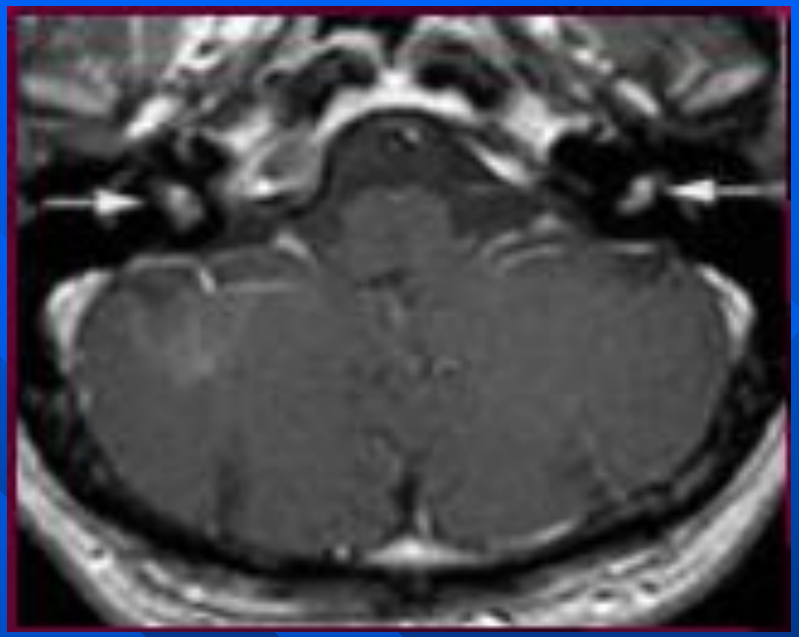
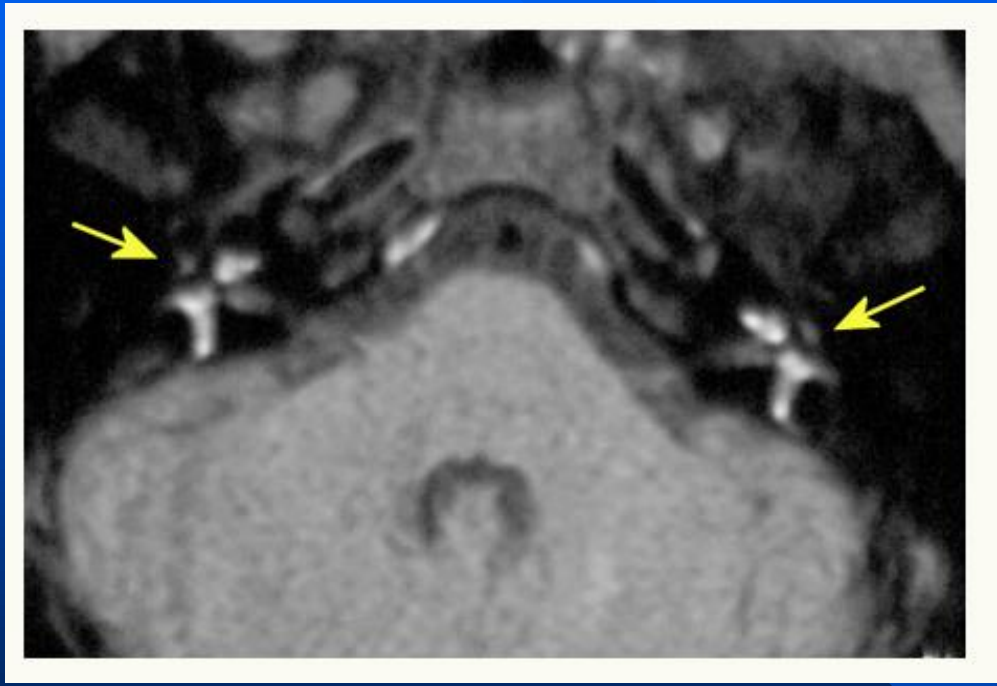
# Labrinthitis

- Cause
  - Viral
  - Bacterial
  - Spirochetal
  - Autoimmune
  - Traumatic
- SNHL with vertigo
- Complication:
  - Labyrinthitis ossificans
    - » postinflammatory fibro- osseous obliteration: Labyrinthitis ossificans
    - » Ossification and obliteration of labyrinth



# Labyrinthine hemorrhage (T1 no contrast)



viral labyrinthitis with high protein fluid can mimic blood

# Labyrinthine hemorrhage (Causes)

- Trauma or other forms of coagulopathy
- Leukemia with leukostasis syndrome
- Thrombocytopenia
- Aplastic anemia
- Multiple myeloma
- Diffuse metastatic breast carcinoma
- Sickle cell

# Labyrinthine ossification (Obliterans)

- Healing response:
  - to infectious, inflammatory, traumatic or surgical insult to inner ear
- Pathology
  - Suppurative membranous labyrinthitis sets up cascading inflammatory response in membranous labyrinth
  - Begins with fibrosis, progresses to ossification
- Epidemiology
  - Meningogenic labyrinthitis
    - » most common cause or acquired childhood deafness
  - 6-30% have some degree of hearing loss following meningitis

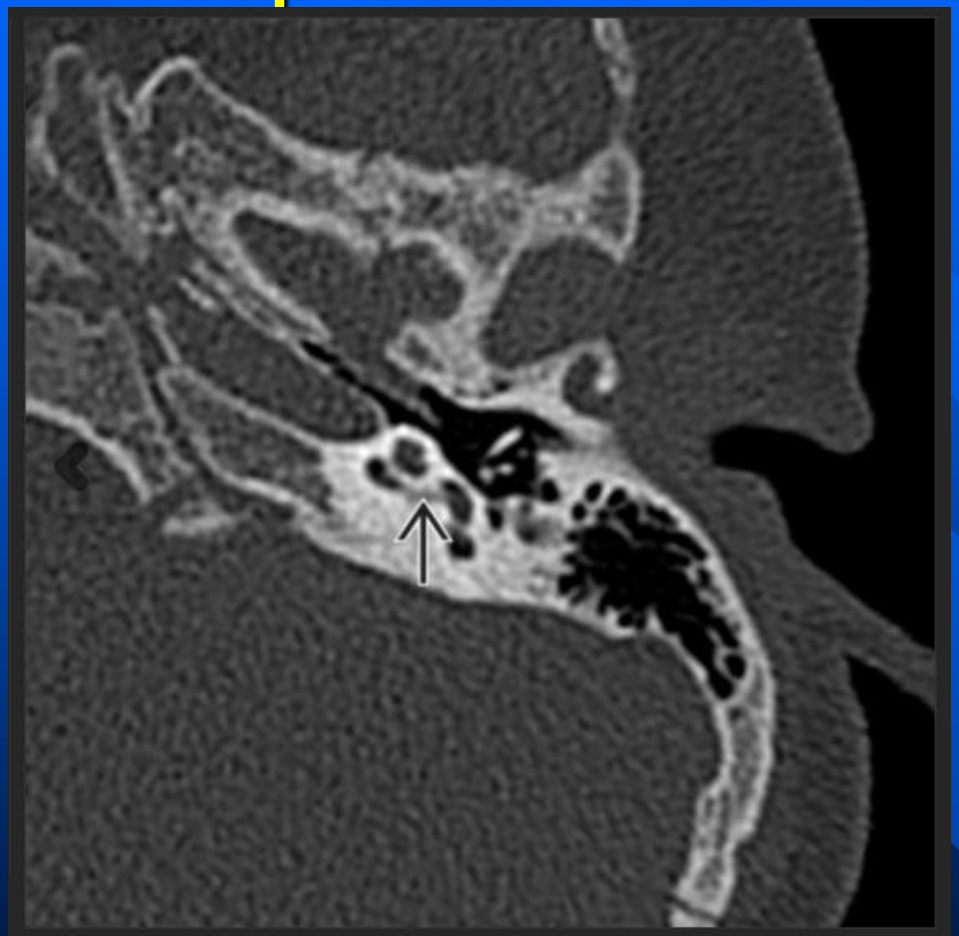
# Clinical Issues

- Most common: Bilateral SNHL in child weeks to months after acute meningitis episode
- Less common: Unilateral SNHL with previous surgery, trauma, mastoid/middle ear infection

