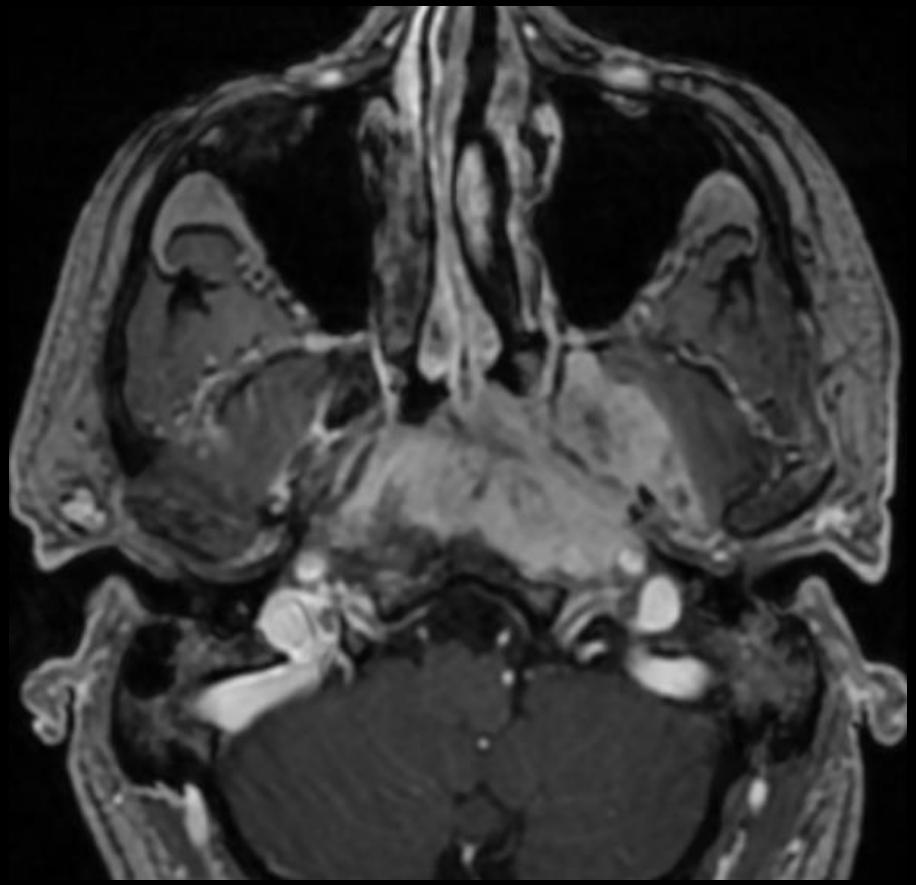
