Saint-Pierre, Brussels

Introduction and aim:

Isolated sphenoid sinusitis is a rare entity, accounting for a 1-2% of all paranasal sinus diseases. While typically presenting with nonspecific symptoms such as headache or facial pain, its proximity to critical structures like the skull base and cavernous sinus can lead to severe complications, including orbital apex syndrome (OAS). This report details an exceptional case of isolated sphenoiditis leading to OAS and retro-bulbar optic neuropathy, instigated by an atypical pathogen, *Staphylococcus epidermidis*, which is generally considered a harmless commensal organism.

Case Report:

We present a 41-year-old female with no significant medical history, who developed left-sided acute vision loss, diplopia, facial numbness and ocular pain. Physical examination revealed reduced visual acuity, complete ophthalmoplegia, hypoesthesia of V1, and ptosis on the left side, consistent with OAS. MRI findings suggested chronic inflammatory sinusopathy in the left sphenoidal sinus, extending to the anterior region of the cavernous sinus and towards the orbital apex. Remarkably, there was no evidence of orbital cellulitis or invasive fungal infection, conditions typically associated with such severe manifestations. The diagnosis was confirmed through imaging, microbiological, and histopathological analyses, which identified *S. epidermidis* as the causative agent. Despite multiple surgical interventions and antibiotics, the patient experienced recurrent episodes of sphenoid sinusitis with cranial nerve palsy (III,VI) and optic neuropathy, necessitating a comprehensive, multidisciplinary approach that ultimately led to complete clinical recovery.

Conclusions:

This case underscores the potential for commensal organisms like *S. epidermidis* to cause significant pathology in atypical locations, leading to severe complications such as OAS and optic neuropathy. The absence of more common etiologies, such as orbital cellulitis and invasive aspergillosis, further highlights the diagnostic challenge and the need for a high index of suspicion, prompt recognition and treatment, emphasizing the importance of considering a broad differential diagnosis in similar clinical scenarios.

Thrombophlebitis of internal jugular vein and occlusion of the internal carotid artery due to Apical petrositis: A case report

N. Bouzraa, A. De Stercke, G. Fayad, G. Cavelier, C. Leclercq, M. Horoi

Department of Otolaryngology & Head and Neck Surgery, CHU Saint-Pierre, Brussels, Belgium

Introduction and aim

Apical petrositis (AP) is a rare but clinically significant condition characterized by insidious infection of the temporal bone. Although uncommon, this condition is essential to recognize due to its high risk of morbidity and neurovascular complications. Symptoms associated with AP vary widely, depending on the extent of the disease, ranging from otalgia to severe neurological deficits. We describe the first reported case of concomitant internal jugular vein and internal carotid artery thrombophlebitis due to AP.

Case report

A 72-year-old patient, previously treated for chronic middle ear infection with clinical suspicion of cholesteatoma, was admitted to the emergency department for severe left ear pain, otorrhea, headache, and dizziness. Otological examination confirmed left middle ear infection without any signs of local cholesteatoma. Urgent imaging studies (MRI and angio-CT scan) showed signs of AP with thrombophlebitis of the proximal segment of the internal jugular vein and occlusion of the internal carotid artery. Emergent myringotomy with placement of a tympanostomy tube, a swab of purulent discharge, and deep nasopharyngeal biopsies were performed.

The patient was admitted and treated with high-dose intravenous antibiotics and therapeutic anticoagulation. A recent MRI showed improvement in petrositis and stability of thrombophlebitis.

In the literature, AP is usually associated with Gradenigo's syndrome in 20% of cases with infrequent vascular complications, most notably of the cavernous sinus (9%). However, only two cases of vasculitis of internal carotid have been described, but without septic thrombosis. To our knowledge, this is the first known case of internal jugular vein thrombophlebitis and internal carotid artery occlusion.

Conclusions

This case highlights the importance of recognizing a rare but significant complication of acute otitis media. Early and effective management is essential to prevent serious complications. This study contributes to the existing literature by highlighting AP's clinical features and diagnostic challenges.

Laryngeal mucocutaneous leishmaniasis: case report and literature review

E.Verhoeven, J. Verfaillie, D. Vogelaers
AZ delta Roeselare, KU Leuven, UZ Gent

Introduction and aim: Leishmaniasis is a parasitic disease caused by infection with *Leishmania* parasites and transmitted by the bite of female phlebotomine sandflies. In humans there are three main forms of Leishmaniasis: cutaneous, mucocutaneous and visceral disease. Mucocutaneous Leishmaniasis can affect the mucosa of the nose, mouth, nasopharynx and the upper respiratory tract. Where the nasal cavity is the most affected site, laryngeal leishmaniasis is a less common form of mucocutaneous disease. Isolated laryngeal disease is worldwide considered a rare condition. Therefore, we present this case to raise awareness of this unusual manifestation prompting more extensive investigation.

