children and decrease in ME volume over time in 40% of cases.

Conclusions: Results support that the ME volume, the ME surface area/volume ratio along with the duration of ET dysfunction influence the extent of ME pathological changes. These parameters can be important to consider for a pathophysiology-oriented approach to the ME surgery that may improve the long-term outcome.

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Bone conduction hearing devices in children (R734)

ID: 734.1

Tissue preserving technique for introducing bone conducting devices in children

Presenting Author: **Malou Hultcrantz**

Malou Hultcrantz

CLINTEC, Karolinska Institutet

Learning Objectives: BHCD in children operated with tissuepreserving technique has a better outcome.

Objectives: A tissue preserving surgical technique has shown no increased inflammatory reactions after a non- skin reduction technique in adults. Objective was to evaluate in children the extent of the stability, the skin in contact with the device, numbness and clinical signs and symptoms of inflammation or infection at the site of the skin penetration.

Methods: A single-centre clinical investigation comparing the surgical technique without the skin thinning procedure with the results from earlier techniques, now using longer individualized abutments. Participants in the study were included consecutively and operated in general surgery in a day surgery setting. The Ostell instrument for registration of stability was used.

Results: Clinically there were no surface related adverse events, nor were any skin reactions noted in the test or control groups during 12 months follow up. Numbers of stability with RFA is given.

Conclusions: This human clinical trial in children, as compared to earlier techniques support and extend findings of newer surgical tissue preserving techniques, with good tissue response and no surface related adverse events.

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Bone conduction hearing devices in children (R734)

ID: 734.2

Use of bone conduction hearing devices in management of patients with congenital aural atresia and microtia- Experience in Hong Kong Chinese

Presenting Author: **Michael CF Tong**

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The Chinese University of Hong Kong

Learning Objectives: Understand the approach in using bone conduction hearing aids in children with aural atresia and microtia.

Introduction: The prevalence of external ear abnormalities is around 1 % in Chinese children in Hong Kong. Coexisting hearing loss could be of outer ear, middle ear or inner ear in origin. Management of hearing losses depends on whether it is unilateral or bilateral, the severity and type as well as the plan of management of the external ear abnormalities.

Methods: A review of the management of Chinese patients underwent bone-conduction hearing aid with co-existing outer ear deformities is made from 1995 to 2015 in a single tertiary referral centre in Hong Kong.

Results: Early cases were managed with percutaneous Baha^{TM} until 2012. With the introduction of Bonebridge^{TM} and Baha Attract in 2013 and 2014 respectively in our centre, there is a change of management leaning towards these transcutaneous devices. Adults or older children were managed with either Bonebridge^{TM} or Baha^{TM} Attract system and children were managed with Baha^{TM} Attract.

Auricular reconstruction could be performed in the same procedure or as a separate procedure as long as a good surgical planning is made.

Two children and one adolescent (age 9, 13 and 19) with Nagata stage 1 auricular reconstruction and Baha^{TM} Attract at same setting were described as an illustration of our technique. Adults with Bonebridge^{TM} cum Nagata stage 1 were described in parallel for discussion.

Discussion and Conclusion: We describe the successful management of a series of congenital atretic and microtia patients with bone conduction hearing devices.

The transcutaneous system allows earlier switch on. The BahaTM Attract system is particularly suitable for some of these children with very thin skull. We see more patient/ parental acceptance with transcutaneous devices after their introduction into clinical practice.

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Bone conduction hearing devices in children (R734)

ID: 734.3

Adapting the BAHA surgical technique for Children

Presenting Author: **Iain Bruce**

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Royal Manchester Children's Hospital

Learning Objectives: 1. Percutaneous and transcutaneous BAHA are both important options in children

2. Adaptations to the skin and soft tissue technique used may be required in children 3. Special circumstances, such as microtia cases, require particularly careful planning and collaborative working with the reconstructive surgeon.