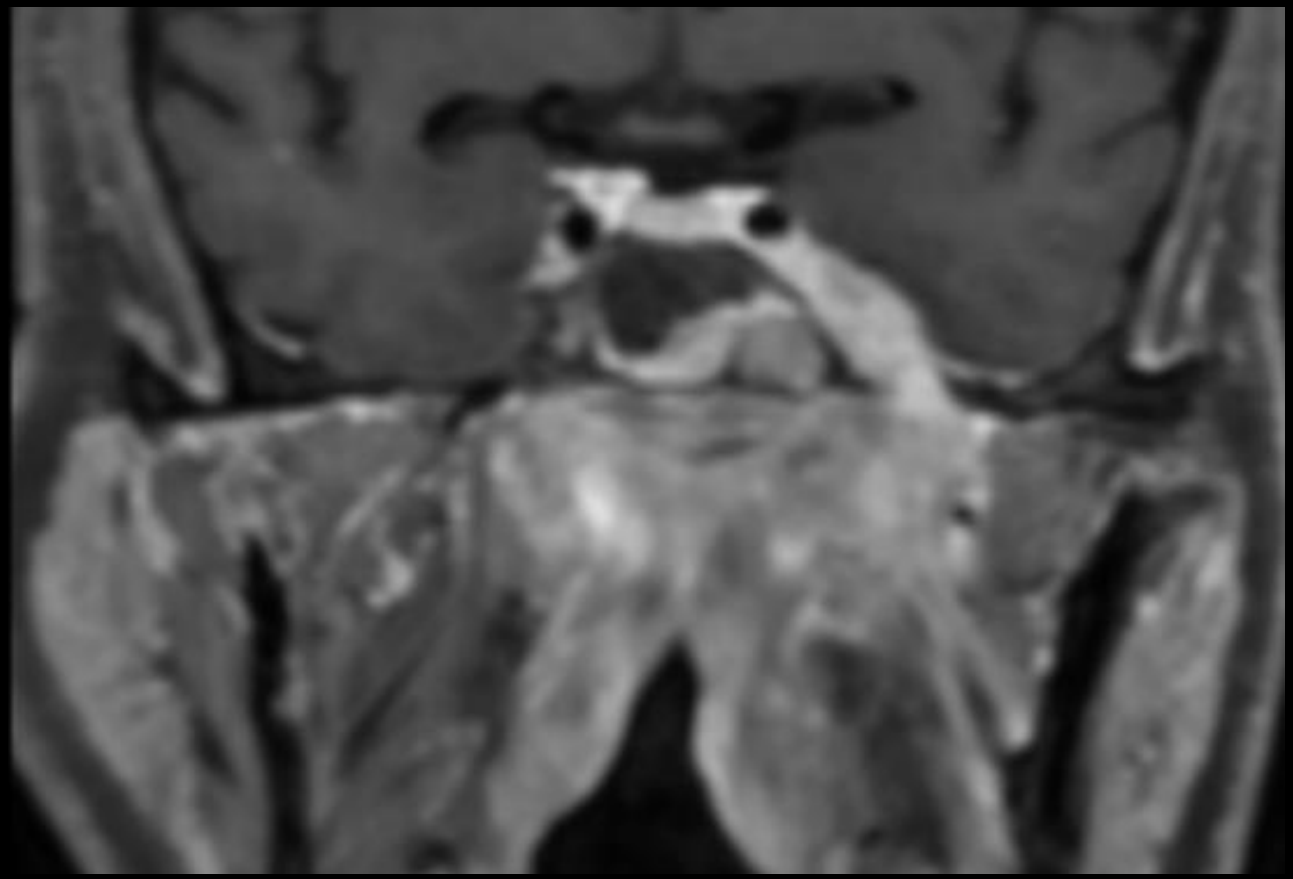
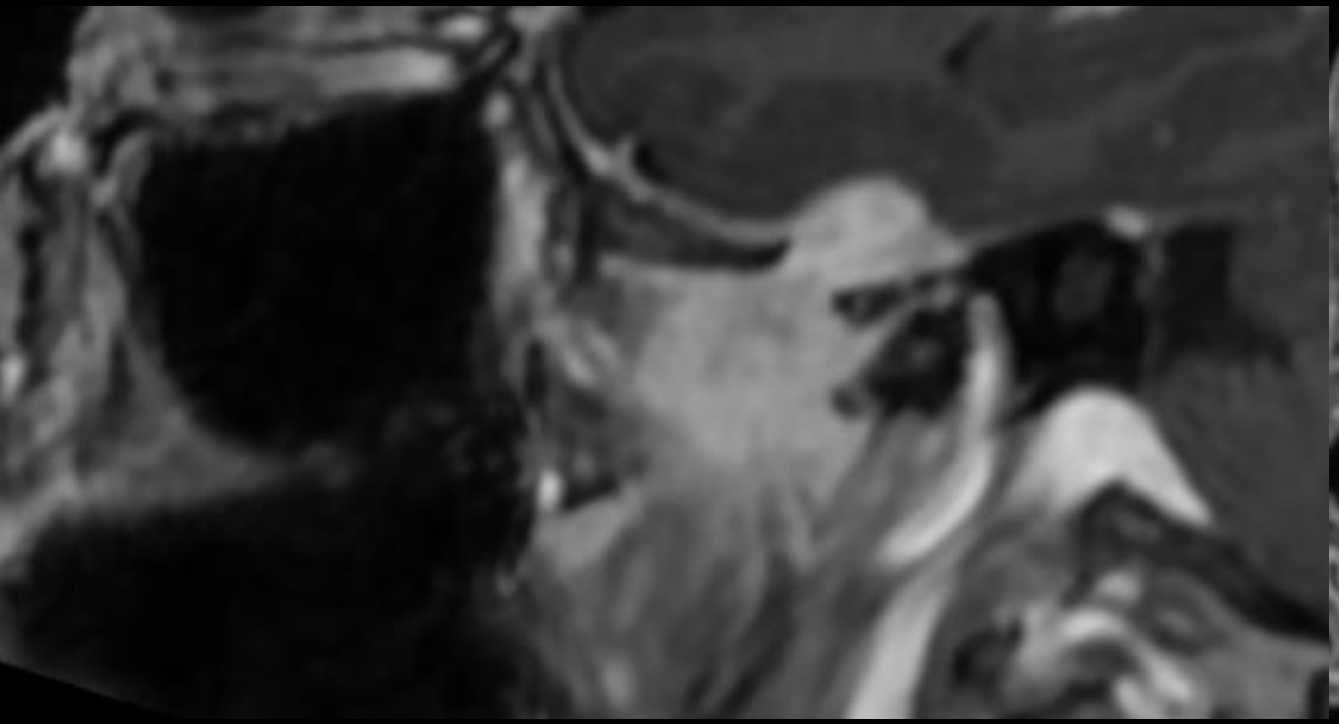
