

# Glomus Jugulare Paraganglioma

- Benign tumor arising from **neural crest** progenitor crest cells (glomus bodies) located in & around jugular foramen (JF)
- Presentation: Objective pulsatile tinnitus most common
  - Other symptoms: CNIX-XI  $\pm$  CNXII cranial neuropathy
  - CNVII or CNVIII neuropathy less often
- Otoscopic exam: **Red, pulsatile** retrotympanic mass
- M:F = 1:4
- Glomus jugulare paraganglioma (GJP) is most common JF tumor
- GJP & carotid body paraganglioma account for 80% of H&N paragangliomas
- Treatment: Surgical resection  $\pm$  radiation
  - Radiosurgery may be used as primary therapy

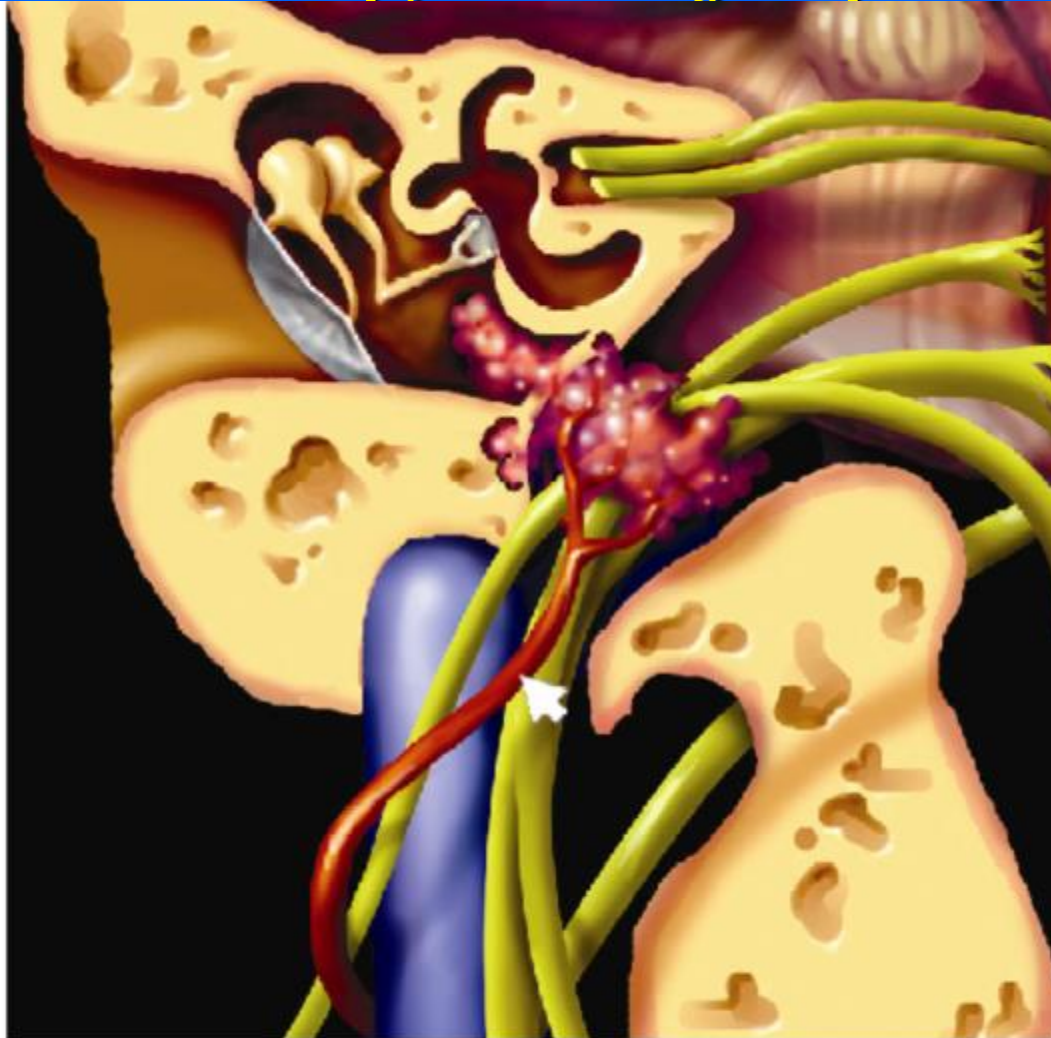
# Imaging

- Bone CT: **Permeative-destructive** bone changes along JF margins
  - Jugular spine erosion is common
  - Floor of middle ear cavity dehiscence
- MR: Lesions > 2 cm demonstrate characteristic **salt & pepper** appearance
- CTA/angiography: Main arterial supply is from **ascending pharyngeal artery**
- **Paraganglia rests** occur in 3 distinct bodies around JF: Jugular bulb, tympanic branch of CNIX (Jacobsen nerve), & auricular branch of CNX (Arnold nerve)
- Vector of spread: **Superolateral** through floor of middle ear is typical

