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Learning Objectives: Although relatively rare in childhood, cholesteatoma deserves a special attention by not only by general practitioners but also by specialists in different mutually related disciplines in the family of neurosciences and, particular, in neurootology.

Introduction. Cholesteatoma in childhood is difficult to diagnose in spite of substantial advances in diagnostic approaches. The delayed detection of this complicated pathology necessitates adequate surgical management.

Methods: We report a child aged eight years presenting with congenital cholesteatoma accompanied by peripheral facial nerve palsy. Management has been initiated by a neurologist and later on, an otorhinolaryngologist has been involved in the therapeutic team because of the failed drug therapy. According to parents' report, three years ago the child complained of gait disturbances attributed mainly to his overweight. A comprehensive physician's examination included preoperative audiometry and computer tomography, intraoperative monitoring system enabling safe cholesteatoma removal in the area of bone destruction at second genu level as well as pre- and postoperative electromyography.

Results: We successfully identified the degree of morphological damage and of the disturbed function. Besides, the prognosis concerning facial nerve restoration was clarified. On the seventeenth day after the surgical intervention, there was convincing electromyographic evidence of significant improvement of the facial nerve function and positive change of facial appearance as documented by pictures in 4-day intervals. A concise review of recent publications dealing with cholesteatoma diagnosis and surgery illustrated the socio-medical importance of this entity in childhood (e.g., A. T. Harris et al., *J Laryngol Otol.* 2016;130:235; M. S. Cohen et al., *Laryngoscope.* 2016;126:732; J. B. Hunter et al., *Otolaryngol Head Neck Surg.* 2016; Mar 1, etc.).

Conclusion: Scanty initial clinical symptoms along with poor otoscopic findings hamper considerably the early exact diagnosis of cholesteatoma. Interdisciplinary collaboration between neurologists, otorhinolaryngologists, radiologists and neurosurgeons could warrant the proper therapeutic behaviour in children with cholesteatoma.

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Endoscope-i: transforming endoscopic technology and the delivery of patient care in ENT

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Learning Objectives: To raise awareness amongst ENT surgeons of the potential role that digital and mobile device technology such as the endoscope-i can play in enhancing the delivery of healthcare services to patients.

Introduction: Digital and mobile device innovation in healthcare is a growing market. The introduction of the endoscope-i, the world's first endoscopic mobile imaging system, allows the acquisition of high definition images and videos, without the need for expensive and bulky stack systems.

Methods: The endoscope-i system was first developed by the senior authors in conjunction with experts in the engineering and software development fields. The system combines the e-i Pro camera app with a bespoke engineered endoscope-i adaptor which fits securely onto the iPhone. The system is portable and allows high definition endoscopic imaging of the ear, nose and throat, with the facility to capture still images and videos.

Results: The endoscope-i has far-reaching applications but comes into its own in when examining the ear endoscopically. The assessment of a variety of pathology such as tympanic membrane perforations, retraction pockets and cholesteatoma can be undertaken efficiently and relayed immediately to the patient. Not only does this provide instant feedback to the patient during the consultation, thereby improving patient education, it also allows the documentation of findings via a secure app which can be stored as part of the patient's record of care, replacing the need for previous hand-drawn notes.

Conclusions: The use of endoscopic mobile imaging systems has the potential to transform the way that healthcare is delivered in ENT. The endoscope-i system provides a cost effective device that is accessible, easy to use and which makes diagnostics simpler and quicker. Although there are clear applications in the field of otolaryngology, the technology is also being used by other medical specialties such as anaesthetics and urology as well as in veterinary medicine and engineering.

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The Novel Affordable Telford Temporal Bone Holder

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Learning Objectives: Surgical training is constantly evolving with greater emphasis placed on simulation. In particular, the understanding of complex three-dimensional anatomy in temporal bone dissection necessitates significant additional training outside of the operating theatre. While virtual reality systems have been developed recently, cadaveric dissection remains the gold standard for simulation.

Several variations of temporal bone holder have been developed but all have limitations. The ideal temporal bone holder should remain stable in multiple orientations but also adjust easily. It should not obstruct the surgical view and should simultaneously provide adequate drainage of bony debris.

The temporal bone holders that are currently commercially available for both ENT departments and temporal bone laboratories, are expensive and have scope for refinement. With this in mind we have produced an extremely cheap alternative that allows trainees to maintain a stable surgical position and facilitate excellent surgical orientation.

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The Management of Petrous Bone Cholesteotoma: A Challenging Clinical Entity

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Learning Objectives: 1. To demonstrate that petrous bone cholesteotomas are a complex clinical entity. 2. To show that patients with this condition often present late with significant morbidity present prior to intervention 3. To describe our clinical outcomes following surgical intervention in the context of the current literature.

Introduction: Cholesteotomas occurring or extending medial to the otic capsule and labyrinth are regarded as petrous bone cholesteotomas (PBC). Important anatomical structures within this area makes the management of these cases demanding. We report our experience and outcomes following surgery.

Methods: Case notes of patients who underwent PBC surgery over an 11 year period (2003–2014) were retrospectively analysed.

Results: 23 patients were identified. Median age 50 years (range 19–81). The commonest symptom was hearing loss (78.3%) with facial nerve dysfunction (69.6%) and disequilibrium (26.1%) being experienced by many. 12 (52.2%) patients had a facial nerve palsy prior to operative intervention. 11 (47%) had previously undergone ear surgery with 7 (30.4%) being for cholesteotoma. 1 (4.3%) patient had multiple episodes of meningitis and 1 (4.3%) had developed a cerebellar abscess prior to operative intervention. Preoperatively, 6 (26.1%) had a “dead” ear with 5 (21.7%) having a profound hearing loss.

In our series, 14 (60.9%) patients had a total petrosectomy with closure of the ear canal, eustachian tube and obliteration of the cavity with an abdominal fat graft. The remaining had subtotal petrosectomy (4), revision petrosectomy (3) or a combined middle fossa and trans-mastoid approach (2). Operative findings confirmed extensive disease in most cases with facial nerve (56%), dural (39%), vestibular (26%), cochlear (21%) and carotid (13%) involvement being encountered. 9 patients had post-operative complications including: wound infections (3), post aural fistula (2), facial palsy (2) and dead ear (2). Within an average follow up period of 43 months, there was 1 (4.3%) recurrence.

Conclusion: In our series, PBC had often become advanced prior to intervention, despite advances and increased availability of imaging techniques. Extensive PBCs are difficult to “cure” by surgery but we show good control rates with little increased morbidity from intervention.

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A Comparison of Operative Time Outcomes in Endoscopic and Open Tympanomastoid Surgery

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Learning Objectives: Initial concerns regarding increased operative times when developing a novel EES practice are unfounded and should not deter otologists from becoming proficient at this technique.

Introduction: Endoscopic Ear Surgery(EES) has recently developed from being an adjunct to traditional microsurgery to becoming the principle methodology in select cases. Surgical use of the endoscope provides a wider field of view, increased depth of field and the ability to directly visualise ‘hidden’ areas of the middle ear.

Prolonged operative time is often considered a drawback when developing a novel application for minimally invasive surgery. There is limited data on the specific operative time of endoscopic tympanomastoid surgery compared to a conventional open approach.