Treatment included explant and blind sac closure, with re-implantation in 3 cases. One case of extensive cholesteatoma required a subtotal petrosectomy. Of the 8 patients, 4 patients required an average of 3 further procedures (range 2–5) to treat continuing CSOM symptoms. Implant outcomes were as follows: original CI retained and in use, n = 1; bilateral CI and use of contralateral non-affected side, n = 4; re-implantation and use of CI on affected side, n = 3.

Conclusions: CSOM can occur, often several years, following CI. Recognition of symptoms together with prompt treatment may allow retention of the original CI and prevent further complications and multiple procedures. CSOM noted preceding CI should be treated adequately prior to or at the time of implantation and steps taken to prevent the recurrence of disease.

doi:10.1017/S0022215116003169

Free Papers (F742)

ID: 742.3

Key factors for developing a Successful UK-Surgical Ear Implant Registry

Presenting Author: **Rishi Mandavia**

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Learning Objectives:

Introduction: Hearing loss has a major social, mental and financial impact worldwide. This impact is set to increase with our ageing population. Industry are targeting this with an increasing range of surgically implanted hearing devices. There is currently no UK registry capturing data on these devices. In the absence of such data it is difficult to reflect on practices and monitor clinical and cost-effectiveness. Establishing such a registry faces several challenges. We aim to identify the requirements for establishing a successful UK-surgical ear implant registry.

Methods: We performed a systematic review adhering to PRISMA recommendations. Articles were included if they described UK-surgical registry design, development, or provided critical analysis of a surgical registry.

Results: 48 studies were included. The major challenges encountered by registries included: poor rates of data completion, difficulty in securing funding and registry maintenance.

Recommendations included: datasets be selected following stakeholder consensus meetings; datasets be flexible and quick to complete; registry participation should be compulsory; the registry should be useful for clinicians and easy to use; data should undergo rigorous processing and cleaning; patients should be involved in registry development and be able to access and input their own data.

Funding sources included industry, participating hospitals, professional societies, and research grants.

Conclusion: This study provides an overview of the key requirements for successful UK-surgical registry development based on previous registry experiences. Our future plans are to conduct stakeholder interviews and patient focus groups to further inform the development of a successful UK-surgical ear implant registry.

doi:10.1017/S0022215116003170

Free Papers (F742)

ID: 742.4

Successful Loading of a Bone Anchored Hearing Implant One Week After Implantation - Stability Measurements and Soft Tissue Reactions

Presenting Author: **Morten Høgsbro**

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Learning Objectives: Potential clinical implications of early loading of a bone anchored hearing implant. How to evaluate stability and soft tissue reactions of a bone anchored hearing implant. Results from a clinical study of early loading of a bone anchored hearing implant.

Objectives: To assess implant stability and safety of loading a bone anchored hearing implant one week after surgery. To evaluate post-operative skin complications of a bone anchored hearing implant abutment coated with hydroxyapatite.

Design: Single centre, prospective cohort study of 25 adults with normal skin and bone quality, approved by danish health authorities.

Intervention: Implantation of the Baha BA400 implant system using a linear incision technique without skin thinning. Abutment lengths of 8 mm,10 mm and 12 mm were used.

Outcome measures: Implant Stability Quotient (ISQ) (primary) and soft tissue evaluation (Holgers grade, skin overgrowth, pain, numbness) (secondary) at 0, 7, 14, 30 days and 3, 6 and 12 months.

Results: 25 patients were included, 23 could be followed up for one year. Mean ISQ was increasing with no sign of adverse influence from the early loading. No implants were lost or clinically unstable. Individual ISQ curves fall in two categories: continually increasing ISQ or increasing ISQ with initial dip. 93.8% of all visits resulted in a Holgers Grade 0 or 1. Skin overgrowth occurred in 2.1% of all visits. Pain was none or mild in 97.9% of all visits. For all visits there was no (95.8%) or mild (4.2%) numbness around the implant. Within the first month of follow-up there was a significantly higher score for the Holgers Grade ($p = 0.005$, Mann-Whitney U-test) and significantly more pain ($p = 0.01$, Mann-

Whitney U-test) compared with the previous generation implant.

