Methods: HEI-OC1 and KELLY neuroblastoma cells were treated with CDDP (100μM), capsaicin(5μM) and capsaicin (5μM)-CDDP (100μM) at 24 h. Cell viability and apoptotic cell death evaluated by WST-1 and annexin-V/PI flow cytometric analysis. DNA-damage related gene expressions were evaluated by Real-time PCR array (Bio-Rad) in cochlear cells.

Results: Capsaicin did not alter cell viability of HEI-OC1 and KELLY. CDDP reduced the viability of HEI-OC1 (46%) and KELLY cells (74%). Combined treatment of capsaicin (5μM)-CDDP (100μM) resulted in a marked decrease in KELLY (16%) cells. Moreover cell viability in HEI-OC1 (80%) cells were increased. Capsaicin alone induced apoptotic cell death of KELLY cells while it did not induce apoptosis in HEI-OC1 cells. CDDP alone and capsaicin-CDDP combinations increased the apoptotic cell death at same ratios in HEI-OC1 cells. In KELLY cells, capsaicin-CDDP combinations induced apoptotic cell death more than CDDP alone. Capsaicin-CDDP induced Fancg, Mif, Mlh3 DNA repair related gene expressions in cochlear cells when compared to CDDP. Bax, Parp2, Pms2, Rad51, Sumo1 and Trp53 (apoptotic and DNA repair) gene expressions were decreased with capsaicin-CDDP combinations while increased in CDDP alone. Expression of Cdc25c was increased with capsaicin-CDDP while decreased with CDDP alone.

Conclusion: This study showed that capsaicin increased CDDP induced neuroblastoma cell death while cochlear cells viability was increased. Capsaicin might be non-tumor interfering protective agent and the effects must be shown by further studies.

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ID: IP004

Surgical approach of mesotympanic congenital cholesteatoma

Presenting Author: **Mercedes Alvarez-Buylla Blanco**

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Learning Objectives: Congenital cholesteatoma surgical technique preserving intact tympanic structures.

Introduction: Congenital cholesteatoma is often presented as an asymptomatic disease. It is usually discovered during the otoscope examination, seen as a white mass behind a normal intact tympanic membrane. The mean age of presentation is in children between 5 and 10 years old. The early diagnosis and treatment is essential in order to avoid future complications. In children the minimally invasive approach is essential preserving the anatomic ear structures.

Clinical case: We present a minimally invasive approach for congenital mesotimpanic cholesteatoma. We perform an endoaural approach, with two incisions, upper and lower one, and a conchomeatal flap is made. This allows a direct approach to the middle ear. The posterior and anterior annulus are detached extending the anterior annulus 90 degrees anterior to the short process of the malleus, maintaining the stability of the tympanic membrane in the umbus. The ossicular chain remains intact. The cholesteatoma is removed and it is checked tby endocopic vision the full excision of the matrix.

Conclusions: We present a minimally invasive endoaural approach to reach full control and elimination of a desease that left to its natural evolution can develop intracraneal and extracraneal complications.

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ID: IP005

Tacking troublesome tinnitus in Lothian children

Presenting Author: **Ida Amir**

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Learning Objectives: We aim to evaluate the incidence, associated factors, management and outcome of paediatric tinnitus in our cohort of patients.

Introduction: Around a third of children experience tinnitus at some point in childhood. Troublesome tinnitus can affect 5% of children.

Methods: A retrospective cohort study of children referred to a paediatric tinnitus clinic over a 5 year period (March 2010-June 2015).

Results: 30 children were referred for assessment to the paediatric tinnitus clinic. The median age of affected children was 10 years (range 5–16). 83% were boys. 83% had bilateral tinnitus. In 5 children with unilateral tinnitus an MRI scan was normal. Only 17% were found to have abnormal hearing results; 2 with bilateral sensorineural hearing loss (SNHL) and 3 with unilateral conductive hearing loss (CHL). In those with unilateral CHL, 2 had chronic suppurative otitis media (CSOM) and 1 was found to have congenital cholesteatoma. There was no correlation between the type/laterality of hearing loss and the laterality of the tinnitus. 57% had no associated past medical history. History of autistic spectrum disorder (ASD) and anxiety disorder contributed to 30% of cases. Two thirds of children underwent behavioural therapy and were provided with a masker. The remaining children had a combination of behavioural therapy and a sound-ball (Puretone relaxation therapy ball). All patients had a minimum of 6 months follow-up (range 6 months-4 years). 43% were discharged after 1 year of follow-up, with equal numbers of those receiving a masker and a sound-ball (6 and 7 respectively). A further 37% required more than 2 years of regular review. No re-referrals were received during the study period.