# MR

- T1WI C+
  - Membranous labyrinthitis secondary to infection is usual precursor to LO
  - In this pre-LO phase, membranous labyrinth enhances, signifying active labyrinthitis
  - Enhancement may be holo-labyrinthine or segmental
  - Enhancement may persist in ossifying stage of LO

# 2-year-old boy 7 months after episode of bacterial meningitis



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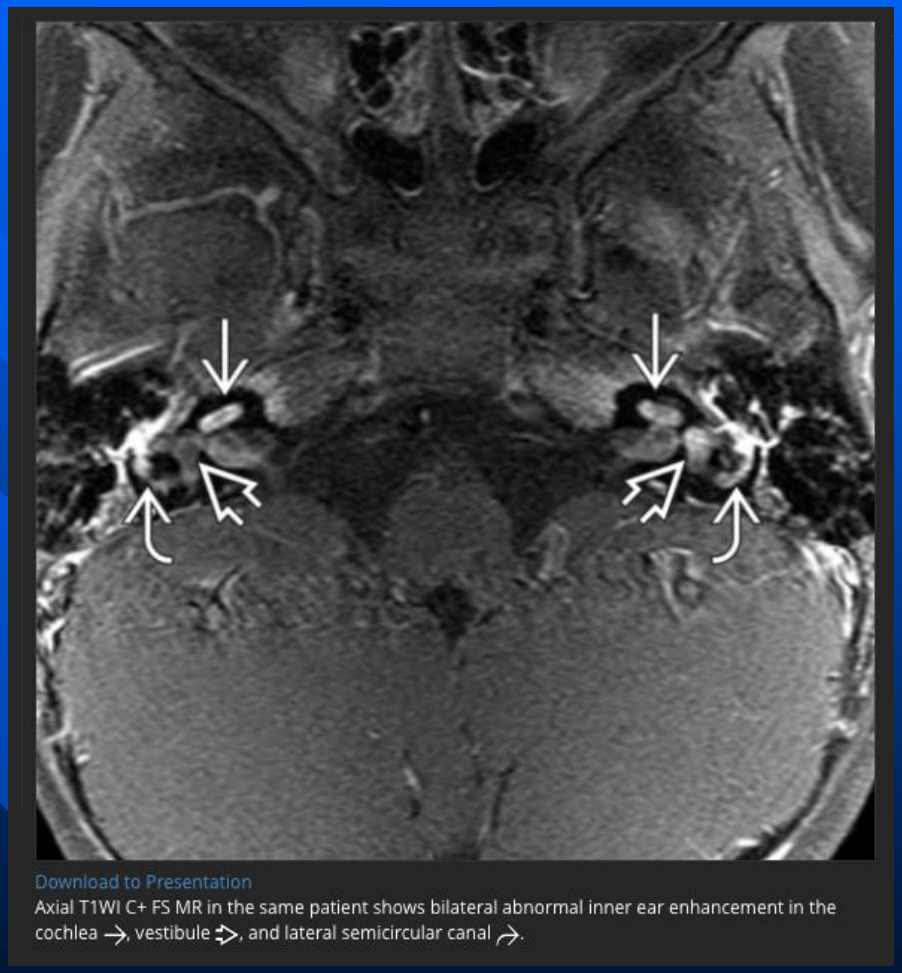
Axial bone CT in a 2-year-old boy with bilateral SNHL 7 months after episode of bacterial meningitis shows subtle ossification at the midportion of the basal turn of the left cochlea, with sparing of the middle and apical turns.



