Tympanic Membrane Perforations

- Myringoplasty
- Tympanoplasty
Myringoplasty

- 1640 - Bancer
- 1878 - Berthold
- 1944 - Schulhof and Valdez
- 1952 - Wullstein
- 1961 - Storrs
Tympanoplasty

- Type I - malleus
- Type II - incus
- Type III - stapes
- Type IV - footplate
- Type V - HSCC
TM Perforations

- Acute Suppurative OM
- Trauma
- Iatrogenic
Sound Transmission

• Impedance - matching system
• TM: stapes = 17:1
• Malleus: incus = 1.3:1
• Total = 22:1
TM Perforations

- Less TM surface
- Direct sound energy to round window without dampening
Goals

- Eradication of pathology
- Intact TM with healthy middle ear cleft
- Secure connection from TM to inner ear
Indications

• Perforation > 3 months
• Significant hearing loss
• Water protection
Preop

- History
- Otomicroscopy
- Audio
- Consent
- Postop issues
Technique - Medial

- Postauricular incision
- Harvest graft
- Vascular strip
- Annulus
- Perforation edges
- Gelfoam
- Graft placement
Postop

- Discharge
- Gtts
- Water precautions
- Followup
Complications

- Infection
- Graft failure
- Chondritis
- Cholesteatoma
- Chorda
- SNHL/Vertigo
Complications - Lateral

- Blunting
- Lateralization
Closure of Perforation

- **Failure**
  - technical error
  - infection
  - poor tubal function

- **Success**
  - “90%”
  - Poorer results in revision cases
Perforation closure

- Smyth & Halik - 11 yrs f/u
  - 81% closure
  - 91% avoidance of atelectasis
  - 60% success in revisions
Hearing

- Controversy as to role of MEE, site, and graft material
- Smyth - ABG of 10 dB in 80%
- Goal of AC threshold less than 30 dB or 15 dB of opposite ear
Children

- Considered less successful
- 35-93% success
- Certain indications
- ? indications
Children

- School age?
- 10-14 years?
- Dry ear for at least one to two years?
Children

- Frequent URI’s and OM
- Narrow canals
- ETD
- Less cooperative
- High reperforation rate
- Recurrent disease
- Ventilates ear
Tos and Lau

- “more rewarding”
- prevention of ossicular pathology
- closure in 92%
- 88% ABG of 20 dB
- 5% M & T
Children

• Manning
  – 78% healed but 52% with good ME function

• Gianoli
  – 92% healed but 38% success

• Vrabec and Deskin
  – advancing age equated to improved success
Tympanoplasty

- Standardized outcome measures
  - longer followup
  - definition of success
Case presentation

- 6 yo WM referred from pedi
- Hx of RAOM and COME
- BMT x 2 (age 1 and 3)
- Extruded tubes one year ago with persistent perforation
Case Report

- Two AS “ear infections” in last year
- OME x 8 wks with last episode
- Denies otalgia, tinnitus, vertigo, or hearing impairment
Case report

• Physical Exam
  – uncooperative child
  – AD 30% dry anterior perforation
  – AS retracted TM

• Audio
  – AD mild CHL
  – PTA 27/10
Case Report

- Now 9 years old
- No otologic complaints except some decreased hearing AD
Case Report

- **Physical Exam**
  - AD 30% dry perforation
  - AS WNL

- **Audio**
  - AD mild CHL
  - PTA 25/7