

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 $31,7 \pm 12,5$. 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 applied 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 tympanoplasty 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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Endoscopic Assisted Petrosectomy via Middle Fossa Approach for Isolated Petrous Bone Cholesteatoma

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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 assisted surgery via middle fossa approach. We were able to preserve hearing in 2 patients. In another 2 patients, labyrinth was already invaded by cholesteatoma and the hearing was not able to preserved.

Conclusion: Endoscopic assisted surgery via middle fossa approach 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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Surgical Intervention of Early Stage Primary Acquired Cholesteatoma

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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.

For the right side, cholesteatoma was confined to the regions outside the ossicular chain. The incus and stapes were intact with good movement although the head of malleus was partly eroded. Therefore, the right ossicular chain was reserved and the epitympanum was reconstructed. The patient was followed up until 9 months after the last operation. No recurrence was found in either ear and the PTA was improved to 13 dB for the right side and 20 dB for the left.

Conclusion: For primary acquired cholesteatoma at early stage, there is possibility that hearing impairment was slight even though the lesions of middle ear already covered and eroded the ossicular chain. For these cases, surgical procedure to remove the cholesteatoma may result in further hearing loss, which lead to a dilemma for both doctors and patients.

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Cholesteatoma treated by mastoid obliteration, recommendations from a personal follow-up of surgical results

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Learning Objectives:

Introduction: Despite declining prevalence, cholesteatoma remains the most devastating type of chronic otitis media that can affect hearing, balance and facial nerve function. In order to prevent such complications, cholesteatoma requires surgical removal. This study presents the lessons learned from an overview of personal results of a single otologic surgeon after starting in a staff position.

Methods: 183 patients that were operated for cholesteatoma between September 2009 and November 2015 by a single otologist were included in this retrospective evaluation. All patients underwent surgery for cholesteatoma and were followed-up by either MRI DWI (>95%) or a mandatory second look procedure (<5%). In general, a canal wall-up technique with ossicular chain reconstruction was used and in selected cases this was followed by mastoid obliteration with bone dust.

Results: Personal results will be presented on recurrent and residual disease after cholesteatoma surgery. A significant otologic learning curve was seen after evaluation of all cases and this was entirely related to a significant reduction of the percentage recurrent and not residual cholesteatoma. Additional mastoid obliteration leads to a significant reduction of recurrent but not residual disease. No difference was seen in results between pediatric and adult patients.

Conclusion: A strict personal follow-up of surgical results on cholesteatoma surgery identified mastoid obliteration as a key factor to reduce recurrent cholesteatoma.

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Indications and techniques in Canal Wall Up Mastoidectomy

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Learning Objectives:

Objective: The aim of this study is to retrospectively analyse the functional and hearing outcomes of canal wall up mastoidectomy for cholesteatoma.

Materials & Methods: 252 patients who underwent canal wall up mastoidectomy for cholesteatoma were analysed. Charts were analysed for age of the patient, type of cholesteatoma, surgical procedures, hearing results, recurrence and follow up.

Results: 64% of the patients belonged to the pediatric population. 38% of the patients had a follow-up of at least five years. Of the patients who underwent two staged surgery, 46.1% had a residual lesion that was identified and excised during the second surgery. Over a five year follow-up period, there were 12.5% patients with recurrences, all belonging to the group in whom a residual cholesteatoma was identified during the second staged surgery. The rate of residual cholesteatoma tended to decrease as age increases. The type of cholesteatoma, acquired or congenital middle ear, were not statistically related to the incidence of residual cholesteatoma. Hearing analysis showed that hearing recovery was excellent with canal wall up procedures and remained stable over five years.

Conclusion: Surgery for cholesteatoma is especially challenging in a pediatric population because of the need for hearing preservation. Hence canal wall up mastoidectomy in a single or two stages should be the approach of choice in the pediatric population. Radiological follow-up by DWI is mandatory for more than 5 years as recurrences can be seen even after 5 years.

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Reconstruction of the incudostapedial joint

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