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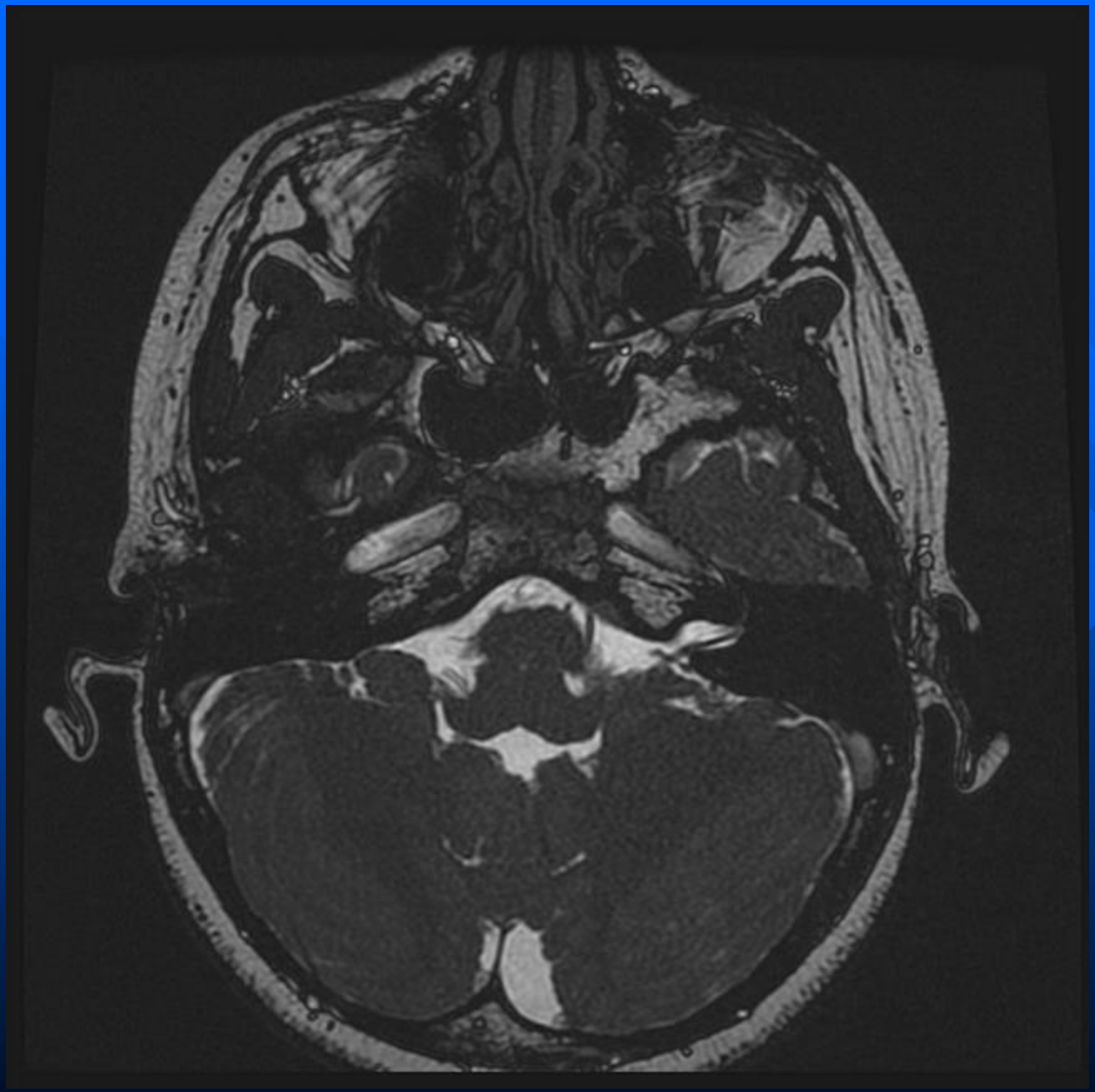
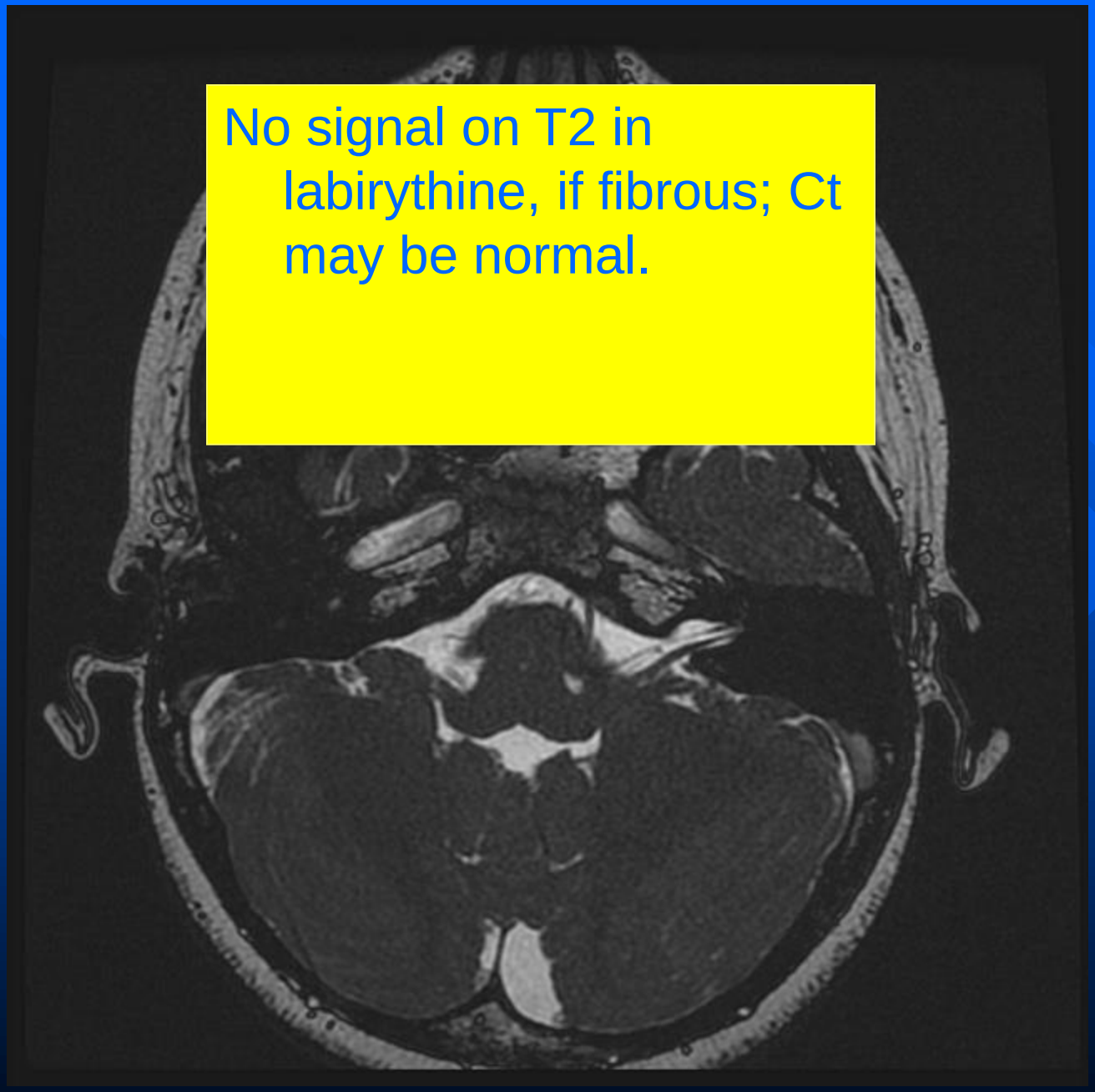
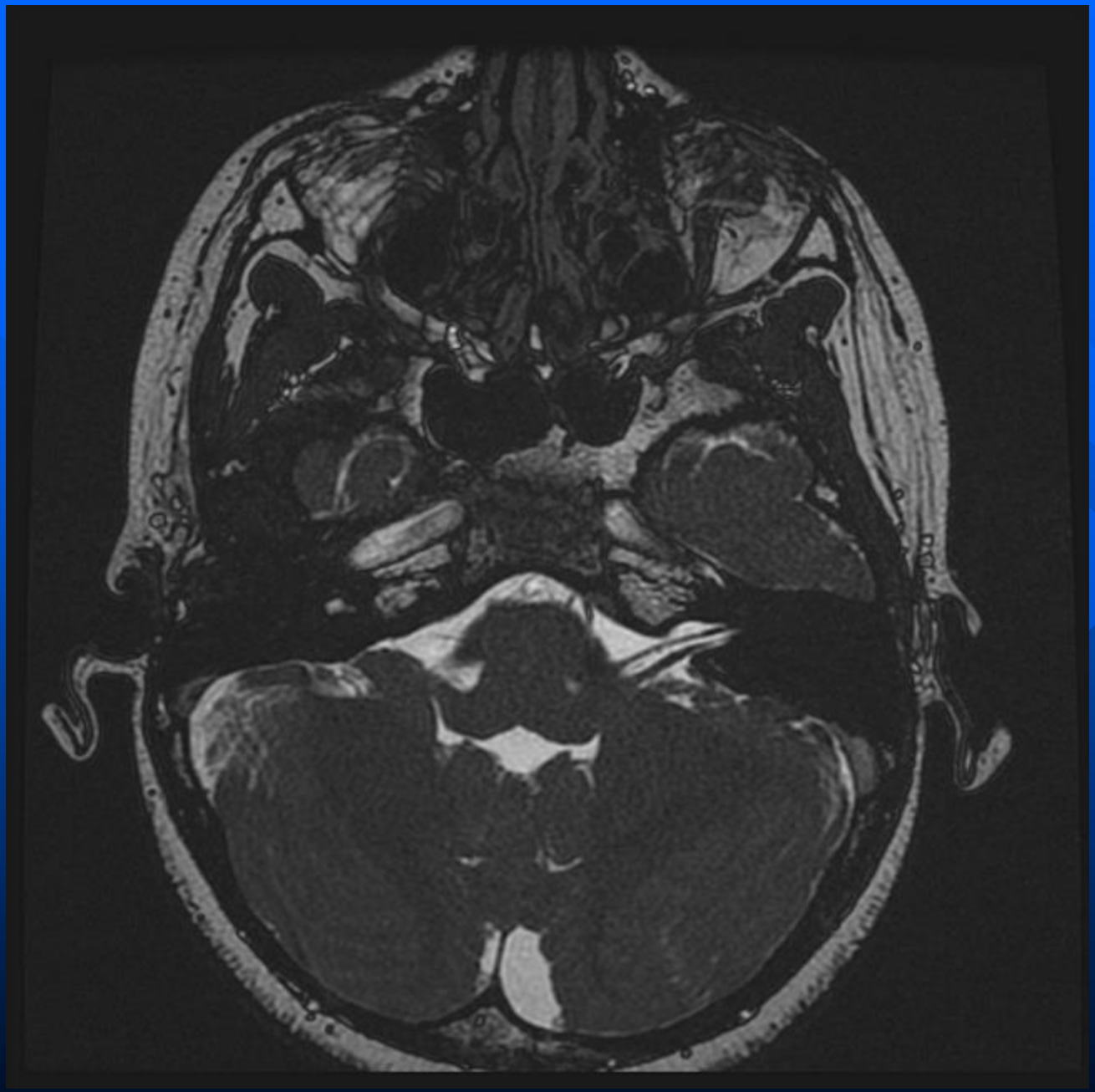