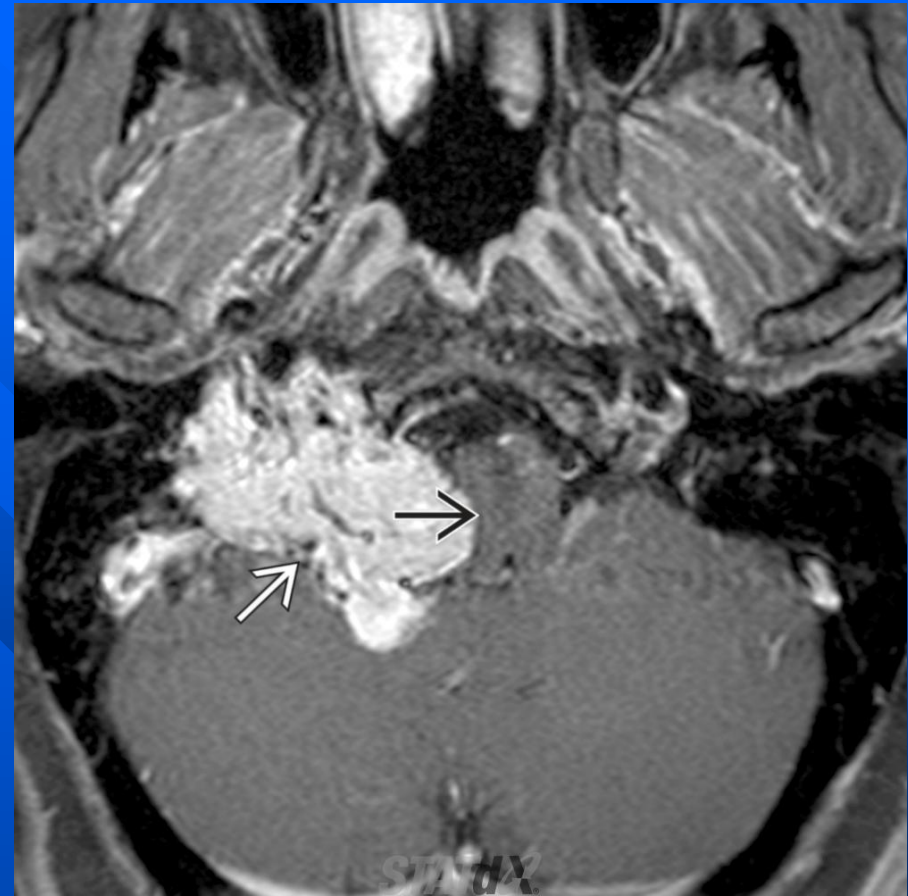
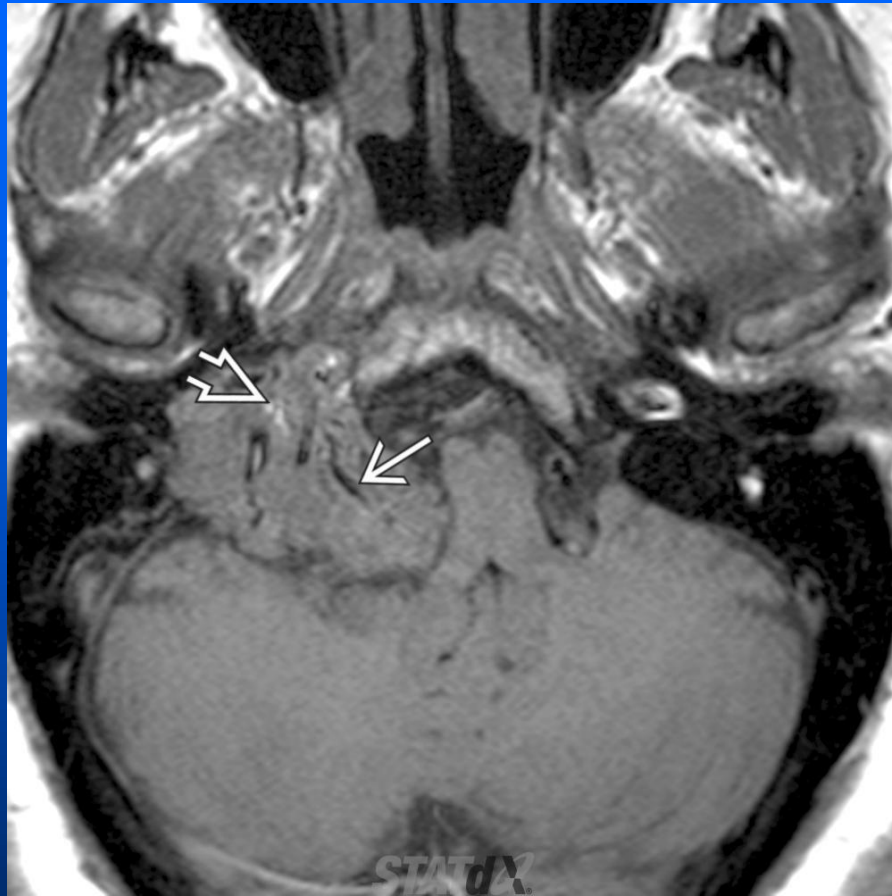
# DDX:

