# Imaging of Conductive Hearing Loss

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Beacon Hospital

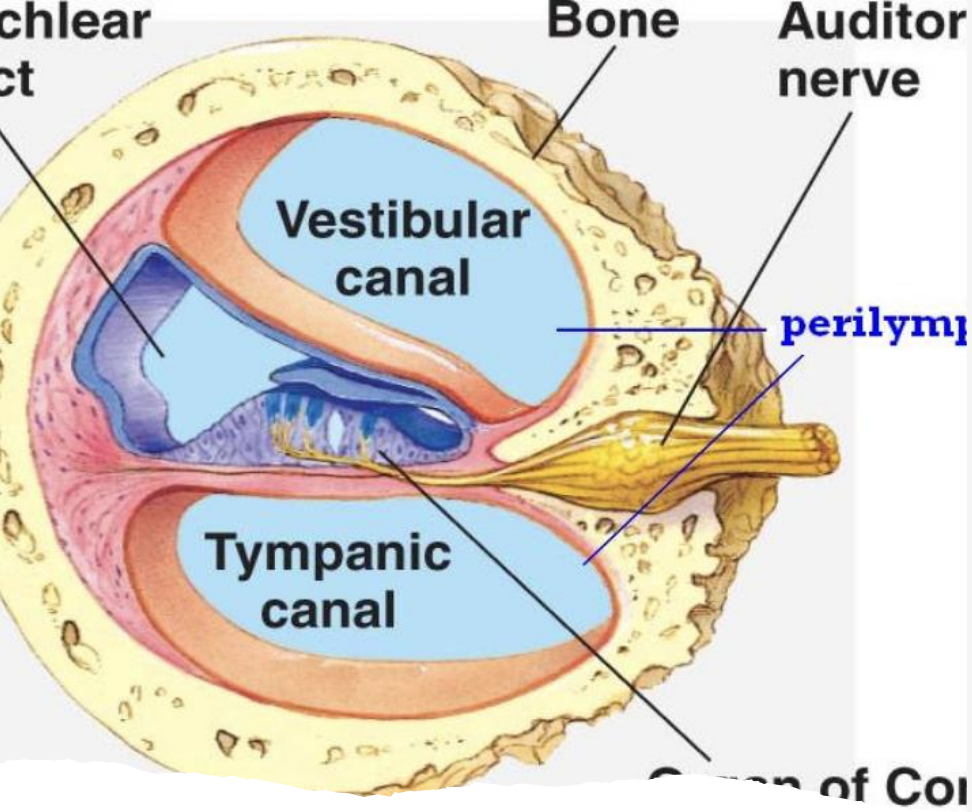
THIS IS MODERN MEDICINE

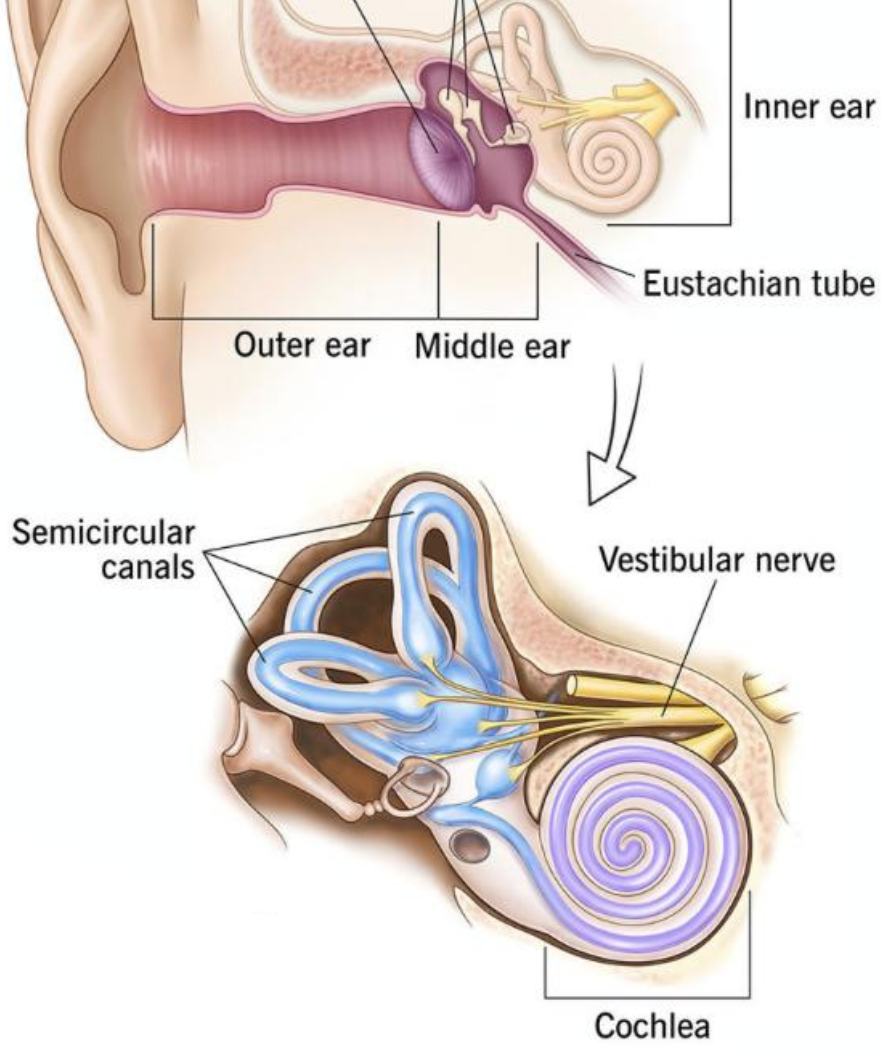
# Why is this worth a discussion?