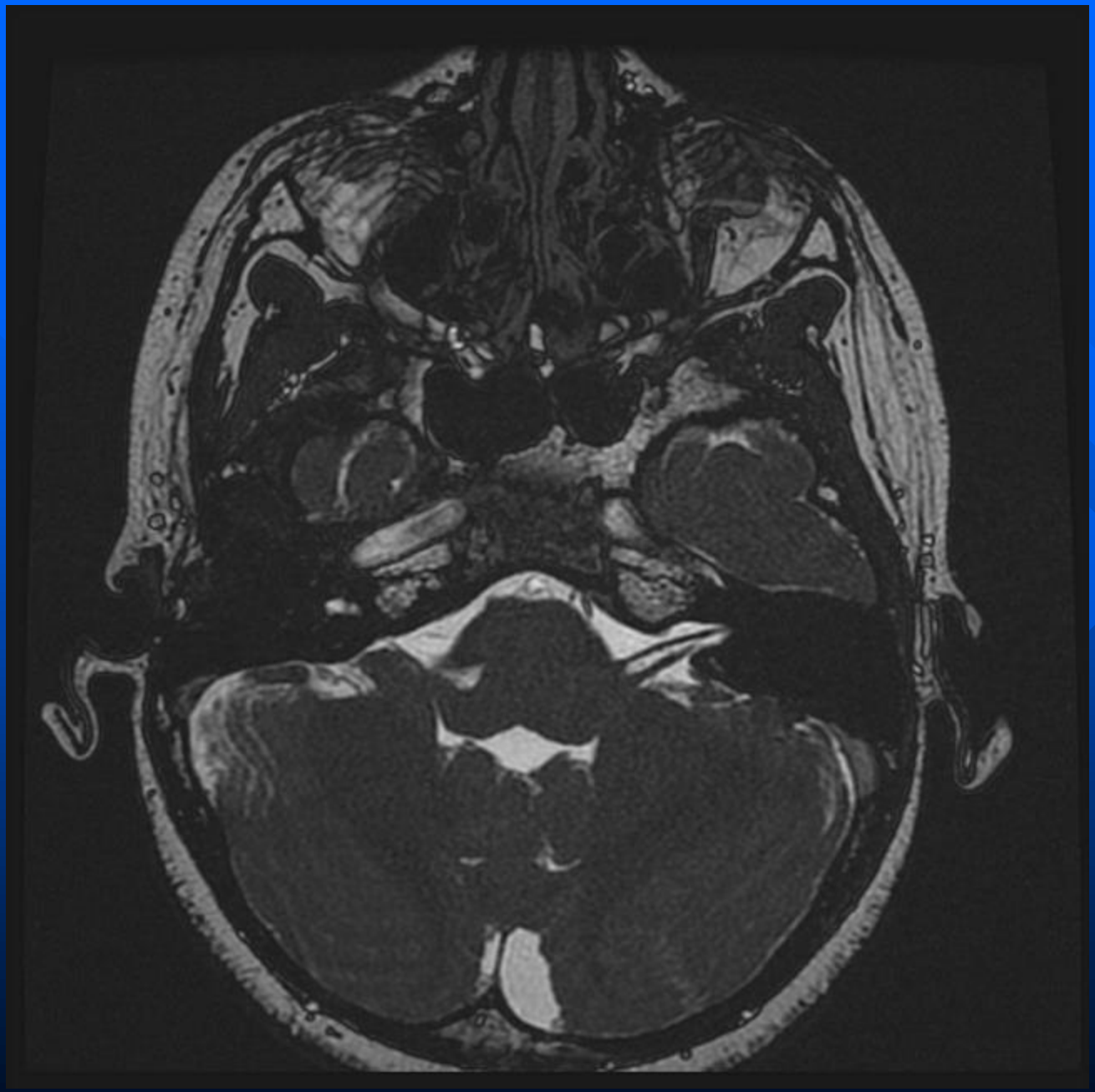
Axial T1WI C+ FS MR in the same patient shows bilateral abnormal inner ear enhancement in the cochlea, vestibule, and lateral semicircular canal.

