respectively. However, the statistical evaluation of the data revealed no significant effect of this factor.

Conclusions: Tympanoplasty type I with underlay grafting using temporalis fascia in children aged between 5 to 8 years, gives good anatomical and functional results.

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ID: IP199

Tympanic impedance measurement with standardised nasopharyngeal air pressures – a new test of Eustachian tube function

Presenting Author: **Matthew E. Smith**

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Learning Objectives: To understand a novel method of measuring ET dysfunction.

Introduction: Eustachian tube (ET) dysfunction is a common and varied condition with significant associated morbidity. In most cases it is caused by a failure of the ET to adequately open, however there is currently no reliable method of assessing this opening. Tubomanometry is a test that has recently shown good inter-individual repeatability as a measure of ET opening and function, by measuring middle ear pressure after the application of regulated nasopharyngeal pressures during swallowing. We present the first reports of a novel test: middle ear impedance measurements during standardised nasopharyngeal positive pressure bursts (tuboimpedance). We assess repeatability in healthy ears, and whether this new assessment provides any advantages over tubomanometry.

Methods: Ethical approval was obtained. Tubomanometry and tuboimpedance assessments were performed in 20 screened, healthy ears (10 volunteers). Each ear underwent tests while the patient swallowed a water bolus during applied nasopharyngeal pressures of 20, 30, 40 and 50mbar. Immediate and delayed repeats were performed at each pressure.

Results: ET opening was detected more frequently with the tuboimpedance method, with a 100% detection rate using a nasopharyngeal pressure of 30mbar or more. ET opening at 20mbar was detected more frequently with tuboimpedance. Repeatability of both tests, as measured by Intraclass Correlation Coefficient, was very good for both immediate and delayed repeats. Repeatability for the tubomanometry R value was mixed.

Conclusions: Tuboimpedance may provide a repeatable measure of ET opening that is easier to perform, due to lower required nasopharyngeal pressures and fewer issues with poor ear-probe sealing. Further assessment in patients with different forms of ET dysfunction is required.

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ID: IP200

Petrous bone cholesteatoma: our recent experience

Presenting Author: **Tommaso Sorrentino**

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Learning Objectives:

Introduction: Petrous bone cholesteatoma is a rare condition affecting the temporal bone. It can be congenital or an evolution of a middle ear cholesteatoma. Usually at clinical presentation it involves labyrinth, facial nerve or vascular strucures. We presented 7 cases of petrous bone cholesteatoma treated in our department in the last 4 years.

Methods: We retrospectively review 7 cases of temporal bone cholesteatoma recently treated in our department.

Results: Three patients presented a previous hystory of middle ear surgery negleted and they presented at the consultation for pain in ear region. Two had already total hearing loss on that side. In the other 4 cases the cholesteatoma was congenital and the diagnosis was made by magnetic resonance for facial palsy in three cases and paralysis of the VI nerve in one case. The surgical approach was transcochlear in 2 cases, translabyrinthine in 4 cases and 1 patients was treated by supralabyrinthine approach. Facial nerve was interrupted in one case and an end to end anasthomosis was performed. We were able to preserve hearing in only 1 case. Facial nerve function improve but normalized only in 1 case.

Conclusions: Facial nerve fuction is the challenging problem in case of petrous bone cholesteatoma. Hearing can be preserved only in case of supralabyrinthine extension.

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Summarising cholestaetoma surgery and A new method of closing the mastoid cavity

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Learning Objectives:

Anatomically there are two separate layers in ear, first middle ear cleft comprising mastoid air cells, antrum, aditus, middle ear and Eustachian tube all lined by contiguous mucosa which secretes mucus and is drained finally to

Nasopharynx. Second being Canal skin and Tympanic membrane epithelium which exfoliates epithelium and is exteriorised. After surgery if this natural cavities loose their anatomy, operated cavity will no longer be dry or healthy in long term.

