Principles of Endoscopic Management of Cholesteatoma

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Endoscopic Management of Cholesteatoma

- Started using the endoscope in ear surgery 1992: Scientific Exhibit at the American Academy meeting in San Francisco.
- 19 years of experience: It is not about surgical instrument, it is about the understanding of disease.

What do we know about cholesteatoma?

- Most cholesteatomas are manifestation of retraction pockets.
- Primarily: middle ear and tympanic cavity disease.
- The attic is the area most commonly involved.
- Most recurrences occur within the tympanic cavity and its extensions, not the mastoid.

Why the Mastoid

“Why not the canal”

- You can get there easily.
- You are using it as a conduit to other area.
- You can not use the ear canal because of the limitation of the microscope.
Rediscovering the Ear Canal

Wide Angle of View
Of Endoscopes
= Wide Ear Canal Access to the Tympanic Cavity

Microscopic
Can not use ear canal
Trans-mastoid
Bulldozer: You can not go beyond any structure without removing it

Transmastoid Surgery: Blurs the distinction between the mastoid and the tympanic cavity

Distinct Spaces
- Anatomically: Epitymapnic Diaphragm.
- Morphologically: Different look.
- Functionally: Mucucilliary versus
Supratubal Recess and Tensor Fold

The Narrow Isthmus

Morphologically:

Functionally:
Transcanal Endoscopic Management of Cholesteatoma

- Appreciate the anatomy of the epitympanic diaphragm and how it affect disease.
- Transcanal access to the difficult to reach areas of the ear.
- Clarify and separates role of mastoid, the area that is best suited for the microscope.

A Stepwise Approach:

- CT and Clinical evaluation:
  - A Limiting ear canal.
  - Extensive involvement of the tympanic cavity especially anteriorly and inferiorly.
  - Involvement of the mastoid cavity proper.
  - Previous failed surgery, mucosal disease or a really wet ear.
  - Start with: Primary Transcanal Approach.
  - If needed: Traditional Mastoidectomy.

Three Approaches:

- Limited Attic Cholesteatoma.
- Endoscopic ‘Open Cavity’ Approach.
- Endoscopic Wide Canal Access.

Management Algorithm

If you open up the mastoid:

- Keep it open to ear canal and well ventilated.
- Reconstruct scutum but make sure that it is ventilated: Release the tensor fold and tendon, lateralize the reconstructed TM.
- Obturate with bone graft.
Three Approaches:

- Limited Attic Cholesteatoma.
- Endoscopic "Open Cavity" Approach.
- Endoscopic Wide Canal Access.

A Limiting Canal

- A small canal.
- An anterior overhang.
- Prominent spine of Henle.
- Unusual angle.

What to do?

- You need to have a plan.
- Where is the disease?
- How narrow and limiting the canal in relation to the disease.
- Decision:
  - Wide transcanal access.
  - Wide tympanomeatal flap and appropriate curetting.

Wide Transcanal Access

- A Limiting ear canal.
- Extensive involvement of the tympanic cavity especially anteriorly and inferiorly.
- Access to the Petrous Apex

Wide Transcanal Endoscopic Access

- Remove skin the ear anal skin along with the epithelial layer of TM remnant.
- Excision and Removal as needed of the fibrous TM remnant.
- Curetting of bone as needed to gain full access to the tympanic cavity and its extensions.
- Reconstruction.
- Video presentation.
Few Words of Wisdom
- Relax, you have all the time you need.
- Irrigation, irrigation and more irrigation.
- Do not get discouraged the first 10 minutes as you raise the flap, this is the most difficult time for bleeding.
- Pack the areas the you are not working on.

Endoscopic Technique
- It’s not about reinventing wheels.
- Remember the Ear Canal…
- Distinct advantages within the tympanic cavity, anterior attic, facial recess, hypotympanum, ET, and sinus tympani
- Do not let them convince you that you can not remove the disease while holding the endoscope in hand.

Learning Curve Issues
- Start slowly, you will not be able to do it all on the first case.
- May want to do a few simple tympanoplasties using the endoscope.
- Start with the endoscope, Do not end with it.