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Learning Objectives:

Objectives: Present the 6 months results of a multicentre, prospective investigation on the Cochlear™ Baha® Attract™ System.

Design: Fifty-four adult patients with hearing impairment, were included and underwent surgery in the current prospective cohort study. Follow-up visits were scheduled at 10 days, 4, 6 and 12 weeks, and 6 months. Main outcome measures are hearing performance (free-field audiometry, speech in quiet, adaptive speech in noise) with the Baha Attract System compared to the unaided situation and compared to a pre-operative test situation using the sound processor on a softband, safety of the Baha Attract System, hearing related quality of life, surgical information, sound processor magnet strength and magnetic retention force over time, and information on postoperative pain, discomfort, numbness and soft tissue status.

Results: The 6 months results of the multicentre will be presented for the main outcome measures.

Conclusions: The objective is to present data regarding the usability and clinical performance of the Baha Attract System in subjects with hearing impairment that are candidates for Baha surgery.

doi:10.1017/S0022215116004291

Bone conduction hearing devices in single sided deafness (R834)

ID: 834.2

Transcutaneous BAHA Attract Implants – Interim results at two years

Presenting Author: **Jaydip Ray**

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Learning Objectives: Transcutaneous bone conduction implants produce less soft tissue complications. Interim results show high patient satisfaction. Percutaneous devices can be converted to transcutaneous devices.

Introduction: Many soft tissue problems in bone anchored hearing solutions are related to their percutaneous nature. Tissue preservation and non skin penetration techniques help address these issues.

Methods: Prospective longitudinal study of 80 consecutive BAHA Attract patients (Sept 2013 and Feb 2016.) Data included indications, audiology, incision, surgery, skin thickness, fixture and postoperative follow up (including audiological , soft tissue, magnet types and usage).

Results: Total 80 patients implanted. Age range 4 – 86yrs. Male : Female ratio 47:33. Fifty six were adults and 24 paediatric. Indications were Conductive deafness (56%), Mixed hearing loss (16%) and Single Sided Sensorineural loss (28%). 22% were conversions from percutaneous devices. 10% cases were performed under local anaesthesia only. The incision in all cases was inferiorly facing "C". Average surgical time 40 min. All had 4 mm fixtures. Average skin thickness at midpoint was 6.2 mm for adults and 4 mm for children. Minimal post operative nursing care was required as the wound healed neatly by 1 week without hair loss and minimal surrounding numbness. No wound complications reported. Four (5%) reported pain after a month but settled conservatively. Two (2.6%) reported surrounding oedema after prolonged continuous use. One reported skin tenderness. Majority loaded with processors at 6 weeks. Commonest magnet strength 4 (range 2 to 5). 89% reported good to excellent device retention. Majority were fitted with the BAHA 4 or BAHA 5 processors. Few had BP110. All patients reported good to very good sound quality with average use of 6hrs /day.

Conclusion: The interim experience with the transcutaneous BAHA Attract system is positive with negligible post operative care requirement.

doi:10.1017/S0022215116004308

Bone conduction hearing devices in single sided deafness (R834)

ID: 834.3

Which device - when and why? The controversial role of bone conduction hearing devices in the rehabilitation of unilateral sensorineural hearing loss

Presenting Author: **David Morris**

David Morris[1], Myrthe Hol[2], Jaydip Ray[3], Joe Toner[4], Bill Hodgetts[5]

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Learning Objectives: Participants will feel able to describe the issues faced by those with unilateral sensorineural hearing loss / single sided deafness (SSD). Participants will appreciate the limitations to rehabilitation of SSD with bone conduction hearing devices. Participants will become familiar with a range of bone conduction hearing devices, described by surgeons who are experienced in their placement. Participants will understand the role of case selection and will appreciate the place for preoperative testing. Participants will appreciate that the personal choice of device selected to address SSD relies on many intertwining factors relating to the surgeon, audiologist and recipient and must also include financial and logistical considerations. Participants will realize the complexities and challenges faced when we attempt to make comparisons between the audiometric performance of such devices.

This lively, one hour round table will bring together colleagues from five experienced auditory implant programmes to share their experience with a range of bone conduction hearing devices now used to rehabilitate patients with unilateral sensorineural hearing loss often referred to simply as single sided deafness or SSD.

The panelists have been selected for their experience with particular devices or for their expertise in audiometric assessment. After a brief introduction, invited panelists will offer their views on a number of controversial topics. It will be interesting to see how much consensus and common ground exists between the different programmes and devices in this regard.

Specific attention will focus on a number of key areas that will guide our discussions:

Selection criteria - is there an age limit to consider at presentation, and if so, how relevant is the state of contralateral cochlea?

Pre-operative trials - short and in-office or prolonged, pre-directed home trial? Is there a place for headband testing with some other surrogate device for transcutaneous implant candidates?

Ease of surgical placement - have the panel experience any notable or avoidable complications?

Device tolerance - are the devices practical to wear day to day?

Postoperative limitations - how relevant are imaging restrictions and removability?

Money - are there any major cost differences between the devices and the resources needed to implant them?

Post-operative performance - how do we begin to determine patient benefit let alone compare the performance of different devices?

Best of breed - one vote - why?

Where will we be in 10 years?

Myrthe Hol will share her Nijmegen, NL, experience on BAHA and Ponto devices, Joe Toner from Belfast, Northern Ireland, will share his extensive experience with Bonebridge, Jaydip Ray from Sheffield, UK, will cover BAHA Attract and Sophono, and Bill Hodgetts from Edmonton,Canada will address the perils of trying to compare device performance.

doi:10.1017/S002221511600431X

Modern training of otologic surgery (N835)

ID: 835.1

Training for otologic surgery: From simulators to OR

Presenting Author: **Daniele Bernardeschi**
Daniele Bernardeschi

Pitié-Salpêtrière Hospital

Learning Objectives:

The aim of this presentation is to describe the different steps of training in otologic surgery: first of all, the surgical simulators are used at the very beginning of the training to evaluate the anatomical knowledge of the resident. Therefore, simulators can provide comparison from different trainers and evaluation of the skill progress.

The next step is the drilling of an artificial temporal bone: this can improve the representation of the 3rd dimension when approaching the temporal bone anatomy: the artificial temporal bone has the advantages of being infectious disease free and low cost compared to cadaveric temporal bone, and the disadvantages are the poor haptic feedback and the lack of surgical scenarios.

After that, the training on cadaveric temporal bones allows the acquisition of a realistic haptic feedback and tool-organs interaction as well as the best anatomical representations of the temporal bone. Surgical procedures can also be simulated on cadaveric temporal bone.

Then the training in the OR is performed with two tools that help the resident in the localization of the facial nerve (the facial nerve stimulating burr) while drilling, and in the recognition of anatomical variations (the computer-assisted surgical navigation) in case of difficult surgeries, always under the supervision of the senior surgeon.