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ID: IP008**The symptoms and prognosis of traumatic pneumolabyrinth by air location**Presenting Author: **MOO JIN Baek**Moo Jin Baek¹, Dong Hyun Lee², Eui Kyeong Bang³¹*Haeundae Paik Hospital, Inje University, Busan, Korea,* ²*Haeundae paik Hospital, Busan, Korea,* ³*Busan vetrans Hospital, Busan, Korea**Learning Objectives:*

Objective: The Pneumolabyrinth is a rare condition in which air is present in the inner ear due to abnormal pathways between the middle ear and inner ear. This condition can be caused by congenital reasons, middle ear surgery, head trauma. The cases of traumatic pneumolabyrinth is increasing due to the high resolution CT. But Symptoms and prognosis of traumatic pneumolabyrinth is not clarified yet and needs further investigation.

Methods: We reviewed 149 cases of head trauma Patients who underwent temporal bone CT between Jan 1st 2012 to Jan 1st 2014. Review of records was done according to the factors: temporal bone fracture, otic capsule involvement, location of air bubble, symptom improvement.

Results: Ten patients showed pneumolabyrinth with symptoms of dizziness and hearing loss. Dizziness which is related to air bubble in the vestibule showed symptom improvement in all 10 cases. While hearing loss followed by air bubble in the cochlea(5 cases) did not show symptom improvement. No correlation was found between Symptom improvement and otic capsule involvement.

Conclusion: In cases of traumatic pneumolabyrinth there are a few factors that can be considered to predict the prognosis. Location of the air bubble appears to be the key factor to predicting the prognosis.

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ID: IP009**Sem Study on Cholesteatoma-affected Ossicles**Presenting Author: **Maurizio Barbara**Maurizio Barbara¹, Selenia Miglietta², Michela Relucenti³, Ezio Battaglione⁴, Giuseppe Familiari⁵, Edoardo Covelli⁶¹*Sapienza University Rome,* ²*Department of Anatomy, Histology, Forensic Medicine and Orthopaedics, Sapienza University, Rome, Italy,* ³*Department of Anatomy, Histology, Forensic Medicine and Orthopaedic, Sapienza University, Rome, Italy,* ⁴*Department of Anatomy, Histology, Forensic Medicine and Orthopaedic, Sapienza University, Rome, Italy,*⁵*Department of Anatomy, Histology, Forensic Medicine and Orthopedics, Sapienza University, Rome, Italy,* ⁶*ENT Unit, NESMOS, Sapienza University, Rome, Italy*

Learning Objectives: To shed some light on the erosive processes that affect the incus in respect to the cholesteatoma localization.

Background: The degree of invasiveness of a cholesteatoma is usually based on some clinical features, such as its extension, relapsing tendency and erosive capacity. For this latter, the ossicular chain, and mostly incus, is usually involved, leading the surgeon to its accurate cleansing or removal.

Material and Methods: For this study, incus specimens were collected during tympanomastoid surgery from adult patients with cholesteatomatous otitis media. The samples were processed for scanning electron microscopy and the investigation aimed to consider at first the whole bone, then to give a detailed mapping of the eroded parts of the incus adjacent to the cholesteatoma tissue. The different degrees of erosion (in terms of presence/absence of erosion, lacunae and their diameter and depth) and the presence/absence of biofilm were considered. Erosion degree was recorded with 0 if absent, and with 1–2–3 if mild, moderate or severe, respectively. Five consecutive fields at 100X magnification, aligned in 3 rows, the first one proximal and the last one distal to the surgical erosive point were analyzed. A total of 60 fields for each row were observed.

Results: Erosion lacunae were clustered on the surface of the eroded areas, their diameter being $75 \pm 15\mu\text{m}$. Although a proximal to distal gradient exists, looking to the distribution of the eroded areas, grade 3 erosion was not only limited to the area proximal to the ossicle erosive edge (first row) but also in row 2 and sometimes scattered up to row 3. Grade 3 erosion was observed around nutrient foramina of the bone (65%).

Discussion: Our observations confirm the hypothesis that the erosion degree is higher near the resection edge, but also prove that erosion areas of degree 3 can also be observed in regions far from the erosive point.

