Open Cavity
Tympanomastoidectomy

Peter S Roland
University of Texas Southwestern
Medical Center
Dallas, Texas

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
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

Definitions

- Radical Mastoidectomy
  - Tympanomastoidectomy
  - Removal of mastoid air cells, TM, malleus & incus
  - Removal of posterior canal wall
  - Closure of the Eustachian Tube
Radical Mastoidectomy

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

- **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
Definitions

• “Bondy” mastoidectomy:
  • Complete exoneration of mastoid air cells without a tympanoplasty or tympanotomy
  • Removal of posterior canal wall
  • 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.
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?
Selection of technique: CWU

- Is patient willing & able to have “second look”?
- Does the patient understand the high recurrence rate with closed techniques?
- Does the patient understand the greater potential for complications?

Canal Wall Down
Open Cavity Mastoidectomy

Cholesteatoma removal

- Removal all cholesteatoma unless:
  - Attached inextricably to
    - Facial Nerve
    - Dura Mater
    - Labyrinthine Fistula?
Critical Features

- Saucerize well
- Amputate mastoid tip
- Create a smooth, flat transition from tegmen mastoideum to tegmen tympani
- Remove all air cells
- Remove posterior wall of EAC to facial ridge

Saucerization
Critical Features

- Lower floor of medial EAC toward hypotympanum
- Remove “Cog” and air cells from anterior epitympanic recess
- Adequate meatoplasty

Anterior Epitympanic recess
Adequate Meatoplasty

Palva Flap
Palva Flap