COMPLICATIONS OF SURGERY FOR CHRONIC OTITIS MEDIA

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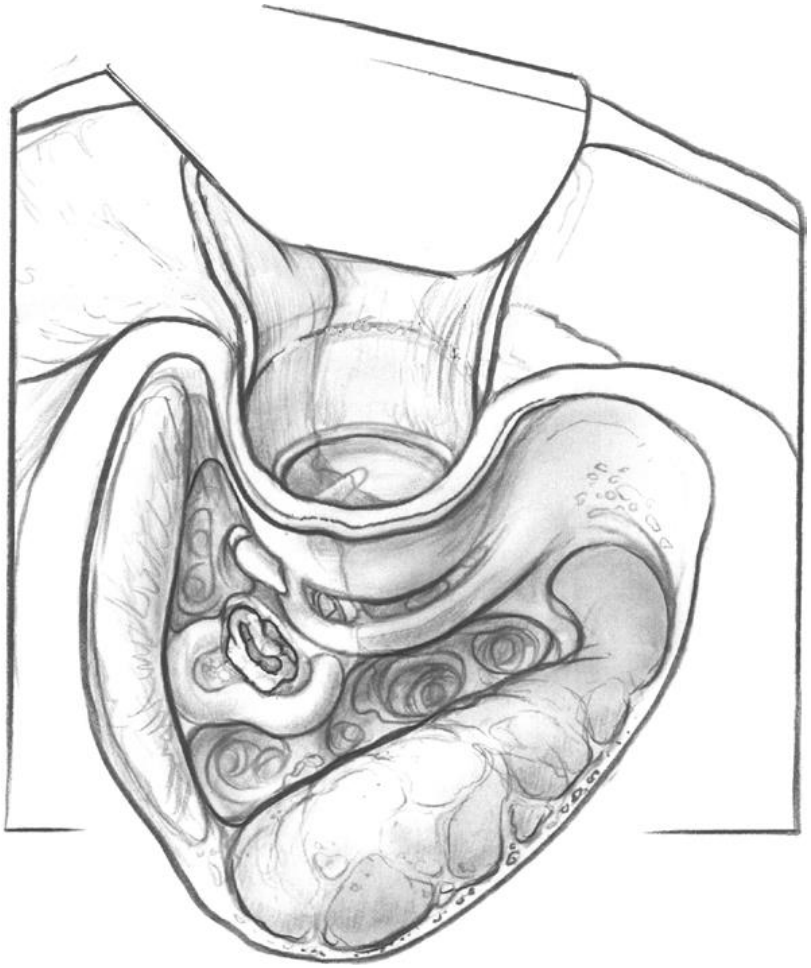
Labyrinthine fistula

