

obliteration had the highest risk of recurrence (58% in children and 20% in adults after 5 years). In children, CWU without obliteration was associated with a hazard ratio for recurrence of 1.9 (95% 1.2–3.0) when compared with CWU with obliteration.

Conclusion: The incidence rate of STMEC1 in children halved from 2002 to 2015. Compared with adults, children were at an increased risk of recurrence. In children treated with CWU, obliteration was associated with a significantly lower risk of recurrence compared with no obliteration.

doi:10.1017/S0022215116004515

Cholesteatoma and the mastoid (N843)

ID: 843.3

Rationale for obliteration of the mastoid cavity

Presenting Author: **Michael Gaihede**

Michael Gaihede
Aalborg University Hospital

Learning Objectives: Basic knowledge about the anatomy and function of the mastoid provides a rationale for obliteration of the cavity in cholesteatoma surgery.

“Danish Otolology Society symposium”

Mastoidectomy is often included in cholesteatoma surgery in order to eradicate the disease. In such cases the subsequent reconstruction of the middle ear may include obliteration of the mastoid. This has become increasingly popular, because studies have demonstrated less recurrent cholesteatomas. While this may speak for itself, the basic reasons for obliteration have not been documented.

The rationale for mastoid obliteration should be based on its function in normal and diseased ears, but our understanding of the mastoid function is rather limited despite its unique structure compared with the tympanum. Thus, the mastoid has been regarded to have only a passive role, where it may enhance the area for gas exchange as well as be a pressure buffer by virtue of its volume.

Recent clinical physiological experiments have demonstrated how pressure regulation of the middle ear cleft consists of both stepwise pressure changes by Eustachian tube openings as well as gradual pressure changes explained by changes in the thickness or congestion of the mastoid mucosa. More studies have confirmed this idea, which may point to a role of the mastoid in the overall pressure regulation.

The histological structure of the mastoid mucosa favors such a function by a loose connective tissue and abundant blood vessels. However, the mucosa does not display cilia and goblet cells as found in the tympanum, which makes it more susceptible to inflammatory changes. Chronic or recurrent infections may easily cause a relative fibrosis, which inevitably limits its capability for thickness changes based on its congestion, whereas its capability for gas absorption may remain unaffected.

In this scenario, the mastoid mucosa may have lost its functional properties because of chronic or recurrent inflammations, and obliteration can eliminate the contribution of a diseased mucosa, which may contribute only to

gas absorption and development of middle ear underpressure.

doi:10.1017/S0022215116004527

Cholesteatoma and the mastoid (N843)

ID: 843.4

Primary obliteration of the mastoid cavity in cholesteatoma surgery

Presenting Author: **Peter Schousboe**

Peter Schousboe
*Consultant, Ph. D., MHM. Vejle Hospital and
Institute of Regional Health Research,
University of Southern Denmark*

Learning Objectives: Handling of Canal wall up and Canal wall down mastoidal cavities in cholesteatoma surgery.

Danish Otolology Society symposium

Mastoidectomy is often necessary in cholesteatoma surgery. If the posterior ear canal wall can be preserved, the mastoidal cavity remains in contact with the middle ear air space, even though it is often filled with scar tissue. The pressure-regulating role of the mastoid mucosa is presumably destroyed or severely diminished due to removal of the trabecular structure. Should the canal wall-up cavity be obliterated in order to prevent recurrence of a cholesteatoma? Or should it be left open allowing subsequent re-aeration? The latter includes a risk of renewed negative pressure in the middle ear and mastoid and the development of recurrent cholesteatoma.

If the posterior ear canal wall has to be removed producing a modified radical cavity, the ear canal is substantially enlarged. This implies regular cleaning (often by an ENT specialist), and moist and infections in the cavity can be troublesome. Should the cavity be obliterated in order to restore the ear canal to its normal size? Or should it be left open for optimal disease control? We have developed a strategy with partial obliteration and enlargement of the ear canal opening. Bone dust, cartilage, fascia and on rare occasions artificial material can be used for obliteration. We find that a partial obliteration diminishes the need for postoperative ear care.

doi:10.1017/S0022215116004539

Endoscopic Ear Surgery 2 (R844)

ID: 844.1

Beyond the middle ear

Presenting Author: **Presutti Livio**

Presutti Livio
University Hospital of Modena

The lateral skull base constitutes an anatomic boundary between the fields of neurosurgery and otolaryngology.

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 suprageniculate corridor, the transcanal transpromontorial corridor, and the transcanal infracochlear corridor.

doi:10.1017/S0022215116004540

Endoscopic Ear Surgery 2 (R844)

ID: 844.2

Integrating endoscopy into everyday otology practice

Presenting Author: **José Carlos Casqueiro**

José Carlos Casqueiro

Hospital Universitario Severo Ochoa | Grupo Otologico Madrid

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.

doi:10.1017/S0022215116004552

Endoscopic Ear Surgery 2 (R844)

ID: 844.3

Endoscopic Assisted ear surgery: Cholesteatoma and beyond

Presenting Author: **Mohamed Badr-El-Dine**

Mohamed Badr-El-Dine

Faculty of Medicine, University of Alexandria, EGYPT

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.

doi:10.1017/S0022215116004564

Endoscopic Ear Surgery 2 (R844)

ID: 844.4

Pros and Cons of Otoendoscopy: 22 years Experience

Presenting Author: **Muaaz Tarabichi**

Muaaz Tarabichi

American Hospital Dubai