- Glomus tympanicum paraganglioma
- Jugular foramen schwannoma
- Jugular foramen meningioma
- Jugular foramen metastasis
- Dehiscent jugular bulb

# Glomus Jugulare tympanicum



*Glomus jugulotympanicum paraganglioma. Drawing shows the vascular mass of the superolateral jugular foramen invading into the middle ear cavity through the floor. The main arterial feeder is the ascending pharyngeal artery (arrow). The clinician sees only the tip of the iceberg behind the tympanic membrane.*



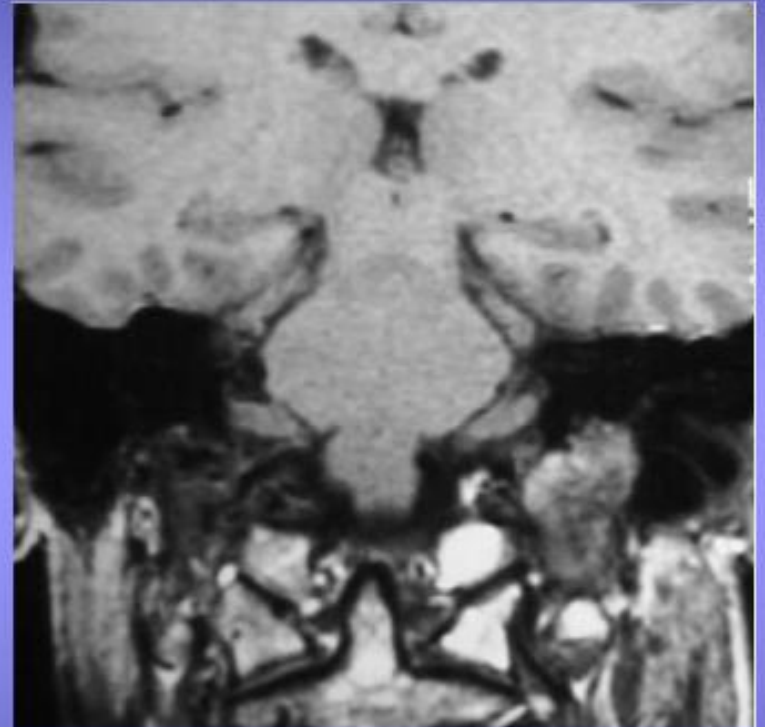
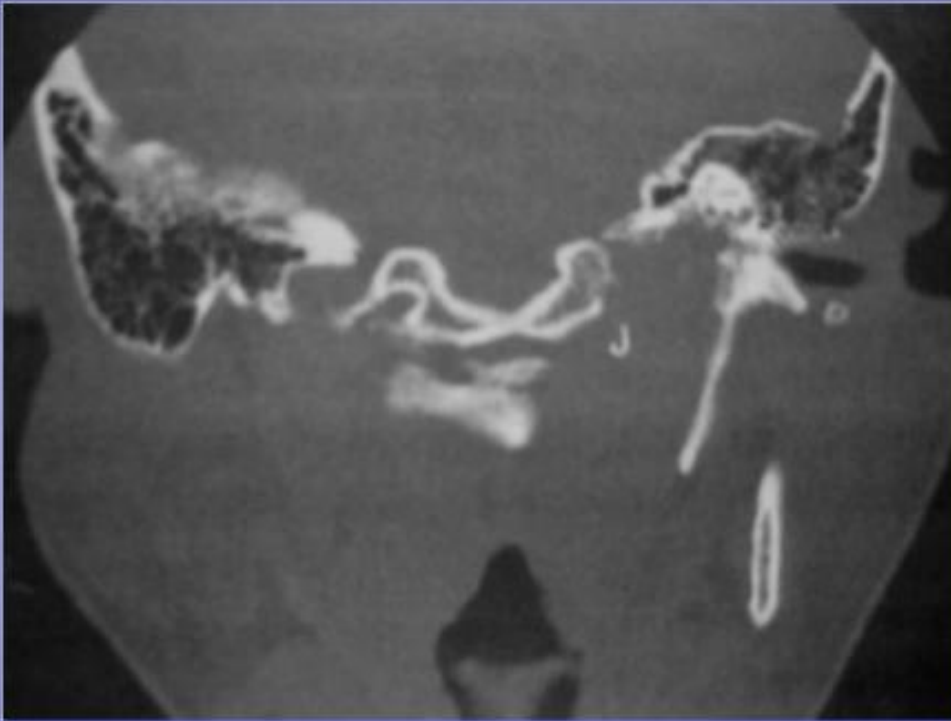
Axial T1WI MR shows a large mass arising from the jugular foramen with multiple areas of salt & pepper. The "salt" (white open arrow) represents blood products or slow flow, while the "pepper" (white solid arrow) represents high-velocity arterial branch flow voids that help differentiate this tumor from other lesions in this location.