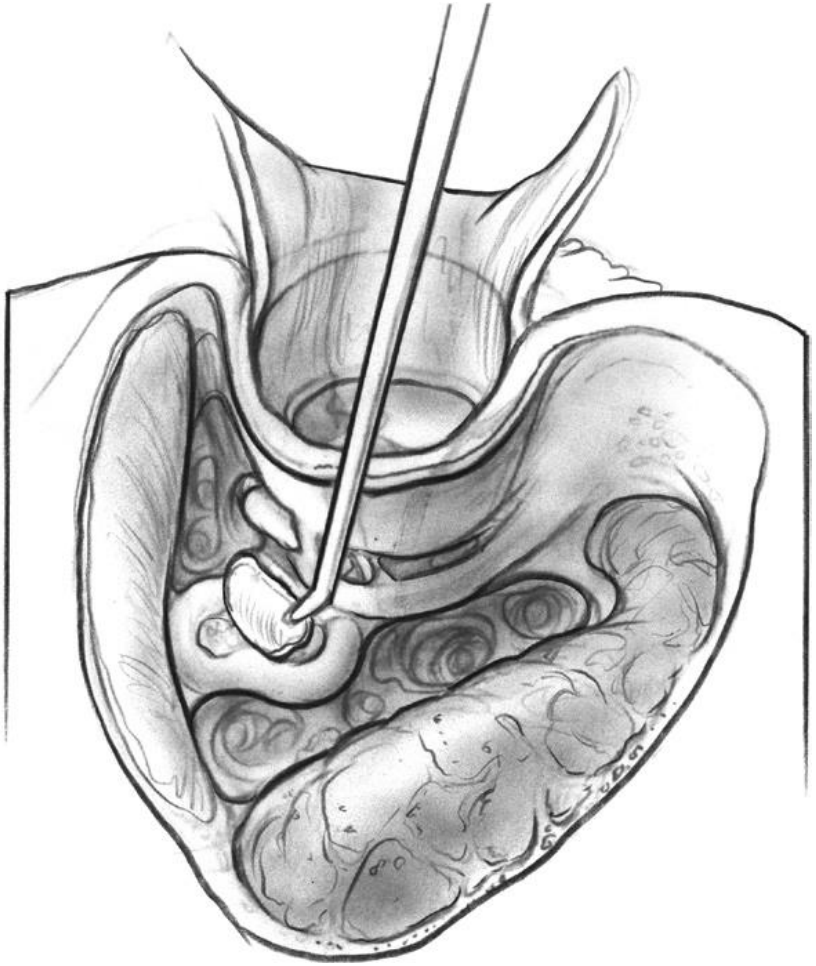
- Stable prevalence of about 10%
- most common location lateral SCC
  - 80% isolated
  - Remainder LSCC + one or more sites
- Endosteal membrane separates matrix from the perilymphatic space
- Fistula test 72% positive
- Duration of COM > 20 years (more than 50%)
- Dizziness
- Sensorineural hearing loss
- high incidence of facial nerve dehiscence (27-55%)

Labyrinthine fistula management



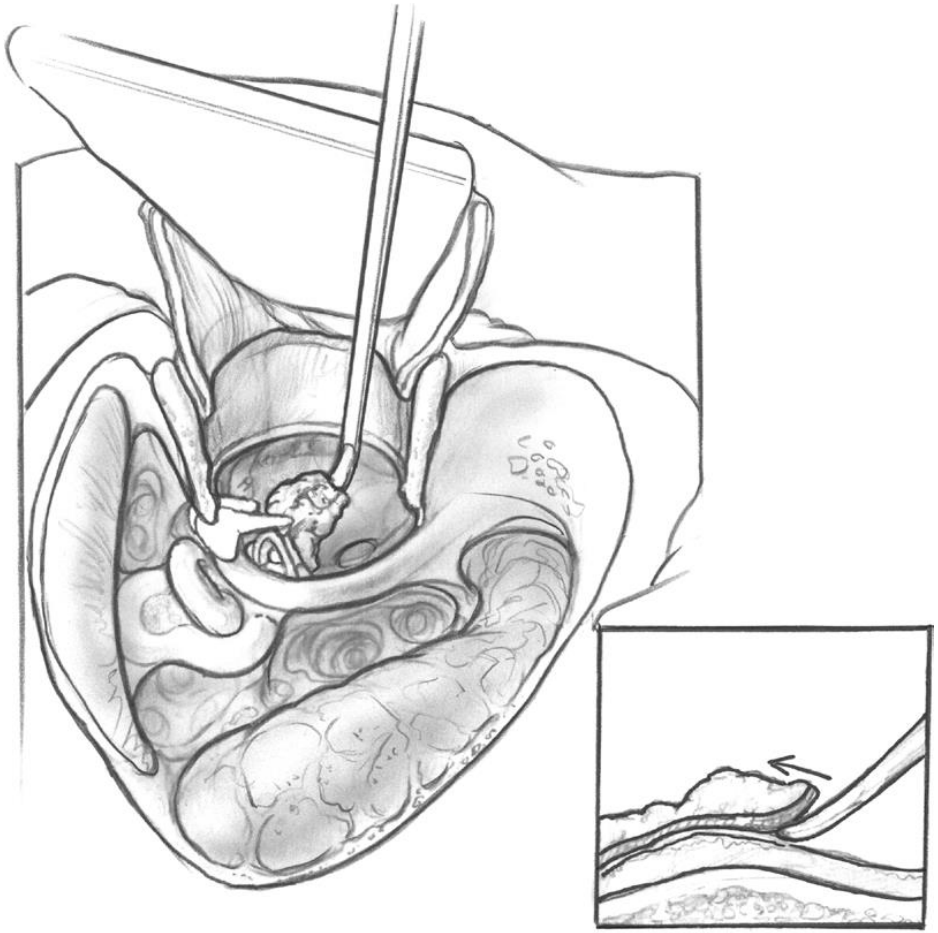
- Open and evacuate any cholesteatoma sac in the mastoid
- carefully palpate the medial wall to detect any bony erosion especially on the dome of LSCC

