Reconstruction of the Tympanic Membrane and Ossicular Chain

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TM reconstruction

- Central Perforation
- Sinus Tympani Retraction Cholesteatoma
- Lateral Attic Wall Erosion Cholesteatoma

Central Perf

- Easiest TM defect to repair
- Lateral or medial graft technique

Medial Underlay

- Key is to visualize entire annulus
- Anterior canal wall skin is elevated in retrograde fashion lateral to fibrous annulus to the meatus while the skin is left intact
- Can remove anterior wall bony overhang

- Use Rosen or sickle knife to elevate the fibrous annulus from the bony annulus from the 1 to 5 o’clock position
- Antibiotic irrigation
- Place gelfilm over promontory
- Place fascia medial to umbo and fibrous annulus

Lateral Overlay

- Key is to remove squamous epithelium from the TM remnant surface entirely
- Anterior canal wall skin removed
- Remove anterior overhanging bony canal wall
- Visualize entire fibrous annulus

- Use Rosen or sickle knife to elevate the fibrous annulus from the bony annulus from the 1 to 5 o’clock position
- Create shelf-like pocket over the fibrous annulus b/n bone of ET and mucoperiosteum to place graft anteriorly
- Antibiotic irrigation
- Place gelfilm over promontory

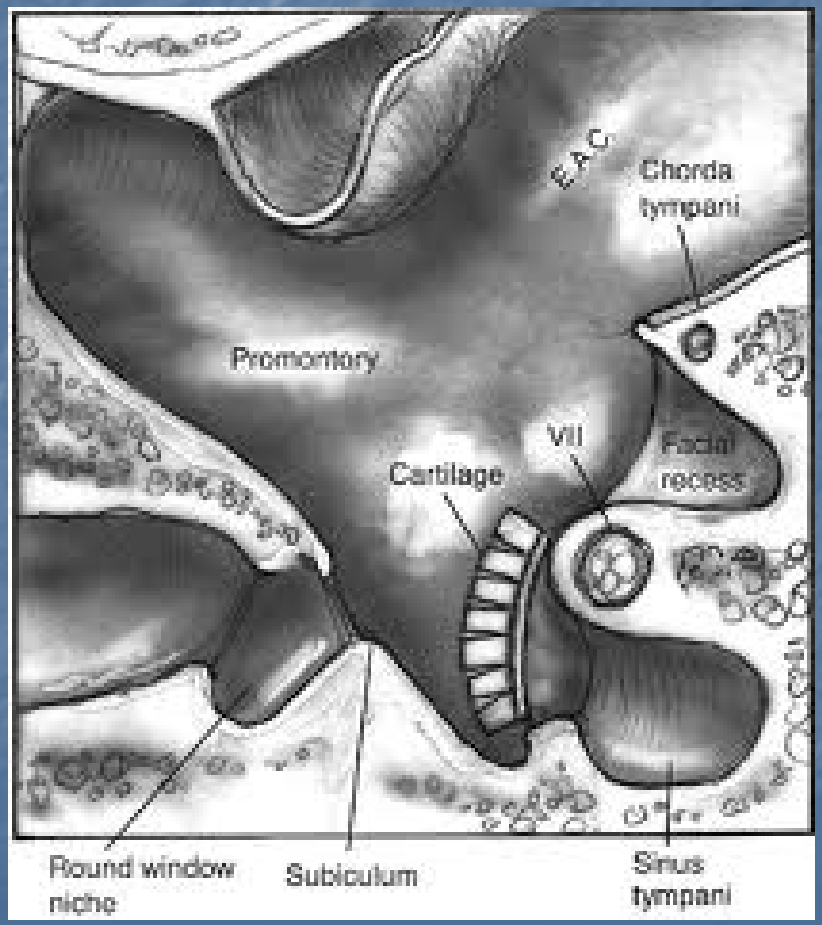
- Graft placed into the fibrous annulus-mucoperiosteal shelf pocket
  - Prevents lateralization
- Remainder laid lateral to fibrous annulus

