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ID: IP238**Clinical Significance of Sensorineural Hearing Loss in Pediatric Chronic Otitis Media**Presenting Author: **Noam Yehudai**

Noam Yehudai, Michal Luntz

*Bnai Zion Medical Center, Technion – The Bruce Rappaport Faculty of Medicine, Haifa, Israel**Learning Objectives:* to promote awareness to the long term effects of chronic OM in terms of SNHL.*Introduction:* Hearing loss is considered a common complication and sequela of chronic otitis media (COM). The loss is usually conductive, but sensorineural involvement also occurs. Clinically significant sensorineural hearing loss (SNHL) has been reported in adults with COM; however its significance in children is still unclear. The aim of the study is to assess the severity of SNHL in single sided COM, in a group of children, using the contra-lateral healthy ear as a control and to define risk factors for the development of SNHL in COM. Characterizing these risk factors will assist in better defining treatment indications for COM and thus reduce the occurrence of SNHL.*Methods:* The study cohort included 124 children with unilateral COM operated between 1997 and 2010. Mean age at surgery was 13.3 ± 3.2 years (range, 7–18 years), and mean duration of disease was 88.4 ± 45.0 months (range, 6–192 months). Bone conduction (BC) pure tone average (PTA) of the two ears was calculated as the average of BC thresholds at 500, 1000, 2000 and 4000 Hz. The parameters evaluated included: demographics (age, sex, and side), duration of disease, presence and location of cholesteatoma, previous otologic history and previous ear surgery.*Results:* A statistically significant difference in BC-PTA was found between the diseased ear (12.74 ± 8.75 dB) and the healthy ear (9.36 ± 6.33 dB) ($p < 0.01$). Statistically significant correlation was found between the level of SNHL in the diseased ear, age and the presence of cholesteatoma.*Conclusions:* One of the complications of chronic COM is the development of SNHL in addition to conductive hearing loss. It is imperative to actively treat COM patients in order to prevent the expected development of SNHL. An insistent approach to patients presenting with these factors is mandatory since they are prone to develop a more severe form of SNHL.

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ID: IP239**Rat Mastoid Bullae Obliteration Using Hydroxyapatite/Chitosan Patch**Presenting Author: **Keun-Ik Yi**

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*Pusan National University Hospital**Learning Objectives:**Purpose:* Canal wall down mastoidectomy is often performed to prevent recurrence and complete removal of lesion in the treatment of otitis media with cholesteatoma. In this case, however, several problems can be caused to the mastoid cavity. Therefore to improve the long term stability of the mastoid cavity and to eliminate the cavity related problems significant modifications were introduced such as the mastoid obliteration technique using various methods including bone, cartilage, fat, flaps and others. This study evaluated the effectiveness of hydroxyapatite/chitosan patch (HAp/Chi patch) known as the new materials to promote osteogenesis for mastoid obliteration in animal model.*Materials and Methods:* Sprague-Dawley rats underwent mastoid obliteration using hydroxyapatite powder (Mimix[®]), cartilage and HAp/Chi patch in each five ear. CT (computed tomography) and mastoid tissue sampling was done after twelve weeks. And we evaluated the degree of osteogenesis and inflammation of tissue.*Results:* The mastoid cavity in HAp/Chi patch group was best filled in CT findings. In the histopathological aspects of the osteogenesis and inflammation, it exhibited 7.5%/20%, 28%/3% and 25%/50% in the group of cartilage, hydroxyapatite powder and HAp/Chi patch group, respectively.*Conclusions:* Hap/Chi patch is less absorbent, better to fill the mastoid cavity and more induce osteogenesis than the other obliteration material. But the degree of inflammation in Hap/Chi patch group is highest. It may be necessary to secure the stability of the mastoid obliteration material through additional experiments.

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ID: IP240**Facial Paralysis in Chronic Otitis Media with Cholesteatoma**Presenting Author: **Nadir Yildirim**Nadir Yildirim¹, Sinan Aksoy², Sermin Tok³¹*Dumlupinar Universitesi Medical Faculty,*
²*DPU Medical Faculty Department of ORL-HNS,* ³*Mersin University Department of Radiology**Learning Objectives:**Objective:* Facial paralysis is a rare and drastic complication of chronic otitis media and middle ear cholesteatoma. The predisposing factors that lead to facial nerve paralysis in

cholesteatomatous ears are still obscure. Herewith, we aimed to investigate the possible etio-pathogenesis of facial paralysis in our cholesteatoma cases.