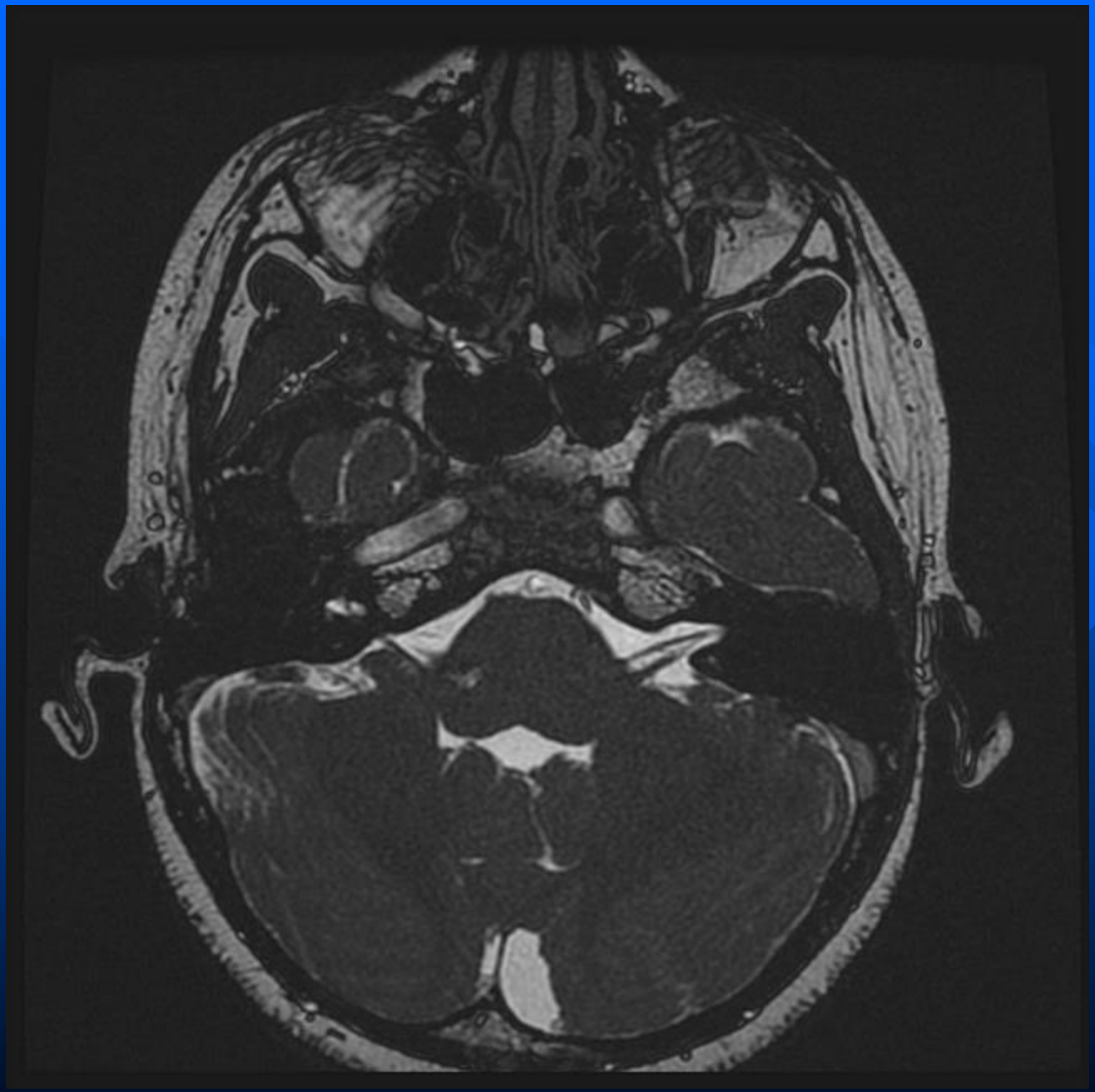


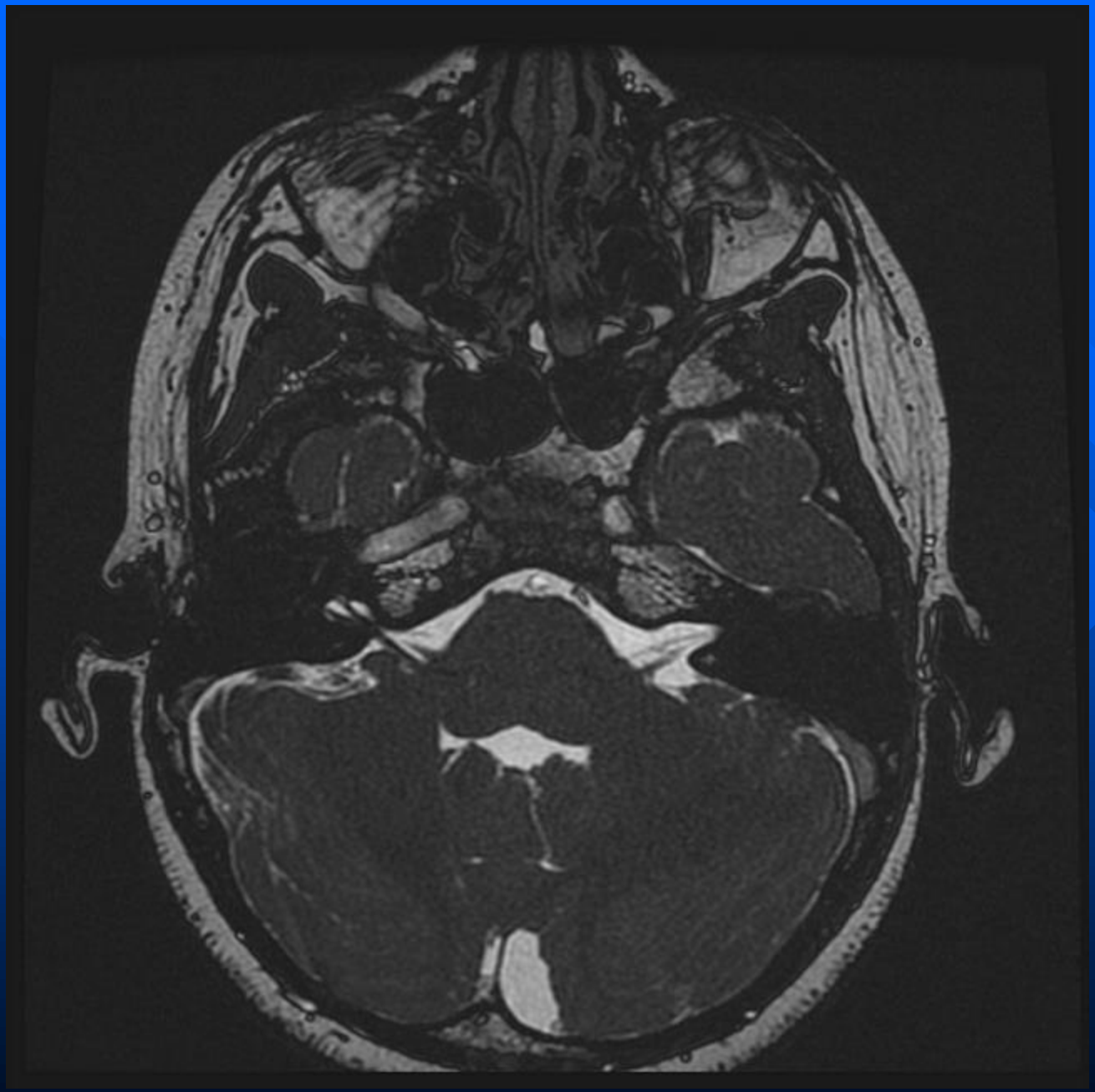
CT – 12/11/06

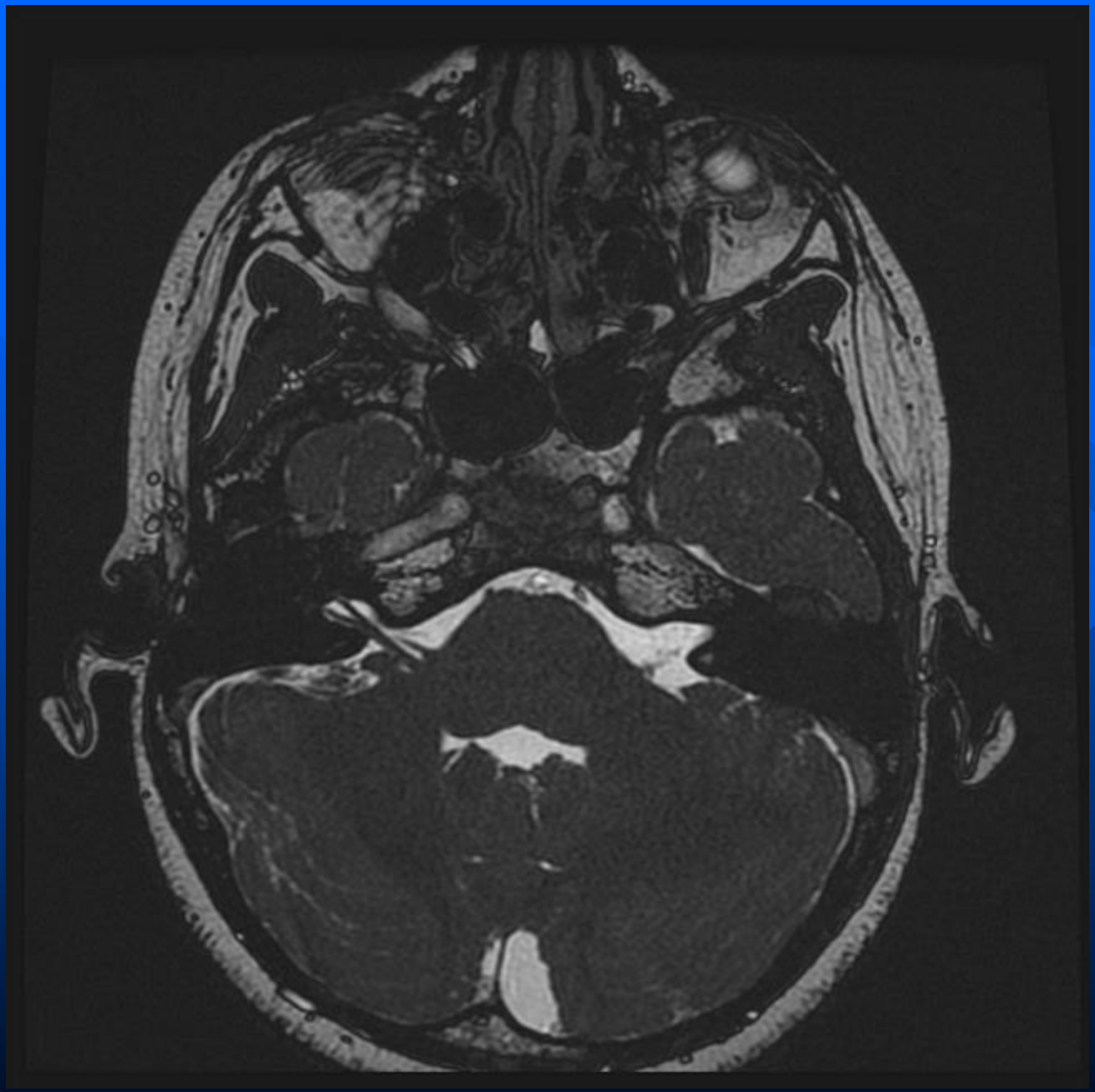

No signal on T2 in labirythine, if fibrous; Ct may be normal.

