Percutaneous implantable Bone Conduction Hearing Aids have been used for decades to treat certain types of hearing losses. These devices can offer improved sound quality, by stimulating the bone directly. However this class of device has a major drawback: a chronic open wound, as vibratory energy is delivered to the skull through an osseointegrated screw directly attached to an external audio processor. To overcome issues related to wound management and infections, two new classes of bone conduction hearing aids have been recently developed: passive, and active, transcutaneous implants. The passive devices transfer mechanical energy through intact skin to the bone. The BONEBRIDGE system represents the first active bone conduction device that addresses the wound issues of percutaneous devices. The system is implanted in the Temporal Bone or in the retrosigmoidal area.

In order to evaluate the surgical risk of exposure /compression of important structures such as the dura and the sigmoid sinus, the BONEBRIDGE can be "virtually implanted" prior to the actual surgery using dedicated software called BB Fast View. The BB Fast View software utilises conventional CT scans (DICOM) and can assist radiological and surgical planning. Important information about the placement of the BONEBRIDGE can be forwarded to the radiologist and surgeon for evaluation. The software has been proven to be a useful tool as a preliminary assessment of the feasibility of BONEBRIDGE implantation.

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Coupling of Active Middle Ear Implants to the Ossicles and the Cochlea

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Learning Objectives: In general, the audiological results achieved after tympanoplasty showed postoperatively for 80 % of the patients an improved or equal hearing compared to preoperatively. Thus 20% of the patients are not satisfied with their hearing. Active middle ear implants offer new possibilities for the improvement of hearing. In principle, active middle ear implants can directly drive any vibratory structure of the middle ear. The lecture uses video sequences to describe and discusses the coupling techniques of active devices to the ossicular chain (Incus, Stapes), to partial or total prosthesis, directly to the round or oval window. For some attachments, special elements had been developed. Also accompanying procedures, such as tympanic membrane reconstruction with cartilage are discussed. In cases of a atelectatic middle ear the alternative application of the device directly to the round oval or round window is advantageous. Active middle ear implants enrich the field of reconstructive middle ear surgery and enable a detailed discussion on different ways of reconstruction.

Since the basic principles of tympanoplasty had been developed in the early 50ties, many otologists made additional contributions to our current knowledge of tympanoplasty procedures.

In general, the audiological results achieved after tympanoplasty showed postoperatively for 80 % of the patients an improved or equal hearing compared to preoperatively. Thus 20% of the patients are not satisfied with their hearing.

Active middle ear implants offer new possibilities for the improvement of hearing.

In principle, active middle ear implants can directly drive any vibratory structure of the middle ear. The lecture describes and discusses, based on short videosequences, the coupling techniques to the ossicular chain (Incus, Stapes), to a partial or total prosthesis, or directly to the cochlea, via the round or oval window. For some couplings methods, special elements had been developed.

Also accompanying procedures, such as tympanic membrane reconstruction with cartilage are discussed.

In cases of a atelectatic middle ear some of the above mentioned alternative applications of the active device directly to the round oval or round window is advantageous.

Active middle ear implants enrich the field of reconstructive middle ear surgery and enable a detailed discussion on different ways of reconstruction.

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Quality of information available via the internet for patients with otological conditions

Presenting Author: **Alistair Mitchell-Innes**

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Learning Objectives:

Objective: Evaluate the type, content and quality of information available via the internet for patients with common otological conditions.

Methods: The Google search engine was used to generate responses for the following search terms: glue ear, otitis media, otosclerosis, Meniere's disease, cholesteatoma and ear perforation. The first 10 websites for each search term were selected for analysis. Websites were evaluated with the validated DISCERN instrument, the LIDA tool, the Flesch Readability Formula, the SMOG (Simple Measure Of Gobbledygook) readability score and against the JAMA criteria. Comparisons were made with a similar study assessing quality of information in non-otological conditions.

Results: Mean SMOG score was 12.19 years of education (range 6.2–22.8). The HON symbol appeared on 15 of 49 websites (30.61%). Pearson's r was used to identify interactions between variables and demonstrated a significant correlation between LIDA score and Google ranking ($R2 = -0.1195$, $p = 0.002$); between university/hospital affiliation and JAMA score ($R2 = -1.7889$, $p = 0.0182$) and commercial affiliation and JAMA score ($R2 = 1.0561$;