Labyrinthine fistula management



- Leave matrix over fistula to protect it
- focus on the rest of the ear disease.
- Any removal is done immediately before closing.
- When exposed, quickly cover the fistula with tissue (fascia, vein, or perichondrium)

Labyrinthine fistula management



- Leave matrix alone whenever fistulas are:
- extensive
- multiple
- Involve vestibule or cochlea

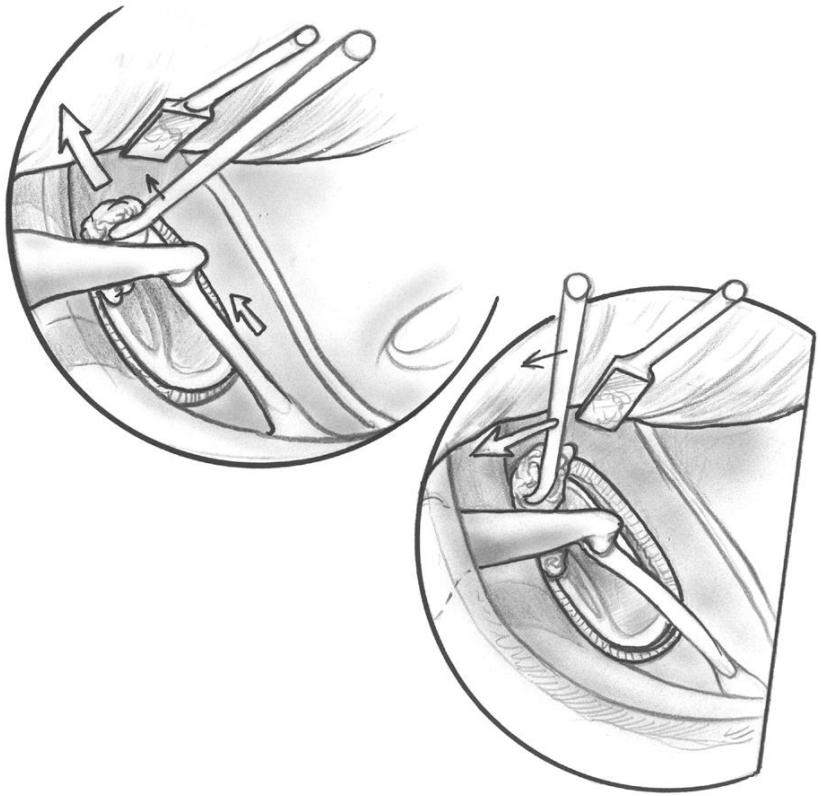
Factors that should be considered in management of LF

- Ability and experience of the surgeon
- Location and size of fistula
- Multiple fistula
- Adherence of matrix to the membranous labyrinth
- Function of both ears
- Infected versus noninfected cholesteatoma

Iatrogenic labyrinthine fistula

- Incidence 0.1%
- SNHL
- Lateral semicircular canal
- Promontory
- oval window (most common site)

How to prevent?



