Introduction: The retrotympanum (facial recess and sinus tympani) is involved in a high percentage (48%) of cases of cholesteatoma. This subsite of the mesotympanum presents particular challenges in terms of access for removal of disease. Approaches suggested have included posterior tympanotomy (Janssen) and endoscopic transcanal (Tarabichi).

Method: The operation is described in detail using photography, diagrams and video material. The surgical principles are to use:

- visualization of the facial nerve at the 2nd genu.
- skeletonization and mobilization of chorda in its course through the bone down towards its branching off facial nerve above the stylomastoid foramen.
- the principle that chorda is always superficial and anterior to facial nerve.
- that if bone is removal only superficial and anterior to chorda, the facial nerve cannot be injured.

We report the use of this technique in a series of 247 cholesteatomas involving the facial recess and sinus tympani. A literature search shows that Farrior (1968) described some aspects of this approach.

Results: This surgical approach provides adequate access to this difficult anatomic area for cholesteatoma visualization and removal – far better than posterior tympanotomy. It provides binocular vision and the possibility of using both hands, unlike the endoscopic approach. In our series, adequate access was provided in 99% of cases – in only 2 cases was there any doubt about complete removal of the invasive sac. In no case was there injury to the facial nerve.

Conclusion: Retrotympanotomy from anterior, mobilizing and using chorda tympani for guidance, is a safe and reliable way of removing cholesteatoma from the facial recess and sinus tympani.

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Free Papers (F862)

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Can we reduce rates of residual cholesteatoma by improving the clarity of the operative field? A multivariate analysis

Presenting Author: **Gavin le Nobel**

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Learning Objectives: 1) to demonstrate the influence of impaired surgical field clarity due to intraoperative bleeding on development of residual cholesteatoma. 2) To emphasize the importance of implementing methods to minimize surgical site bleeding, such as hypotensive general anesthesia.

Introduction: Sites within the middle ear and mastoid with limited visualization are more frequently implicated in residual cholesteatoma. We hypothesize that other factors leading to compromised surgical field visualisation may similarly affect rates of residual cholesteatoma. The objective of this study was to evaluate whether impairment of surgical site visualisation from intra-operative bleeding contributes to the risk of residual cholesteatoma.

Methods: Data were collected prospectively on a consecutive series of children having intact canal wall surgery for cholesteatoma at an academic pediatric hospital. Clarity of surgical field was assessed intra-operatively on a six-point rating scale and categorized as minimally compromised (grades 0-I) or significantly compromised (grades II-V). Presence of residual cholesteatoma was assessed at follow up clinical encounters, second stage procedures, and with MRI.

Results: Surgery was completed on 224 ears, during which 82 (37%) had minimal visual field compromise from bleeding. Residual cholesteatoma was identified in 38 (17%) of ears, with only 8 (9.8%) in cases with minimal bleeding at first surgery, and 30 (21%) in cases with significant bleeding. Predictors of residual disease on univariate regression analysis included severity of bleeding ($p = 0.029$), extent of cholesteatoma ($p < 0.001$), years of surgeon's experience ($p = 0.0045$). Age and type of cholesteatoma were not found to be significant. Multivariate regression analysis demonstrated that the most robust predictor was extent of cholesteatoma ($p < 0.001$).

Conclusions: Impairment of surgical field visualization from intraoperative bleeding is one factor that contributes to the presence of residual cholesteatoma. These findings support the use of techniques, such as hypotensive general anesthesia, that minimize surgical site bleeding and improve surgical field visualization.

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Over a hundred endoscopic ear surgery cases; surgical outcomes of a starting practice

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Learning Objectives:

- Basic principles of endoscopic ear surgery.
- Surgical results from a starting endoscopic ear surgery practice including cholesteatoma and tympanoplasty.

Introduction: Endoscopic ear surgery offers an unparalleled view of the middle ear thanks to the wide-angle field of view and is increasingly gaining popularity amongst ENT-surgeons worldwide. However, the transition from operating with the microscope to the endoscope is challenging,