Case presentation: A 59-year-old male with a history of smoking, asthma and chronic obstructive pulmonary disease presented with longstanding hoarseness for several years. Initial clinical examination was suggestive for malignancy. Histological and radiological workup was inconclusive. Only after a third biopsy, extended histologic examination allowed the diagnosis of mucocutaneous isolated laryngeal leishmaniasis. Subsequently, the patient was referred to the Department of Infectious Diseases for further diagnostic and therapeutic management. There were no systemic symptoms and further clinical investigation was negative, so visceral Leishmaniasis could be excluded. We decided to treat with fluconazole and not with liposomal amphotericin B, because of potential toxicity in view of the already reduced renal function and lack of reimbursement in the Belgian health care system. After a treatment with daily oral fluconazole 200 mg for 6 weeks, improvement of hoarseness as well as of the clinical appearance of the vocal cords on laryngostroboscopy were observed.

Conclusion: This case illustrates this rare extracutaneous manifestation of leishmaniasis and highlights the importance of considering this not always tropical disease in the differential diagnosis of vocal cord lesions and persistent hoarseness, especially in patients with a travel history to endemic areas, even preceding onset of symptoms by many years. Awareness of this clinical manifestation is important in otorhinolaryngology for establishing a correct diagnosis and appropriate treatment.

Laryngocele: a cause of acute dyspnea - case report

D. Van den Hende

Department of Otolaryngology – Head and Neck Surgery, Algemeen Stedelijk Ziekenhuis Aalst, Aalst, Belgium

Introduction and aim:

A laryngocele is an abnormal cystic dilatation of the saccule of the larynx. It communicates with the laryngeal lumen and contains air. A laryngocele can be classified as internal (within the larynx), external (outside the larynx) or mixed (both). The clinical presentation is often asymptomatic. But despite being benign, laryngoceles can cause relevant airway obstruction. Alertness and correct diagnosis can preclude emergencies.

Case report:

A 57-year-old male presented to the emergency department with acute dyspnea, stridor and dysphonia. Clinical examination showed a swelling of the neck on the right side. Laryngoscopic investigation revealed a big mass at the height of the right vallecula covering the right vocal cord and a part of the left vocal cord, endangering the airway. Contrast-enhanced computed tomography scan confirmed a big mixed laryngocele (55 x 22 x 44 mm) on the right side. The laryngocele was drained externally under local anesthesia giving instant improvement of the symptoms. Twelve days later the laryngocele was excised under general anesthesia using an external approach. The patient could leave the hospital in good condition. A control CT-scan 6 months later showed a small residual laryngocele, this time only internal, which will be reevaluated in 4 months. If it hasn't enlarged by then it can be removed endoscopically.

Conclusions:

A laryngocele may not be the first diagnosis that comes to mind when a patient presents to the emergency department with acute dyspnea but it's important to take it into consideration. As reported in this case it can be drained externally under local anesthesia providing instant relief for the patient. To obtain a permanent solution the laryngocele has to be excised.

Title: case report: first endoscopic placement of an allograft tympano-ossicular system in a patient

Author(s) : D. Philips, V. Topsakal

Institution(s) : Universitair Ziekenhuis Brussel, Vrije Universiteit Brussel

Introduction and aim: The use and placement of an allograft tympano-ossicular system (ATOS) is a widely known and effective technique that restores the eardrum and, if necessary, part of the ossicular chain. This technique is usually used in difficult cases where classical techniques (e.g. cartilage, perichondrium, fascia grafts) offer a reduced chance of success. In our experience and after review in literature, placement of an ATOS was always done through a retro-auricular approach.

Case Report: First endoscopic placement of an ATOS in a 28-year-old man with a central kidney-shaped perforation (size 60%) and moderate-severe conductive hearing loss (Fletcher index: 62 decibels; air-bone gap: 42 decibels). An ATOS was used in which the malleus of the graft was removed peroperatively and the patient's original malleus was preserved.

Results: 2 months post-operatively still a closed eardrum and a great improvement of the air-bone gap (Fletcher index: 22 decibels; air-bone gap: 9 decibels). The operation time was 77 minutes and went without complications. 6 weeks post-operatively, granulation tissue was noted on the graft which was effectively treated with a combined corticosteroid-antibiotic ointment preparation.

Conclusions: Endoscopic placement of an ATOS is a safe, effective and a minimally invasive technique to restore difficult eardrum perforations.

Difference in characteristics between tinnitus patients with and without hyperacusis depending on three different definitions of hyperacusis.

K. Rycek, H. Keppler, A. Deklerck, I. Dhooge

Department of Otorhinolaryngology, Ghent University Hospital, Belgium

Introduction and aim: To evaluate the phenotypic differences between patients with tinnitus only and patients with tinnitus and hyperacusis, based on three different definitions of hyperacusis.