Introduction: The appropriateness and effectiveness of BAHA in selected children and young people is well established. Lower than expected uptake in children has contributed to recent technological advances, most notably percutaneous BAHA without soft tissue reduction and the development of transcutaneous BAHA (Cochlear™ Baha® Attract System), aimed at improving cosmesis and reducing skin problems. Adaptations in surgical technique and special considerations may be necessary when undertaking BAHA surgery in children.

Methods: A single surgeon's experience of BAHA surgery in children will be reviewed and illustrated, with emphasis upon adaptations in skin and soft tissue surgical technique and decision making regarding siting of the fixture in relation to the pinna.

Results: Five scenarios will be considered: 1. 'No soft tissue reduction surgery', 2. Adapting the recommended surgical technique for ATTRACT surgery, 3. Transitioning from percutaneous to transcutaneous BAHA, 4. Simultaneous BAHA and mastoid surgery, and 5. Microtia. Illustrative cases will be presented for each scenario. Most notably changing the position of the skin incision for ATTRACT surgery from anterior to posterosuperior to the implant magnet, offers potential cosmetic benefits and avoids disruption of the soft tissue planes in planned autogenous pinna reconstruction cases. Inappropriate choice of the implant site may also compromise future pinna reconstruction. Scar tissue over the implant magnet does not lead to problems with pressure induced skin necrosis, when transitioning from percutaneous to transcutaneous BAHA.

Conclusions: Traditionally, cosmesis and recurrent inflammation have limited uptake of BAHA in children. Advances in BAHA technologies have led directly to greater applications in children. The anticipated development of an active transcutaneous BAHA promises further improvement in cosmesis and acceptability to children and young people.

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Late problems following surgery on chronic otitis media (N735)

ID: 735.1

Granular myringitis after middle ear surgery?

Presenting Author: **Iain Swan**
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Granular myringitis is a problem that we all encounter. There is no good definition for granular myringitis in post-surgical ears but the term is loosely applied to ears where there is a small area of granulation tissue on the grafted tympanic membrane or in the mastoid cavity.

It may appear many months after surgery in what was initially a well healed ear, and there are usually no obvious identifiable causes. There are several papers about granular myringitis in patients with no history of ear surgery but none about post-surgical patients. It is rarely mentioned in case series, but all surgeons encounter it.

There is no good evidence on aetiology or on treatment, in post-surgical cases or in non-surgical cases. Many treatment modalities have been reported in non-surgical cases including topical antibiotics/steroids, acetic acid, hydrogen peroxide, 5-fluorouracil, Castellani's paint, cautery, laser and surgery. Most of these, except surgery, are used in post-surgical cases.

It seems that most surgeons try a variety of treatments until the inflammation settles, which can take many months. There is no evidence for efficacy of any specific treatment. The most reasonable conclusion is that no specific treatment has been found to be effective in a significant proportion of patients.

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Late problems following surgery on chronic otitis media (N735)

ID: 735.2

Problems associated with the use of Serenocem granules in mastoid obliteration

Presenting Author: **Christopher Aldren**
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Learning Objectives: Significant bone erosion has been detected in patients who have had mastoid obliteration using Serenocem granules. The lecture will discuss the issues regarding use of new materials. Advice will be given on how to report and investigate adverse reactions and the management of patients affected when things do not go to plan.

Serenocem granules are a ceramic granule produced by Corinthian Surgical in the United Kingdom. They have been marketed since 1997 as an ideal material for obliteration of the mastoid cavity. The author used the granules for mastoid obliteration in 40 cases over a 10 year period. Results were generally good however at recent revision surgery one patient was noted to have significant erosion of the temporal bone adjacent to the granules. Subsequent CT scanning of other patients found bone erosion to be a common finding, occurring in 75% of patients. The product was reported to the medicines and healthcare products regulatory agency (MHRA) and to the company. Other surgeons were contacted and similar findings were noted in their patients. The product was withdrawn by the company. Surgical findings will be illustrated with video. CT scans and histology will be presented. The possible aetiology will be discussed as well as the significant managment issues arising for the patients affected.