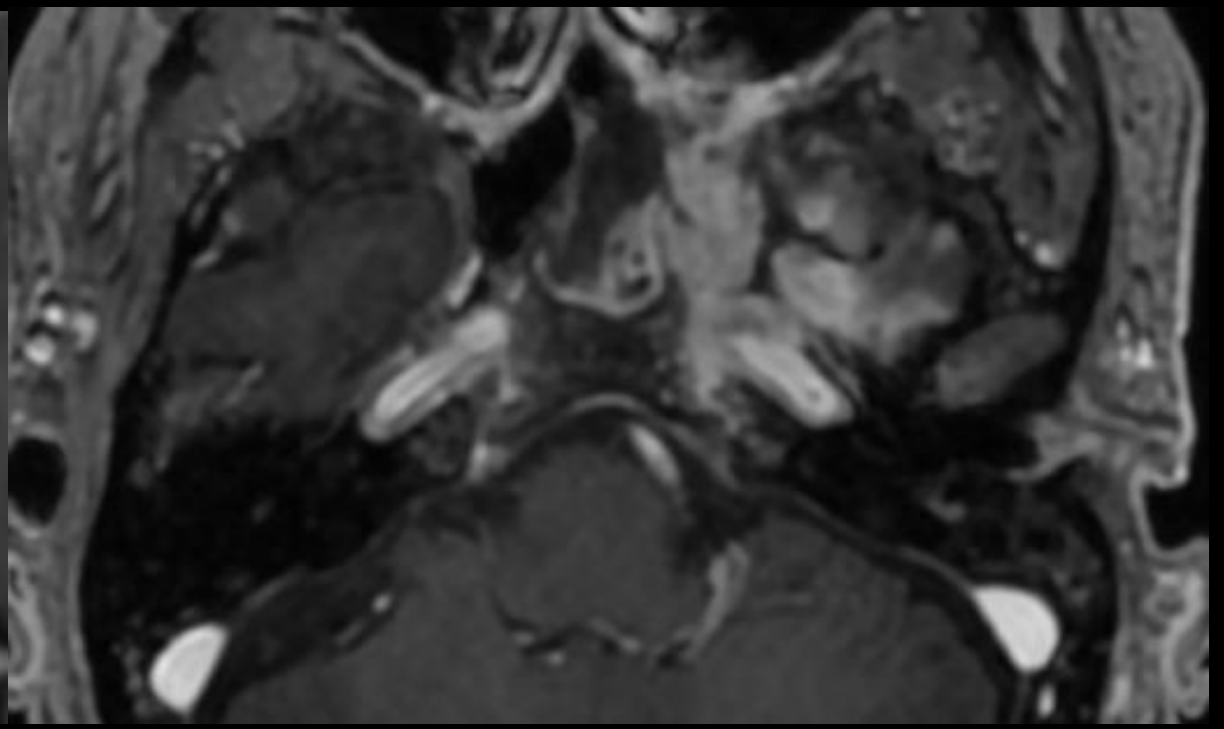
SJMCH, Bengaluru

