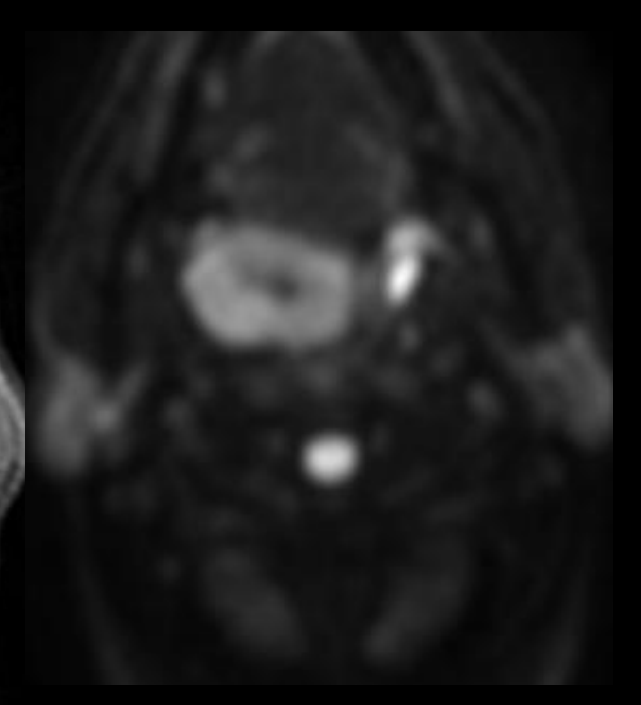
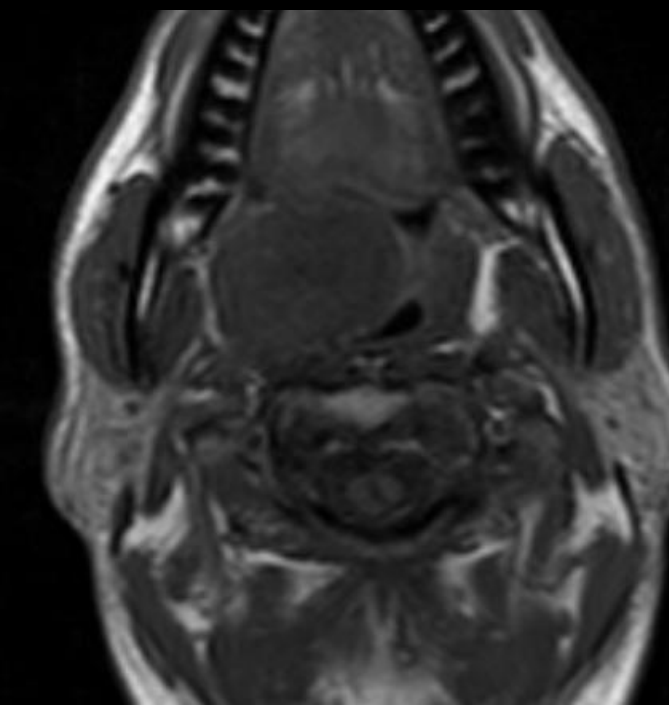
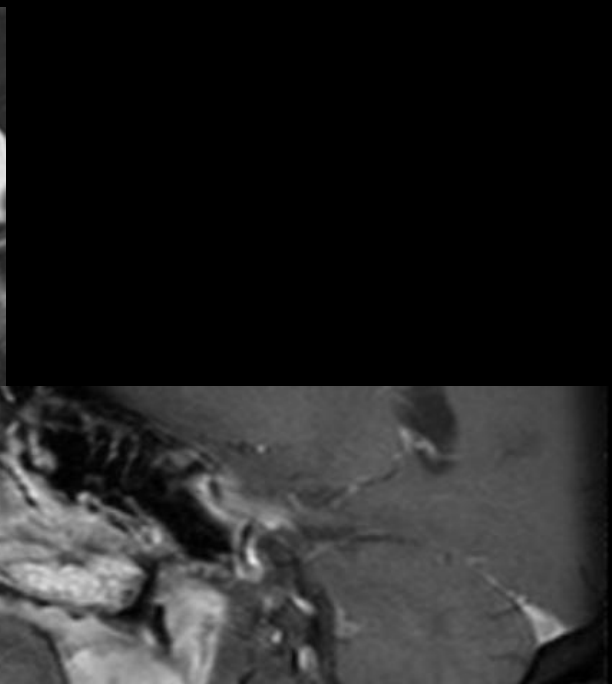
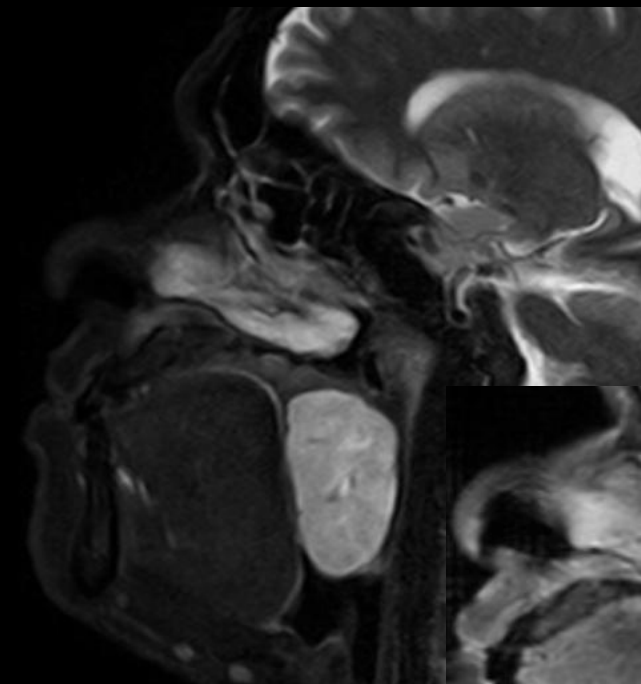
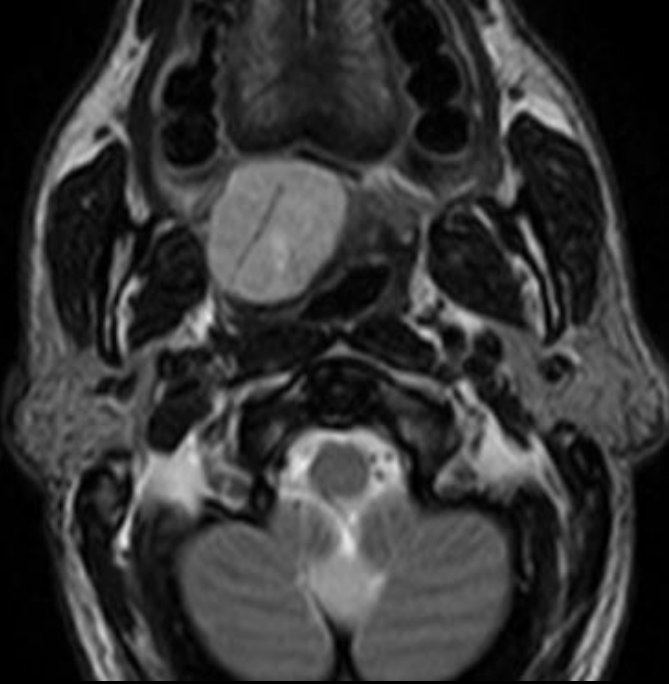




