

Presenting Author: **Sejoon Oh**

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Learning Objectives:

Patulous eustachian tube (PET) can have a significant negative impact on a patient's quality of life. Several methods of surgical management can be an option to treat PET, and our objective is to evaluate the safety and efficacy of autologous cartilage injection in patients with PET. Thirty-three ears of twenty-five patients with chronic PET refractory to conservative treatment were enrolled to this study. Autologous tragal cartilage was harvested, and chopped into fine pieces to allow its injection using a 1cc Bruening syringe. Endoscopic cartilage injection was performed submucosally into the anterior (0.5 mL) and posterior aspects (0.5 mL) of the nasopharyngeal ET under local anesthesia in an operating room. Patients were evaluated postoperatively by nasal endoscopy and by interview to document symptoms. Successful treatment was defined as complete relief or significant improvement plus satisfaction with treatment. The only complication that occurred was temporary otitis media with effusion in one ear. Inferior turbinate reduction was performed in three ears with accompanying nasal septal deviation or turbinate hypertrophy to allow better nasopharyngeal ET visualization. After autologous cartilage injection, the successful treatment rate, as determined by subjective autophony symptoms, was 69.7% (23/33). The average follow-up period was 25.2 months. Autologous cartilage injection is a minimally invasive technique that has been used by the authors to successfully treat patulous eustachian tube. The described procedure was found to provide a good overall success rate without long-term complications.

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Surgical results of transcanal endoscopic ear surgery in chronic otitis media.

Presenting Author: **Masafumi Ohki**

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Learning Objectives: To endoscopically examine surgical results for chronic otitis media after endoscopic ear surgery comparing with microscopic ear surgery

Introduction: Middle ear surgery has commonly been treated using a surgical microscope. A binocular stereomicroscope has often been used in ear surgery because this instrument offers many advantages including binocular stereoscopic vision of the surgical field; no obstruction of the view by blood, mucus, or bone dust on the lens; high magnification, besides being hands-free. Conversely, the narrow-angle view is a disadvantage of using a microscope for middle ear surgery. Moreover, there are several blind areas behind important structures, such as the facial nerve, that cannot

be avoided. The use of an endoscope can offer several advantages over the use of a microscope during middle ear surgery, particularly the wider field of view. Therefore, endoscopic ear surgery, especially transcanal approach, has been developing recently. The aim of this study is to endoscopically examine surgical results for chronic otitis media after endoscopic ear surgery comparing with microscopic ear surgery.

Methods: Sixty-nine consecutive patients who underwent tympanoplasty for chronic otitis media. Transcanal endoscopic ear surgery was performed in 25 patients, and postauricular incision microscopic ear surgery in 44. Hearing outcome of air conduction threshold, bone conduction threshold, air-bone gap was assessed.

Results: Surgical results of hearing levels after transcanal endoscopic ear surgery was significantly better than postauricular incision microscopic ear surgery. Transcanal endoscopic ear surgery is advantageous to approach to the attic and perform tympanoplasty for sound transmission.

Conclusions: Surgical results of transcanal endoscopic tympanoplasty for chronic otitis media were excellent.

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Postoperative residual cases in pediatric acquired cholesteatoma

Presenting Author: **Shinsuke Ohshima**

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Learning Objectives:

Introduction: Acquired cholesteatoma is more aggressive in children than in adults. Despite the aggressive behaviour, radical treatment such as canal wall down technique was less performed to reduce cavity problem which requires endless care. This results in high rate of residues and recurrence. We focused in this study on reducing residues in pediatric acquired cholesteatoma surgery and explored risk factors of residual lesions.

Methods: Medical charts of 39 children under 15 years old with acquired cholesteatoma were retrospectively reviewed. Various factors were compared between the residual cholesteatoma (+) and (-) groups: surgical procedures, type of cholesteatoma, number of primary sites of cholesteatoma at surgery (P, protympanum; T, tympanic cavity; A, attic; M, mastoid), development of mastoid air cells, and the status of stapes. Residue (+) was defined if residual lesion was found after one-stage surgery or planned two-stage surgery, but not during second-look operation.

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

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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 (FREMAPP) 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 cerebello-pontine 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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Surgical success and complications of tympanoplasty using composite tragal cartilage in chronic 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.