Conclusions: Paediatric tinnitus is more common in boys. History of ASD and anxiety disorder are important factors to consider. Behavioural therapy with a sound masker or a

sound-ball appear to be equally effective strategies for managing tinnitus in this cohort of Lothian children.

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ID: IP006

Cholesteatoma complicated by parapharyngeal abscess occurred after temporal bone fracture

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Learning Objectives:

Introduction: Parapharyngeal abscess as a cervical complication of the cholesteatoma is an extremely rare disease. In the modern antibiotic era only a few cases of this life-threatening complication have been reported in the literature. The different routes of extension, e.g. peritubal, through the eroded mastoid tip or due to the involvement of the apex of the petrous temporal bone, have been previously described. However, the appropriate time and surgical strategies for management of the complication and principal disease are still controversial.

Methods: This is a retrospective descriptive case report based on clinical chart data and analysis of computed tomography scans.

Results: A 65-year-old man with a long history of recurrent right purulent otorrhea presented to our tertiary care facility with right temporal bone fracture. Later, he started to complain of hoarseness, snoring and dysphagia and was diagnosed with right parapharyngeal abscess on a contrast enhanced computed tomography scan. The patient underwent abscess drainage through transcervical route with simultaneous emergency radical mastoidectomy. Despite development of septic shock with acute renal failure in the postoperative period the patient recovered.

Conclusions: Temporal bone fracture in patients with preexisting chronic otitis media with cholesteatoma can cause infection extension to the deep neck spaces through the fracture bone defects. Early consultation of an otologist is indicated in such cases. Analysis of the computed tomography scans with thorough evaluation of the fracture line extension should be performed to prevent the complications.

Learning Objectives: Due to the rarity the cervical complications of the cholesteatoma are requiring a high index of suspicion among otologists. To increase awareness of this condition, we report this unique case.

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ID: IP007

Treatment strategy according to staging of congenital cholesteatoma in pediatric patients

Presenting Author: **MOO JIN Baek**

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Learning Objectives:

Background: The main goal of congenital cholesteatoma treatment is total eradication of the disease in order to prevent recurrence and preserve normal structure and function. This is usually achieved by a surgical method depending on the nature and extent of the disease. The authors aims to find out the proper surgical method for each stage by comparing possible surgical methods and their following prognoses depending on the stage.

Method: We retrospectively reviewed 55 patients from 2010 to 2015 who were diagnosed congenital cholesteatoma. The surgical treatment was performed by several different approaches determined by the location and extent of the disease and degree of adhesion to the surrounding structure. After 6 months of follow up, Recurrence was evaluated. Data was analyzed according to the patients age, stage by Potsic's classification, relationship between age and location of the lesion and also relationship between surgical methods and results.

Results: Age distribution was from 1 year to 14 years and among these patients, 25(45%) were under 2 years of age. 26 Patients(47%) were classified as Stage I with the highest number. Patients diagnosed at an elder age showed a tendancy of lesions being located more posteriorally and being found at more various locations such as the mastoid or attic. The result of surgical procedure was stage I with no recurrence, stage II with 1 case of recurrence, stage III with no recurrence, stage IV with 2 cases of recurrence. Recurrence was found in 3 cases among the total 55 cases.

Conclusion: Early diagnosed diseases with lower stage were treated with surgical approaches capable of removing the lesion and at the same time preserving normal function. And also in these cases rates of recurrence and complication revealed to be low. Therefore early diagnosis with minimal conservative surgery is the most important principle to achieve the main goal of congenital cholesteatoma treatment.