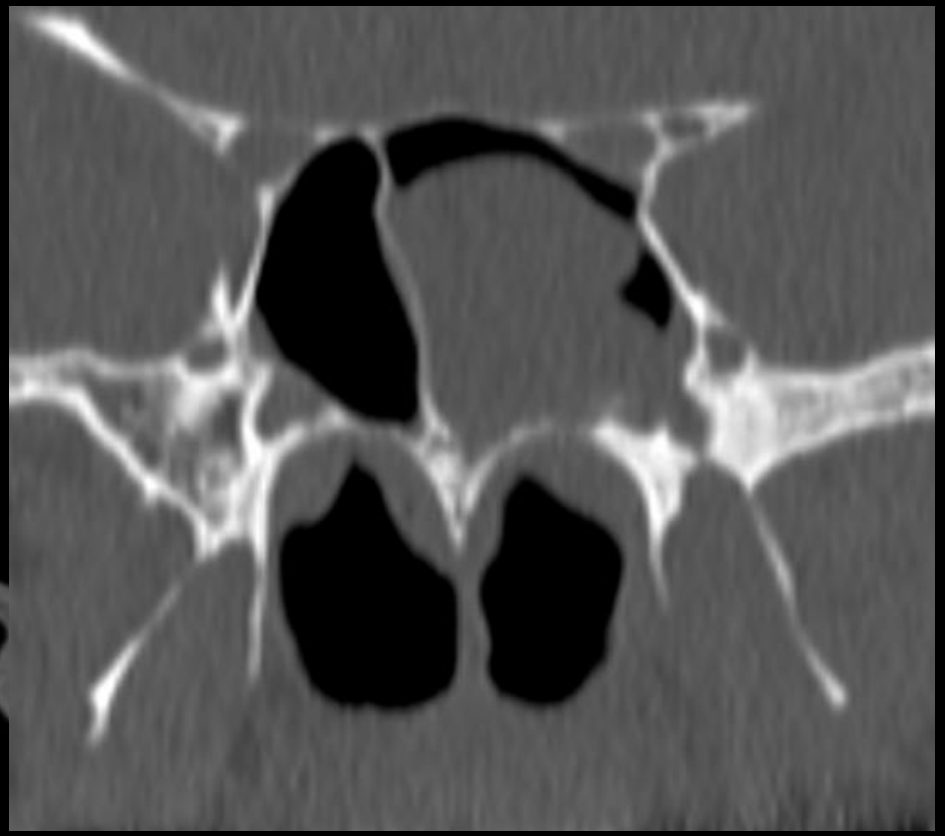
Contributor of the Series

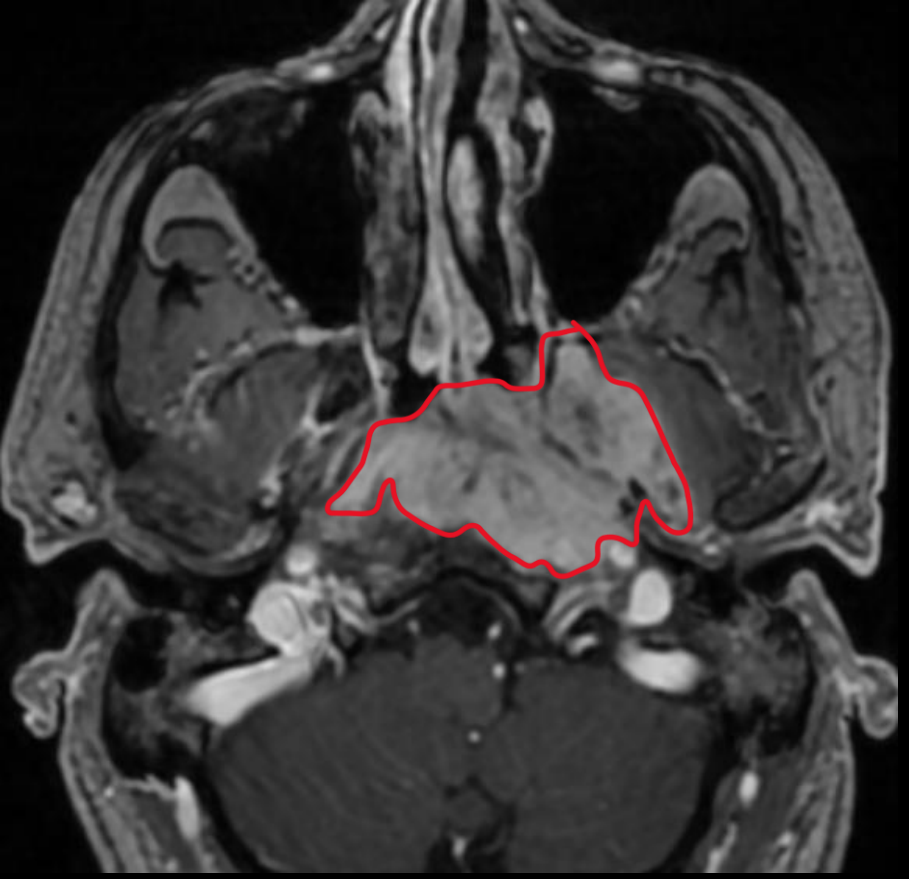


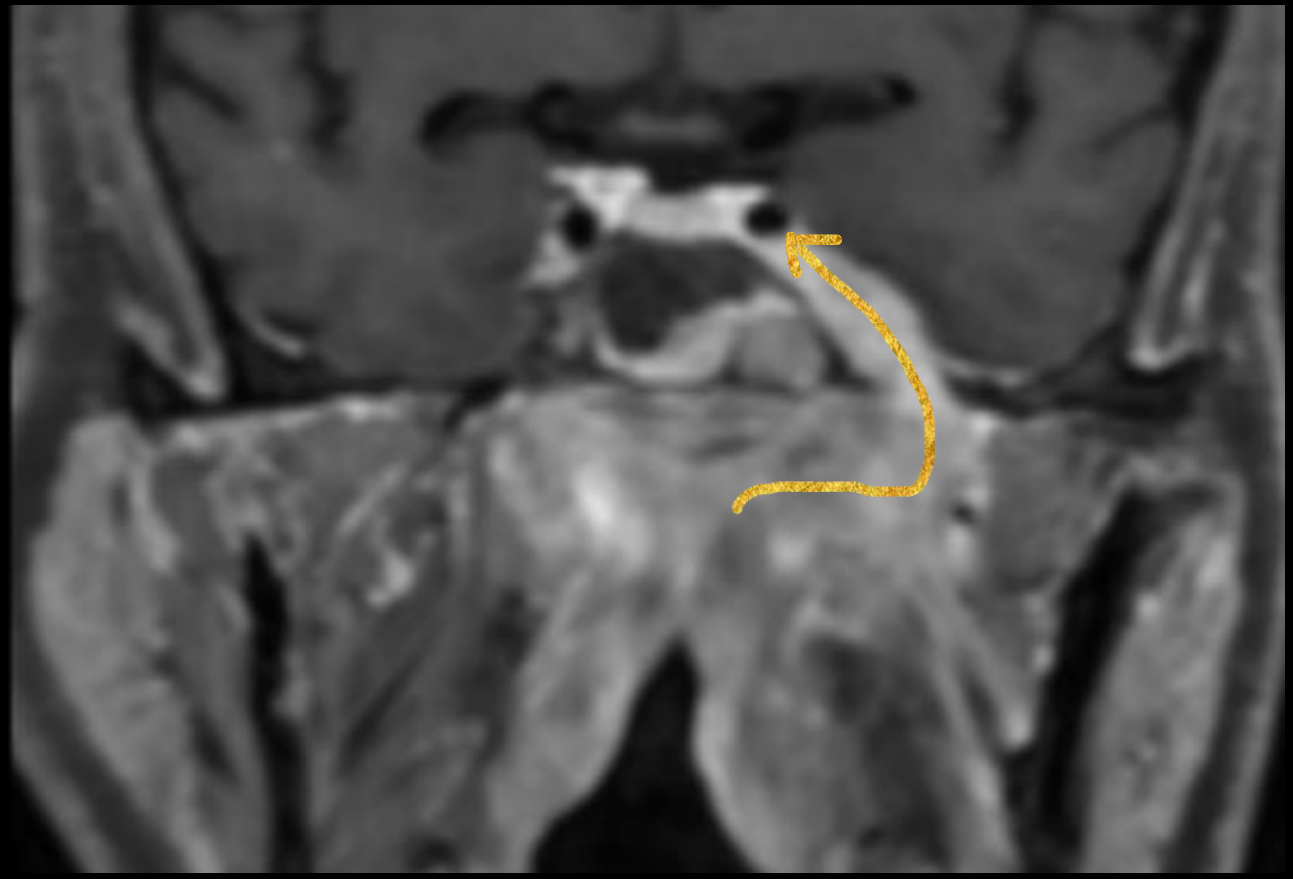




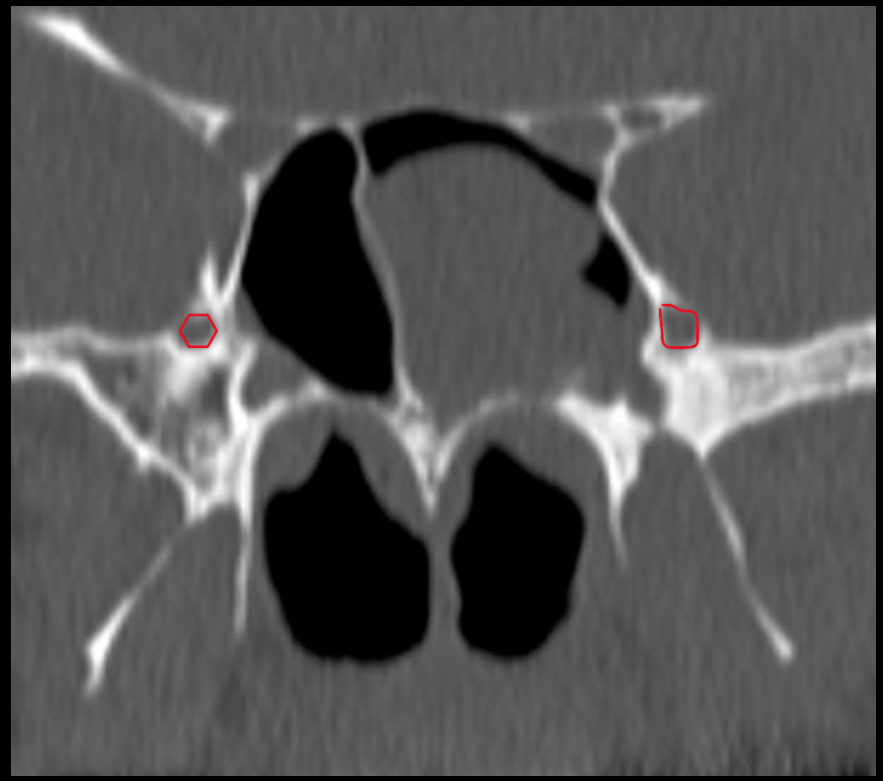




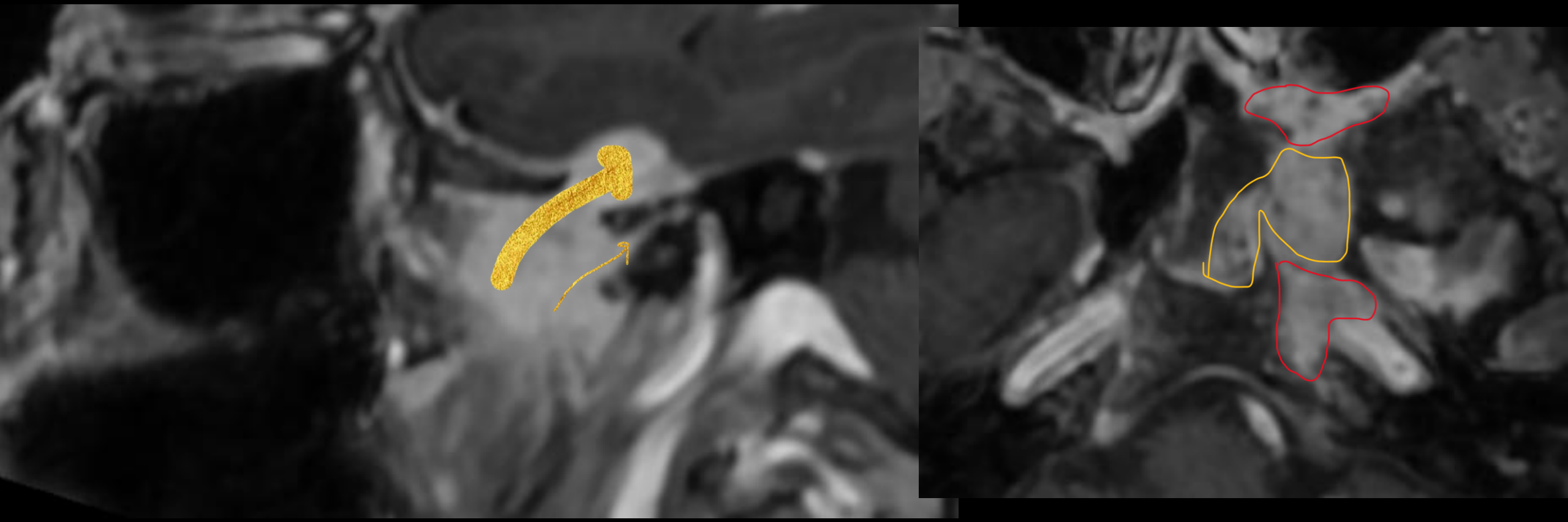




Mass in the nasopharynx infiltrating the prevertebral muscles, clivus, left medial pterygoid and lateral pterygoid without extension across the anterolateral border.
Inferiorly it is extending to oropharynx.
Superiorly there is perineural spread along the V3 (Mandibular nerve) through the foramen ovale into the cavernous sinus.
Anteriorly it is seen extending to pterygoid plates.
Posterolaterally it is seen partially encasing left ICA (<180 degrees)



Unequivocal widening of left foramen ovale and spinosum.
There is widening of left foramen lacerum and left foramen rotundum.
Note the sclerosis of left pterygoid and erosions of floor of sphenoid sinus.