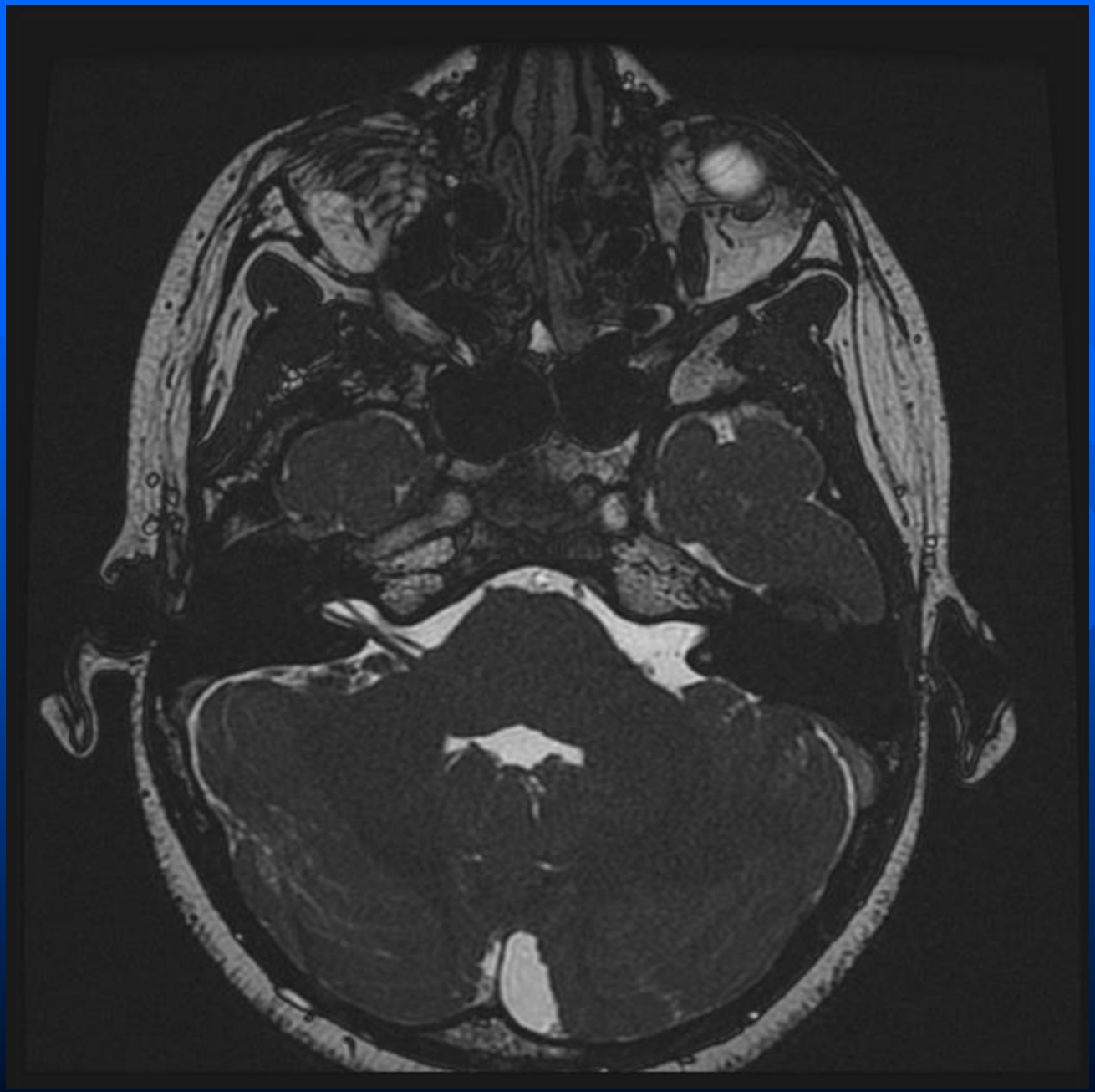


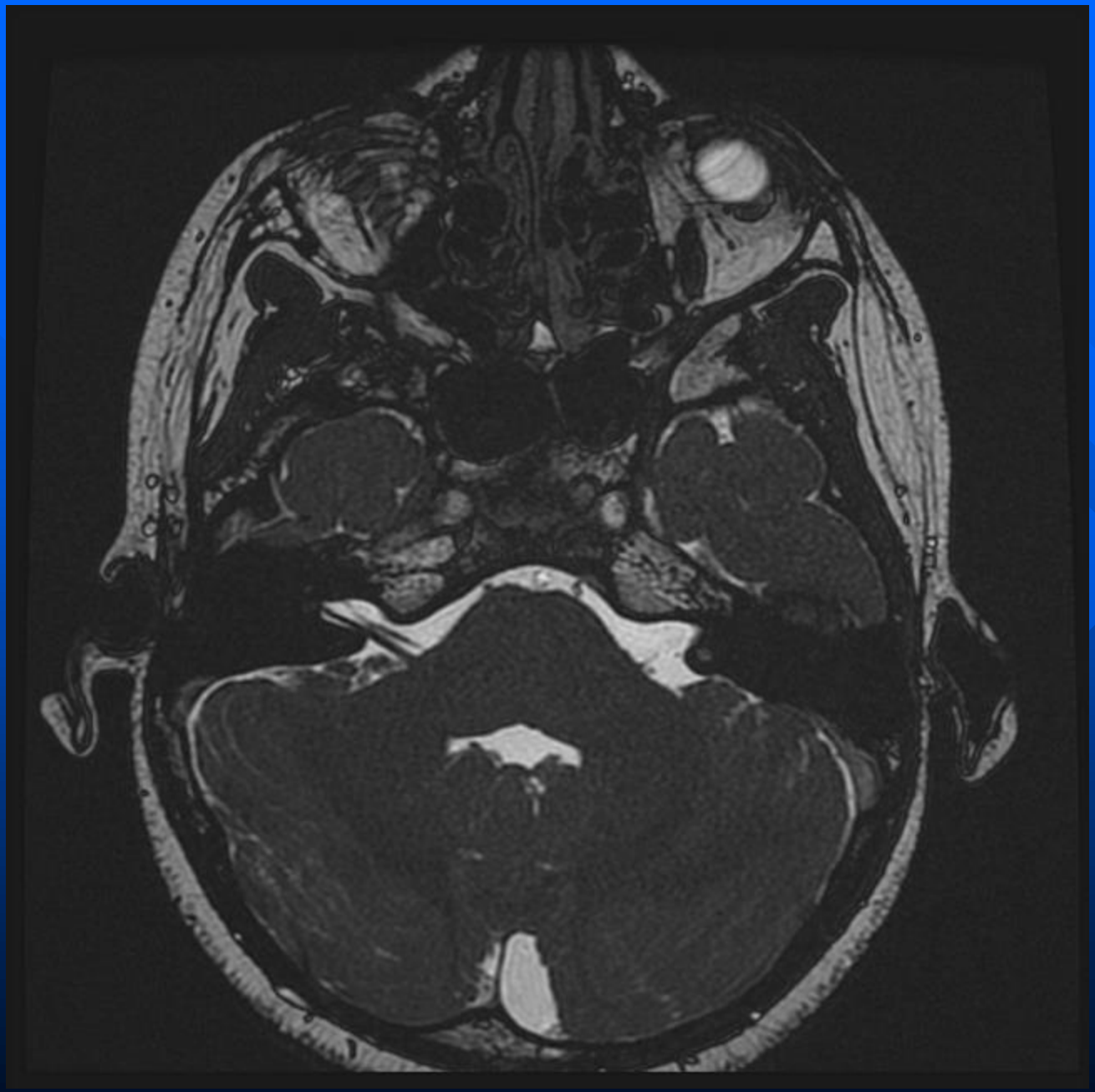


