

Material and Methods: A randomized, longitudinal study took into consideration the Stage II RP that were either treated by a surgical procedure or simply observed for a period of two years. Surgery consisted in an endaural approach epitympanectomy with scutum reconstruction (tragal cartilage).

Results: All the operated cases showed a permanent healing condition with stable hearing function. Nearly half of the “observation group” showed instead deepening of the pocket that in one case even ended up with perforation. In none of the study patients a real cholesteatoma was observed.

Conclusions: A preventive surgery is to be preferred in all Stage II RP. In fact, even if in some of the patients it could remain stable over the time taken into consideration (2 years), the possibility of occurrence of a more severe stage, ending up potentially to cholesteatoma, would represent a reasonable choice in order to avoid in the future more complex surgical procedures and all related possible complications.

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Labyrinthine problem in chronic ear diseases (R864)

ID: 864.1

Cholesteatoma with canal fistula and the third mobile window

Presenting Author: **Tadashi Kitahara**

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Learning Objectives: The better bone conduction threshold at low-tone frequencies immediately after tympanoplasty with mastoidectomy and no preoperative fistula symptoms might imply the third mobile window theory. The worse bone conduction threshold in high-tone frequencies with spontaneous nystagmus after surgery might indicate inner ear damage.

Objective: To understand the third mobile window effect of chronic otitis media with cholesteatoma with inner ear fistula on the bone conduction threshold, we examined changes in the bone conduction audiogram after tympanoplasty with mastoidectomy for chronic otitis media with cholesteatoma with canal fistula.

Study Design: Retrospective case review.

Patients: According to the intraoperative classification of Dornhoffer and Milewski, we focused especially on type IIa (anatomical bony fistula with no perilymph leak). We checked the bone conduction threshold at least three times: just before, just after, and 6 months after surgery in 20 ears with type IIa lateral semicircular canal fistula.

Results: Compared with the preoperative bone conduction threshold, six cases were better, 12 cases were unchanged, and two cases were worse within the first postoperative week. Finally, one case was better, 15 cases were unchanged, and four cases were worse at the sixth postoperative month.

Patients with a better bone conduction threshold in the low-tone frequencies immediately after surgery had a tendency to show no preoperative fistula symptoms. Postoperative spontaneous nystagmus had a tendency to be observed in patients with a worse bone conduction threshold in the high-tone frequencies.

Conclusion: The better bone conduction threshold at low-tone frequencies immediately after tympanoplasty with mastoidectomy and no preoperative fistula symptoms might imply the third mobile window theory. The worse bone conduction threshold in high-tone frequencies with spontaneous nystagmus after surgery might indicate inner ear damage.

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Labyrinthine problem in chronic ear diseases (R864)

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The surgical management of labyrinthine fistula in chronic ears

Presenting Author: **Neil Donnelly**

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Learning Objectives: This presentation will explore the identification, surgical management and outcome of labyrinthine fistula in the presence of chronic ear disease. The format will use real patient scenarios and intra-operative video to illustrate the learning points.

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Labyrinthine problem in chronic ear diseases (R864)

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Staging method for cholesteatoma-induced semicircular canal fistula using CTP (Cochlin tomo-protein), as a diagnostic marker

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Learning Objectives: In order to better understand the inner ear damage in chronic inflammatory ears, the diagnosis and treatment of cholesteatoma induced fistulae is very important. Here in this talk, new staging method of fistulae using a biomarker is introduced and discussed with the previous methods.

Introduction: Previously proposed staging methods of labyrinthine fistulae include; A) the depth or severity of labyrinthine structure involvement (Dornhoffer et al. Palva et al.) B) Diameter of the fistula (Gacek). In this presentation I will introduce a novel method of staging using a biochemical marker.

Methods: CTP (Cochlin tomo-protein, an isoform of Cochlin), perilymph specific protein, is a novel and unique biomarker. We reported a biochemical test for perilymph leakage detecting CTP in middle ear lavage (MEL, lavaging the middle ear cavity using 0.3 ml saline). Recently we could establish a highly reliable ELISA-kit to detect CTP. The Japanese PLF diagnosis criterion is now based on the visual identification of the fistula (not a leakage) and/or detecting CTP. With a help of private clinical test enterprise (SRL inc.) in Japan, CTP test is widely available nationwide, in 170 hospitals.

If there is 2ul of leaked perilymph in the MEL, the test is positive. The diagnostic performance of the test has a high reliability, and the AUC in ROC analysis was greater than 0.90.

Results: We have tested fistulae and suspected fistulae induced by cholesteatoma. If the diameter of the fistula is more than 2 mm, there is more chance to detect CTP.

Conclusions: CTP test is a objective biochemical test to detect PL leakage. The visual judgment of "the depth or severity" of the fistula propped previously is a subjective judgment. The detection of CTP correlated better with the diameter of the fistulae.

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Labyrinthine problem in chronic ear diseases (R864)

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Panel Discussion: Labyrinthine Problems in Chronic Ear Disease

Presenting Author: **Joel Goebel**

Joel Goebel

Washington University School of Medicine

Learning Objectives: 1. Understand the causes of vestibular dysfunction in chronic ear disease. 2. Appreciate the available vestibular function tests to assess function in the setting of middle ear/mastoid disease. 3. Recognize the

causes, symptoms and treatment for labyrinthine fistulae and third window phenomena.

Patients with chronic ear disease and cholesteatoma frequently present with symptoms of dizziness and vertigo that may represent labyrinthine dysfunction in the involved ear or dizziness from unrelated causes. The challenge for the otologist is to recognize specific signs of vestibular involvement on the physical exam and order appropriate vestibular function testing. This panel will explore various examination and laboratory signs of labyrinthine involvement in patients presenting with dizziness. Of particular interest on examination are the presence of the Halmagyi head impulse sign, presence of nystagmus with pressure or air caloric stimulation, and the postural responses on foam posturography. In the laboratory, responses to rotation, centrifugation, evoked responses to sound stimulation and computerized dynamic posturography are of particular utility to diagnose and treat labyrinthine dysfunction in patients with active chronic ear disease.

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Various aspects of cholesteatoma surgery (N865)

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Long-term Results of Troublesome CWD Cavity Reconstruction by Mastoid and Epitympanic Bony Obliteration (CWR-BOT) in Adults

Presenting Author: **Jean-Philippe Vercruyse**

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Learning Objectives: To present the long-term surgical outcome of the bony mastoid and epitympanic obliteration technique with canal wall reconstruction (CWR-BOT) in adults with an unstable cavity after prior canal wall-down surgery (CWD) for extensive cholesteatoma Study Design: Retrospective study Interventions: Therapeutic Setting: Tertiary referral center Patients: Fifty consecutive adult patients undergoing a CWR-BOT between 1998 and 2009. Main Outcome Measure(s): (A) Recurrence and residual rates of cholesteatoma, (B) postoperative hygienic status of the ear, including postoperative aspect of the tympanic membrane (TM) and external ear canal integrity (EAC), (C) functional outcome and (D) long-term safety issues. Results: (A) The percentage of ears remaining safe without recurrent or residual disease after CWR-BOT was 96% after a mean follow-up time of 101,8 months. Recurrent cholesteatoma occurred in 2% (n = 1) and a residual cholesteatoma was detected in 2% (n = 1) of the cases. (B) A safe dry, and trouble-free graft and self-cleaning EAC was achieved in 94%. (C)