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ID: IP010**Protocols for Application of Non-EPI DW MRI in Cholesteatoma**Presenting Author: **Maurizio Barbara**Maurizio Barbara¹, Alessandro Bozzao², Edoardo Covelli³, Andrea Romano⁴, Luigi Volpini³, Veronica Confaloni⁴¹*Sapienza University Rome,* ²*Neuroradiology, Sapienza University, Rome, Italy,* ³*ENT Unit, NESMOS Department, Sapienza University, Rome, Italy,* ⁴*Neuroradiology, Sant'Andrea Hospital, Rome, Italy*

Learning Objectives: Shed some light on role of MRI for cholesteatoma.

Background: Although the diagnosis of cholesteatoma is in nearly all cases achieved by a meticulous otomicroscopical or endoscopic examination, imaging is usually required for a better definition of the extension of the pathology as well as to evidentiate eventual bony erosions. Non-ECHO-planar diffusion weighted magnetic resonance (non-EPI DW MRI) has been recently acquired as an important diagnostic tool in case of cholesteatoma, with high rates of sensitivity and specificity. At the ENT Unit of Sant'Andrea Hospital in Rome, Italy, this technique is regularly applied since five years especially for following-up after surgery. In this study, specific protocols are presented to be applied in different clinical situations.

Material and Methods: A consecutive number of subjects affected by cholesteatoma were scheduled for surgery. Both primary and recurrent cases were taken into consideration. Primary cases were subdivided in limited and extended cases, while recurrent cases comprised both routine cases and sequels from subtotal petrosectomy with blind sac closure of the external meatus. In the extended cases and in petrous bone cholesteatoma cases, non-EPI DW MRI was planned soon after surgery (within 1 month) and 3, 6 and 12 months after surgery. In the limited cases, it was only planned 12 months after surgery.

Results and Discussion: Non-EPI DW MRI has proven to be highly sensitive for detecting residual pathology with only rare cases of false positivity. The early application of this technique in selected invasive cases enabled to reassure the surgeon on the performed surgical procedure or give notice of the expected residual tissue left in particular cases where other priorities were taken into consideration (e.g. facial nerve function).

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Intracranial complications of chronic otitis media

Presenting Author: **Anna Bartochowska**
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Learning objectives: In the presentation the clinical course and therapeutic results of intracranial complications of otogenic origin will be discussed.

Introduction: Intracranial complications of otogenic origin are rare but still represent a potentially lethal threat.

Methods: The aim of the study was clinical analysis of 48 intracranial complications in 29 patients with chronic otitis media. The incidence of complications, symptoms reported at admission, neurological condition, microbiological material, the choice of the surgical therapeutic method and treatment results were evaluated.

Results: 16/29 patients had a single complication, while 13/29 - multiple complications. Brain abscess was reported in 18/48 cases, meningitis in 14/48, sigmoid sinus thrombosis in 7/48, epidural abscess in 6/48 and subdural empyema in 3/48. Surgical treatment was implemented immediately and simultaneously in the temporal bone focus and the site of complication. There were no deaths.

Conclusions: Brain abscess was the most common complication in the study group. In many patients several intracranial complications occurred at the same time. The authors recommend fast evacuation of the temporal bone purulent focus accompanied by the surgical treatment of intracranial complications with the evacuation of the abscess under the control of neuronavigation.

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Endoscopic Ear Surgery and its impact on the operating theatre team

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Learning Objectives:

Introduction: The development of Endoscopic Ear Surgery (EES), from being an adjunct to microscopic dissection to becoming the prime methodology in select cases, has been an exciting recent development. This work assesses the experience of theatre team members with EES versus conventional ear surgery.

Methodology: A questionnaire was designed covering the areas of theatre time management (planning and organisation, leadership and direction, inter-team working), team thinking (shared situational understanding, thinking ahead, decision making) and team safety (safe practice, equipment use, low energy and fatigue), comparing EES to conventional microsurgery of the ear. The scale used was: 1-much worse, 2-somewhat worse, 3-neither better nor worse, 4-somewhat better, 5-much better.

Results: The respondents included 7 theatre nurses, 3 anaesthetists and 3 theatre practitioners. All respondents reported a greater subjective satisfaction with EES mainly with regard to being able to appreciate what was happening during the surgery. The anaesthetists reported that it was easier to anticipate anaesthetic requirements at the close of the procedure in EES and that patients were more comfortable postoperatively. Five out of the seven nurses consistently rated EES as a 4 or 5 compared to conventional ear surgery with regard to theatre team management, team thinking and team safety. EES was initially perceived as challenging by the nurses but with experience they report a greater degree of involvement and satisfaction with the endoscopic procedure. The theatre practitioners rated EES to be better in theatre team management and team thinking but as equivocal with regard to team safety.