

doi:10.1017/S0022215116001304

Free Papers (F612)**ID: 612.2****Predictive parameters in hearing improvement after tympanoplasty for primary acquired cholesteatoma**Presenting Author: **Yasuhiro Arai**Yasuhiro Arai¹, Masahiro Takahashi¹, Ryohei Yaguchi¹, Naoko Sakuma², Nobuhiko Oridate¹¹*Yokohama City University School of Medicine,*²*Kaagawa Children's Medical Center**Learning Objectives:*

Introduction: The cholesteatoma classification and staging system were proposed by the Japan Otological Society in 2010. The criteria classifies cholesteatoma into three stages (I, II, and III), and mastoid development and status of the stapes were categorized into four stages (MC0-3 and S0-3). The aim of this study was to elucidate whether these parameters were associated with hearing improvement after tympanoplasty for primary acquired cholesteatoma.

Methods: One hundred eight patients with acquired middle ear cholesteatoma (116 ears) underwent tympanoplasty at the Yokohama City University Hospital from 2003 to 2014. The present retrospective study included 37 patients (38 ears) who underwent a single-staged canal wall down type III tympanoplasty with canal wall reconstruction in order to minimize the effect of surgical method on postoperative hearing level. We analyzed association between parameters such as cholesteatoma staging, mastoid development, status of the stapes, and material used in canal reconstruction and postoperative hearing improvement. Hearing improvement was evaluated according to the guidelines of the Japan Otological Society. Categorical and continuous variables were compared using the χ^2 and Wilcoxon rank-sum tests, respectively.

Results: Hearing improvement was achieved in 76.3% of the study ears (29 of 38). A significantly higher grade in the preoperative mastoid development was observed in the ears with improvement than those without ($P = 0.013$). There was no significant difference in other factors between the two groups. The mean postoperative volume of tympanic cavity in the ears with improvement ($n = 7$) and those without ($n = 4$) was 0.357 mL and 0.142 mL, respectively. The more developed preoperative mastoid seemed to be associated with the more aerated postoperative tympanic cavity.

Conclusions: Mastoid development was a predictive parameter in hearing improvement after tympanoplasty for primary acquired middle ear cholesteatoma.

doi:10.1017/S0022215116001316

Free Papers (F612)**ID: 612.3****Dura involvement and lateral skull base reconstruction in cholesteatoma surgery: a retrospective study**Presenting Author: **Andreas Anagnostos**Andreas Anagnostos¹, David Schwarz², Sami Shabli², Antoniu-Oreste Gostian², Karl-Bernd Hüttenbrink²¹*Nicosia General Hospital & Larnaca General Hospital, Cyprus | University Hospital Of Cologne, Germany,* ²*University Hospital of Cologne, Germany*

Learning Objectives: - Dura involvement in cholesteatoma surgery is rare but possible. - Reconstruction of the lateral skull base can be performed using a variety of materials. - No intracranial complications are expected when dura involvement is recognized and treated properly.

Introduction: Due to its anatomical proximity to the tympanic cavity and the mastoid cells, the dura of the middle cranial fossa is occasionally involved in middle ear and mastoid surgery. This study investigates the frequency of dura involvement during cholesteatoma surgery in children and adult population.

Methods: A retrospective chart review of cholesteatoma surgeries between 2004 and 2015 at an academic tertiary care center was performed. Any kind of dura involvement, as well as the reconstruction techniques and long-term complications were documented.

Results: From 1291 cholesteatoma surgeries performed in the study period, a total of 97 (7.5 %) surgeries with dura involvement were identified. In the majority of these cases ($n = 74$, 5.7 %) the bone to the middle cranial fossa was missing and the otherwise intact dura was exposed. The dura was additionally damaged and cerebrospinal fluid leak was seen in six surgeries (0.5 %). In three cases (0.2 %) iatrogenic dura injury was reported, whereas in 9 surgeries (0.7 %) cholesteatoma came up to and infiltrated the dura. Reconstruction of the lateral skull base was performed using cartilage ($n = 24$, 1.9 %), polydioxanone (PDS)-foil ($n = 14$, 1.1 %), bone pate ($n = 8$, 0.6 %) and fibrin glue ($n = 5$, 0.4%). In 11 cases (0.9 %) a combination of autologous materials - such as cartilage, bone pate, muscle and connective tissue - was used, whereas in 33 surgeries (2.6 %) no reconstruction of the lateral skull base was performed. In a follow-up time period of 19.7 months (range 1 day - 104 months) no intracranial complications were reported.

Conclusions: The involvement of the dura of the middle cranial fossa is a rare but possible phenomenon during cholesteatoma surgery. A variety of reconstruction materials are available for the sufficient reconstruction of the skull base in such cases. When recognized and treated properly, no intracranial complications are expected, even in long term time period.

doi:10.1017/S0022215116001328

Free Papers (F612)**ID: 612.4****A paradigm shift in the management of petrous temporal bone cholesteatoma?**Presenting Author: **Shami Acharya**Shami Acharya, Harry Powell, Sherif Khalil, Shakeel Saeed
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