

Results: There are statistically significant decreases in the numbers of viable inner and outer hair cells in TNF α -treated OC explants, when compared with the control group. Gene expression of pro-apoptotic Smac/Diablo is significantly increased at 48 hours in vitro (but not at 24 hours), when compared with controls. On-going studies are evaluating the expression of Smac/Diablo gene at 72 and 96 hours in vitro.

Conclusion: The role of Smac/Diablo gene expression has not previously been studied in TNF α -challenged OC explants. These results suggest late up regulation of Smac/Diablo expression in TNF α ototoxicity, which may be important for the propagation of the apoptosis pathway in OC explants in vitro. (NIDCD RO1-05575)

Otology/Neurotology

Type of Electrode Insertion and Hearing Preservation Outcomes

Alejandro Rivas, MD (presenter);
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Objective: Assess the levels of hearing preservation during cochlear implant surgery by comparing different electrode insertion techniques (standard cochleostomy, soft surgery, round window).

Method: Retrospective chart review looking at levels of hearing preservation after cochlear implantation in children and adults, using different electrode insertion techniques (N = 144 ears from 32 patients). Pre- and postoperative pure tone thresholds at 250, 500, and 1000 Hz frequencies were measured. Statistical analysis was performed using nonparametric method (Kruskal Wallis test).

Results: One hundred and four (72%) procedures were performed using standard cochleostomy, 25 (17 %) procedures were performed using soft surgery, and 15 (11 %) procedures were performed using round window insertion. Postoperative hearing thresholds were used as the main outcome measure. In all groups, residual hearing was preserved in different degrees (total: 30 %, moderate: 27 %, marginal: 37 %, none: 6 %). Statistically significant differences were encountered between the 3 groups. Soft surgery technique and round window insertion had better hearing preservation results compared to standard cochleostomy ($P < .008$ and $P < .009$, respectively). No difference between round window and soft surgery techniques was encountered ($P = .07$).

Conclusion: Although cochlear implants are a revolutionary technology, they carry the risk of destroying residual hearing. Our study demonstrates that the use of soft surgery or round window techniques warrants better residual hearing when compared to standard cochleostomy.

Otology/Neurotology

Visualization of Endolymphatic Hydrops in Patients with Ménière's Disease by Locally Enhanced Inner Ear MRI: Correlation with Audiovestibular Function

Robert Gürkov, MD (presenter); Julia Louza;
Michael Strupp; Wilhelm Flatz; Eike Krause, MD

Objective: The pathophysiologic role of endolymphatic hydrops in Ménière's disease is still unresolved. The aim of this study was to determine whether the degree of endolymphatic hydrops as it is detected in vivo in patients with definite Ménière's disease correlates with audiovestibular function.

Method: In this prospective study, 37 patients with definite Ménière's disease were examined with intratympanic contrast enhanced temporal bone MRI. The degree of hydrops was then compared with hearing levels, SP/AP ratios, interaural amplitude ratios of vestibular evoked myogenic potentials and horizontal semicircular canal paresis.

Results: There was a significant correlation between the degree of hydrops on the one hand and the averaged hearing level at 0.25 to 1 kHz and 0.5 to 3 kHz ($r = 0.71$, $P < .01$) and the vestibular evoked myogenic potential interaural amplitude ratio ($r = -0.44$, $P < .05$) on the other hand. A trend toward a correlation was found between the hydrops and the caloric response; no correlation was found between the hydrops and the SP/AP ratio.

Conclusion: The degree of endolymphatic hydrops correlates with a progressive loss of auditory and sacculus function in patients with Ménière's disease.

Otology/Neurotology

Water-Soluble Coenzyme Q10 in Chronic Hearing Loss

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Renzo Mora, MD; Valentina Santomauro, MD

Objective: Q-TER is a multicomposite water-soluble formulation of CoQ10; in particular, Q-TER consists of a mixture of maltodextrin, acting as a carrier, of CoQ10 molecules of succinate, which serves as bioactivator. The purpose of this study was to evaluate the efficiency of Q-TER in subjects with chronic sensorineural hearing loss.

Method: A total of 80 patients affected by chronic sensorineural hearing loss were included. The patients were divided, at random, into 2 numerically equal groups (A and B). Group A underwent therapy with Q-TER, 160 mg, once a day for 30 days; group B received placebo, once a day for 30 days.

