

Surgery in this region has always been a challenge for both disciplines owing to the presence of important anatomical structures such as the internal carotid artery, the otic capsule, and the facial nerve.

Several approaches have been developed to reach pathology located in the lateral skull base and in the fundus of the internal auditory canal (IAC) and petrous apex.

Despite the benign nature and limited dimensions of the lesions located in this anatomical region, extensive surgical approaches are often required to reach and remove the disease.

At present the main application of endoscopic surgery relies on the middle ear cholesteatoma surgical treatment, but in the natural evolution of the technique there are the steps forward of lateral skull base surgery and petrous bone pathology.

During the experience of recent years, we progressively noticed that the internal ear and the whole temporal bone could be accessed in an endoscopic assisted fashion or even by exclusive endoscopic approaches. Despite the benign nature and limited dimensions of lesions located in this anatomical region, extirpative surgical approaches are often required to reach and remove the disease. The problem would only be to codify as much as possible the landmarks and the procedures, and to integrate them to classic microscopic approaches.

Three main corridors to the lateral skull base were identified: the transcanal supragenulate corridor, the transcanal transpromontorial corridor, and the transcanal infracochlear corridor.

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Endoscopic Ear Surgery 2 (R844)

ID: 844.2

Integrating endoscopy into everyday otology practice

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Endoscopes are not new for otologist but it took a long way to use them first for documentation and then in modern endoscopic ear surgery (EES).

We will discuss our experience with the use of endoscopes after five years adopting this approach and we will explain how the endoscopy has modified our management in some cases. The benefits and disadvantages will also be discussed.

We will show our learning curve in EES, our difficulties in adopting the use of endoscopes and our thoughts about how endoscopes can improve our everyday practice.

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Endoscopic Ear Surgery 2 (R844)

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Endoscopic Assisted ear surgery: Cholesteatoma and beyond

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Learning Objectives:

Objective: The purpose of this presentation is to emphasize the importance of incorporating the endoscope together with the microscope during cholesteatoma surgery. Because poor access to the hidden recesses of the middle ear was the major reason for residual disease, therefore, angled endoscopes were considered a major adjunct in dealing with such blind spots.

Methods: Endoscope-assisted surgery (EES) helped the surgeon to overcome the limitation of the straight vision offered by the microscope. On the other hand, EES has its own peculiarities as the surgeon works practically with one hand, and in many instances uses angled-vision endoscopes. New instrumentations specifically adapted for EES are now available. Also, new technologies have stimulated the creation of powered endoscopic equipment. Both have pushed the surgeon to widen the indications of EES beyond cholesteatoma.

Results: Our results confirmed that better control over the pathology, especially in hidden recesses, is possible with the help of endoscope. Advancements in EES improved maneuverability and offered better visualization over the pathology; therefore pushing the limits of endoscope and widening its indications.

The author highlights the importance of endoscope-assisted surgery during cholesteatoma surgery and presents different recent indications of endoscope in the field of otology and skull base surgery. EES is increasingly used for removal of various middle ear tumors, middle ear exploration for CHL, otosclerosis surgery and cochlear implant surgery. Also, CPA surgery during micro-vascular decompression and acoustic neuroma complete removal from the fundus of IAC.

Conclusion: Combining the attributes of endoscope together with the microscope is the most efficacious approach and will continue widening the indications of endoscope in the future. EES is technically feasible for the majority of surgeons and should be included in all training programs and courses.

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Endoscopic Ear Surgery 2 (R844)

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Pros and Cons of Otoendoscopy: 22 years Experience

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Learning Objectives: 1-Understand advantages of endoscopic otologic surgery for eliminating residual disease. 2-Understand advantages of endoscopic otologic surgery for re-establishing ventilation. 3-Understand limitation of endoscopic otologic surgery.

Introduction: Although it has been 15 years since the introduction of operative endoscopy to ear surgery in the form of exploration of old mastoid cavities¹, there is presently tremendous variations in thoughts and practice across the globe on the role of the endoscope in cholesteatoma surgery.

