Open Cavity Tympanomastoidectomy

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Definitions

- Mastoidectomy:
  - Removal of the mastoid air cells
- Antrotomy:
  - Entry into the mastoid antrum, usually via mastoid cortex
- Atticotomy:
  - Entry into the epitympanum, usually via the EAC
- Tympanotomy:
  - Entry into middle ear space
- Tympanoplasty:
  - Repair of middle ear structures
Definitions

- Cortical Mastoidectomy
  - Approach through lateral mastoid cortex
  - Usually, but not necessarily via post auricular incision
- Subcortical Mastoidectomy
  - The lateral mastoid cortex is left intact (at least initially)
  - Starts @ scutum (I.e. medially) and moves laterally
  - Usually, but not necessarily, via endaural approach
  - “Inside Out” mastoidectomy

Open Cavity Techniques

The posterior canal wall of the EAC has been removed, thereby transforming the EAC and the mastoid bowl into a single common cavity

- Radical mastoidectomy
- Modified radical mastoidectomy
- “Bondy” mastoidectomy

Open techniques exteriorize disease and eliminate the potential for ongoing bone erosion and destruction
Radical Mastoidectomy

- Infection of peritubal &/or labyrinthine air cells
- Cholesteatoma that can not be removed from protympanum of Eustachian tube.

Definitions

- Modified Radical Mastoidectomy
  - Tympanomastoidectomy
  - Complete exoneration of the mastoid air cells with reconstruction of TM & ME.
  - Removal of posterior canal wall
  - May include Tympanoplasty types I-IV w/wo ossiculoplasty
  - Cortical or subcortical dissection
**Mod Radical Mastoidectomy**

**Definitions**

- "Bondy" mastoidectomy:
  - Complete exoneration of mastoid air cells *without* a tympanoplasty or tympanotomy
  - Removal of posterior canal wall
  - Technically, a modified radical mastoidectomy, although the latter term is not used accurately.
  - Performed by subcortical dissection
Bondy Mastoidectomy

Goals: safe & dry

- A smooth, featureless exteriorized cavity that can be easily visualized & cleaned in an office setting.
- A cavity lined with normal skin that remains dry and problem free with a minimal amount of care and that tolerates the usual activities of daily living, even swimming!
Goals: hearing & looks

- Conservation of residual hearing
- Improved hearing
- An acceptable cosmetic appearance.

Management of Cholesteatoma

- Depends on:
  - Type
  - Age
  - Number of recurrences
  - Extent of disease
  - Underlying ET function
  - Patient’s wishes
Intact canal wall

- Looks better
- No “problem” cavity
- Heals rapidly
- 20-40% recurrence
- Requires second look

Canal wall up

- First operation
- Limited disease
- Patient demands
- Good eustachian tube function
Canal wall down (modified radical)

- Looks worse
- “problem cavity” possible
- Heals slowly
- 3-5% recurrence
- ? Swimming
- Hearing aids more difficult

Selection of technique: CWU

- Is patient willing & able to have “second look” or regular re-imaging with MRI using non echo planar DWI?
- Does the patient understand the high recurrence rate with closed techniques?
- Does the patient understand the greater potential for complications?
Selection of technique: CWD

- Can patient accept the appearance of a meatoplasty?
- How important are water sports?
- What is the likelihood that a hearing aid will be needed in that ear?
- Is the canal wall destroyed by disease?

Canal Wall Already Down
Canal Wall Down

Canal Wall Down
Canal Wall Down

Cholesteatoma removal

- Removal all cholestatoma unless:
  - Attached inextricably to
    - Facial Nerve
    - Dura Mater
    - Labyrinthine Fistula?
      - Cover immediately
      - Antibiotics
      - Steroids
Good canal wall down

- Remove all air cells
- Saucerize well
- Amputate mastoid tip
- Large meatoplasty

Good canal wall down

- Tegmen first and even from middle ear through aditus and into antrum
- Floor of EAC down to level of hypotympanum
- Canal wall down to level of VII
Open Cavity Mastoidectomy

Saucerization
Tegmen

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Critical Features

- Remove “Cog” and air cells from anterior epitympanic recess

Anterior Epitympanic recess
Anterior Epitympanic recess

Adequate Meatoplasty
Palva Flap

Palva Flap
Adequate Meatoplasty

Questions??