- ‘The GP’s don’t want to hear about this, they will fall asleep during it, do something else’
- ‘They are all normal’
- ‘Nothing can be done anyway’

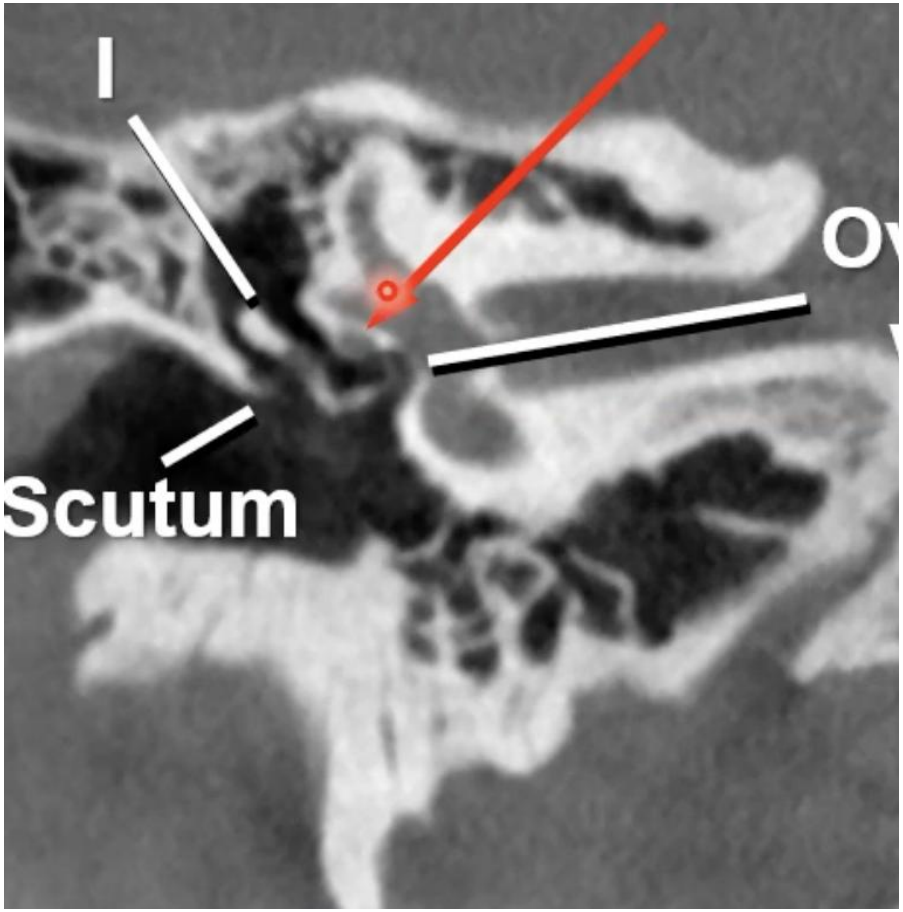
# Why is it worth a discussion?