Literature Review: There are increased numbers of citations on this subject especially in the last 5 years. These reports have focused on four patterns of application of operative endoscopy in ear surgery, the first and the oldest report revolve around exploration of old mastoid cavities using the endoscope with endoscopic removal of recurrent disease.¹ The second is examination of the mastoid cavity through a stab postauricular incision.² The third is the use of transcanal endoscopic evaluation and removal of disease from the sinus tympani during traditional combined tympanomastoidectomy.³⁻⁴ The fourth is the use of transcanal endoscopic approach as the primary access to the cholesteatoma within the middle ear and the use of traditional postauricular mastoidectomy only to address the disease within the mastoid cavity proper.⁵

Best Practice Summary:

- 1- There is little evidence in the literature, beyond the cohorts reported by the initial authors 16 years ago, to support the use of the endoscope in exploring old cavities or through a stab wound in the postauricular area.
- 2- Transcanal Endoscopic Access to disease within the sinus tympani in combination with traditional combined tympanomastoidectomy should be incorporated into the routine management of cholesteatoma.
- 3- Exclusive transcanal endoscopic approach to the middle ear as the primary surgical method of removal of cholesteatoma has been reported increasingly in the literature, but more data is needed to compare outcome to traditional accepted surgical treatment of cholesteatoma.

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Updates in the surgical managements for cholesteatoma (N845)

ID: 845.1

Revision surgery after canal wall down tympanomastoidectomy

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Learning Objectives: The aim of this study is to investigate causes and treatment results of revision surgery cases performed after CWD tympanomastoidectomy.

Canal wall down (CWD) tympanomastoidectomy may be an appropriate choice for the successful removal of cholesteatoma in the middle ear, attic, and mastoid cavity. However, it sometimes needs some revision surgeries. The aim of this study is to investigate causes and treatment results of revision surgery cases performed after CWD tympanomastoidectomy. From Jan 2010 to Dec 2015, among 276 patients who underwent CWD tympanomastoidectomy, cases requiring revision surgery were enrolled in this study. Six cases of staged operations and 18 patients who were not followed up more than 6 months were excluded in this analysis. Using medical records, demographics of subjects, causes of revision surgery, operation name, and postoperative results were investigated retrospectively. Patients were divided into 2 groups according to whether they had got an intact canal wall mastoidectomy as the initial surgery. Among 252 patients, 18 (7.1%) needed revision surgeries due to postoperative problems excluding staged operations and minor procedures. Male to female ratio was 6:12 and left to right ratio 10:8. Residual cholesteatoma was found in 3 cases (1.2%) and they were removed in sinus tympani (2 cases) and malleus handle (1 case) successfully. There was no more cholesteatoma recurrence after revision surgery. Tympanoplasty or myringoplasty was performed in 15 cases (6.0%) and the perforation of tympanic membrane was healed in all cases. Revision ossiculoplasty due to prosthesis extrusion was done in 1 case (0.4%). Final postoperative outcomes showed no statistical significance between two groups ($p > 0.05$). Revision surgeries after CWD tympanomastoidectomy showed a low incidence and good postoperative outcomes. However, regular and careful examinations after initial surgery should be emphasized to avoid revision surgery.

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Updates in the surgical managements for cholesteatoma (N845)

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Subtotal petrosectomy: Long term surgical results in managing chronic ear disease

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Learning Objectives:

Objectives: To investigate the long term surgical results of subtotal petrosectomy, a retrospective study of the patients with chronic otitis media who underwent subtotal petrosectomy with or without cochlear implantation was performed.

Subjects & Methods: Twenty nine patients (14 men and 15 women, mean age 61.5 years, SD 8.7 year) who received subtotal petrosectomy by one surgeon between April 2004 and December 2015 were included in this study. Ten patients underwent simultaneous or sequential cochlear implantation for the hearing rehabilitation depending on the active