Material and methods: A retrospective analysis was conducted on 199 adult patients visiting the tinnitus clinic at Ghent University Hospital. Patients were categorized into two groups: those with tinnitus only and those with tinnitus and hyperacusis, based on three definitions of hyperacusis: anamnesis, hyperacusis questionnaire (HQ), and dynamic range (DR). Phenotypic differences between both groups were compared.

Results: Among all patients with tinnitus, 19.6% exhibited hyperacusis based on HQ or DR, whereas 63.8% demonstrated hyperacusis according to anamnesis. Total scores for the tinnitus handicap inventory and tinnitus functional index were significantly higher among patients presenting with both tinnitus and hyperacusis, in comparison to those with tinnitus alone. Various other characteristics either displayed no discernible differences between the two groups or exhibited differences depending on the definition of hyperacusis employed.

Conclusions: Patients experiencing both tinnitus and hyperacusis reported higher levels of annoyance in comparison to those solely dealing with tinnitus. Nonetheless, discrepancies in various other characteristics were frequently influenced by the specific definition of hyperacusis employed. A standardized diagnostic criterion for hyperacusis is currently lacking.

Tinnitus suppression with electrical stimulation in the most basal contact of the cochlear implant electrode as a model for round window stimulation

K. Kheirkhah (MSc)¹, V. Van Kelecom^{1,2}, M. Leblans¹, J. van Dinther¹, G. De Greve¹, E. Offeciers¹, A. Zarowski¹

¹*European Institute for Otorhinolaryngology, Antwerp, Belgium*

²*University of Ghent, Ghent, Belgium*

Introduction and aim:

The objective of this research was to test if efficient tinnitus suppression could be obtained with electrical stimulation of a single most basal electrode contact of a cochlear implant. This approach simulated the effects of electrical stimulation with a round window electrode.

Material and methods:

The study was performed in ten adult cochlear implant patients showing complete or almost complete tinnitus suppression during electrical stimulation with their standard fitting-MAP. In all these patients, tinnitus appeared again when the implant was switched off. Five Nucleus implant users and five Mi12xx series with FLEX28 electrode with at least 6 months CI experience were included. Two types of stimulation at the most basal CI-contact were presented: a constant pulse train and a modulated pulse train. The variation of pulse rates was low rate (100-300pps) and high rate (≥ 900 pps), and the current level ranged from C-level to less than T-level for both stimulation types. The effect of acute electrical stimulation at the most basal electrode contact was compared to the effect obtained with multichannel stimulation with the patient's current fitting-MAP. Electrical stimulation was paused between tests with different stimulation types until the tinnitus returned to the baseline intensity. Patients reported the VAS-scores for tinnitus loudness and intrusiveness during the normal CI use and for each of the single contact stimulation types.

Results:

Eight subjects perceived complete suppression with one or more stimulation patterns. In two patients, suppression was less efficient in comparison to full-band CI stimulation. Louder stimuli were in general perceived as annoying and less effective in reducing tinnitus. In FLEX28 patients it was also possible to obtain full tinnitus suppression with current amplitudes under the thresholds for auditory perception.

Conclusions:

In 8 out of 10 included patients, we were able to obtain complete or almost complete tinnitus suppression with electrical stimulation at only one most basal electrode contact. Therefore, round window stimulation with a single electrode might become a potential treatment for tinnitus in patients with significant residual hearing. The therapy should be confirmed in future studies for a long-term effect.

A rare case of nerves III, IV, V, and VI palsy due to M. Tuberculosis infection.

A. De Stercke, G. Cavelier, M-E. Debaty and M. Horoi

Department of Otolaryngology & Head and Neck Surgery, CHU Saint-Pierre, Brussels, Belgium

Introduction and aim

Tuberculosis of the central nervous system accounts for less than 5% of extrapulmonary tuberculosis. Of these, damage to the cavernous sinus is one of the rarest and can potentially damage the cranial nerves passing through it. This article aims to share our experience and draw the attention of specialists to this diagnosis when faced with cranial nerve palsy.

Case report

A 42-year-old patient presented with complaints of dizziness in the context of severe headaches that had been recurrent for several months. During follow-up, she first developed right peripheral facial palsy, then ipsilateral involvement of the trigeminal and abducens nerves.

An initial CT and MRI work-up was negative. In the face of a persistent inflammatory syndrome and progression of the symptomatology, with additional nerve III involvement, a second MRI was ordered and revealed a contrast-enhanced lesion in the right cavernous sinus. This image was confirmed by a PET scan showing multiple hypermetabolic adenopathies and suspected tuberculosis involvement.

In the meantime, a Quantiferon® test returned positive, and lymph node biopsies showed mycobacterium tuberculosis infection. The risks and benefits of the cavernous sinus biopsy were taken into consideration.

Four-drug antituberculosis therapy and corticosteroid treatment were initiated, gradually resolving the various symptoms.