- Remove cholesteatoma by dissection parallel to the stapedius tendon to steady the stapes

How to prevent?

- Be cautious about removing any granulation tissue or inflamed mucosa from around the stapes
- If the dissection becomes difficult:
  - leave the cholesteatoma
  - reconstruct the tympanic membrane
  - second stage operation in 6 to 9 months
- Immediately cover any opening with fascia, avoiding any suction

SNHL

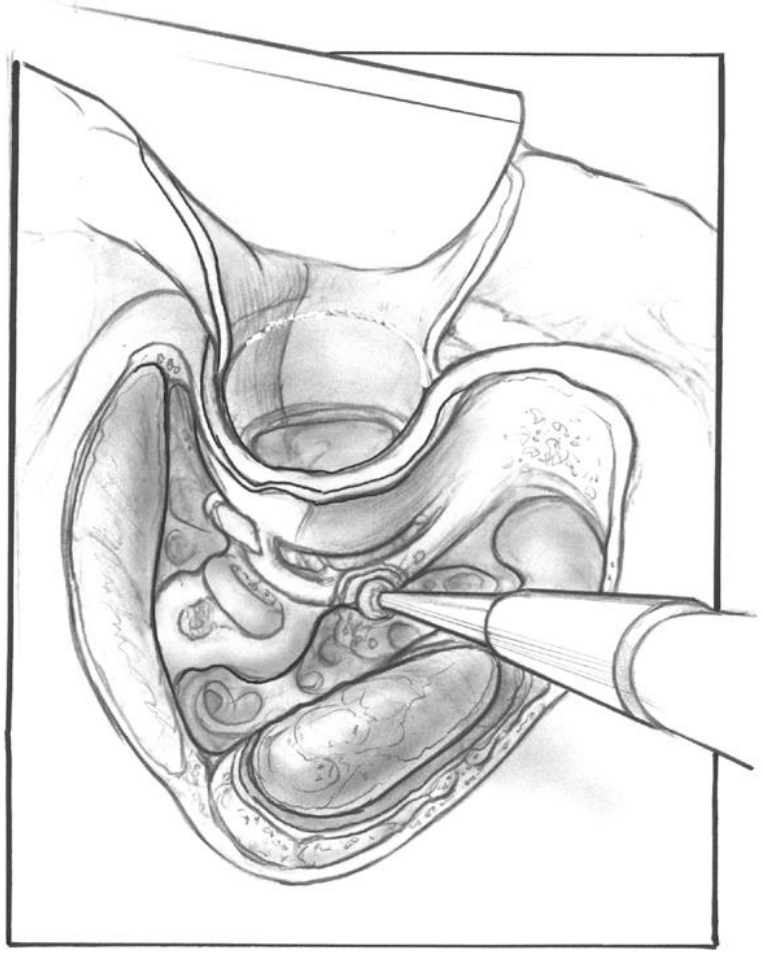
- Opening the labyrinth
- Excessive ossicular manipulation
- drilling on the ossicles
- noise
- Most common in intact ossicular chain
- All ears had some recovery in the first 3 postoperative months

How to prevent SNHL?

- When removing cholesteatoma from ossicles:
  - slow, deliberate manner
  - Malleus handle: dissect parallel to it
  - lateral surface of incus body and short process: anteroposterior direction
  - Incus long process: superoinferior (parallel)
  - stapes and oval window: parallel to stapedius mucsle

Iatrogenic facial paralysis

- Incidence in otologic surgery: 0.6% to 3.6% and exceeds 5% in revision cases
- The most frequent facial nerve injury is transection of the mastoid segment with a cutting burr



