Results: Residual cholesteatoma was found ten out of 39 ears (25.6%). Residual sites including overlaps were mastoid cavity (n = 7) followed by tympanic cavity (n = 6) and attic (n = 4), which is different from adult acquired cholesteatoma where the tympanic cavity such as tympanic sinus is the most likely area of residues. Among the various factors examined, significant differences were found between the residue (+) and (−) groups: multiple primary sites such as TAM and PTAM diseases and poor status of stapes were more seen in residue (+) group.

Conclusions: Residual cholesteatoma was mostly seen in mastoid cavity, probably because small piece of epithelium remains in honeycomb structure of well-developing mastoid cavity, which is a characteristic feature of mastoid in children. In order to minimize the residual lesion, surgeons should take care of complete removal of mastoid cholesteatoma especially in patients with advanced case such as multiple primary sites and with invasion to stapes.

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ID: IP161

Hearing results in stapes surgery

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Learning Objectives:

In Asia, otosclerosis is not so common as in Europe and North America. The reports about stapes surgery is not many in Japan. So we report the hearing results in stapes surgery performed in our institution.

We analyzed the hearing results of 101 ears which were performed stapes surgery at Osaka University Hospital from April 2007 to December 2014. We evaluated the hearing results by criteria of AAO-HNS at 6 months after surgery and at 2 years after surgery. Furthermore, we analyzed hearing gain, air-bone gap and air conduction threshold by each frequency.

Small fenestration stapedotomy was performed in 63 ears. Partial stapedectomy was performed in 23 ears and total stapedectomy was performed in 12 ears. The CO2 lazer was used to fenestrate the foot plate of stapes in 40 ears. The manual perforator was used in 56 ears. The details of prostheses are as follows: Teflon wire piston; 64 ears, Teflon piston; 20 ears and titanium clip piston; 14 ears. The total success rate (i.e. the air-bone gap is smaller than 10 dB) is 70%. Concerning the success rate by A-B gap (AAO-HNS criteria), there was no statistical difference in fenestration methods, fenestration devices or prostheses. To see by each frequency, the hearing gains at high frequencies (2k, 3k and 4k) are better in stapedotomy than in stapedectomy at 6 months after surgery. But there is no significant difference at 2 years after surgery. The air conduction threshold at high frequencies in stapedotomy at 2 years after surgery worsened than at 6 months after surgery.

The hearing results are substantially equal to other reports. The A-B gap after surgery does not depend on either fenestration methods, fenestration devices or prostheses in our report. The reason why the air conduction threshold at high frequencies in stapedotomy worsened at 2 years after surgery seems re-calcification around the piston.

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ID: IP162

A case of presigmoid retrolabyrinthine approach to vestibular schwannoma by use of continuous direct neurophysiological monitoring of facial nerve and cochlear nerve

Presenting Author: **Naoki Oishi**

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Learning Objectives:

Intraoperative monitoring of the facial nerve and the cochlear nerve is essential to achieve preservation of function after surgery to vestibular schwannomas. Recently two novel monitoring methods have been reported to improve preservation of function: continuous direct auditory evoked dorsal cochlear nucleus action potential (AEDNAP) monitoring and facial nerve root exit zone-elicited compound muscle action potential (FREMAP) monitoring (Nakatomi and Miyazaki, et al. 2015). A presigmoid retrolabyrinthine approach is considered to have the advantages of the two major approaches, the retrosigmoid suboccipital and presigmoid translabyrinthine approaches, as a minimally invasive surgical option to vestibular schwannomas, allowing direct access to the cerebellopontine angle and preservation of hearing function (Iacoangeli et al. 2013). Here, we report a case of presigmoid retrolabyrinthine approach to medium vestibular schwannoma by use of continuous monitoring of the facial nerve and the cochlear nerve, as a novel surgical method to achieve a minimally invasive surgery with preservation of function.

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ID: IP163

Surgical success and complications of tympanoplasty using composite tragal cartilage in cronic otitis media

Presenting Author: **Kadir Serkan Orhan**

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Learning Objectives: To evaluate the success rate and result of tragal composite cartilage tympanoplasty.

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Objective: This study intends to present the success of the membrane closure and audiological earnings of tympanoplasty operations using composite tragal cartilage, in our clinic.