Sinus Tympani Retraction Cholesteatoma

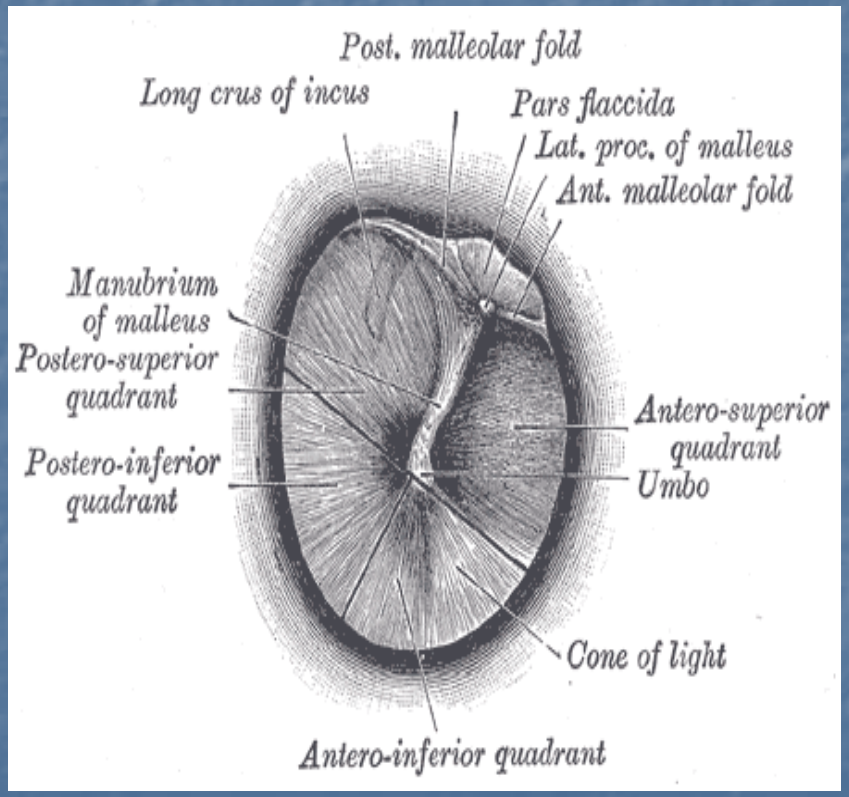
Sinus Tympani Retraction Cholesteatoma

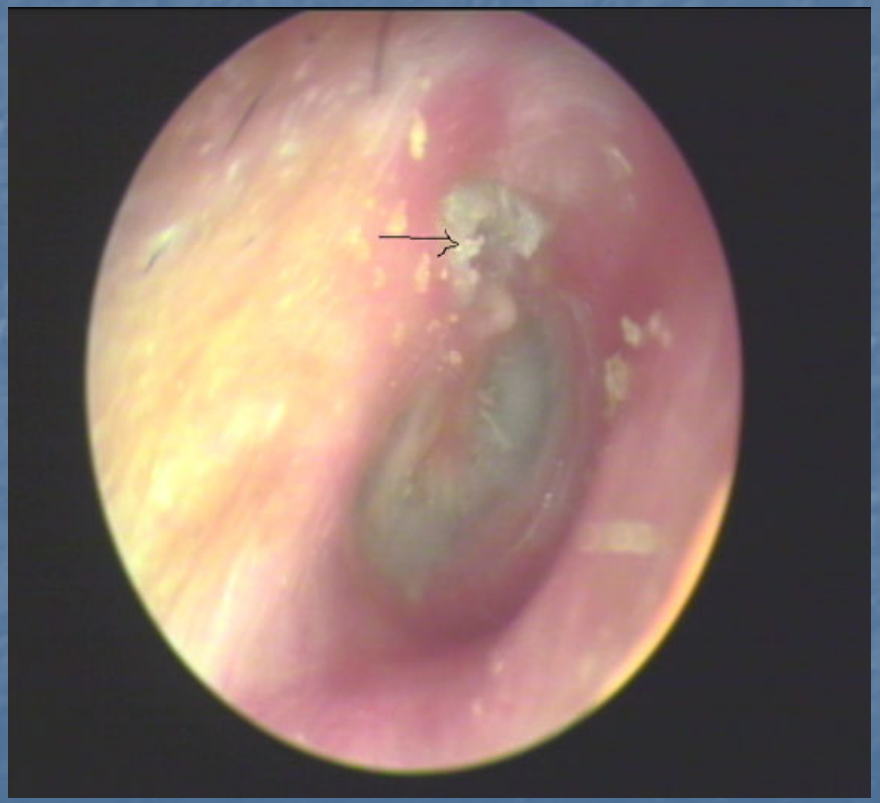
- Technically most difficult b/c hard to visualize
- Facial recess approach
- Area of adhesive retraction usually begins at anterior aspect of the round window
- Free from TM anteriorly and superiorly to stapes and FN
- Use crabtree elevator to inspect +/- endoscopy