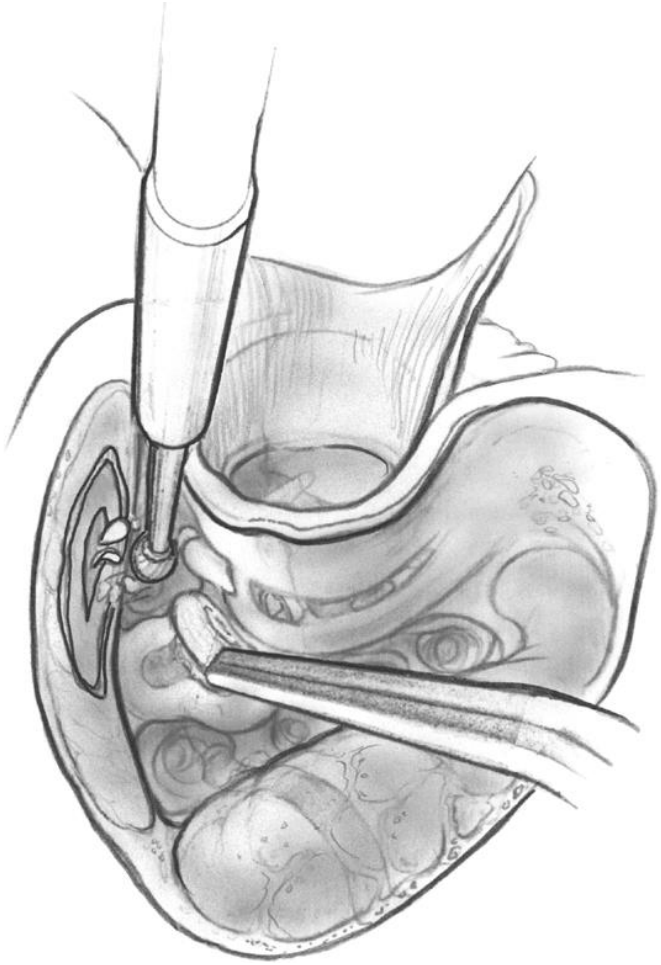
Iatrogenic facial injury management

- facial nerve injury is recognized during surgery
  - facial canal should be opened proximally and distally to decompress and examine it
  - Epineurium splitting is contraversy
- facial nerve paralysis is recognized after surgery
  - Confident that It was not resected: inspection
  - Surgical examination
    - Doubts concerning trauma
    - Electric silence 3 days beyond the event

Severe latrogenic facial injury management

- one third of the nerve or greater:
  - Resection and anastomosis
- *early repair within* several days of injury, and certainly within 30 days
- A maximum gap of 1 cm is cutoff point for rerouting and anastomosis (17mm)
- proximal-distal orientation of the graft should be reversed
- barely dissect the epineurium
- best reconstruction: 30-50% fibers, HB III
- return of function 5 to 7 months after repair
- Graft in canal without suture

Dural injury



- Indiscriminate cauterization of dural vessels
- drill or a misguided curette
- should be repaired as soon as it is noticed

Dural injury

- Posterior fossa Dural injuries are more problematic
- Bed rest +/- lumbar drainage for PFD repair
- Removing surrounding 5 mm of bone to inspect Dura and brain
- Repair by
  - Sutures
  - fascia graft
  - Muscle
  - Bone
  - cartilage/perichondrial grafts
  - Hydroxyapatite bone cement

Vascular injuries

- **Sigmoid Sinus**
- **Superior Petrosal Sinus**
- **Jugular Bulb**
- **Carotid Artery**