Conclusions

We report here a rare case of cavernous sinus syndrome with palsy of the nerves III to VI due to Mycobacterium tuberculosis infection and preceded by damage to nerves VII and VIII. As this type of lesion can be challenging to detect, ENT specialists and neurologists need to be able to evoke it when faced with cranial nerve damage in order to facilitate diagnosis and treatment.

Title: **Feasibility and efficacy of transdermal skin contour sutures: a retrospective propensity score matched study.**

Authors: E. Lavrysen, M. De Beukelaer, L. Pingnet, F. Declau

Institutions: Faculty of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium ;
GZA Hospitals, campus Sint-Vincentius, Antwerp, Belgium

Introduction and aim

Setting the contour and projection of the nasal tip is one of the most challenging aspects of rhinoplasty. The skin-soft tissue envelope (STE) plays an important role in rhinoplasty and can greatly affect the final outcome. To achieve predictable postoperative results, it is crucial to avoid dead space in the lower third of the nose. Skin contour sutures (SCS) have been proposed recently to ensure the accuracy of the tip and contours, especially in cases with a thick STE. To prevent the risk of skin necrosis or scarring, we modified the technique by placing the knot of the transdermal contour suture on the inside of the nose. The present study evaluates the feasibility and efficacy of this new technique.

Material and methods

We performed a retrospective propensity-score matched analysis in 159 patients enrolled for rhinoplasty. After propensity score matching, 120 patients in two cohorts were retained. The following covariates were taken into the statistical calculation: age, gender, ethnicity, previous nasal surgery, nasal trauma, respiratory allergy, and smoking. The first cohort of 60 patients underwent rhinoplasty with SCS. The control cohort consisted of 60 patients who underwent rhinoplasty without SCS. Functional and aesthetic evaluation was performed with PROMs. Assessments were conducted prior to and at 3 months after surgery.

Results

Postoperatively, there was a significant improvement in the mean preoperative scores for FACE-Q nose, FACE-Q nostrils, UQ with VAS, and SCHNOS. When compared to the control group, patients who underwent SCS had a significantly better outcome in terms of aesthetics at 3 months post-op. Functional outcome as measured by the NOSE and SCHNOS-O scores, did not show any significant difference between both cohorts.

Conclusions

Skin contour sutures have a significant positive effect on the aesthetic outcome at 3 months postop. To confirm, more long-term studies are necessary.

Nasal secretions as a useful tool for monitoring systemic and mucosal antibody responses induced by mRNA-based vaccination

J. Declercq^{1,2,3}, S. Gerlo⁴, S. Van Nevel², N. De Ruyck², G. Holtappels², L. Delesie³, E. Tobback³, I. Lammens^{1,2}, K. Sedeyn⁵, X. Saelens⁵, B.N. Lambrecht^{1,3,6}, L. Vandekerckhove^{3,4}, S. Vanhee^{1,2}, P. Gevaert^{2,3}

¹VIB-UGent Center for Inflammation Research; ²Upper Airways Research Laboratory, Ghent University; ³University Hospital Ghent; ⁴HIV Cure Research Center, Ghent University; ⁵VIB Center for Medical Biotechnology; ⁶Erasmus Medical Center, Rotterdam.

Introduction and aim: In order to prevent infections caused by respiratory viruses and consequently limit virus circulation, vaccines must elicit mucosal immunity at the viral entry site, being the nasal mucosa. Nasal secretions represent a non-invasive approach to analyze mucosal responses. Using this unique tool, we set-out to investigate whether the currently employed mRNA-based vaccines induce mucosal antibody responses and if these responses can serve as indicators of systemic vaccine-induced immunity in a non-invasive manner.

Material and Methods: We comprehensively characterized mucosal neutralizing antibody (NAb) responses in a cohort of 183 individuals who visited the COVID-19 vaccination center at the University Hospital Ghent (Belgium). Participants were systematically sampled for serum and nasal secretions at multiple timepoints following primary adenovirus vector (AVV)- or mRNA-based COVID-19 vaccination, as well as after mRNA-based booster vaccination. Additionally, we used a mouse model to elucidate the origin and mechanism of vaccine-induced mucosal immunity.

Results: Our findings reveal that particularly repeated vaccination promotes virus NAbs in nasal secretions, irrespective of a homo- or heterologous booster scheme. Nasal and serum NAb titers correlated significantly with one another, suggesting that antibody responses observed in nasal secretions reflect systemic antibody responses. Furthermore, our mouse experiments revealed that NAb-producing cells reside in the spleen and bone marrow, but not at the respiratory mucosa. Serum transfer experiments confirmed circulating antibodies can effectively migrate to the respiratory mucosa.

Conclusions: Collectively, these results demonstrate that the currently used mRNA vaccines elicit mucosal immunity through transport of circulating antibodies to the respiratory mucosa, particularly following repeated immunizations when serum NAb titers are high. These findings underscore that nasal secretions are an effective, non-invasive approach to monitor both mucosal and systemic immunity induced by vaccination. Therefore, we advocate for the inclusion of nasal mucosa NAb measurements in vaccine efficacy trials and routine testing procedures.