Results: Before, at the end, and 6 months after the end of the treatment, all patients underwent: pure tone audiometry, transient

evoked otoacoustic emissions (TEAOE) and otoacoustic products of distortion (DPOAE), auditory brainstem response and speech audiometry. Compared with group B, at the end of the treatment in group A the pure tone audiometry showed a significant ($P < .05$) improvement of the audiometric thresholds at the 1,000, 2,000, 4,000, and 8,000 Hz. This improvement was confirmed by the data obtained with the speech audiometry and in the last check. We found no significant differences in the others parameters and in group B.

Conclusion: It is quite early to be enthusiastic. There must be more studies with controlled results. However, this kind of therapy for chronic hearing loss seems to be interesting, especially to stop hearing decay. It is also remarkable that good results are found one month after the beginning of the treatment.

Pediatric Otolaryngology

A Double-Blind, Randomized, Placebo Controlled Trial Evaluating the Effects of a 5-Day Course of Postoperative Prednisolone following Pediatric Tonsillectomy

Patrick J. D. Dawes, MD, FRACS (presenter); Emily McCassey

Objective: Evaluate the effect of a 5-day course of oral prednisolone vs matched placebo on postoperative recovery following tonsillectomy in a pediatric population.

Method: A total of 195 children undergoing tonsillectomy were randomly allocated to 5 days oral prednisolone or placebo. These were presented in identical bottles and tasted similar. Pain and return of function were assessed on each of the first 8 postoperative days using a validated face pain scale and daily symptom questionnaires.

Results: There are no significant differences seen between placebo and control groups for any of the parameters assessed. These include; pain scores, nausea and vomiting, time to return to normal activity and oral intake, bedtime and sleep disturbance.

Conclusion: There is no significant difference in early outcomes following pediatric tonsillectomy between those given a postoperative oral steroid course compared to placebo.

Pediatric Otolaryngology

A New Algorithm for Pediatric Airway Management Using the Intubating Laryngeal Airway

Bennett E. Barch, MD (presenter); Narasimhan Jagannathan; Jeffery Rastatter, MD

Objective: 1) Evaluate the use of the intubating laryngeal airway (ILA) in providing safe endotracheal intubations in pediatric patients with difficult airways. 2) Present a management algorithm using direct laryngoscopy, rigid bronchoscopy, and

the ILA for evaluating and securing the airway in pediatric patients with difficult airways.

Method: The medical records of patients in whom the ILA was used to secure the airway from January 2009 to January 2011 were reviewed. We documented the circumstances necessitating airway management, success of the ILA, airway evaluation findings, and medical conditions contributing to the difficult airway.

Results: A total of 50 patients had an ILA placed for airway management. Nine out of 50 (18%) were performed emergently. The median age was 59.8 months (range, 0.3-244.1 months), and the median weight was 19.0 kg (range, 2.6-86 kg). Four cases (8%) were unanticipated difficult airways, and 46 out of 50 (92%) were anticipated difficult airways. Comorbid conditions included craniofacial syndromes ($n = 36$), cervical spine instability or immobility ($n = 9$), and airway hemorrhage ($n = 3$). A total of 48 out of 50 (96%) patients were intubated on the first attempt through the ILA. In 2 patients intubation required a second attempt. The overall success rate using the ILA to secure the airway was 100%.

Conclusion: ILA is safe and effective in pediatric patients with a difficult airway as a conduit for tracheal intubation. Our proposed algorithm for difficult pediatric airway provides a safe means for anesthesiologists and otolaryngologists to evaluate and secure the airway in these patients.

Pediatric Otolaryngology

A Retrospective Review of Ventilation Tube Removal in Children

Faisal Ahmed Arshad (presenter); Showkat Mirza, FRCS; Chee-Yean Eng, MD

Objective: Ventilation tube insertion is the primary surgical intervention in persistent otitis media with effusion. Around 7% of ventilation tubes require elective removal. The objective is to discover the tympanic membrane healing rate after ventilation tube removal and identify measures that improve this.

Method: Retrospective case note review performed for patients who had elective ventilation tube removed over an 8-year period. Information gathered included if any concomitant procedure was performed to repair the tympanic membrane and final outcome of the tympanic membrane status.

Results: A total of 113 cases were included in this study. The average age at grommet insertion and removal was 5.8 years old and 8.3 years old, respectively. After ventilation tube removal the perforation edges were freshened in all cases. The majority of patients (84.1%) subsequently had an intact tympanic membrane. Additional procedures were performed on 19 ears, 6 with insertion of overlay absorbable material and 14 with a fat plug. Closure rate in these patients was 100%. Shah and Sheperd grommets had a significantly lower residual tympanic membrane perforation rate compared to T-Tube and Titanium grommets.

Conclusion: Tympanic membrane closure rate after ventilation tube removal was 84.1%. Additional procedures, ie, overlaying of