- Up to 15% of all adults experience hearing loss. This most commonly sensorineural.
- Quite a common indication for imaging , particularly IAM imaging
- Hearing loss +/_ facial, ataxia, tinnitus, pulsatile tinnitus is commonly requested .
- However, the appropriate imaging depends hugely on whether Its conductive vs sensorineural which in turn influences how they are imaged.
- How do we tell the difference
- Age , there's a difference between paediatric and adult imaging.
- Whether the hearing loss is acute or chronic.
- Associated symptoms; ataxia, facial nerve palsy




Conductive vs Sensorineural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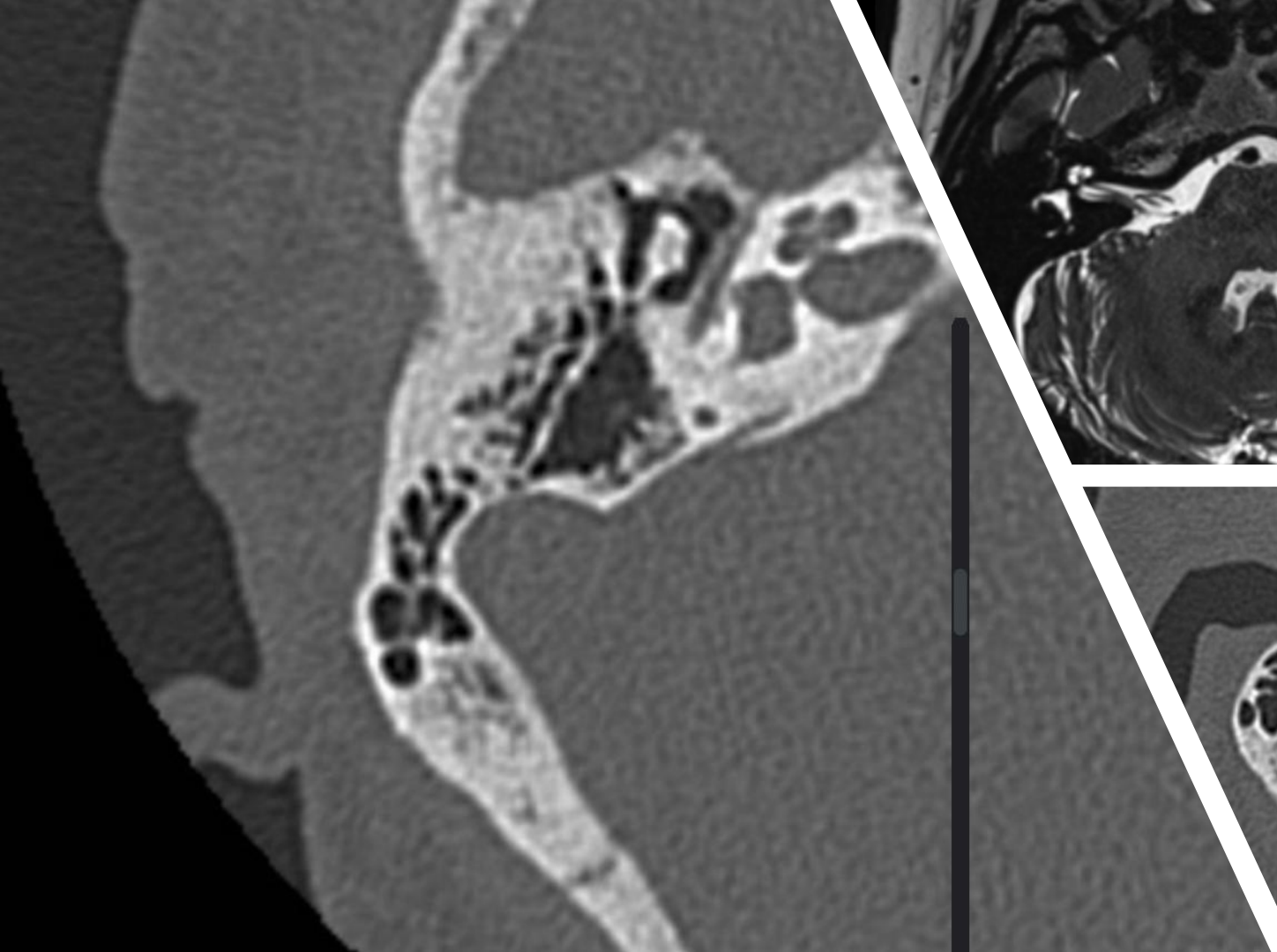
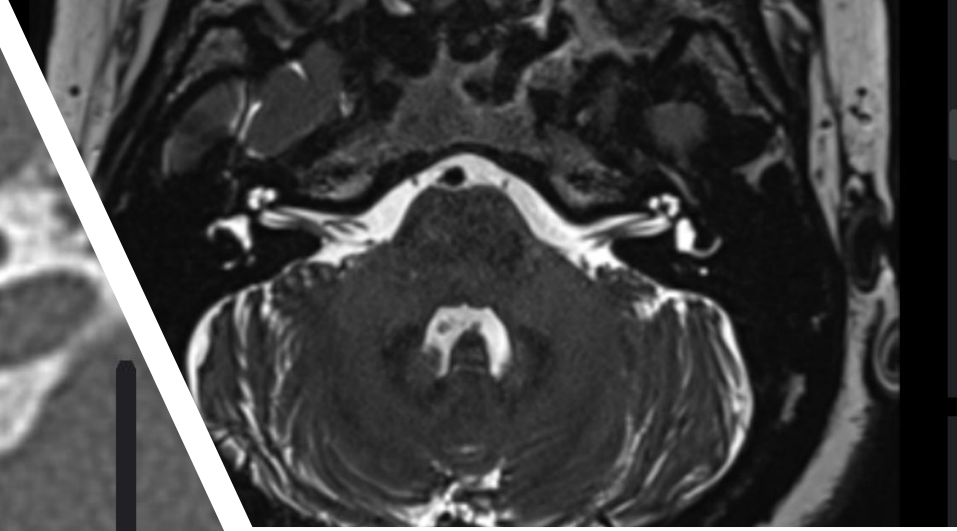
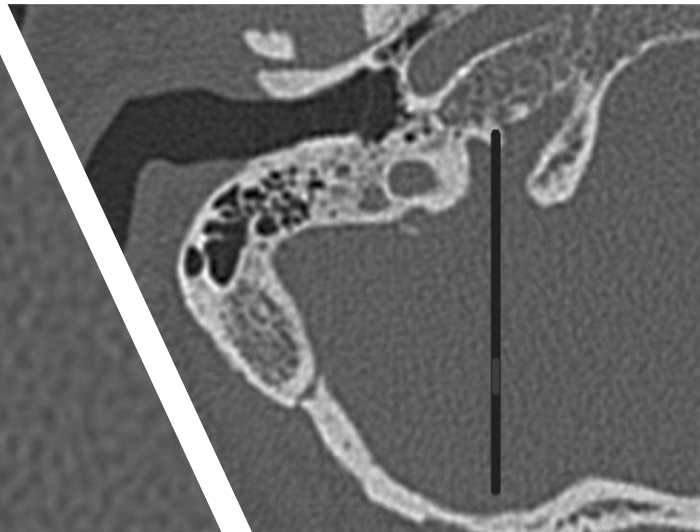
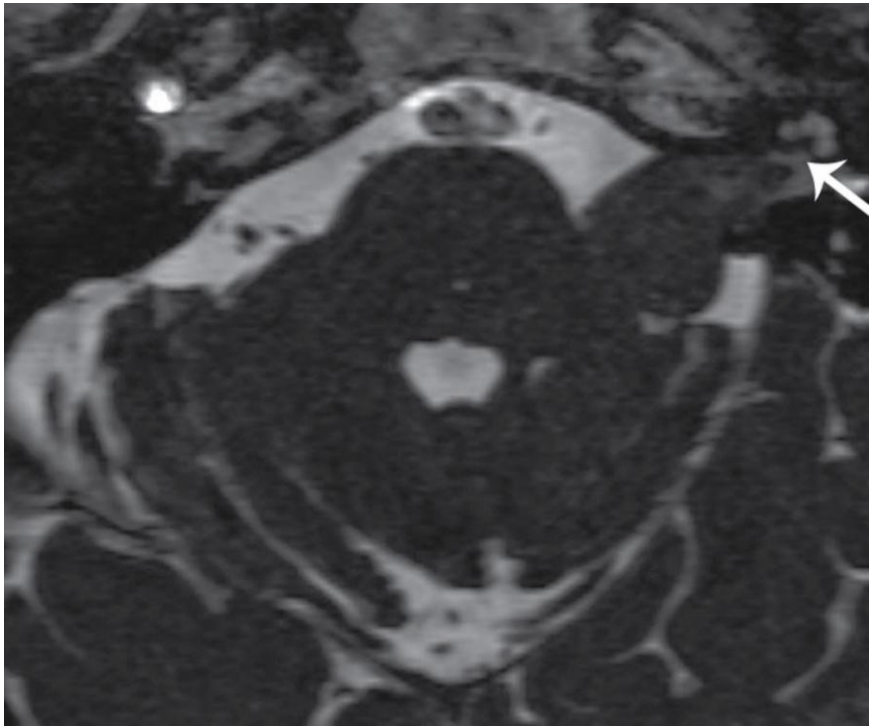