The Body Dysmorphic Disorder Questionnaire - Aesthetic Surgery: are we screening the troublesome patients?

F. Declau^{1,3*}, L. Pingnet^{3*}, Y. Smolders³, E. Fransen², V. Verkest^{1,3}

*Laura Pingnet and Frank Declau are shared first authors

¹ Department of ENT, GZA-ziekenhuizen, Campus Sint-Vincentius, Antwerp, Belgium

² Centre of Medical Genetics, University of Antwerp, Edegem, Belgium

³ Department of ENT, Antwerp University School of Medicine and Health Sciences, Antwerp, Belgium

Introduction and aim

This study aims to clarify the current concept of performing rhinoplasty in patients with possible body dysmorphic disorder (BDD). The primary outcome was to investigate the value and evolution of the Body Dysmorphic Disorder Questionnaire - Aesthetic Surgery (BDDQ-AS) outcome before and after surgery.

Methods

Together with the BDDQ-AS, also the NOSE scale, FACE-Q nose and nostrils, and Utrecht questionnaire were used for concurrent validation. In this prospective study, 187 patients were asked to complete these PROMs at 4 time points: at the preoperative consultation and postoperatively at 3, 6 and 12 months.

Results

The preoperative BDDQ-AS positivity rate was as high as 55.1%. Postoperatively, there was a highly significant decrease in the odds of scoring positive on the BDDQ-AS. At the preoperative consultation, positively screened patients were less satisfied with the aesthetics of their noses with worse scores on UQ, FACE-Q nose and VAS. The preoperative differences in outcome measure ratings disappeared postoperatively, except for the FACE-Q nostrils, which surprisingly showed better values in BDDQ-AS positive patients. Age and previous nasal trauma were statistically significant covariates associated with positive BDDQ-AS screening.

Conclusions

Due to the overwhelming decrease in positive BDDQ-AS outcome after surgery, a positive screening result on the BDDQ-AS should not be interpreted as a formal contra-indication for surgery. Collaboration with psychologists or psychiatrists remains crucial to diagnose BDD conclusively.

Title: Postoperative doxycycline reduced nasal inflammation and improved wound healing in chronic rhinosinusitis patients with an eosinophilic endotype or phenotype

E. Vandewalle¹; E. De Schryver¹; L. Derycke¹; L. Calus¹; N. De Ruyck¹; G. Holtappels¹; S. Vanhee^{1,2}; P. Gevaert¹; T. Van Zele¹

1Upper Airway Research Laboratory - Ghent University, Ghent, Belgium;

2VIB-UGent Center for Inflammation Research, Gent, Belgium

Introduction and aim: Chronic rhinosinusitis with (CRSwNP) and without nasal polyps (CRSsNP) is an inflammatory disease of the sinonasal mucosa which is treated with functional endoscopic sinus surgery (FESS) when standard medical therapy is insufficient. Tetracyclines do not only have an anti-bacterial but also an anti-inflammatory effect, especially on eosinophils. The aim of this study was to investigate the effect of doxycycline on wound healing and nasal inflammation after FESS.

Material and methods: 33 patients, both with (n=21) and without (n=12) nasal polyps undergoing sinus surgery were randomized in a 1/1 ratio to receive either placebo or doxycycline daily for 8 weeks after surgery. Patients were evaluated at baseline and postoperative at several timepoints until 48 weeks. Patient reported outcomes measures (PROM) were recorded. Nasal secretion for inflammatory markers and nasal endoscopy for wound healing evaluation were performed on each visit. Nasal secretion at baseline, 2 weeks and 8 weeks postoperative were analyzed by LC-MS (Liquid chromatography–mass spectrometry) for whole protein analysis. All patients were categorized according to their endotype based on multiple endotype classifications systems, including JESREC. **Results:** Postoperative wound healing was impaired in CRSwNP and eosinophilic CRS (ECRS) defined by the JESREC classification. Doxycycline therapy improved wound healing quality especially in the eosinophilic phenotype and endotype with a significant improvement at 4 weeks for CRSwNP and up to 24 weeks after surgery for ECRS patients. In nasal secretions, an increase in MMP-9 and neutrophilic markers such as MPO during postoperative wound healing was observed until week 12, which was attenuated by doxycycline therapy. Eosinophilic markers including ECP showed a gradual decrease during wound healing in patients treated with doxycycline, reaching significance at 48 weeks postoperative.

Conclusions: Doxycycline improved postoperative wound healing quality and reduced local nasal inflammation in CRS patients with an eosinophilic phenotype or endotype.