Sagittal oblique image showing disease along V3 (mandibular) and nervus spinosus. On the right side, note the disease in pterygomaxillary fissure. There is involvement of left foramen lacerum and petrous apex. The area in yellow shows disease within the sphenoid sinus.

cT4 Tumour with any of the following:

- Intracranial extension
- Unequivocal clinical and/or radiological involvement of cranial nerves
- Involvement of hypopharynx
- Invading orbit (including inferior orbital fissure)
- Involvement of parotid gland
- Infiltration beyond the anterolateral surface of the lateral pterygoid muscle

Nasopharyngeal Carcinoma

- **Epidemiology**: NPC is the most common primary malignancy of the nasopharynx, accounting for ~70% of cases; peaks at 40-60 years, with a 3:1 male predominance and is endemic in southern China/Asia.
- **Risk factors:** EBV-associated non-keratinizing and basaloid SCC predominate in endemic regions; keratinizing SCC linked to smoking, alcohol, nitrosamines; dietary salted fish/meat also important.
- **Clinical presentation:** Often late, with cervical nodal masses (most common), nasal obstruction, epistaxis, conductive hearing loss; advanced disease may cause cranial-nerve palsies, headache, diplopia, Trotter's triad.
- **CT:** Best for early bone involvement—NPC appears as a soft-tissue mass in the fossa of Rosenmüller; aggressive tumors erode skull base and extend via foramina to clivus, cavernous sinus, temporal bone; shows heterogeneous enhancement.
- **MRI:** Modality of choice for staging—mass is T1 isointense, T2 iso-to-mildly hyperintense, heterogeneously enhancing; exquisitely shows parapharyngeal spread, skull-base marrow infiltration, perineural and intracranial extension.

- **Key MRI signs:** Mucosal asymmetry, loss of adenoidal septa and deep mucosal white line, and fluid in the middle ear (due to Eustachian-tube obstruction); fat-saturated post-contrast sequences essential.
- **Nodal disease:** Seen in 75–90% at presentation—retropharyngeal and level II nodes most common, often with necrosis or extranodal extension; up to 35% skip retropharyngeal nodes and present first in level II.
- **PET/CT:** Highly sensitive for nodal and distant metastases and the modality of choice for recurrence detection; complements MRI and CT for complete staging.
- **Treatment:** Primarily radiotherapy ± chemotherapy; surgery mainly for biopsy or radiation-resistant/recurrent lesions; watch for temporal-lobe necrosis, cranial-nerve dysfunction, fibrosis as post-RT complications.
- **Reporting priorities:** Describe tumor epicenter, parapharyngeal invasion, skull-base and foraminal spread, perineural and intracranial extension, nodal burden and pattern, and distant metastases—all critical for TNM staging and radiotherapy planning.

Contributor

Dr. M S Kashif
MD, Fellowship in Oncoimaging
SR, St. John’s Medical College Bengaluru