Learning Objectives:

Tympanoplasty with canal wall reconstruction was performed using sliced cartilage, fascia, and inferior based musculoperiosteal flap in 46 patients with open mastoid cavities and hearing loss. All patients were followed for more than two years after the last operation. The mastoid skin was elevated and trimmed, and then the fascia and sliced auricular cartilage were transplanted to the mastoid side of the skin and covered using musculoperiosteal flap. The remaining space in the mastoid cavity was filled with bone chips (42 cases). In the cases involving a normal or shallow eardrum (24 cases, group A), ossicular reconstruction was performed at the same time. Among the cases involving an adhesive eardrum, two-staged surgery was planned in 11 cases (group B). The other 11 patients with adhesive eardrums were treated with one-stage ossiculoplasty where possible (group C). Hearing improvement was achieved in 75% (18/24 cases) of the cases in group A, 45% of the cases in group B (5/11 cases), and 18% of the cases in group C (2/11 cases) at 12 postoperative months. None of the patients developed recurrent discharge, cholesteatoma or granulation tissue, although one patient in group C (2%) suffered re-adhesion. The reconstructed tympanum and posterior canal wall appeared to be thick structures made of skin and sliced cartilage. The boot-shaped reconstructed canal was suited to staged ossiculoplasty because the shape-memory effect provided an adequate combination of stiffness and flexibility for the second stage. The structure remained relatively stable over the long term. This method has advantages for patients with adhesive eardrums that require secondary ossiculoplasty or an active middle ear implant.

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ID: IP129

Practicality Analysis of JOS Staging System for Retraction Pocket Cholesteatoma: Japan Multicenter Study (2009–2011)

Presenting Author: **Keiji Matsuda**

Keiji Matsuda[1], Tetsuya Tono[2], Hiromi Kojima[3], Yutaka Yamamoto[3], Masafumi Sakagami[4], Yasuo Mishiro[4], Yasuyuki Hinohira[5], Taeko Okuno[6]

[1]University of Miyazaki, [2]Unversity of Miyazaki, [3]Jikei University School of Medicine, [4]Hyogo College of Medicine, [5]Showa University School of Medicine, [6]Mitsui Memorial Hospital

Learning Objectives:

Objective: To analyze the practicality of staging criteria of acquired cholesteatoma (2010) for standardizing pathological condition in Japan.

Design: A multicenter, retrospective study.

Setting: Six academic tertiary referral centers.

Participants: A total of 446 patients that underwent surgery (for the first time) for acquired retraction pocket cholesteatoma between 2009 and 2010 at 6 institutions in Japan.

Intervention: Cases were managed by trans canal atticotomy (TCA, 42 cases), canal wall down and reconstruction (CWDR, 142 cases), canal wall down (CWD, 29 cases), or canal wall up technique (CWU, 233 cases).

Main Outcome Measures: The extent of cholesteatoma was surgically confirmed, and auditory outcomes and disease recurrence during 3 years after the last operation were assessed.

Results: The cholesteatoma affected the pars flaccida in 325 cases (73%), the pars tensa in 100 cases (22%), and both of these regions in 21cases (5%). The frequency of postoperative air-bone gaps of < 20 dB was 70% in the pars flaccida group, 54% in the pars tensa group, and 43% in the combined group. These rates decreased as the cholesteatoma stage increased. The frequency of residual disease at the "second look" (10%) peaked at 12 postoperative months, whereas it peaked at 24~36 postoperative months after single-stage procedures (4%). Recurrent sac formation exhibited a similar frequency (4%) from 6 months to 36 months. The frequencies of all types of recurrence increased with the disease stage.

Conclusion: Disease stage was found to be related to hearing outcomes and the recurrence rate. This simple staging system may be particularly useful for standardizing the reporting of acquired cholesteatoma and for adjusting for the severity of the condition during outcome evaluations. It might also provide information that is useful for counseling patients.

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Canal wall down tympanoplasty with soft posterior meatal wall reconstruction in cases of recurrent cholesteatoma

Presenting Author: **Saeko Matsuzaki**

Saeko Matsuzaki, Naoki Oishi, Masato Fujioka, Sho Kanzaki, Yoshihiko Hiraga, Noriomi Suzuki, Makoto Hosoya, Kaoru Ogawa

Keio University School of Medicine

Learning Objectives:

Introduction: Prevention of postoperative recurrent cholesteatoma is one of the important goals in the management of cholesteatoma. Surgery for recurrent cholesteatoma could be rather challenging because of potential tendency towards re-recurrence. Canal wall down tympanoplasty can be a good surgical option with low rate of recurrence, and soft posterior meatal wall reconstruction has a feature of less formation of a narrow-neck retraction pocket after surgery compared to other hard-tissue reconstruction methods (Yamamoto-Fukuda et al, 2009). In order to achieve disease-free and dry ears after surgery on 13 recurrent cholesteatoma cases which we experienced for 3 years, we adopted a canal wall down technique with soft posterior meatal wall reconstruction. We present

representative cases and short-term results with mean follow-up period of 23 months.