Biologics for uncontrolled severe chronic rhinosinusitis with nasal polyps in Belgium: A real-world efficacy study

A.-S. Viskens^{1,2}, L. Bollens³, E. Borgers⁴, F. Rogister⁵, S. Halewyck⁶, V. Hox⁷, M. Jorissen^{4,8}, W. Lemmens⁹, K. Speleman¹⁰, L. Van Gerven^{1,4,8}, O. Vanderveken^{2,11}, B. Verhaeghe¹², P.W. Hellings^{1,4,13,14}

Background: Since 2022, mepolizumab and omalizumab are reimbursed for severe chronic rhinosinusitis with nasal polyps (CRSwNP) in Belgium. Their efficacy has been demonstrated in large double-blind placebo-controlled trials. However, limited reports on real-world efficacy data have been published.

Method: Patients that were prescribed a biologic for CRSwNP from 8 medical centers in Belgium, consented to be prospectively studied for 6 months. Reimbursement criteria, clinical parameters and biomarkers determined the choice of the biologic. A first analysis of the baseline characteristics (demographics, medical history, comorbidities), and the clinical effects (NP-score, SNOT-22, VAS-scores, and ACQ-5) after 3 and 6 months were analyzed.

Results: We report the first 100 patients of this study with a mean SNOT-22 score of 46.4 ± 19.8 and a mean NP-score of 4 (IQR:3-6). The mean age was 53 years old, 77% of patients had comorbid asthma and 55% had a disease duration of more than 10 years. Eighty-six patients received mepolizumab and 13 patients omalizumab. After 3 months the NP-score (4 (IQR:3-6) vs. 3 (IQR 2-4) vs. 2 (IQR1-4); $p < 0.0001$), SNOT-22 score (46.5 ± 19.4 vs. 27.1 ± 19.4 vs. 23.1 ± 18.6 ; $p < 0.0001$), and ACQ-5 scores (1.6 (IQR0.6-2.8) vs. 0.6 (IQR 0.0-1.4) vs. 0.6 (IQR0.0-1.4); $p < 0.0001$) all improved significantly. The main effect was reached at 3 months without significant further improvement at 6 months. Overall, 12% showed no/poor response, 50% showed a moderate response and 35% showed an excellent response at 6 months according to the EPOS/EUFOREA criteria for response to a biologic. In clinical practice, 77% continued their biological after 6 months based on therapeutic response. There was no significant difference between the overall outcomes to the 2 biologics.

Conclusions: This real-world Belgian study shows an effectiveness of biologics in the majority of patients with the main effect already reached after 3 months, without significant further improvement at 6 months.

Affiliations:

1 KU Leuven Department of Microbiology, Immunology and Transplantation, Allergy and Clinical Immunology Research Unit, Leuven, Belgium; 2 Faculty of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium; 3 Faculty of Medicine, KU Leuven, Leuven, Belgium; 4 Department of Otorhinolaryngology-Head and Neck Surgery, UZ Leuven, Leuven, Belgium; 5 Department of Otorhinolaryngology, CHU de Liège, Belgium; 6 Department of Otorhinolaryngology, University Hospital Brussels, Jette, Belgium; 7 Department of Otorhinolaryngology, University Hospital Saint-Luc, Brussels, Belgium; 8 Laboratory of Experimental Otorhinolaryngology, Department of Neurosciences, KU Leuven, Leuven, Belgium; 9 Department of Otorhinolaryngology, hospital Oost-Limburg, Genk, Belgium; 10 Department of Otorhinolaryngology, General hospital Sint-Jan Bruges, Bruges, Belgium; 11 Department of Ear-Nose-Throat, Head and Neck Surgery, Antwerp University Hospital, Edegem, Belgium; 12 Department of Otorhinolaryngology, Onze Lieve Vrouw hospital Aalst, Belgium; 13 Department of Otorhinolaryngology, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands.;14: Department of Otorhinolaryngology, University of Ghent, Ghent, Belgium.

Post-transplant lymphoproliferative disorder of the middle ear

B. Gevers¹, J-P. Van Damme¹

¹ ENT department, CHU UCL Namur site Godinne, Belgium

Introduction and aim

Post-transplant lymphoproliferative disorder (PTLD) is a well-recognized complication following solid organ and/or stem cell transplantation, typically arising from the proliferation of lymphocytes in response to immunosuppressive therapy and in a context of Epstein-Barr Virus reactivation or infection. While PTLD commonly affects lymphoid tissues such as lymph nodes, its occurrence in the middle ear is exceedingly rare. Herein, we present a unique case of PTLD within the right middle ear, manifesting itself as a complicated otitis media. We highlight the challenges in diagnosis, management, and the importance of considering unusual presentations of PTLD in transplant recipients.

Case report

In this report, we describe a case of a 60 year old female recipient of a bone marrow transplantation (allograft from her sister) in 2023 who presented with symptoms suggestive of right acute otitis media, refractory to conventional treatment. She then rapidly developed sudden right-sided peripheral facial palsy with profound sensorineural hearing loss. Emergency surgical exploration of the right middle ear and mastoidectomy revealed a fleshy tissue filling the tympanic cavity and the mastoid. Histopathological examination of the samples taken during the surgery confirmed the diagnosis of PTLD. The clinical course, radiological findings, histopathological features, and evolution of this unique case are discussed herein.

