

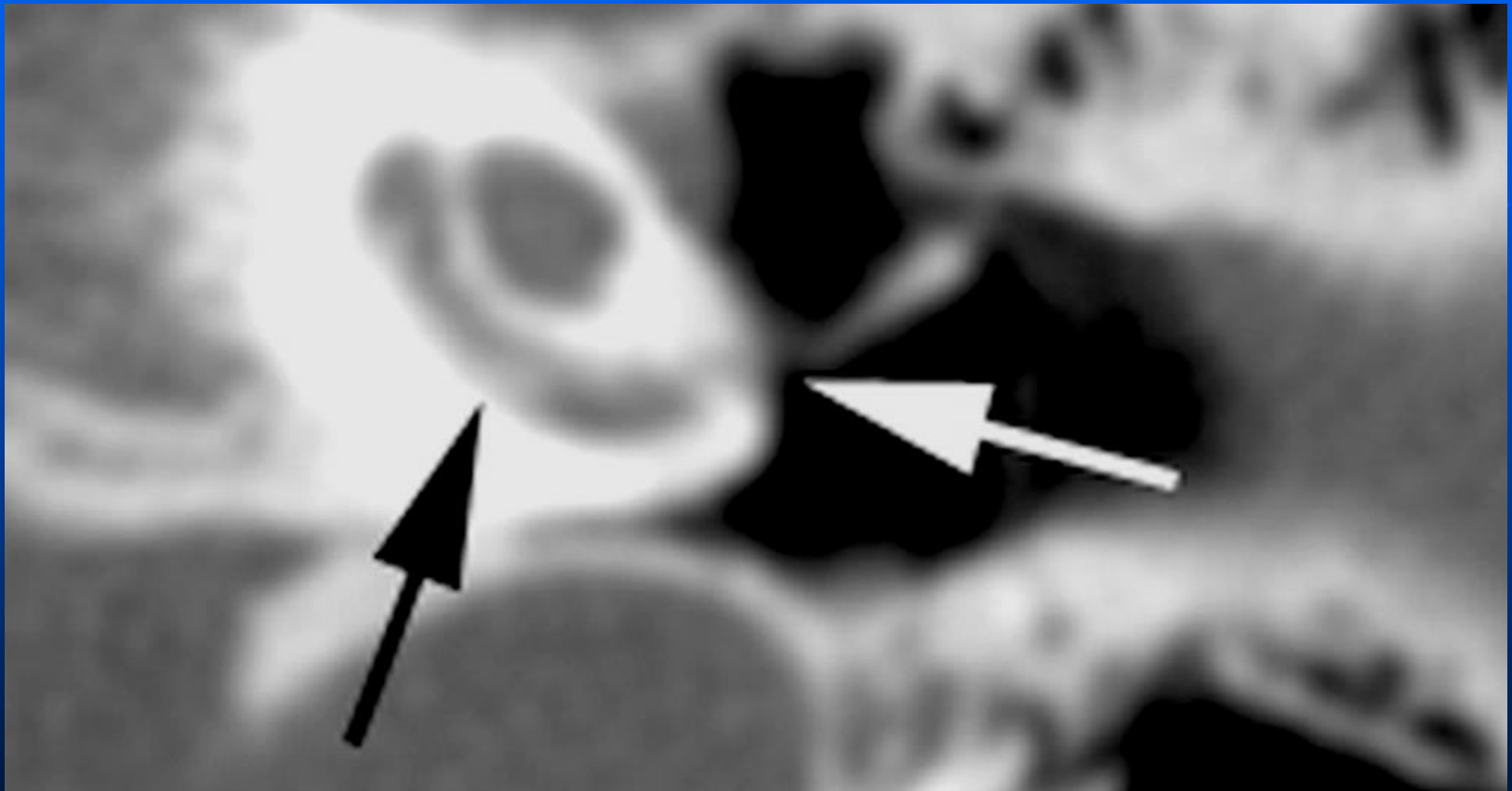
# Labyrinthine Ossificans

- Healing response to inner ear infection, inflammation, trauma, or surgery.
- Synonyms
  - Labyrinthine ossification, ossifying labyrinthitis, labyrinthitis ossificans, chronic labyrinthitis.
- Imaging
  - Varies with severity
    - » Mild: "Enlarged" modiolus; subtle inner ear new bone
    - » Severe: All inner ear fluid replaced by bone
  - Temporal bone CT: **High-density** bone deposition within membranous labyrinth
  - T2 MR: **Low-intensity** foci within high-signal fluid of membranous labyrinth

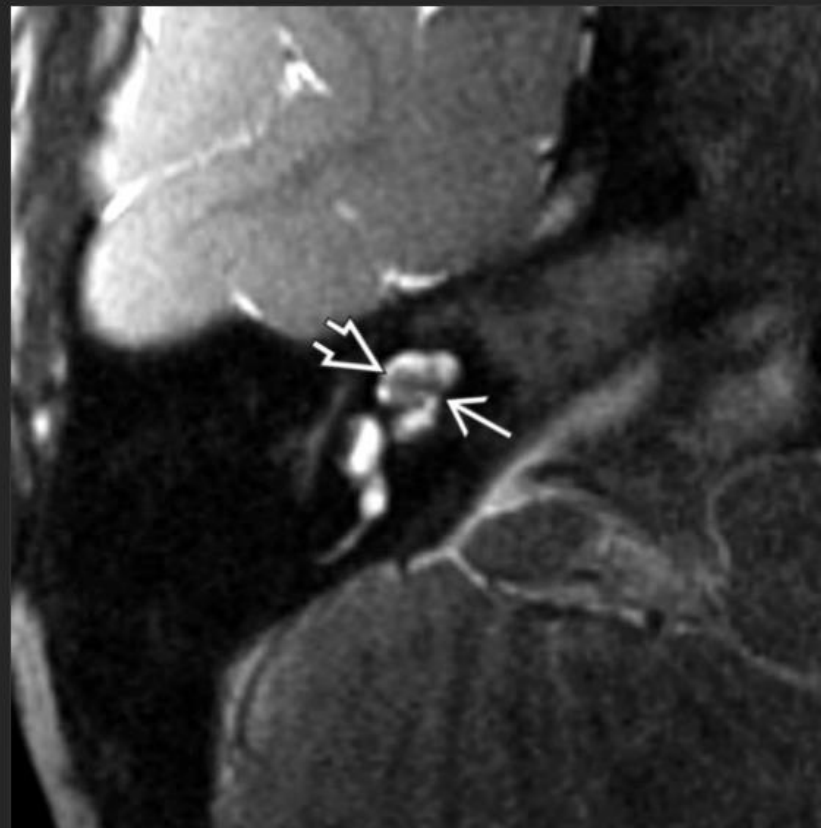
# Clinical Issues

- Most common: Bilateral sensorineural hearing loss (SNHL) in child weeks to months after acute meningitis episode
- Less common: Unilateral SNHL with previous surgery, trauma, mastoid/middle ear infection
- Cochlear implantation used for SNHL correction if cochlear nerve is still present
- Bilateral cochlear labyrinthine ossificans (LO) is serious detriment to cochlear implantation

## **Labyrinthine Ossificans (in basal turn)**



# Labyrinthine ossification (Another example)



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Axial T2WI MR in right inner ear with mild LO shows bony encroachment on basal turn of cochlea

→ Notice associated "large modiolus" ⇨, which is fibro-osseous cochlear involvement.