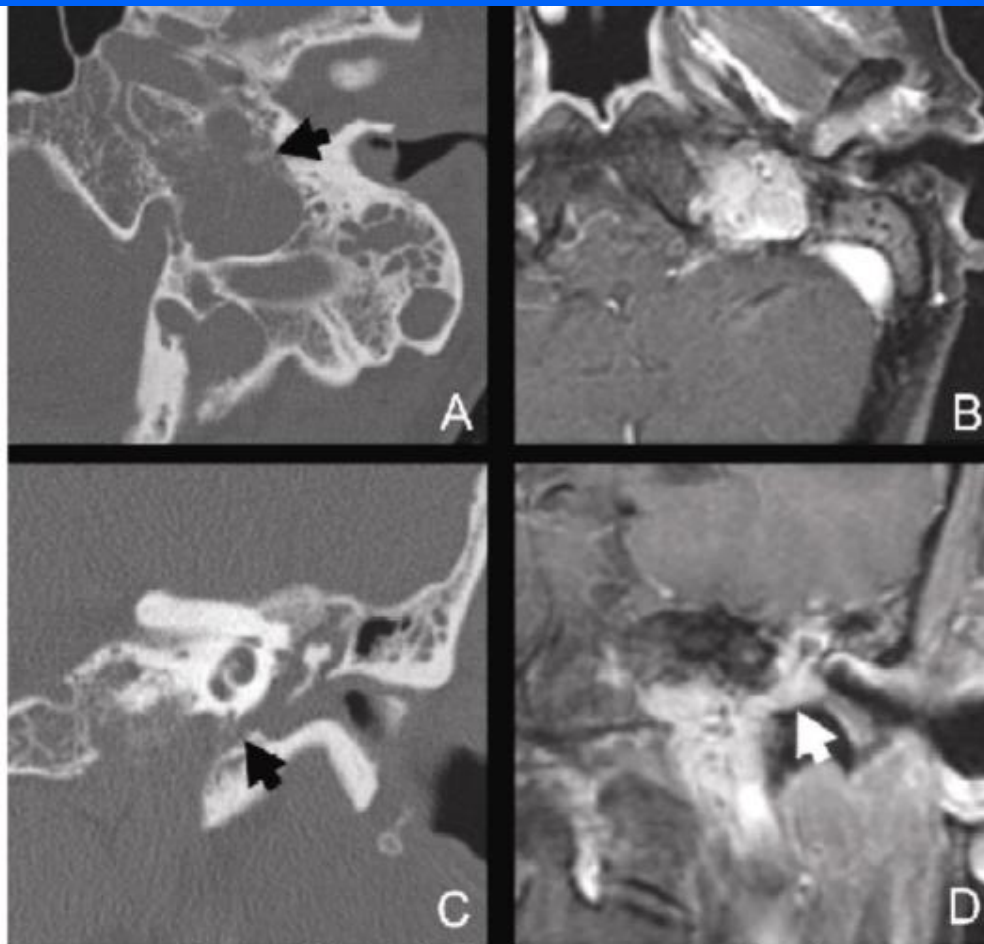


Axial T-bone CT of the left ear shows a GJP with typical bony permeative-destructive margins (white solid arrow). A pulsatile, red retrotympanic mass and pulsatile tinnitus would be expected clinical findings.

# Glomus Jugulare tympanicum



# Glomus Jugulare tympanicum



*Glomus jugulotympanicum.* (A) Axial CT shows permeative bony margins to JF and jugular spine (arrow). (B) T1 C+ MR reveals the avidly-enhancing tumor filling the JF. (C) Coronal CT shows the tumor has eroded the middle ear floor (arrow). (D) T1 C+ MR shows enhancing tumor entering the middle ear (arrow).