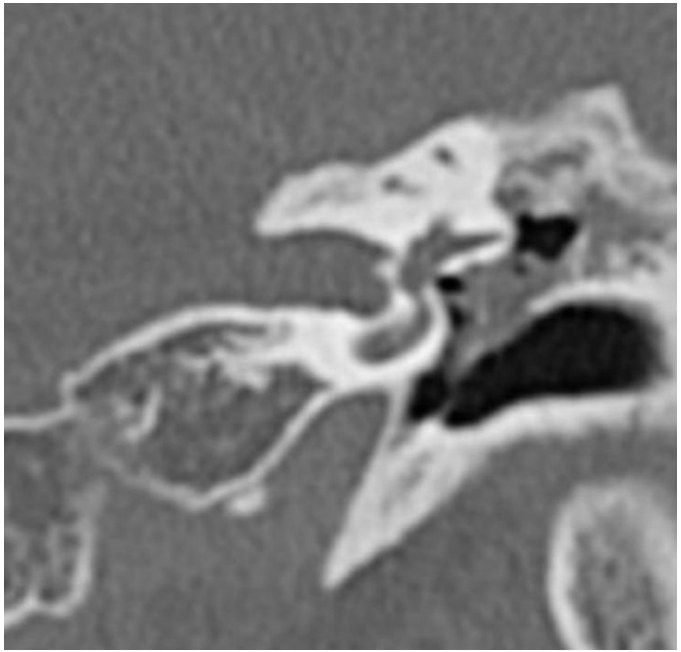


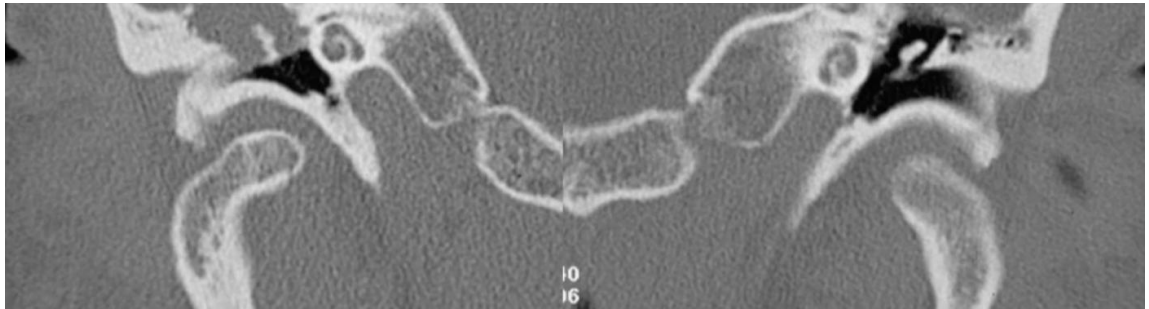
Frequent cause of unilateral deafness and sudden in a small percentage

# Hearing loss visible on CT but not MRI

- Cholesteatoma
- Ossicular dislocation
- Otsosclerosis
- Superior semi circular canal dehiscence
- Paraganglioma

# Cholesteatoma





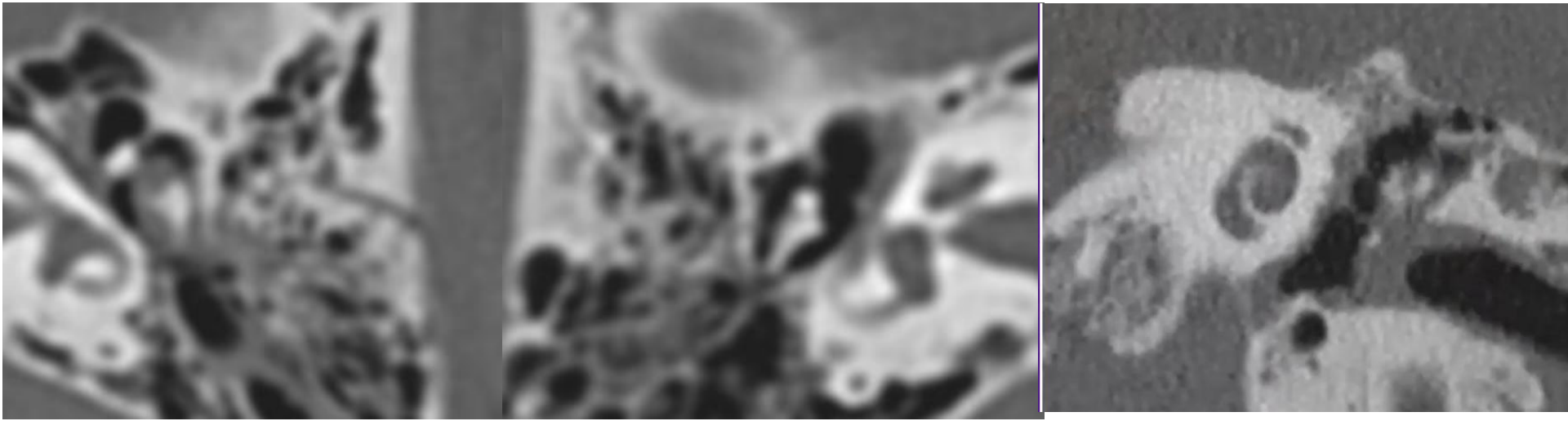
# Why is it significant?

