laboratory measurement of the correlation of ISQ with abutment length. Implications of the measurements for future studies and clinical measurements.

Introduction: Objective: To quantify the influence from abutment length on measured Implant Stability Quotient (ISQ) for a bone anchored hearing implant system.

Method: Design: Laboratory measurements on temporal bones. The Ponto Wide Implant (Oticon Medical AB, Askim, Sweden) was implanted in temporal bones and measurements of ISQ were made on implant level and for the 6 mm, 9 mm, 12 mm and 14 mm abutments using The Osstell ISQ and SmartPegs (Osstell, Göteborg, Sweden) type 09 (implant level) and type 55 (abutment level). By varying the insertion torque and implantation site, a broad span of implant level ISQ measurements was obtained and compared with the measurements on abutment level. The validity of the data was secured by measuring implant level ISQ before and after measurements on abutment level.

Results: For each abutment length a linear relationship existed between the implant level and the abutment level ISQ throughout the span of ISQs. The slopes for the linear correlations were similar for the different abutments lengths. The relationship for the ISQ as a function of abutment length throughout the span of implant level ISQs was also linear and the slope was measured to be -3.1 ISQ/mm ± 0.2 ISQ/mm (standard error of estimate).

Conclusion: The measured correlation between ISQ on implant and abutment level for a bone anchored hearing implant system revealed that the difference in ISQ for different abutment lengths is an additive constant independent of implant level ISQ. This relationship can be used for pooling mean results in clinical studies where different abutment lengths are used.

doi:10.1017/S0022215116005648

ID: IP068

Evaluation of a New Powerful Sound Processor for Bone-Anchored Hearing

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Learning Objectives:

Introduction: Patients with profound hearing loss for instance as a result of cholesteatoma surgery, may experience problems with air-conduction hearing aids due to tightly fitted ear moulds and/or maximum gain restrictions by acoustic feedback. In profound mixed hearing loss that consists of a moderate sensorineural loss with a large air-bone gap a powerful direct-drive bone-conduction device (BCD) is a viable alternative for a conventional hearing aid, owing to the relatively favourable bone-conduction thresholds.

Until recently, the body-worn Baha Cordelle II processor was the only alternative for patients with a profound mixed hearing loss that needed a BCD. Recently, the head-worn Cochlear Baha 5 SuperPower Sound Processor (SP5) was introduced, which offers more advanced signal processing and wireless capabilities that may further improve the hearing experience for this patient population. In this study we will compare the performance of both devices.

Objective: We will evaluate the performance of the Baha SP5 relative to the Baha Cordelle II. The objective evaluation comprises aided thresholds, speech perception in quiet and in noise, and loudness growth measures. For the subjective evaluation questionnaires will be used.

Methods: Performance of the Baha SP5 and Baha Cordelle II will be evaluated in a group of 10 experienced Baha Cordelle users. Measures comprise free-field aided thresholds and speech perception in quiet with standard Dutch CVC monosyllables and speech perception in noise with the digits-in-noise test. Additionally, loudness growth will be measured for both devices. The performance of either device in real life will be evaluated with APHAB, SSQ, and proprietary questionnaires. The efficacy of wireless sound transmission with Baha SP5 when using the telephone or watching TV will be evaluated with a proprietary questionnaire.

Results: of this study will become available early Spring 2016. Results will be presented at the conference.

doi:10.1017/S002221511600565X

ID: IP069

Systematic review: the radiological and histological evidence of cochlear trauma following implant insertion

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Learning Objectives: A systematic review to assess the radiological and histological evidence of cochlear trauma following cochlear implant insertion.

Introduction: Cochlear implantation (CI) has developed from its origins in the 1980s. Initially, CI was for profound bilateral hearing impairment. However, as candidacy for CI has become more relaxed, there is an increasing emphasis on hearing preservation.

Evidence supports the position that full electrode insertion in an atraumatic fashion into the scala tympani (ST) provides optimal hearing outcomes (Ashendorff et al 2005, Shepherd 1993, Finley et al 2008).

The main aim of this systematic review was to elucidate the degree of trauma associated with CI.

Methods: A systematic literature search was undertaken using PubMed Medline. A grading system described by Eshraghi (2003) was used to classify cochlear trauma. Both radiological and histological studies were included.