After complete canal down mastoidectomy two types of mastoid cavities can be found - First -completely sclerosed – means there remains no visible mastoid cells at the floor-here a large and thin fascia is lined to cover all the cavity and it epithelises and Second - cellular cavity (it is always not possible to exenterate all the air cells or at least impractical) – in which after complete Mastoidectomy, there still remain some cells at the floor. If this cavity is lined by fascia or cavity filling is done, the remaining air cells will keep on secreting mucus and granulate and the cavity will no longer be dry. A new method of solving this problem is - Conchal cartilage which is harvested at the time of meatoplasty is thinned out and laid down in cavity with convexity upwards so that it creates a small cavity communicating to aditus and then to middle ear and large fascia is lined over it.

Out of 102 canal down mastoidectomies we found primary healed cavity in 64 which never had cavity problem, 33 cavities were showing minor granulations and were cured with Trichloroacetic acid,steroid packing or drops.3 came to be tubercular and 3 never became dry in 15 months follow up.

The benefit of this procedure is that the cartilage needed is already harvested by meatoplasty, time saving as no cartilage fixation is needed to create a separate wall, time saving, reduces the size of cavity, primary healing occurs as full cavity is lined by fascia and no raw bone is exposed.

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ID: IP202

Vestibular schwannoma growth after stereotactic radiosurgery

Presenting Author: **Emma Stapleton**

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Learning Objectives: 1) To clarify the natural history of vestibular schwannoma and outline treatment options 2) To present two cases of abnormal vestibular schwannoma growth following STRS 3) To discuss potential reasons for tumour growth after STRS 4) To confirm the need for lifelong radiological and clinical surveillance following STRS.

Introduction: Vestibular schwannomas, are benign tumours of Schwann cell origin that occur on the eighth cranial nerve. Commonly presenting symptoms include hearing loss, tinnitus and balance disturbance. Tumour progression can lead to brainstem compression, cranial neuropathies and hydrocephalus. Smaller, slow-growing tumours can be safely observed, but larger tumours necessitate treatment in the form of either surgery or STRS. The literature states that tumours up to 3 ;cm in diameter can be successfully controlled in the majority of patients with STRS, and a recent Cochrane review concludes that the treatment method for large vestibular schwannomas should be chosen on an individual basis, taking into consideration the patient's preferences, clinician experience and the availability of radiotherapeutic equipment.

Methods: We present two cases of vestibular schwannoma which were treated with STRS, and decreased in size during the two years following treatment, following which they began to exhibit further growth.

Discussion: Pseudoprogression of vestibular schwannomas for up to two years following STRS is a well-documented phenomenon, following which the oedematous tumour regresses in response to the STRS.

Potential reasons for tumour growth over two years after STRS are malignant transformation of the tumour, and late failure of STRS. Although rare, there is a documented risk of malignant change following exposure to radiation. Late failure of STRS is possible if, despite an early response to STRS, living cells within the tumour develop an adequate blood supply for growth.

Conclusions: Vestibular schwannoma patients warrant lifelong radiological and clinical surveillance following STRS, as there is a small chance of initial regression followed by further growth. These cases therefore require surgery, for tumour removal and histological diagnosis.

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ID: IP203

Management of the intact, mobile stapes: a 12 year experience

Presenting Author: **Emma Stapleton**

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Learning Objectives: 1) To clarify the goals of tympanomastoid surgery 2) To present a single surgeon's 12 year cohort of patients 3) To determine hearing outcomes in patients with an isolated, intact, mobile stapes and aerated tympanum following tympanomastoid surgery 4) To compare the outcomes of Type III cartilage tympanoplasty with published results of various ossicular prostheses in similar patient groups. 5) To recommend management guidelines for hearing preservation in patients with an isolated, intact, mobile stapes

Introduction: The goals of tympanomastoid surgery are the elimination of disease and the preservation of good hearing function. There is much literature on this topic, and it is understood that a mobile stapes and aerated tympanum are essential for a successful type III tympanoplasty, and that the interposition of a cartilage disc between stapes and tympanic membrane graft can improve audiometric results. However, there is heterogeneity amongst reported case series, and conflicting reports regarding the use of ossiculoplasty materials. The aims of this paper were to analyse hearing outcomes from a 12 year cohort of patients with an isolated, intact, mobile stapes following tympanomastoid surgery; to compare primary cartilage reconstruction with