Study design: Retrospective chart review

Patients: Thirteen cases of recurrent cholesteatoma out of consecutive 388 middle ear surgeries in Keio University Hospital between January 2012 and March 2015 were enrolled. The average age of the cases was 48 years old with a range of 25–76 years. The mean follow-up period was 23 months (ranging from 10 months to 33 months). The operation was 2nd time in 8 cases, 3rd time in 4 cases, and 4th time in 1 case.

Results: Dry ear was achieved in all the cases in average 5.5 months after surgery and no further infection was observed. Postoperative air-bone gaps were less than 40 dB in 5 patients and 20 dB in 4 patients. No re-recurrence was observed during the observation period.

Conclusions: A canal wall down tympanoplasty with soft posterior meatal wall reconstruction for recurrent cholesteatoma provides good short-term results. Longer observation period is needed to confirm the effectiveness of the surgical procedure.

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Endoscopic versus Open Surgical Management of Patulous Eustachian Tubes

Presenting Author: **A. E. Louise McMurran**

A. E. Louise McMurran, Ahmad Moinie, Constantinos Mamais, Clive Brewis, Bhaskar Ram
Aberdeen Royal Infirmary

Learning Objectives:
Presenting features of Patulous Eustachian Tubes
Surgical management of Patulous Eustachian Tubes

Introduction: A variety of surgical techniques have been used in the management of Patulous Eustachian Tubes, however the long-term efficacy and safety of these methods remains uncertain. We highlight this issue using the the case of an 84 year old man with bilateral Patulous Eustachian Tubes who has had multiple surgical procedures over a two year period.

Methods: The patient presented with bilateral autophony, tinnitus and hearing loss. The diagnosis was confirmed by observation of tympanic membrane movement on respiration at otomicroscopy. Initial surgical management involved endoscopic reduction of the Eustachian tubes, first by injection of calcium hydroxylapatite and cautery to the torus tubarius, and followed by insertion of fat into the Eustachian tube with suturing when symptoms recurred. Further symptoms prompted more invasive surgical management with transtympanic occlusion of the Eustachian tubes with conchal cartilage.

Results: Endoscopic injection of fillers and cautery to the Eustachian tubes did provide symptomatic benefit in this patient's case, though the effects were short lived. Insertion of fat and suturing endoscopically was difficult practically and did not produce long-term symptom control. Open ear surgery with placement of tragal cartilage into the Eustachian tube performed initially on the right followed by the left four months later has led to complete resolution of symptoms. The patient did, however, develop bilateral middle ear effusions with conductive hearing loss, requiring myringotomy and grommet insertion.

Conclusions: Endoscopic surgical techniques for reducing patulous Eustachian tubes may provide symptomatic benefit with few ill effects, but have limited long-term efficacy. Transtympanic occlusion with cartilage is presented is an alternative approach with an improved outcome.

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Changing lives of hearing impaired patients in rural north india through concept of trained ear care workers with the vision of hearing for all by 2030

Presenting Author: **Rohit Mehrotra**

Rohit Mehrotra[1], Pankaj Srivastava[2], Ashutosh Kumar[1]
[1]Mehrotra ENT Foundation, [2]Pankaj ENT Hospital

Learning Objectives: By introducing the concept of **ear care workers** who identify patients having hearing loss by organizing regular ear health camps in rural areas of Kanpur district. If this concept is implemented throughout India, a significant reduction in deafness could be achieved. Those patients who could be benefited from surgery or hearing aids are treated accordingly at low cost with a vision of **hearing for all by 2030.**

Introduction: Hearing loss is the most common sensory deficit in humans today. As per WHO estimates in India, there are approximately 63 million people, who are suffering from Significant Auditory Impairment; this places the estimated prevalence at 6.3% in Indian population.

Materials and Methods: This is an ongoing study. Patients with history of hearing loss were identified by ear care workers through our regular ear health camps in rural areas of Kanpur district. Ear care workers were trained at our base hospital. Patient requiring conservating treatments were treated at the camps. Patients who required surgery or hearing aids were brought to our clinic, subjected to clinical ENT examination, Otoscopy and pure tone audiometry. Surgery was performed, or hearing aids were provided and patients were followed up at regular interval.