Conclusion

With this case report, we want to underline the importance of considering PTLD in the differential diagnosis of middle ear pathologies in transplant recipients, as rapid recognition and intervention are crucial for ensuring optimal patient outcomes. Additionally, it emphasizes the necessity of a multidisciplinary approach involving otolaryngologists, hematologists, oncologists, radiologists and pathologists for the comprehensive management of such complex cases.

Title: Ear infection caused by *Achromobacter xylosoxidans*: determining the characteristics, prevalence and treatment.

Authors: A. Darsigova, P. Lambert

Institution: AZ Oostende, Belgium

Abstract:

1. Introduction

The *Achromobacter xylosoxidans* (AX) is known as a non-fermentative gram-negative peritrichous rod(1). It is usually an opportunistic infection. The AX has been isolated from different kinds of infections in both immunocompetent and immunocompromised patients. Also the use of prolonged or broad-spectrum antibiotics can be a possible cause of infection (4,5,6). An optimal antimicrobial regimen has not been fully determined. Usually it is susceptible to sulfonamides, carbapenems and third-generation cephalosporins, trimethoprim-sulfamethoxazole, antipseudomonal penicillins (3,4,7).

2. Methods

Data was gathered from January 2006 up till June 2021. This data contained all the swabs that were taken from ear discharge. The aim was to determine if the prevalence of AX infection increased over the years. Also determining the sensitivity of the AX to certain antibiotics, the symptoms, the treatments and the complications.

3. Results

In total there were 3576 swabs taken between January 2006 and June 2021. The AX was isolated in 74 cases (2.1%), of which 50% was isolated in combination with other organisms, such as *Pseudomonas aeruginosa* (18/37) and *Staphylococcus aureus* (13/37).

The antibiotics that were commonly used were Ciprofloxacin, Amikacin and Gentamycin. It is known from previous studies that the AX is most sensitive to Ceftazidim. In table 2 the sensitivity and resistance to these antibiotics is shown. In 94.5% of the cases AX is sensitive to Ceftazidim.

4. Discussion

Overall there is a small increase in prevalence from 2006 to 2021. In practice patients with ear discharge are often first treated with Amikacin or Ciprofloxacin eardrops. Some patients received intravenous treatment with Ceftazidim. Because topic Ceftazidim eardrops don't exist, a local pharmacy was asked to make a recipe adding physiological water to an ampoule of Ceftazidim. In the few cases where this local treatment was used there was a resolution of the ear infection. Although some of them still had recurrent infections where regular suction cleaning was needed.

Table 1

Year	<i>Achromobacter xylosoxidans</i>	Total	Percentage (%)
2006	3	223	1.35
2007	4	355	1.13

2008	0	217	0.00
2009	3	228	1.32
2010	3	247	1.21
2011	0	197	0.00
2012	1	186	0.54
2013	1	178	0.56
2014	5	228	2.19
2015	4	254	1.57
2016	6	268	2.24
2017	10	243	4.12
2018	10	213	4.69
2019	4	194	2.06
2020	15	230	6.52
2021	5	115	4.35

Table 2

Antibiotic	Sensitivity (%)	Specificity (%)	Intermediary (%)
Ciprofloxacin	9.46	51.35	37.84
Amikacin	10.81	86.49	1.35
Gentamycin	6.76	82.43	8.11
Ceftazidim	94.50	1.35	4.05

Parathyroid carcinoma: a rare endocrine malignancy

Author: Dr. M. Vanermen, Dr. P. Heylbroeck, Dr. G. De Vos, Dr. T. Cammaert, Dr. S. Delrue, Dr. C. Vanclooster, Dr. B. Janssens¹, Dr. P. Neyt

Institution: Department of Otorhinolaryngology and Endocrinology¹, AZ Sint-Lucas, Groenebriel 1, 9000 Ghent, Belgium

Abstract

Introduction and aim

Parathyroid carcinoma (PC) is a very rare endocrine malignancy and accounts for only 1% of all patients with primary hyperparathyroidism (pHPT). Unlike its benign counterpart, parathyroid adenoma, PC presents with more symptoms and with marked elevation of serum calcium and parathyroid hormone concentrations. Diagnosis of PC is often challenging and is often made only after surgery through histopathological examination. However, certain features like marked elevation of calcium and PTH, a palpable neck mass, calcifications or invasion of surrounding tissues on ultrasound should warn the surgeon for a possible PC. Definite treatment is an 'en bloc' resection of the lesion. With this case report we want to draw attention to the signs and symptoms that are suspicious for a possible PC in patients diagnosed with primary hyperparathyroidism.