- Place piece of tragal cartilage with convex side towards promontory from RW to OW to block entrance



Lateral Attic Wall Cholesteatoma

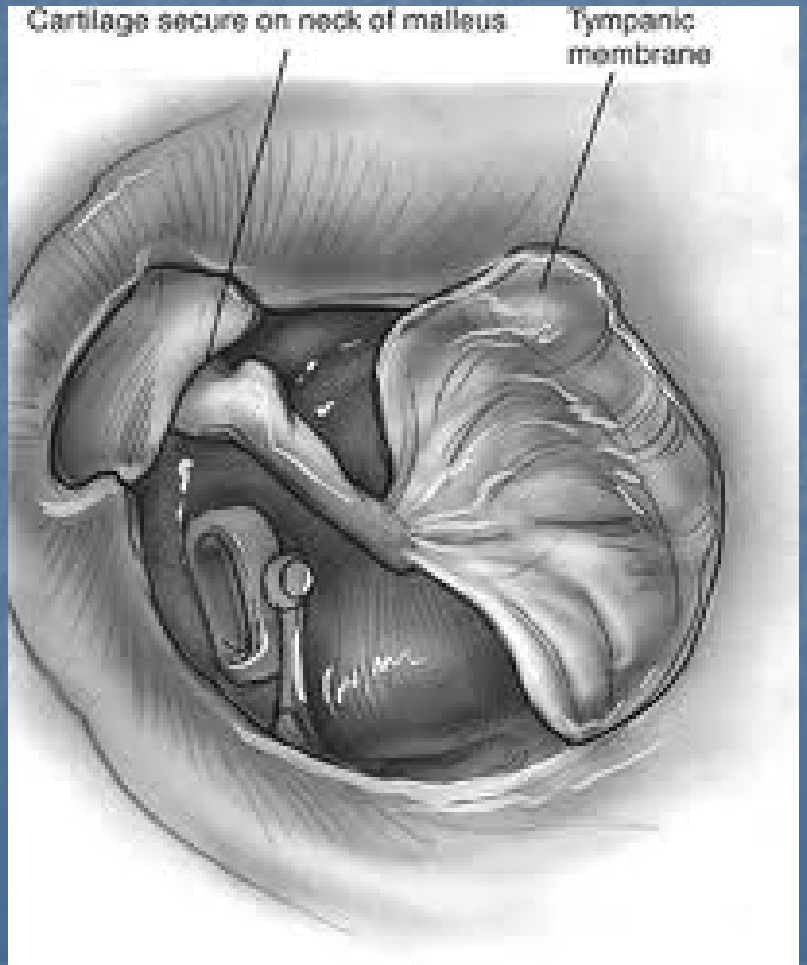




Lateral Attic Wall Cholesteatoma

- Most common type of chole causing TM defect
- Elevate fibrous annulus anteriorly and posteriorly
- Develop TM flap down to but not off of the umbo to visualize pars flaccida area
- CWU and facial recess approach

- Reconstruct lateral attic wall with tragal cartilage
- Fix cartilage against malleus neck



