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Learning Objectives:

Introduction: To prevent residual and recurrent cholesteatoma, we performed canal wall down technique with the obliteration of paratympanic spaces for patients with acquired cholesteatoma.

Material and Methods: 229 ears were operated (223 patients: 81 females and 142 males). In 158 cases an operation was performed for the first time and 71 cases were revision and re-operation after surgery by other surgeons. All patients underwent sanation surgery with the obliteration of paratympanic spaces followed by the restoration of the posterior wall of the external auditory meatus and simultaneous tympanoplasty (closed-type surgery). Close tympanic cavity with chondro-perichondrial flap with simultaneous ossicculoplasty. Obliterate paratympanic spaces with bone pate, or bioglass, or allocartilage and cover it with chondroperichodrial flap. The patients were examined one year after the treatment with the use of the MRI technology using the non-EPI DWI regime to monitor the residual and recurrence cholesteatoma.

Results: From 2009 to 2015, we operated 229 ears. The results were evaluated according to otomicroscopy, MRI sequences, such as the non-EPI DWI and recorded for survey. From 2009 to 2011 the residue of cholesteatoma was diagnosed in 3 cases (3,7%), from 2009 to 2012–7 cases (5.9%), from 2009 to 2013–9 cases (6%), from 2009 to 2014–11 cases (5,8%) and from 2009 to 2015–11 cases (4,8%). No residual cholesteatoma were detected in the obliterated mastoid cavity.

Conclusion: Long-term follow up indicated that the canal wall down technique with bony obliteration is a safe method with which to treat primary cases and to reconstruct unstable cavities. The MRI technology in the non-EPI DWI regime was successful in differentiating soft tissues and enabling the detection of residual or recurrent cholesteatoma after a canal wall down bony obliteration technique procedure.

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Mastoid Obliteration (R741)

ID: 741.3

The Bony Obliteration Tympanoplasty Technique in cholesteatoma Management

Presenting Author: **Erwin Offeciers**

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Learning Objectives: 1. To share the long term results of our bony obliteration tympanoplasty technique in primary and revision cholesteatoma cases (BOT), and in the reconstruction of unstable CWD cavities (CR-BOT). 2. To illustrate the advantages of an intact bony canal wall over CWD procedures. 3. To discuss the prerequisites for long term safety when using the BOT. 4. To advocate the use of the non-EP DW MRI sequence for the follow-up of cholesteatoma cases.

Introduction: Since the last 15 years we have used the Canal Wall Up Bony Obliteration Technique (CWU-BOT) in 87% of our cholesteatoma cases. The BOT preserves the bony CW and closes the tympano-attical barrier and posterior tympanotomy with sculpted cortical bone. After removal of all diseased soft tissue and bone, the antro-attico-mastoid space is completely obliterated with healthy bone pâté. The middle ear is reconstructed using a tympano-ossicular allograft, including the malleus handle, which acts as the anchor point for columellar reconstruction to the stapes with a remodelled allograft incus or malleus.

Methods: We report on the long term outcome of 2 series of consecutive cases operated on by a single surgeon (EO). The first series comprises 34 paediatric cholesteatoma cases, followed up for at least 5 years without drop-outs. Control for residual disease was done by non-EP DW MRI (100%) at 1 and 5 years post-op. Control for recurrent disease was done by yearly micro-otoscopic evaluation. We compare the outcome with a similar series, previously operated by the same surgeon, using identical dissection and reconstruction techniques, however without bony obliteration. As such, we evaluate the contribution of the BOT factor to long term safety (prevention of recurrence).

The second series comprised 50 unstable CWD cavities surgically restored by means of the BOT, and followed up for a mean of more than 8 years. Control for residual disease was done by a combination of staging (the early cases) and non-EP DW MRI (76%). Control for recurrent disease was done by yearly micro-otoscopic evaluation.

Results: We report on recurrence rate, residual rate and anatomical/hygienic outcome.

In the paediatric series the 5 year recurrence rate was 5.8% (2 cases). The residual rate was 2.9% (1 case). At 5 years post-op all patients reported 0% otorrhea. The ears were waterproof in 100%. The operation rate (re-operation risk) to achieve this final result was 1.47. This re-operation rate included the revisions for the 2 residual cholesteatoma cases and for the single recurrence case, as well as secundary closure of 3 reperforations and some secundary Meatoplasty cases. The comparison with the non-BOT series showed a vast improvement of the recurrence rate, from 19.4% to 2.9%, as well as an improvement of the residual rate (from 24.3% to 5.8%).

