hearing loss and dizziness following head trauma underwent exploratory tympanotomy and PLF repair with the clinical impression of traumatic PLF. Outcome Measure: Postoperative hearing changes and control of dizziness.

Results: All patients had sudden or progressive hearing loss and dizziness following head trauma; a car accident, slap injury, and barotraumas. Surgical exploration was performed 2 to 47 days after the trauma. Possible evidence of PLF was found in 9 cases and included: fibrous web around the oval window (OW) (n = 3), perilymph collection around the round window (RW) (n = 5), and bulging of the RW membrane (n = 1). After surgical repair, the mean hearing gain was 28dB (10~55dB); the hearing improved to serviceable levels in 6 out of 10 cases (60%). All patients had resolution of the vestibular symptoms after the surgery.

Conclusion: Sudden or progressive sensorineural hearing loss accompanied by dizziness following head trauma should prompt the consideration of a traumatic PLF. Early surgical exploration is recommended to control dizziness and improve hearing outcomes.

Otology/Neurotology

Efficacy of Diffusion-Weighted Magnetic Resonance Imaging in Middle Ear Cholesteatoma

Mikio Suzuki, MD (presenter); Asanori Kyuuna; Hiroyuki Meda; Akira Ganaha, MD

Objective: Evaluate the usefulness of diffusion-weighted magnetic resonance imaging (DWI) in the diagnosis of middle ear cholesteatoma.

Method: We performed DWI on 73 patients suspected of having middle ear cholesteatoma, including 21 revision cases. Magnetic resonance imaging was performed with 1.5 T units using diffusion-weighted spin-echo-type echo planar imaging.

Results: Of 73 participants, 59 had cholesteatoma. Positive DWI findings were observed in 42 subjects and negative findings in 31 subjects. The sensitivity, specificity, and positive and negative predictive values of DWI for cholesteatoma were 69.4%, 92.8%, 97.5%, and 41.9%, respectively. In the case of 34 patients who were positive for cholesteatoma on both otoscopic and CT examinations, 33 were diagnosed with cholesteatoma. Of the remaining 39 subjects with one or both negative results for cholesteatoma, the sensitivity, specificity, positive predictive value, and negative predictive value of DWI were 57.6%, 92.3%, 93.7%, and 52.1%, respectively.

Conclusion: Since DWI clearly showed high specificity and positive predictive value, it is useful for diagnosing middle ear cholesteatoma, including postoperative recurrent cholesteatoma of 5 mm diameter or larger. DWI could sufficiently detect cholesteatoma with one or both negative results on otoscopic and CT examinations.

Otology/Neurotology

Electronystagmography in the Diagnosis of Central Vertigo

Renzo Mora, MD (presenter); Angelo Salami, MD; Francesco-Antonio Salzano, MD; Luca Guastini, MD; Massimo Dellepiane, MD

Objective: Determine the efficacy and applicability of electronystagmography (ENG) testing in the differential diagnosis between peripheral and central vertigo, through the visual-vestibular interaction test, in patients with vertigo.

Method: Patients were submitted to ENG recording. Patients sat on a rotatory chair, which was placed in the middle of a rotary rotatory cylindrical chamber. The rotatory chamber was driven by a direct current engine, which turned it clockwise and counterclockwise, and its internal area was covered with 32 black vertical contrast.

Results: All patients underwent rotatory vestibular stimulation by Stop test (VOR), optokinetic stimulation (OKN), and contemporary rotatory vestibular and optokinetic stimulation (VVOR). Our experiences highlight as normal that subjects and/or patients affected by peripheral vertigo present a VVOR nystagmus homodirectional to optokinetic nystagmus; patients affected by central vertigo present a VVOR nystagmus homodirectional to vestibular-ocular-reflex (VOR). In healthy patients, VVOR nystagmus is always homodirectional to OKN and indicates the optokinetic system prevalence on VOR.

Conclusion: The presence of a VVOR nystagmus homodirectional to VOR indicates the absence of the optokinetic system prevalence due to a central nervous system (CNS) modification, and highlights a CNS disease. Our data highlight the role of ENG in the diagnosis between peripheral and central vertigo.

Otology/Neurotology

Emerging Role of Nonmuscle Myosin II and Implications for NMMII Associated Deafness

Elliott Kozin (presenter); Bechara Kachar; Felipe Salles; Robert Adelstein; Xuefei Ma; Yingfan Zhang; Leonardo R. Andrade, PhD

Objective: Data are scarce regarding the role of nonmuscle myosin II (NMMII) isoforms in the postnatal inner ear. Here we seek to: 1) understand the localization and function of each isoform in the postnatal environment, and 2) investigate the cause of hearing loss observed in mutations of NMMII.

Method: Organ of Corti tissue was dissected from neonatal eGFP-NMMII-A or -B mice, and immunohistochemistry was performed using NMMII-isoform specific antibodies. OC cultures of rat were exposed to NMMII inhibitors at multiple time points. NMMII-C KO mice were stained with NMMII-isoform