Conclusion: Loading of the implant system 1 week after surgery has been successful for 25 patients with normal bone quality followed up for one year. No implants were lost. All individual ISQ were increasing throughout the study period, although some showed an initial ISQ dip. Soft tissue reactions around the hydroxyapatite coated abutment were generally mild and tolerable but elevated in the first month of follow-up compared with the previous generation implant.

doi:10.1017/S0022215116003182

Free Papers (F742)

ID: 742.5

A Review of Paediatric Bone Anchored Hearing Aid (BAHA) use in Chronic Otitis Media (COM)

Presenting Author: **Nicholas Dawe**

Nicholas Dawe[1], Denise Leese[2], Suzanne Marley[2], Kate McPherson[2], Ian Johnson[2]

[1]*Freeman Hospital, Newcastle upon Tyne,* [2]*Newcastle BAHA Programme, Freeman Hospital, Newcastle upon Tyne*

Learning Objectives: BAHA placement in paediatric cohorts with COM is a viable option following trial of soft band device. Medium and longer-term concordance with the device demonstrates tolerance and acceptability in carefully selected paediatric patients.

Introduction: Bone anchored hearing aids (BAHA) are an accepted treatment alternative for patients with hearing loss associated with chronic otitis media (COM). Reports of BAHA use and outcomes in paediatric cohorts, with conductive or mixed hearing loss, in the context of COM, are limited. We present long-term follow-up data for paediatric patients undergoing BAHA at a large tertiary referral centre.

Methods: Retrospective case series.

Cases identified from a prospectively maintained database of paediatric cases (under 18 years at first fitting), performed over a 10-year period (2003–2013).

Results: 180 consecutive paediatric surgical cases were reviewed. 16 patients were identified as having undergone BAHA placement for COM hearing rehabilitation. 69% were female, and one had associated Down's syndrome. Median age was 14 years (mean 12.7 years) and ranged from 4 to 17 years old at first fitting.

43.8% of placements were were bilateral. Median duration of follow-up was 64 months (range 19–150 months). One patient requested removal of bilateral abutments at seventeen months follow-up. The remaining cases were continuing to use their implant regularly in the medium to longer-term. There were no adverse surgical outcomes.

Conclusions: In this unselected case series, the use of BAHA in patients with COM has been demonstrated to be safe, well-tolerated and reliable method of hearing rehabilitation demonstrated by patient concordance at medium to longer-term follow-up.

doi:10.1017/S0022215116003194

Free Papers (F742)

ID: 742.6

Management of Chronic Otitis Media for Cochlear Implantation and Other Implantable Devices.

Presenting Author: **Robert Briggs**

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Learning Objectives:

The presence of Chronic Otitis media presents a significant management challenge in patients who are candidates for, or who have, a Cochlear Implant or other Implantable Hearing device. Permanent eradication of middle ear disease, including cholesteatoma and infection, is required together with reconstruction to provide robust cover of the implanted device or secure separation from the external environment. This can be achieved with either staged or primary surgery depending on the nature and extent of the chronic otitis media. Procedures include: routine Tympanoplasty with or without Intact Canal Wall Mastoidectomy; Blind Sac Closure of the external auditory canal with removal of all squamous epithelium from the canal, tympanic membrane and middle ear cleft, with or without obliteration of the mastoid or plugging of the Eustachian tube.

This paper presents an algorithm for the management of such cases based on the Melbourne Cochlear Implant Clinic experience and provides an overview of the aims and surgical techniques utilized in patients with Chronic Otitis Media for the eradication disease and creation of safe stable ears with Cochlear Implants and various other implantable devices.

doi:10.1017/S0022215116003200

Classification of Cholesteatoma (N743)

ID: 743.1

The ChOLE-Classification. A proposal from the Swiss Otology Committee

Presenting Author: **Thomas Linder**