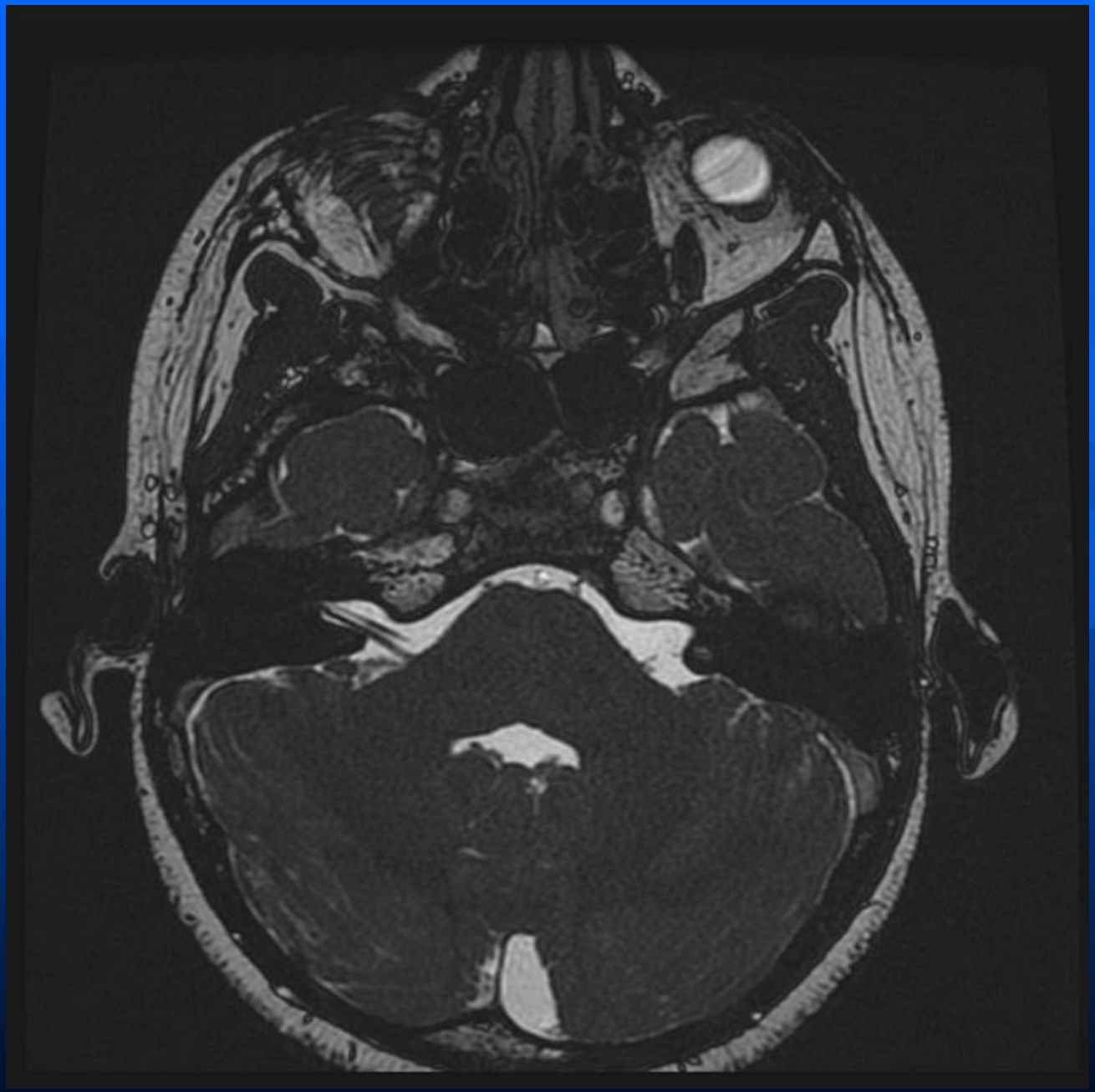


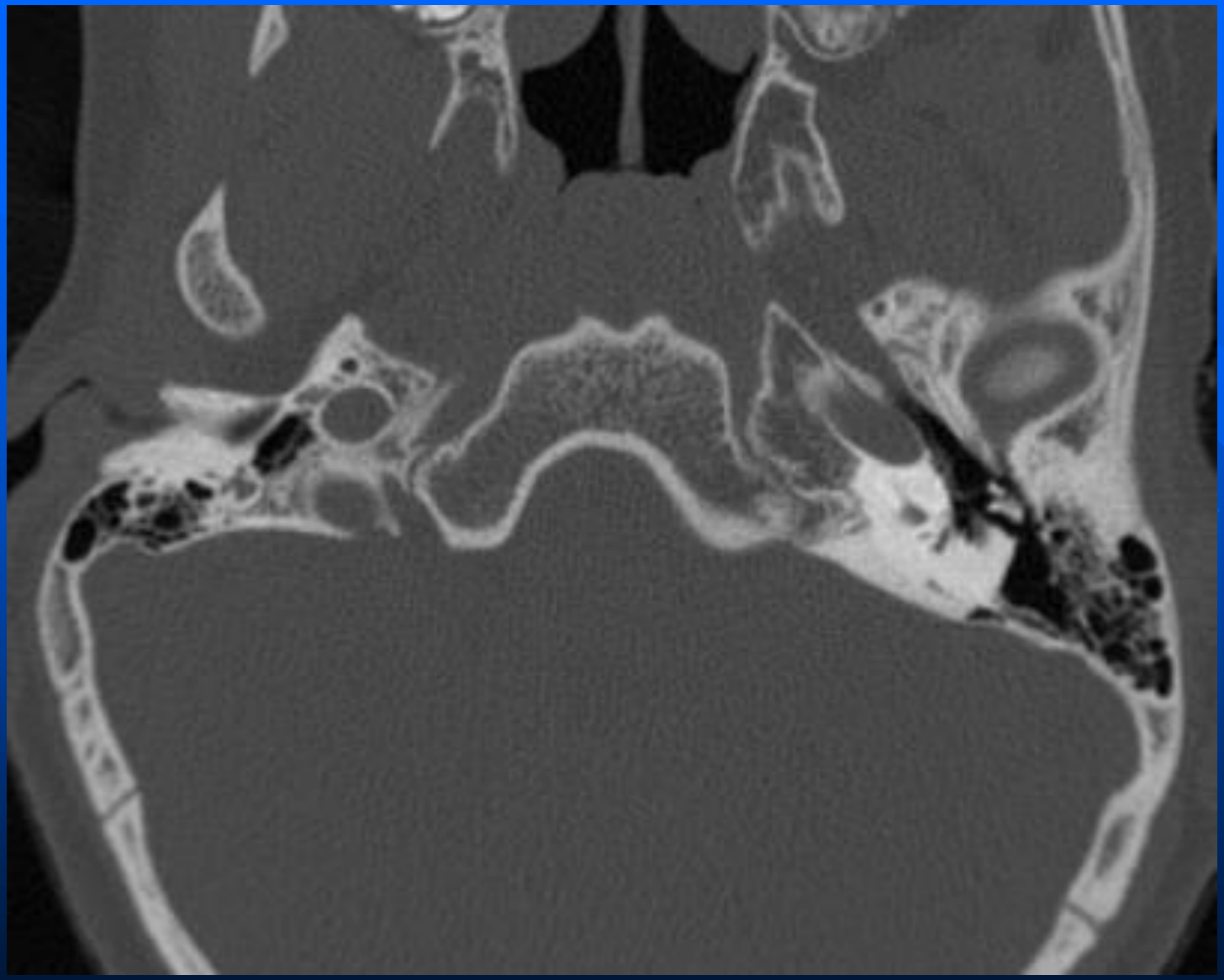


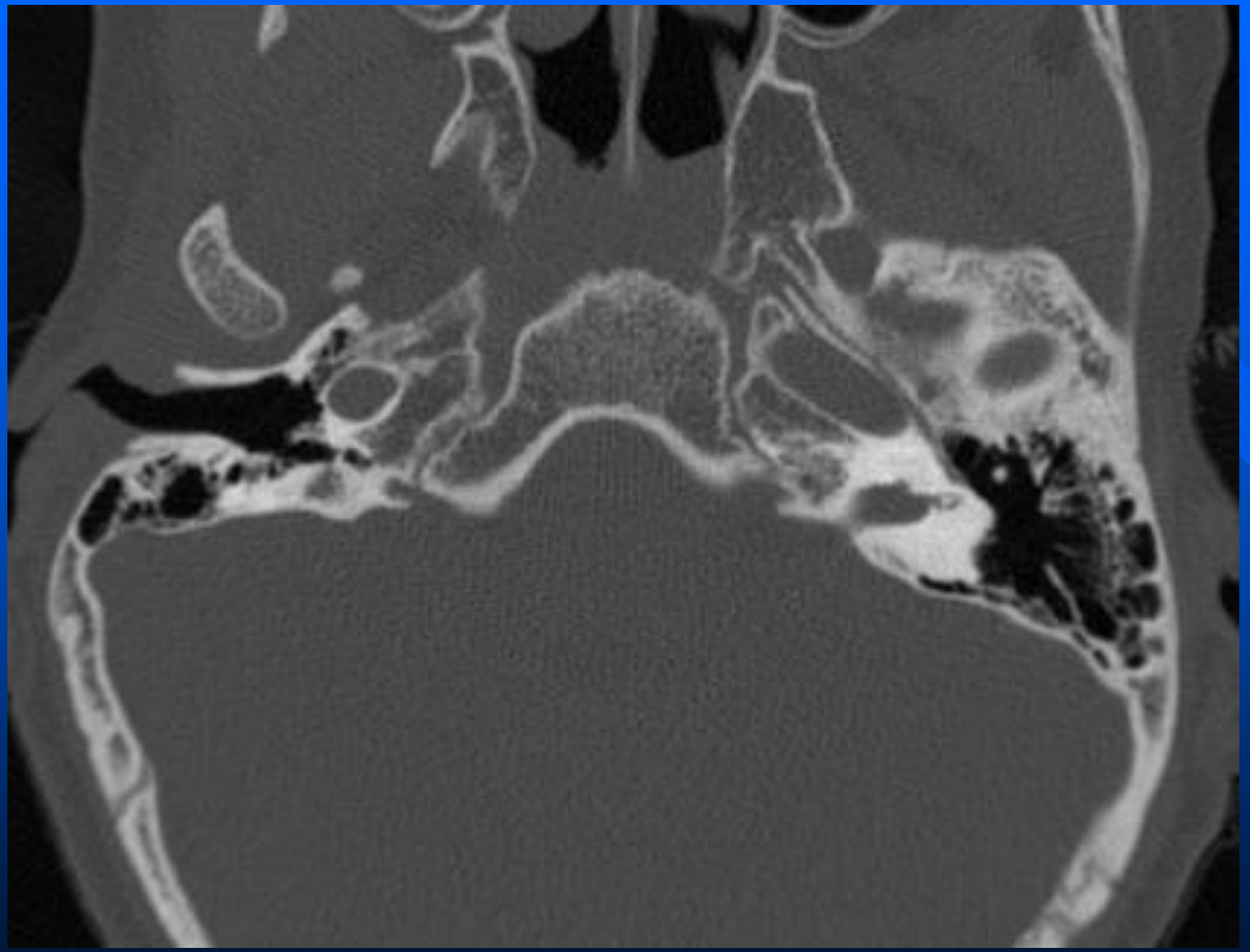


