

Learning Objectives: Hearing loss is the most widespread sensory disorder, with an incidence of congenital genetic deafness of 1 in 1,600 children. For many ethnic populations, the most prevalent form of genetic deafness is caused by recessive mutations in the gene gap junction protein, beta 2, 26 kDa (*GJB2*), which is also known as connexin 26 (*Cx26*). For more than 15 years, we have developed and evaluated a mouse model of *Gjb2*-related deafness as follows, i) a dominant-negative *Gjb2* R75W transgenic mouse model shows incomplete development of the cochlear supporting cells, resulting in profound deafness from birth (Kudo et al., *Hum Mol Genet* 2003; Inoshita et al., *Neuroscience* 2008), ii) the outer hair cells (OHCs from the dominant-negative mutation of *Gjb2* are deformed, but reveal normal development and maturation (Minekawa et al., *Neuroscience* 2009), iii) *Cx26* dysfunction is associated with delayed apoptosis and retention of the greater epithelial ridge cells (Inoshita et al., *BMC Genet* 2014), iv) the disruption of the cochlear gap junction plaques is associated with the *Gjb2*-related deafness and the the assembly of cochlear gap junction plaques is dependent on *Cx26* (Kamiya et al., *J Clin Invest* 2014), vi) the deformation of OHCs and the accumulation of caveolin-2 in the organ of Corti plays a crucial role in the progression of, or secondary OHC loss in, *Gjb2*-associated deafness (Anzai et al., *Plos One* 2015). In the next, we focused on the development of fundamental therapies for *Gjb2*-related deafness. Successful transgene expression was obtained through the round window membrane in the supporting cells of the neonatal mouse cochlea using adeno-associated viral (AAV) vectors without causing additional damage to the cochlear function (Iizuka et al., *Hum Gen Ther* 2008). Perinatal cochlear delivery of *Gjb2* using an AAV significantly improved the auditory responses and development of the cochlear structure (Iizuka et al., *Hum Mol Genet* 2015).

doi:10.1017/S0022215116003819

Ossicular Reconstruction (R776)

ID: 776.1

The use of the Dresden partial clip prosthesis in ossicular reconstruction

Presenting Author: **Christopher Aldren**

Christopher Aldren

Wexham Park Hospital

Learning Objectives: To demonstrate the use of the Dresden partial clip prosthesis and show results.

The Dresden partial clip prosthesis is a titanium prosthesis used for ossicular reconstruction in the presence of a mobile stapes. Video will be shown to demonstrate its ease of application. Results will be presented and compared to the authors experience with other prostheses. Cases requiring revision will be discussed with video illustration.

doi:10.1017/S0022215116003820

Endoscopic Ear Surgery: Concept and Technique (1) (V777)

ID: 777.1

Direct Cost Comparison of Totally Endoscopic versus Open Ear Surgery

Presenting Author: **Nirmal Patel**

Nirmal Patel¹, Aydin Mohammadi², Nicholas Jufas²

¹*Macquarie University, Sydney,* ²*Kolling Deafness Research Centre| Macquarie and Sydney University*

Learning Objectives: Objective: The introduction of new surgical techniques requires not only an evaluation of safety and clinical efficacy but also cost justification. Totally Endoscopic Ear Surgery (TEES) is a relatively new technique for managing chronic ear disease. The cost of specialised equipment required may be a barrier to implementation of the technique. This study aims to test the null hypothesis that open and endoscopic approaches have similar direct costs for the management of attic cholesteatoma in an Australian private hospital setting. Study Design: A retrospective direct cost comparison from a hospital perspective, of TEES and traditional canal wall up mastoidectomy for the management of attic cholesteatoma in the private tertiary setting was undertaken. Indirect and future costs were excluded. Methods: A cost comparison of anaesthetic set up and resources, operative set up and resources, average cost of running an operating theatre and cost of overnight admission was performed between the two techniques. Results: TEES has a mean reduction of AUD\$2998.63 per operation from the hospital perspective when compared to an open procedure for attic cholesteatoma. Conclusion: Once the learning curve is achieved, TEES is more cost effective from a hospital perspective, than canal wall up mastoidectomy for attic cholesteatoma. When indirect and future costs are considered as well, the economic gain of managing attic cholesteatoma endoscopically could possibly be even greater.

Objective: The introduction of new surgical techniques requires not only an evaluation of safety and clinical efficacy but also cost justification. Totally Endoscopic Ear Surgery (TEES) is a relatively new technique for managing chronic ear disease. The cost of specialised equipment required may be a barrier to implementation of the technique. This study aims to test the null hypothesis that open and endoscopic approaches have similar direct costs for the management of attic cholesteatoma in an Australian private hospital setting.

Study Design: A retrospective direct cost comparison from a hospital perspective, of TEES and traditional canal wall up