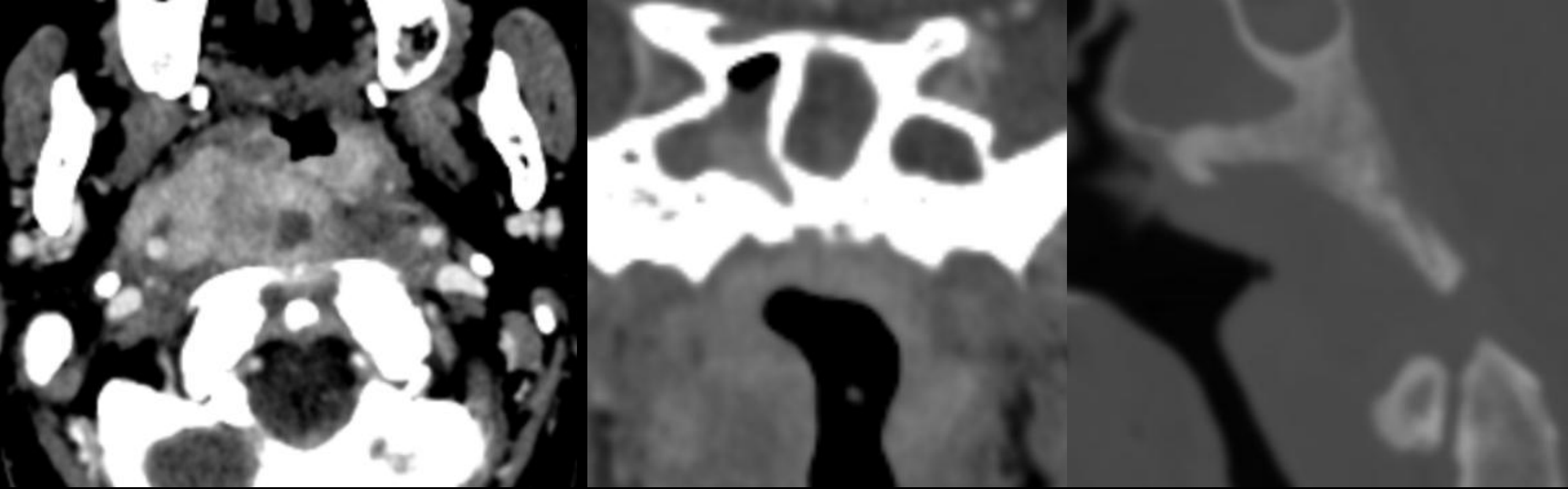




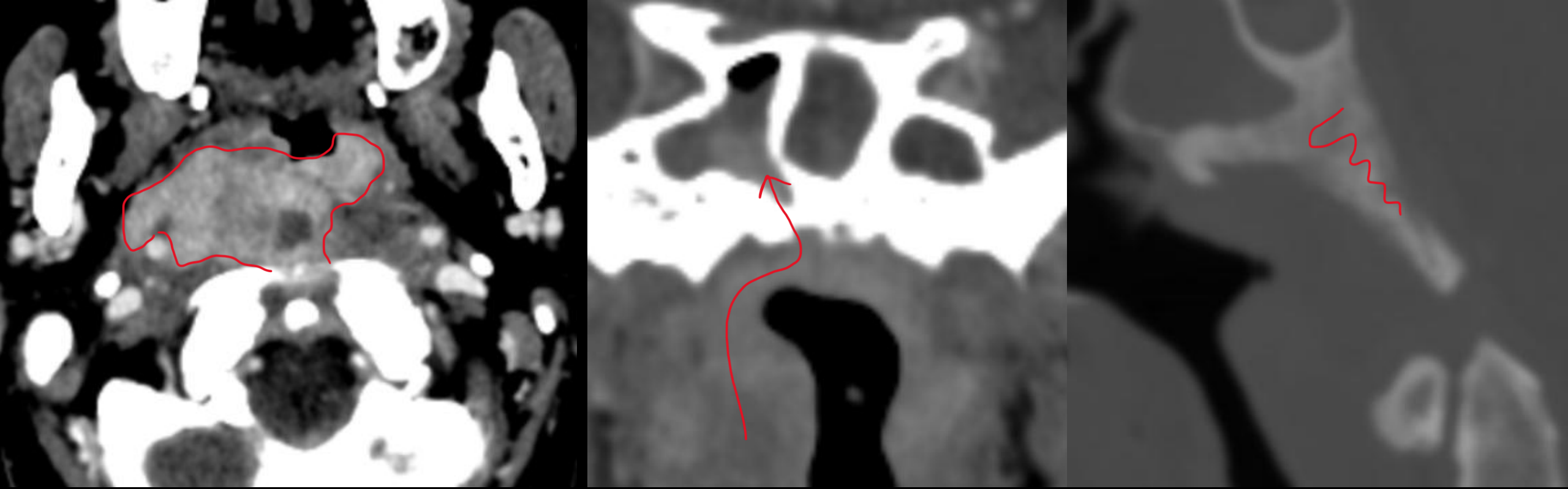
2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

SJMCH, Bengaluru
Contributor of the Series



- Right sided hearing loss in a 55 year male smoker. Diagnosis?



- Heterogeneously enhancing mass in the nasopharynx (R>L) extending to tonsils. Posteriorly involving the prevertebral muscles, extending beyond pharyngeal raphe to C1/atlas anterior arch and the anterior longitudinal ligament. Superior extension is noted into the sphenoid sinus. Right ICA is partly encased without luminal extension / narrowing. The Clivus is diffusely sclerosed secondary to infiltration.
- Local staging – T3 (AJCC TNM 9th edition). Intracranial extension if progresses → T4.

T – Primary Tumour

- cTX Primary tumour cannot be assessed
- cT0 No evidence of primary tumour, but EBV-positive (EBV-associated) cervical node(s) metastasis present
- cTis Carcinoma in situ
- cT1 Tumour confined to nasopharynx
or
Tumour extends to oropharynx and/or nasal cavity without parapharyngeal involvement
- cT2 Tumour with extension to parapharyngeal space
or
Tumour infiltration of the medial pterygoid, lateral pterygoid and/or prevertebral muscles
- cT3 Tumour invades bony structures of skull base, cervical vertebrae, pterygoid structures and/or paranasal sinuses
- 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.

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