- The longer it's left, the worse the bone destruction

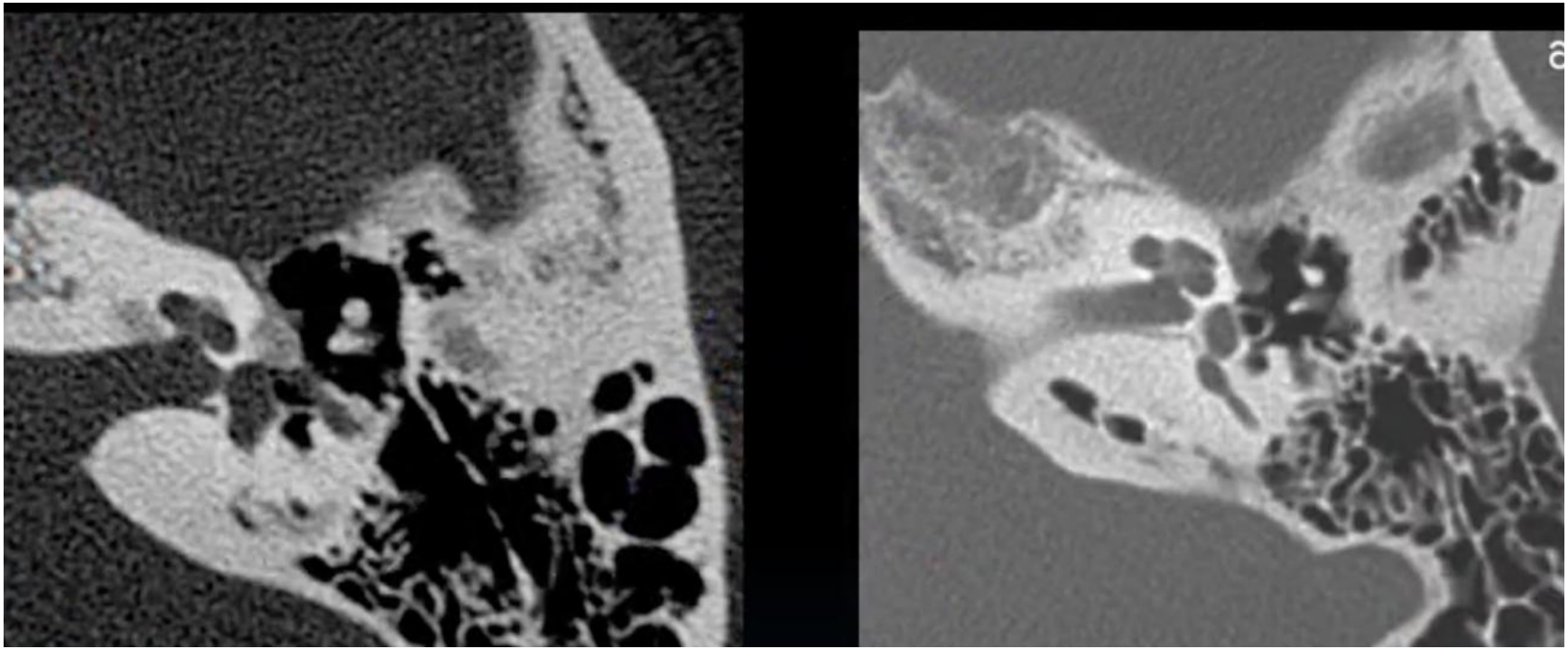
- Consequences are:
  - Permanent hearing loss
  - Facial nerve palsy
  - Possible encepaholcele, meningitis

