

Learning Objectives: The experimental assessments of the new prostheses (PORP and TORP) in cadaveric temporal measurements provide objective ways to predict their functional outcomes and benefits prior to their clinical application.

The middle-ear in human ear converts and transmits acoustically-induced sound stimuli to the inner ear. The middle-ear structures can be damaged by various middle-ear pathologies. The damaged middle-ear structures are frequently reconstructed by surgical procedures to rearrange or to replace the impaired middle-ear structures with an implantable prosthesis. Especially, the partial ossicular reconstruction prosthesis (PORP) and total ossicular reconstruction prosthesis (TORP) are used to provide direct connection between the tympanic membrane and the stapes. While such tympanoplasty surgeries are common these days, stable positioning of the prosthesis and reliable connection between the prosthesis and the remaining ossicular structure are still difficult to achieve.

In this study, four newly-introduced prostheses for tympanoplasty were assessed in cadaveric temporal bones; two PORPs with a ball joint and a notch for placement under the malleus and two supplemental devices for TORP, Omega Connector and TotalOption Connector. All the prostheses were implanted to the temporal bones in sequence, and time for implantation was measured for each of the prostheses.

With each of the prostheses implanted, motion of the stapes footplate and the volume displacement at the round window membrane were measured using a laser Doppler vibrometer (LDV).

The measured quantities were assessed as the functional outcomes of the surgical reconstruction with the corresponding prosthesis, in comparison with sound transmission in normal ears. Preliminary results indicate that middle-ear reconstructions with the newly-developed prostheses resulted in surgical outcomes comparative to normal middle-ear. Further, they provide relatively easy handling of the prostheses during the surgeries and relatively secure connection between the prostheses and the remaining middle-ear structures and thus relatively small risk of post-operative dislocation compared to current prostheses for tympanoplasty.

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Difficult Situations in Cholesteatoma Surgery (N713)

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Current trends in managing complications of chronic otitis media with cholesteatoma

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Learning Objectives: 1. Complications secondary to cholesteatoma still remain a formidable challenge in developing countries. A high index of suspicion is necessary to prevent significant morbidity and mortality. 2. CT scan

plays a pivotal role in diagnosis of both intracranial and extracranial complications. 3. While the initial management may differ, canal wall down mastoidectomy remains the most reliable surgical procedure in these patients.

Introduction: Complications secondary to cholesteatoma are associated with significant morbidity and mortality. Despite a significant decline in the incidence of these complications in developed countries, they still pose a considerable challenge in developing countries. The present study has been conducted to outline our experience in managing complications of cholesteatoma.

Materials and Methods: This study was a retrospective review at KEM Hospital, India of clinical charts of patients with cholesteatoma who had presented with clinical or radiological evidence of complications and had undergone surgical interventions between 2008 and 2013. Patient demographics, clinical course, investigations, management and postoperative outcomes were analyzed.

Results: Of the 469 patients that underwent surgery for cholesteatoma, complications were observed in 86 patients (18.33%). Intracranial complications included meningitis 1.06%, brain abscess 3.2%, sigmoid sinus thrombophlebitis 1.9% and subdural empyema 1.06%. Extracranial complications included labyrinthine fistula 4.6%, facial paralysis 2.9%, zygomatic abscess 0.4%, post-auricular abscess 6.39%, neck abscess 1.2% and labyrinthitis 0.2%. HRCT temporal bone and CT Brain with contrast was done to establish the diagnosis of these complications. With combined neurosurgical intervention for intracranial complications and canal wall down (CWD) mastoidectomy as the definitive procedure, complete eradication of cholesteatoma was achieved.

Conclusions: Complications secondary to cholesteatoma still remain a formidable challenge in developing countries. A high index of suspicion is necessary to prevent significant morbidity and mortality. CT scan plays a pivotal role in diagnosis of both intracranial and extracranial complications. While the initial management may differ, canal wall down mastoidectomy remains the most reliable surgical procedure in these patients.

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Difficult Situations in Cholesteatoma Surgery (N713)

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The Evolution of Bone Anchored Hearing Aids (BAHA) in the Indian Subcontinent

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Learning Objectives: 1. to understand the prevalence and incidence of partial deafness and the various indications for candidacy for BAHA in India 2. to comprehend issues