Materials and Methods: One hundred and seventy one patients with diagnosis of chronic otitis media without cholesteatoma (classified in accordance with types of perforation) who treated with tympanoplasty using tragal cartilage graft between the years 2006–2014 was included to the study.

Results: The study included 171 patients, 73 were men and 98 were women. The range of the age was 13–71. Mean age was 31,7 ± 12,5. Follow-up period ranged from 99 months to 8 months, and the average was 34 months. There was central, attic, marginal and total perforations in 147 (85,9%), 13 (7,3%), 9 (5,3%) and 2 (1,2%) patients, respectively. Preoperative retraction was found in 12 (7%) of patients. In preoperative examination tympanosclerosis was observed in 26 (11,1%) patients. Patients' preoperative air-bone gap values were between 6–80 dB and, mean was 34 ± 13 dB. In 26 patients tympanosclerosis (11.1%) was observed in accordance with the preoperative examination. The Standard surgical technique sapplied in this study and in the postoperative examination complete and incomplete closure was seen in 145 (84,8%) and 26 (15,2%) patients, respectively. In the postoperative audiological evaluation, statistically significant increase was seen in air-bone gap values at 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz ($p < 0.01$).

Conclusions: The success of membrane closure at timpanoplasty operations using cartilage graftmaterial is superior to other grafts which are physically thinner and more flexible compared to cartilage. In terms of hearing values, the results are similar with the operations carried out with other graft materials.

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ID: IP164

Endoscopic Assisted Petrosectomy via Middle Fossa Approach for Isolated Petrous Bone Cholesteatoma

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Istanbul University

Learning Objectives: Endoscopic assisted surgery for petrous bone cholesteatoma can be used safely.

Objective: The petrous bone cholesteatoma (PBC) is used to describe an epidermoid cyst of the petrous portion of the temporal bone. Sanna et al have classified PBCs into five groups: supralabyrinthine, infralabyrinthine, infralabyrinthine-apical, massive, and apical. Besides, these terms describe both the extent of the lesion and the location.

The appropriate surgical procedure for PBC is frequently radical surgical removal such as the labyrinthectomy and/or rerouting of the facial nerve. However, it may have to be modified, depending on the status of the contralateral ear. Therefore, location and extend of the pathology is defined to adequate surgical approach with modification. Recently, some studies have described to "minimally invasive cholesteatoma removal" which were aimed to preserve hearing and facial nerve functions for treatment of the PBC.

Methods: We performed standard middle fossa craniotomy to access to petrous apex. Otomicroscope was used to remove the most part of the cholesteatoma, but in some hidden area such as infralabyrinthine area, medial part of the carotid artery, endoscope (4 mm 0 or 45 degree) was used.

Results: Here we present 4 cases with infralabyrinthine-apical cholesteatoma who underwent endoscopic assited surgery via middle fossa approache. We were able to preserve hearing in 2 patients. In another 2 patients, labrinth was already invaded by cholesteatoma and the hearing was not able to preserved.

Conclusion: Endoscopic assisted surgery via middle fossa approache can be help removal of infralabyrinthine-apical or massive without cochlear resection, labyrinthectomy and facial nerve injury. Moreover, it may help to reduce the residual cholesteatoma mostly in hidden recess.

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ID: IP165

Surgical Intervention of Early Stage Primary Acquired Cholesteatoma

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peking university third hospital

Learning Objectives:

Objective: The purpose of this study was to investigate the surgical intervention and hearing preservation of early primary acquired cholesteatoma.

Methods: A case of bilateral early primary acquired middle ear cholesteatoma was reported. The different operative management of each ear was reviewed. Postoperative effect and hearing outcome were followed up.

Result: A 27-year-old male complained of intermittent bilateral otorrhea for seven years. The pure tone audiometry was 22 dB for the right ear and 28 dB for the left. Based on clinical history combining with CT imaging, the patient was diagnosed with bilateral primary acquired cholesteatoma. The two ears were operated separately in 1-year interval.

At surgery of left side, the ossicular chain was wrapped around by cholesteatoma which involved the region inside the ossicular chain. Hence the incus and head of malleus was removed. Then partial ossicular replacement prosthesis (PORP) were used to reconstruct the left ossicular chain and the epitympanum was reconstructed with cartilages.

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