Material and Methods: We retrospectively reviewed the charts of 5 facial nerve paralysis cases that were connected to co-existing chronic otitis media with cholesteatoma and compare our findings with reported case series in literature. The duration and degree of facial paralysis, temporal bone CT findings including the size of the mastoids, dehiscence of the fallopian canal and other accompanying radiological abnormalities such as semicircular canal dehiscence, and intraoperative findings were noted.

Results: In the years of 2014–2015 we admitted 156 primary of recurring cases of middle ear cholesteatoma in our clinic, 5 (3.2%) of which also had associated facial paralysis. This percentage was comparable to those of reported series. Of those patients, 2 of whom had already been operated with canal wall-down (CWD) technique years ago for cholesteatoma that recurred. According to House-Brackmann (H-B) classification, one patient had grade 5, one patient grade 4, two patients grade 3 and one patient grade 2 paralyses. All three previously unoperated cases had relatively smaller mastoids and lateral semicircular canal (LSSC) dehiscence, detected either on CT and/or perioperatively. Fallopian canal dehiscences were in tympanic segment in 3 and in mastoid segment in 2 of the patients. All patients were operated with CWD technique as to include facial canal decompression. All but one paralyses were regressed to either HB-1 (3 cases) or HB-0 (1 case) grades postoperatively.

Discussion and Conclusion: It appears that previously existing facial canal dehiscence and small mastoids predisposes both facial canal and LSSC erosion in untreated chronic otitis media with cholesteatoma as to result in facial nerve palsy.

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Randomized clinical trial for partial canal wall preserved masto tympanoplasty

Presenting Author: **Xin Ying**

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Learning Objectives:

Objective: To study and evaluate the outcome of partial canal wall preserved masto tympanoplasty (PCM) for chronic otitis media with cholesteatoma and/or granulation tissue.

Methods: Thirty-nine patients were randomly divided into two groups. 20 patients underwent PCM, 19 patients underwent canal wall down masto tympanoplasty (CWD). All of the patients had a follow-up period of 5 years.

Results: All the patients in the two groups underwent the operation successfully and no intraoperative or postoperative complications were found. The mean time of drying of cavity was 6 weeks (4–8 weeks) in the PCM group, while it was 8 weeks (6–10 weeks) in the CWD group. The cavity in the PCM group were near normal or slightly larger than the external auditory canal, and the tympanic flaccid part slightly wider than normal, patients could able to wear traditional hearing aids. The patients need cavity cleaning less than 1 times a year in the PCM group and 3–4 times a year in the CWD group. The surgery cavity volume was 1.4 ± 0.2 ml in the PCM group and 2.6 ± 1.1 ml in the CWD group ($P < 0.05$), the difference was statistically significant. There were 8 patients (40%) improved hearing level (threshold improved > 10 dB) 5 years after operation in the PCM group and 6 patients (32%) in the CWD group, no statistically significant difference. 1 patient (5%) developed a recurrent cholesteatoma which was located in the attic and 4 patients (20%) developed retraction pockets in the attic in the PCM group, while 3 patients (15.8%) developed cavity problem that the epithelial accumulation were not easy to clean in the CWD group, no statistically significant difference.

Conclusion: With PCM technique, cholesteatoma could be completely and safely removed from the middle ear, and patients had near normal postoperative external auditory canal. Therefore, PCM was a reasonable choice for the surgery of otitis media with cholesteatoma and/or granulation tissue.

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Ossicular Anomaly and Endolymphatic Hydrops as Risk Factors for Complications after Ossiculoplasty

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Learning Objectives:

We report a case of endolymphatic hydrops with an ossicular anomaly, in which a hearing test showed fluctuating mixed hearing loss. A 42-year-old man with hearing impairment had experienced varying ear symptoms on his right side since elementary school. Evaluation by computed tomography showed an ossicular anomaly, and magnetic resonance imaging revealed endolymphatic hydrops in the symptomatic ear. Ossiculoplasty or stapes surgery is considered in patients with conductive hearing loss; however, the existence of endolymphatic hydrops is a risk factor for surgical complications. Preoperative magnetic resonance imaging examination may be beneficial when evaluating inner ear conditions such as ossicular anomalies, especially in cases accompanied by fluctuating hearing loss.