

*Conclusion:* Theatre staff report an initial challenging learning curve with EES. With time however the theatre team satisfaction levels are higher due to greater awareness and involvement with the surgical procedure.

*Learning points:* The theatre team shows high levels of satisfaction with EES.

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## ID: IP013

### Sonotubometry using perfect sequences: clinical results of the 105 healthy subjects

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*Learning Objectives:*

*Objectives:* The aim of this study was to establish the rate variation of sonotubometric measurements using a specific broadband class of signals, the so-called perfect sequences (PSEQ) among healthy adults and to identify an optimal and technically simple test to provoke Eustachian tube (ET) openings.

*Methods:* Sonotubometry was performed on 105 healthy adult subjects. Three different consecutive maneuvers were performed for ET opening: dry swallowing, water swallowing (a small (2 ml) and a large (5 ml) water bolus). Values of the amplitude and duration of each measured ET opening were calculated.

*Results:* 6,300 measurements were performed. Sonotubometric ET openings were detected for all subjects but not for each measurement. 6,180/6,300 measurements (98.1%) objective ET openings were registered. Mean ET opening duration time and the mean sound amplitude were similar for all performed test and are 270 (SD ± 96) ms, 13.48 (SD ± 6.57) dB.

*Conclusion:* sonotubometry based on PSEQ stimuli is a reliable methodology to assess the Eustachian Tube opening function in healthy subjects. Mean ET opening duration time and the mean sound wave amplitude were similar performing all analysed tests, hence might be concluded, that dry (saliva) and water swallowing are a reliable sonotubometric maneuvers and may be used examining ET opening function. Size of a sip during water swallowing does not affect the sonotubometry result. All maneuvers can be equally used as the optimal maneuver, and we think that water swallow is most comfortable for the subject.

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## ID: IP014

### Devices for restoring hearing in the sequelae of cholesteatoma

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*Learning Objectives:* Possible solution to restore the hearing using bone conduction implants and middle ear implants solutions. The presentation illustrates different situations, in patients where the hearing loss changed post cholesteatoma's surgery.

The hearing loss in patients with history of Cholesteatoma, have multifarious features that depend either by the damaging disease activity or by the result of the surgery. The majority of them suffer from conductive hearing losses because the ossicles have been destroyed by the disease or surgically removed. The hearing has to be restored, reconstructing the ossicular chain (ossiculoplasty) or, in other cases, with hearing implants. Frequently patients with previous cholesteatoma, show a mixed hearing loss, due to the aging or toxicity of the disease. A limited number presents a profound deafness, or anacusis due to a cholesteatoma's invasion into the labyrinth or by iatrogenic damage during the surgery. All these outcomes can be corrected with auditory implants inserted either in the middle ear or in the cochlea. Subjects that have CWU and CWD tympanoplasty done and good bone hearing threshold were treated with BONEBRIDGE device in the retro-sigmoid site, in order to avoid any future contamination in case of a disease recurrence or infections in the middle ear. In mixed hearing losses, a Vibrant Soundbridge system has been preferred to place the FMT over the stapes, if present, or onto the footplate or on the round window. In CWD cases the round window membrane has been always the site of choice. When the cavity is completely clean and dry a VSB could be implanted with the FMT on the RW pays attention of the positioning of the conductor link, far from the diseased area and in a channel covered with bone pâté. Doing a cholesteatoma removal and a middle ear implantation on the same surgical session is not always the best option. There are situations where the procedure requires two steps: cholesteatoma removal first and implantation later. Always an open external ear canal is mandatory in order to check with otoscopy the condition of the middle ear cavity in the next visits. Finally, in patients with profound hearing losses, a cochlear implant was implanted via retro-sub-facial approach.

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## ID: IP015

### The Chorda Tympani Nerve Degenerates during Chronic Otitis Media. An Electron Microscopy Study

Presenting Author: **Katarina Berling Holm**

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