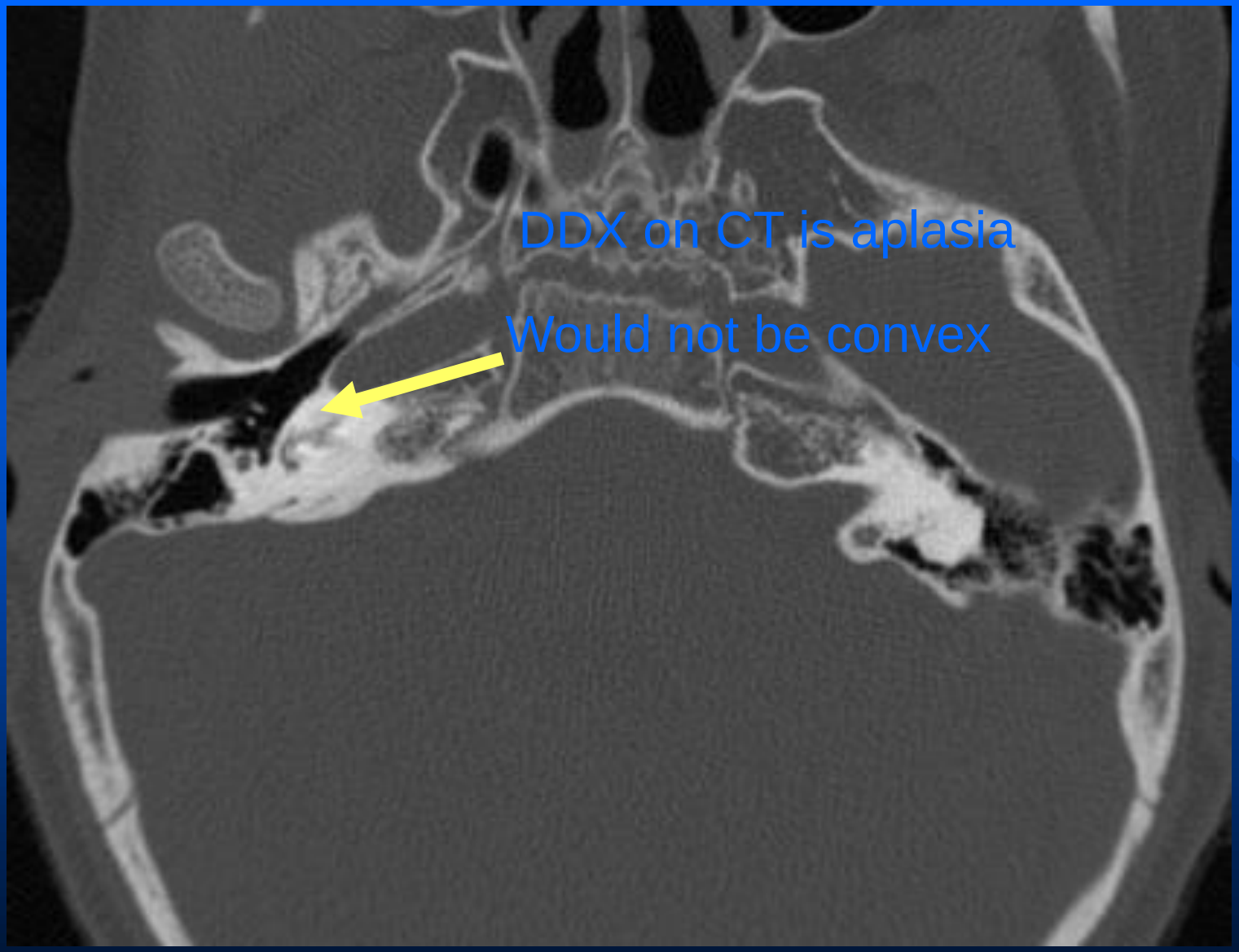











DDX on CT is aplasia
Would not be convex