In the cavity BOT-reconstruction series the recurrence rate was 2% (1 case). The residual rate was 2% (1 case). The long term final post-op outcome showed a dry and self-cleaning ear in 94% of the cases.

In both series there was no bone conduction loss and no facial paresis or palsy.

Conclusion: The CWU-BOT combines the advantages and avoids the disadvantages of both the CWU and CWD

technique, reconciling the long term safety aim with excellent anatomical/hygienic outcome. The long term recurrence rates have dropped significantly in our series, as well as the residual rates. The vast majority of the patients report a dry, selfcleaning and water-resistant ear in the long term. The use of non-EP DW MRI as a screening tool for residual disease has obviated the need for routine second stage surgery and provides long term safety.

For us this solves the old debate of CWU versus CWD techniques in cholesteatoma management. Since 1997 we have completely abandoned the use of CWD techniques for the management of cholesteatoma. The suppression of the paratympanic cell system by complete bony obliteration seems to favourably influence the behaviour of the biologically unstable middle ear and its mucosal lining. The careful reconstruction of a solid bony partition between the mastoid and attic space on the one hand and the ear canal and tympanic cavity on the other hand seems to limit the effect of the pathological biological behaviour of the canal skin.

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Free Papers (F742)

ID: 742.1

External Ear Otalgia treated with Subcutaneous Methylprednisolone Acetate injections – a novel case series

Presenting Author: **Paula Coyle**

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Learning Objectives: To show delegates a novel way of treating neuralgic external ear otalgia.

Introduction: Steroids are used in other specialities such as orthopaedics and anaesthetics for pain relief. It is felt that corticosteroids reduce pain by inhibiting prostaglandin synthesis which reduced inflammation and tissue oedema by stopping the reduction in tissue vascular permeability. They have also been shown to reduce spontaneous discharge in an injured nerve with reduced neuropathic pain. Steroids are in all ENT department as we use them regularly to help with other symptoms such as hearing loss and vertigo. We present five cases where steroids were used for neuralgic otalgia of the external ear over a year period in an ENT Clinic in a UK district general hospital.

Method: Usual causes of otalgia which can be varied and sinister had to ruled out with full history taking, examination including otoscopy and flexible nasendoscopy. Any further imaging needed was decided on a case by case basis. Patients were examined by the consultant under the microscope. The location of pain on the pinna or external auditory canal was tested by pressing the areas with the speculum or wax hook. Patients were verbally consented and subcutaneous Methylprednisolone Acetate in the form of Depo-Medrone 40 mg/ml was injected into the area. The patient's notes were reviewed and symptoms pre-procedure and post-procedure reviewed and assessed.

Results: Patients all had an improvement on their pain score. Most needed repeated treatment, but were grateful for the temporary relief.

Conclusion: To our knowledge this treatment has not been used in ENT before for managing otalgia. We have had great success with it with small patient numbers and over a short time period. It is easy, safe and practical in perform in the clinic room. We would conclude that large patient numbers and research is needed to assess the reliability, cost analysis and predictability of this procedure in the short and long term.

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Free Papers (F742)

ID: 742.2

Chronic suppurative otitis media in adult cochlear implantation: a review of our experience

Presenting Author: **Nina Mistry**

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Learning Objectives:

- Importance of the prompt treatment of CSOM post-CI.
- Recognition of surgical factors when performing CI to minimise the potential for future CSOM development: avoiding or correcting damage to posterior canal wall and annulus.
- In cases of pre-existing CSOM, steps should be taken to treat the disease and prevent recurrence.

Chronic suppurative otitis media (CSOM), with or without the presence of cholesteatoma, may occur following cochlear implantation. At present, however, there is paucity of published data regarding the incidence and management of CSOM in adult cochlear implant (CI) recipients. Here we describe our experience of treating these patients and discuss important lessons learnt.

Details of all CI recipients who underwent procedures for CSOM from January 2001 to December 2015 were identified. Information regarding the patient's case history, type and timing of the surgical procedure, post-operative complications and CI use were collected.

Results: Eight CI patients with CSOM were identified (1.18% of patients undergoing CI during this period). The mean age at initial CI was 53 years. Two patients were identified as having pre-existing CSOM prior to CI and underwent simultaneous procedures. In the other 6 patients, CSOM developed post-CI with the main symptom being chronic otorrhoea. The mean time interval between CI and CSOM surgery was 5.6 years (range 3–11 years).