Sigmoid Sinus injuries

- Small: bipolar cautery or thrombin-soaked Gelfoam
- Larger lacerations require packing:
  - removes bone from around the injury first
  - bolus of Surgicel directly over the injury
    - Secure in place by bone wax or suture
  - obliterate the sinus extraluminally
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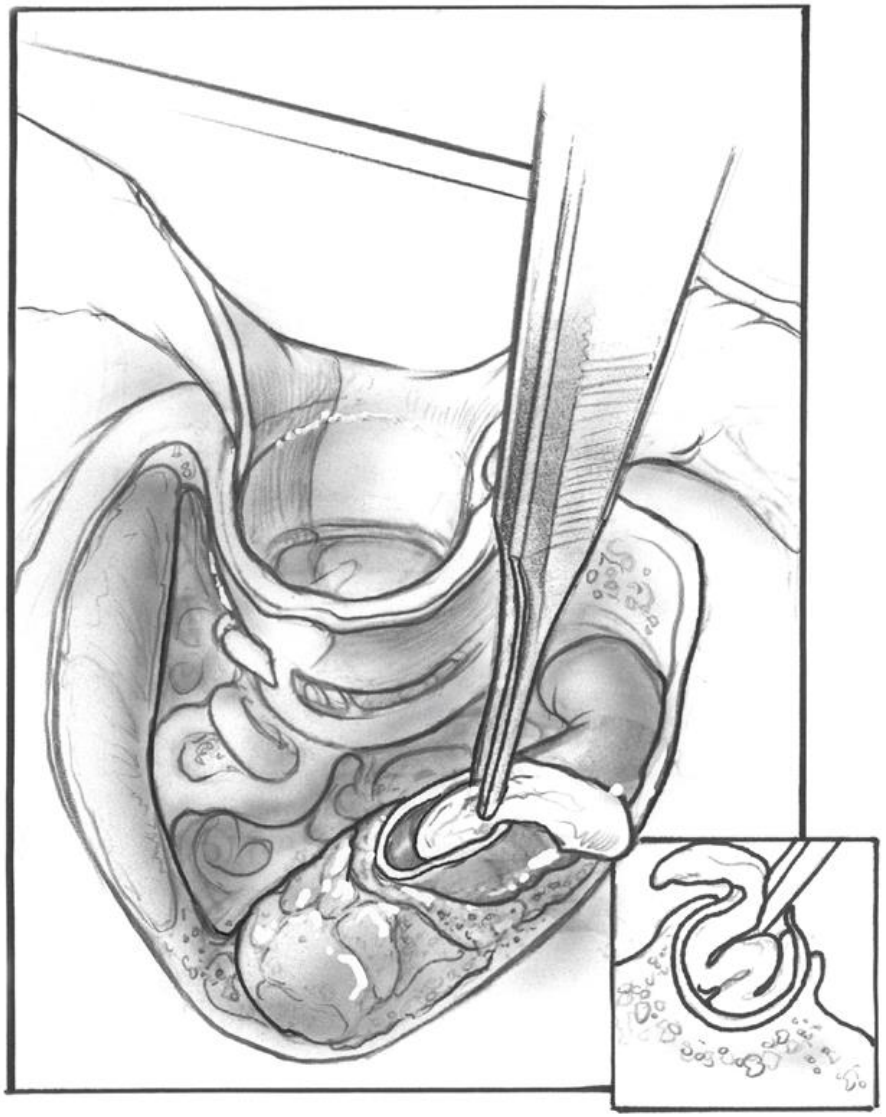
- Massive bleeding
  - Obliteration above and below the injury
  - Jugular vein ligation in neck

obliteration intraluminally

- 4 *4 cm Surgicel
- A tail of Surgicel remains outside to prevent embolization



Superior Petrosal Sinus

- bleeding usually stops with bipolar cautery
- If not controlled:
  - exposing the sinus medial and lateral to the injury. The medial portion is obliterated

Jugular Bulb

- More anterior sigmoid sinus is, the higher the jugular dome lies
- High jugular bulb 6%, Dehicency 7%
- Small openings: Bone wax or Gelfoam
- Larger: packing with surgicel between bony defect and bulb
- Not controlled: ligate the internal jugular vein in neck, obliterate the bulb and the sigmoid sinus with Surgicel
- Do not overpack the bulb: Injury to lower cranial nerves