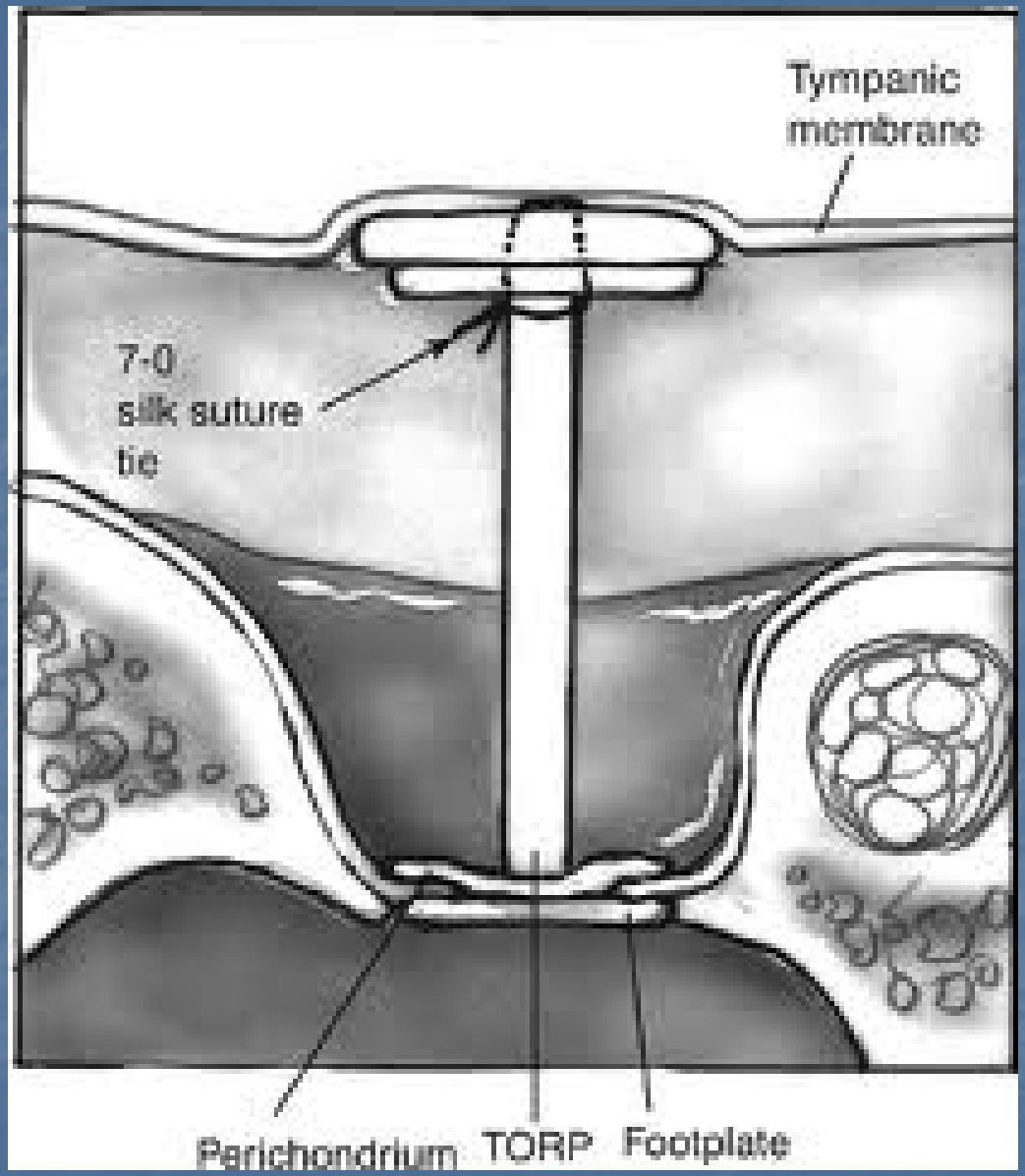
OCR

- High extrusion rates of early PORP and TORP
- Double Cartilage Block
  - Harvest tragal cartilage and split to but not through perichondrium
  - Fold on itself and place b/n TM and stapes


A
B
C
Perichondrium

TORP

- To avoid extrusion, there should be no contact b/n articular surfaces and prosthesis
- Harvest tragal cartilage and secure to TORP platform with 7-0 silk
- Perichondrium placed over footplate and insert TORP


Tympanic membrane
7-0 silk suture tie
Perichondrium
TORP
Footplate