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Learning Objectives:

Introduction: In active Chronic Ear Disease (CED) and secuelae of CED without Cholesteatoma we perform Miringoplasties and Tympanoplasties without Mastoidectomy to reconstruct the sound transmission mechanism.

In this course we describe our surgical approaches and the materials that we use for the reconstruction of the ossicular chain. We tend to favor the use of autologous grafts whenever possible such as temporalis muscle fascia, tragal cartilage and remodeled incus. In some cases we also use titanium TORP and otologic cement depending on the existing viable remnants.

Material and method: For the purpose of this course we have revised 50 cases that had undergone Miringoplasties or Tympanoplasties. In the 50 cases we describe the procedure used to reconstruct the tympanic membrane and the ossicular chain depending on the pathology found in each case.

Results:

1. - The most frequent approach has been retroauricular (85%).
2. - In 50% of the cases the tympanic membrane was grafted with fascia (50%). In the remaining 50% the membrane was grafted with tragal perichondrium or periosteum obtained from the mastoid.
3. - The graft was positioned in two pieces and overlaid to the despitheliazed tympanic remnants leaving the malleus handle between the two grafts (Double Overlay Graft, DOG).
4. - The results showed that in 94% of the cases the tympanic membrane remained closed 3 years after surgery.
5. - There was a significant hearing improvement in 80% of the cases. In those cases the residual air bone gap was less than 20 dB.

Conclusions: Miringoplasties and Tympanoplasties without Mastoidectomy have excellent results in the majority of cases. Both grafts take and hearing improvement is frequent enough as to recommend surgery as the best treatment choice. The adequate selection of cases for surgery, some technical aspects and thorough follow up of the patient are considered critical to obtain good and long lasting results.

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Cholesteatoma accompanied abnormal ossification; Report of two cases

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Learning Objectives: Case study.

It is well known the cholesteatoma causes bone erosion and destruction of ossicular chain. We experienced two cases of cholesteatoma accompanied by abnormal ossification around ossicles which showed fixation to the wall of antrum or bony wall of middle cranial fossa. Case 1 is a 39-year-old man. He visited our hospital complained hearing loss of his left ear about one year ago. He also complained otorreah of left side six months ago, cured spontaneously. 10 years ago he had visited our hospital for his right ear surgery, then an otomicroscopic examination of his left ear showed only dry small retraction pocket. But this time the retraction pocket of his left ear had been enlarged. Computed tomography scanning (CT) revealed deformity of ossicles. An operation of his left ear was performed. Abnormal ossification was seen around malleus head and Incus body and fixed the wall of antrum. Isolated cholesteatoma was existed behind the malleus head. Case 2 is a 45-years-old woman. At the age of 23, her left ear had been operated for cholesteatoma in our hospital. 8 years later she visited our hospital for his right otalgia. An otomicroscopic examination of her right ear revealed the retraction pocket with large squamous debris. By conservative treatment her otalgia was cured and the retraction pocket was cleaned. CT revealed only small soft tissue in attic. At this time the age of 45, the debris of the retraction pocket couldn't be removed for pain. CT revealed large soft mass with defect of bony wall of middle cranial fossa. An operation of her left ear was performed. Ossicles fixed wall of antrum and isolated cholesteatoma by the abnormal ossification was found. It will be necessary to take into consideration of the existence of isolated cholesteatoma by abnormal ossification.

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Simultaneous cochlear implantation and labyrinthectomy for advanced Ménière's disease

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Learning objectives:

1. Understand the challenges in managing intractable vertigo in Ménière's disease.
2. Review the literature on cochlear implantation outcomes in Ménière's disease.
3. Learn about simultaneous labyrinthectomy and cochlear implantation as an emerging technique in the management of Ménière's patients with intractable vertigo.

Introduction: Patients with Ménière's disease can develop unaidable sensorineural hearing loss. Cochlear implantation

has recently been utilised in this group with favourable outcomes. A more challenging group are those with intractable vertigo and they have traditionally posed a significant management dilemma.

Methods: Retrospective case note review was performed in a tertiary referral centre. Three female patients with recurrent incapacitating attacks of vertigo despite conservative management underwent simultaneous labyrinthectomy and cochlear implantation. Two patients had unaidable hearing preoperatively. One patient had moderate-severe sensorineural loss and was suffering from frequent debilitating drop attacks that had resulted in injury.

Results: There was complete resolution of vertigo in all patients in our series. Speech perception in quiet and ability to hear in background noise improved in all cases. Review of the literature demonstrated a small number of cases worldwide in whom simultaneous labyrinthectomy and cochlear implantation have been performed with successful outcomes.

Conclusion: Surgical labyrinthectomy is an effective method for elimination of vertigo in patients with Ménière's disease. The major disadvantage in the past was loss of residual hearing. Cochlear implantation is now an option in these patients. The benefits of simultaneous labyrinthectomy with cochlear implantation include prevention of implantation of a fibrosed or ossified cochlea, a decrease in the duration of deafness and a single operative procedure. This technique should be considered as a management option in carefully selected patients.

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Magnetic Resonance Imaging surveillance after subtotal petrosectomy and blind sac closure: A review of radiological findings and long term follow up

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Learning objectives:

1. Learn about the MRI features of the temporal bone post SP BSC.
2. Understand more about the behaviour of the temporal bone when it has been isolated from the external environment.
3. Understand the role of MRI in surveillance of the temporal bone post SP BSC.

Introduction: Long term follow up is recommended following subtotal petrosectomy (SP) with cavity obliteration and blind sac closure (BSC) of the external auditory canal to detect recurrent or iatrogenic cholesteatoma and chronic otitis media (COM). Follow up has historically been a challenge both clinically and radiologically. Recent advances in MRI have transformed our ability to survey patients post SP BSC. The objectives of this study were to: i. Characterise the MRI features post SP BSC; ii. Assess the behaviour of the temporal bone and disease persistence/progression post SP BSC; iii. Classify the radiological features and define their consequences for clinical care.

Methods: Retrospective case note review was performed in a tertiary referral hospital of 23 patients who underwent SP BSC between November 2004 and October 2013. MRI surveillance was carried out over a mean follow up period of 48 months (range 14–116). MRI features over time were compared to clinical course and surgical findings.

Results: Otitis media with effusion is a common finding in the unventilated temporal bone but appears to have little if any clinical consequence. Revision surgery was performed on clinical grounds in four patients (17%) and concerning imaging features but no clinical concerns in three patients (13%). Radiological findings correlated with operative and histological findings for cholesterol granuloma and mucosal COM but there was discrepancy in the diagnosis of cholesteatoma.

Conclusions: The MRI features of the temporal bone post SP BSC are described. A grading system for radiological findings is proposed to guide surveillance and possible further surgical intervention.

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Hearing loss and cognitive decline in Singapore: status quo of an island nation

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Learning objectives:

1. Understand the challenges related to hearing health and cognitive decline in seniors facing a small country that has undergone rapid development over the last 50 years.
2. Identify ways that may start to address these through education and research.

Introduction: The burden of dementia continues to rise worldwide. Hearing loss has been independently associated with accelerated cognitive decline and identified as an independent risk factor for all-cause dementia. Singapore is a small country facing a rapidly ageing population. This study aims to review the current status of hearing health and cognitive decline in seniors in Singapore.

Methods: A literature search of articles published in English was conducted based on PRISMA guidelines.

Results: The prevalence of dementia is estimated to be 10% in those ≥60 years and increases with age. Interethnic