# Ossicular fracture

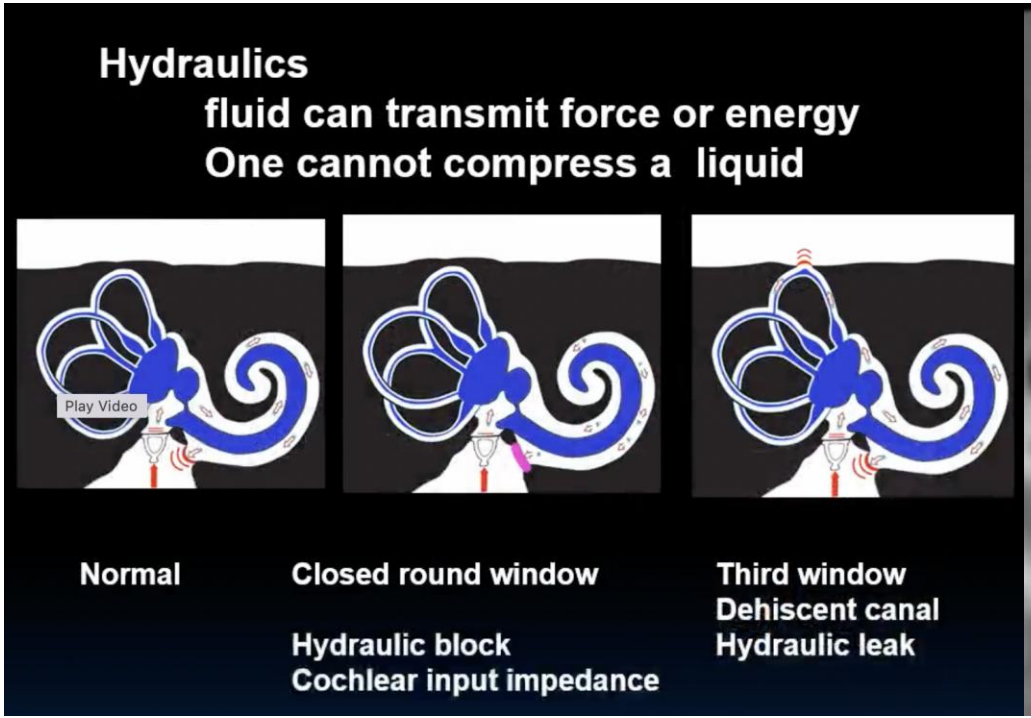
Hearing loss in the setting of recent prior trauma also needs CT temporal bones and not  MRI