Case report

A 72-year-old female patient, with a history of hypertension and diabetes, was referred to the ENT clinic with a recent diagnosis of pHPT with a request for parathyroidectomy. A few months earlier she was diagnosed with chronic kidney disease, marked hypercalcemia and hyperparathyroidism. The patient also manifested symptoms of constipation, osteoporosis and kidney stones. Following the recent diagnosis of pHPT, a 3-cm parathyroid adenoma was identified through parathyroid scintigraphy, prompting parathyroidectomy. Intraoperatively, a firm and sizable mass with strong adhesion to near structures, raised suspicion of PC. This suspicion was confirmed upon histopathological examination.

Conclusions

Parathyroid carcinoma is a very rare endocrine malignancy. Timely diagnosis and appropriate surgical intervention are pivotal in managing this malignancy effectively. Awareness of the potential existence of parathyroid carcinoma in cases of primary hyperparathyroidism, especially in case of marked hypercalcaemia and hyperparathyroidism, is crucial for clinicians and surgeons, guiding comprehensive preoperative assessments and enabling prompt, tailored interventions.

Endobronchial Ultrasound-Guided Transbronchial drainage of a mediastinal abscess

S. Basir^a, P. Claessens^b, O. Peetermans^c, R. Wener^d

^a Department Respiratory Medicine, Antwerp University Hospital, University of Antwerp, Antwerp, Belgium.

^b Master Student Medicine, Antwerp University, Antwerp, Belgium.

^c Department of Otorhinolaryngology and Head and Neck Surgery, Antwerp University Hospital, Antwerp, Belgium.

^d Department of Thoracic Oncology, MOCA, Antwerp University Hospital, University of Antwerp, Antwerp, Belgium.

Introduction

Retropharyngeal abscess is a deep neck space infection that may present in various ways with potentially life-threatening complications to occur. Endobronchial ultrasound-guided transbronchial fine needle aspiration (EBUS-TBNA) is a less invasive and useful alternative to surgery for sampling peribronchial masses. However EBUS-TBNA complications can occur, they are extremely rare.

Case Presentation

A 51-year-old man with a residual collection posteriorly in the superior mediastinum underwent EBUS-TBNA a day after initial treatment of a retropharyngeal abscess with amoxicillin – clavulanic acid, a cervicotomy with dissection and drainage of the retropharyngeal space. Two days later, a CT scan showed a minor reduction of the mediastinal abscess and a more extensive drainage and debridement was performed.

Cultures showed growth of *Streptococcus anginosus*. The antibiotic regimen was changed, partly due to a hospital-acquired pneumonia. Multiple CT scans showed further decline of the mediastinal abscess and eventually complete resolution.

Conclusion

EBUS-TBNA is able to drain mediastinal abscesses in the peribronchial/peritracheal area and may decrease the need of more invasive procedures. It is worth considering in case of good anatomic accessibility and overall good clinical state of the patient. However, prospective trials are required to confirm the feasibility and safety of EBUS-TBNA.

Title: Interplay between Enterobius Vermicularis Infection and Allergic Rhinitis: A Case Report with Literature Review

Author(s):

G. Fayad, G. Cavelier, M. Verhasselt, A. Rodriguez, M. Horoi

Institution(s):

Department of Otolaryngology, CHU Saint-Pierre, Brussels

Abstract Body:

Introduction and Aim: *Enterobius vermicularis* (pinworm), despite being one of the most prevalent parasitic infections globally, is often overlooked in adult populations. Its potential to exacerbate allergic conditions, such as allergic rhinitis, is not well-documented. This case report aims to shed light on the significant yet underrecognized impact of *E. vermicularis* infection on allergic rhinitis, highlighted by the concurrent presentation of anal and nasal pruritus, and the resolution of symptoms following antiparasitic treatment.

Case Report: A 67-year-old, with no prior history of parasitic infections, presented with the unusual combination of nasal and anal itching, in addition to classic symptoms of allergic rhinitis. The temporal correlation of these symptoms and their persistence led to a diagnostic evaluation for parasitic infections, revealing *E. vermicularis* eggs via a perianal tape test. Following mebendazole treatment, there was a complete resolution of both pruritus and allergic rhinitis symptoms, underscoring the parasitic contribution to the allergic manifestations. This observation is supported by Solmaz et al. (2018), who found a significant elevation in serum total IgE levels in allergic rhinitis patients with concomitant *E. vermicularis* infection, and by Patsantara et al. (2015), who noted an immune response akin to a Type 2 hypersensitivity reaction in children with pinworm infections.

Conclusions: This case highlights the critical need for awareness of *E. vermicularis* as a potential exacerbator of allergic rhinitis symptoms, given its high prevalence and the effectiveness of antiparasitic treatment in alleviating allergic manifestations. It aligns with literature suggesting a complex immunological interaction between parasitic infections and allergic diseases, calling for further research into integrated diagnostic and therapeutic strategies.

