

★ Glomus Tumors (Paragangliomas) — Radiologic Summary

Glomus tumors are highly vascular, usually benign but potentially aggressive lesions that arise from small paraganglia associated with the autonomic nervous system in the head and neck region.

In radiology, their most important features are marked vascularity and characteristic appearance based on location.

📌 1) Most Common Types and Their Origins

1. Glomus tympanicum

Origin: Tympanic plexus paraganglia in the middle ear.

Typical location: The promontory of the middle ear.

Diagnostic clue: Small, well-defined, bright nodule; no bone erosion.

2. Glomus jugulare

Origin: Paraganglia surrounding the jugular bulb.

Typical location: Within or around the jugular foramen.

Diagnostic clue: Foraminal widening + salt-and-pepper-like bony erosion.

3. Carotid body tumor (glomus caroticum)

Origin: The carotid body at the carotid bifurcation.

Typical location: Exactly where the ICA–ECA divide.

Diagnostic clue: Splays the vessels apart → Lyre sign.

📌 2) How Do We Recognize Them Radiologically?

MRI Features

T1: Usually isointense

T2: Hyperintense

Classic sign: Salt & pepper appearance

Pepper: Flow-void areas → highly vascular

Salt: Slow-flow/bright foci

Post-contrast MRI

Intense, rapid enhancement

Numerous thin flow voids within the lesion.

CT (especially for bone evaluation)

Tympanicum → Bone is intact

Jugulare → Jugular foramen widening and erosion

🕒 3) Simplest Approach to the Differential Diagnosis

◆ Bright small mass in the middle ear → Glomus tympanicum
(Other lesions like aberrant ICA do not originate from the promontory.)

◆ Widened jugular foramen → Glomus jugulare

◆ Carotid bifurcation is splayed open → Carotid body tumor
(Schwannoma does not splay; it only displaces.)

🕒 4) Four Golden Facts Every Student Must Know

1. They are highly vascular → Abundant flow voids on MRI are the key sign.
2. Biopsy is avoided (risk of severe bleeding).
3. Location = half of the diagnosis.
4. Always check for multiple lesions → SDH-related syndromes can present with more than one tumor.

Note:

SDHB mutation → poorer prognosis, higher metastatic risk.

SDHD mutation → higher chance of multiple tumors.

→ When you find one glomus tumor, evaluate the contralateral side and other paraganglioma sites.

🕒 5) One-Minute Memory Phrase

“Small bright nodule on the promontory = tympanicum;

Highly vascular mass widening the jugular foramen = jugulare;

Carotid bifurcation opened by lyre sign = carotid body.”