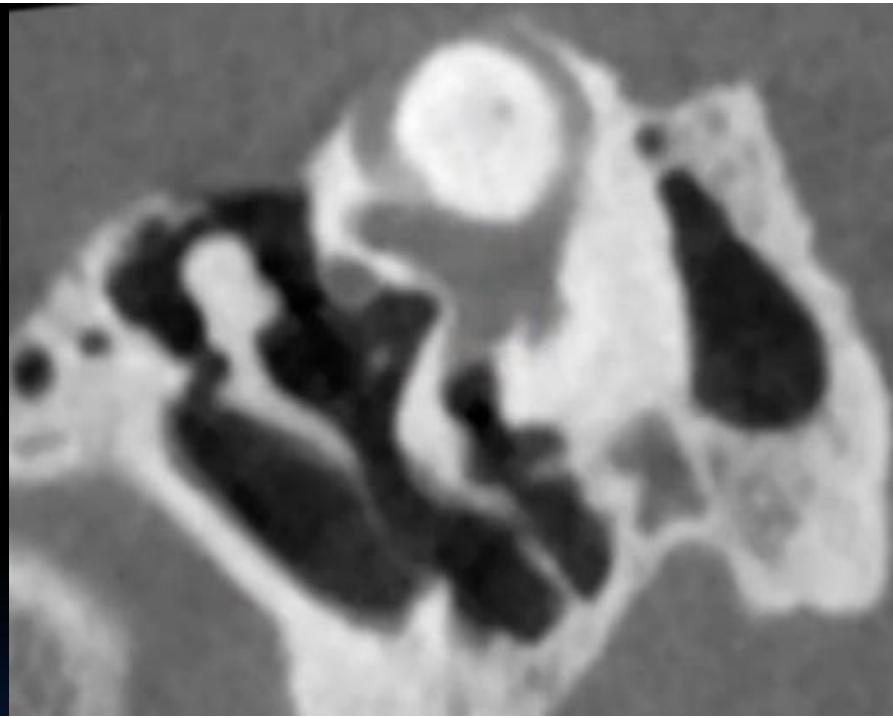


# Otosclerosis



# Superior Canal Dehiscence



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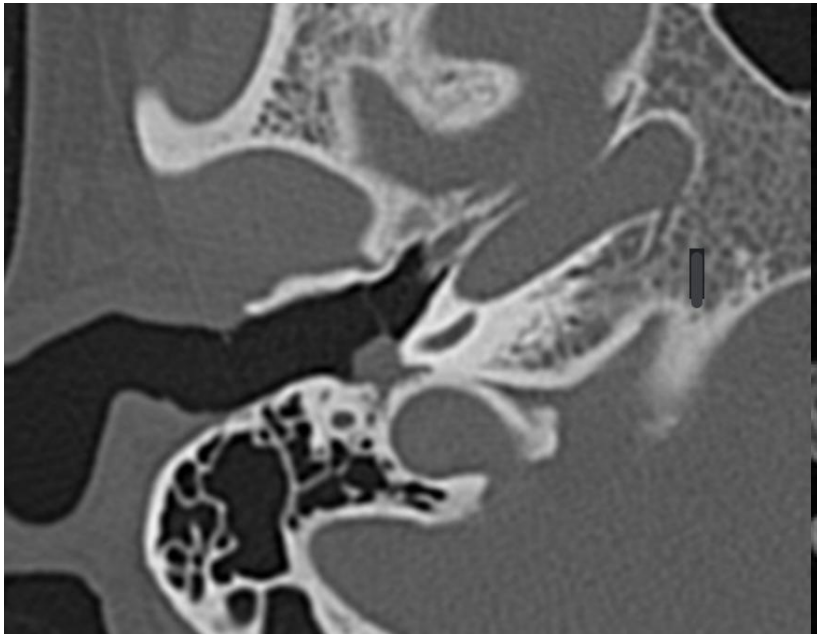
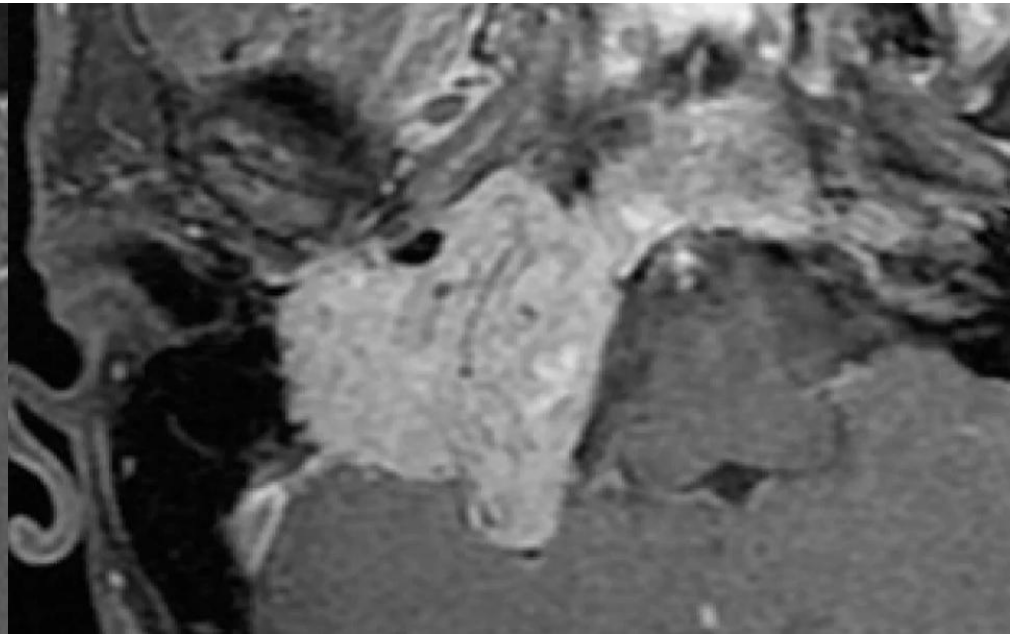
# Paraganlioma

- Almost invisible on MR without contrast
- Usually benign but can cause bone destruction, facial nerve palsy
- Often associated with pulsatile tinnitus
- Can be treated with radiation, excision
- Pre operative embolisation





# Summary

- MR as a single investigation for hearing loss is not adequate.
- There are visible causes on CT which are otherwise invisible.
- Conductive versus sensorineural hearing loss can be diagnosed on audiology
- These can be intervened on.
- Delayed diagnosis is problematic.
- They often have secondary symptoms, tinnitus, facial balance, balance issues.
- Changes are often subtle the study is only a good as how its done and the person reporting it.

# Thank you



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