2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM



- A well circumscribed lobulated mass is seen in the oropharynx epicentered in the soft palate on the right side, measuring about 2.7 x 3.9 x 4.8 cm (TR x AP x CC). It shows T2/ STIR fairly homogeneous hyperintense, T1 isointense signal with T2 shine through and mild heterogeneous enhancement.
- Lesion is confined to the palate without extension to nasopharynx or hypopharynx.
- It is exerting mass effect upon the posterior third of tongue. There is significant air column narrowing.
 - Features are suggestive of a minor salivary gland neoplasm; pleomorphic adenoma vs less likely low grade mucoepidermoid carcinoma.
 - HPE – Pleomorphic adenoma.

Feature	Adenoid Cystic Carcinoma (AdCC)	Mucoepidermoid Carcinoma (MEC)	Pleomorphic Adenoma (PA)
Origin / Type	Malignant tumor from intercalated duct & myoepithelial cells	Malignant tumor from excretory duct epithelium (mucoïd + epidermoid cells)	Benign <i>mixed</i> epithelial–myoepithelial tumor with fibromyxoid stroma
Common Sites	Minor salivary glands (palate >> submandibular > parotid)	Parotid most common; also minor glands (palate, buccal mucosa)	Parotid (superficial lobe), palate, parapharyngeal
Clinical Clues	Pain, neural symptoms early (perineural invasion hallmark)	Painless swelling ± facial nerve palsy if high-grade	Painless, very slow-growing, mobile mass
Growth Pattern	Infiltrative , submucosal, ill-defined	Variable — low-grade: cystic & well-circumscribed, high-grade: solid, infiltrative	Encapsulated, well-defined , lobulated; may recur if capsule breached
CT Findings	Infiltrative, soft-tissue density; may show bony erosion or foraminal widening (due to perineural spread)	Heterogeneous , cystic or solid, possible calcification; may erode bone if high-grade	Well-circumscribed , homogeneous soft-tissue mass ± coarse calcification
MRI — T1	Iso- to hypointense	Iso- to hypointense	Iso- to mildly hypointense
MRI — T2	Variable; often low to intermediate signal (due to high cellularity and fibrosis)	Intermediate to high (more cystic if low-grade)	Very high T2 (“light-bulb bright”) due to myxoid stroma
Post-contrast Enhancement	Heterogeneous, moderate-to-intense ; may show linear or perineural enhancement along skull-base foramina	Low-grade: cystic with septal/mural enhancement; high-grade: solid, heterogeneous	Smooth, homogeneous or gradual enhancement , often delayed on DCE

Feature	Adenoid Cystic Carcinoma (AdCC)	Mucoepidermoid Carcinoma (MEC)	Pleomorphic Adenoma (PA)
Dynamic Contrast (DCE) Pattern	Type III curve: early enhancement with plateau (hypercellular)	Type II or III: rapid wash-in, variable washout depending on grade	Type I curve: gradual, progressive enhancement
Diffusion (DWI/ADC)	Low ADC ($0.8\text{--}1.1 \times 10^{-3} \text{ mm}^2/\text{s}$) due to dense cellularity	Variable: lower ADC in high-grade, higher in low-grade	High ADC ($>1.4 \times 10^{-3} \text{ mm}^2/\text{s}$) (low cellularity)
Perineural Spread	Characteristic feature — along V2, V3, facial, or hypoglossal nerves; seen as foraminal widening, linear enhancement, loss of fat planes	Possible in high-grade but less common	Absent
Bone Involvement	Common (base of skull, hard palate, mandible)	In high-grade only	Rare (pressure remodeling only)
Metastasis	Hematogenous (lungs, bone) common; late nodal disease	Nodal more frequent than hematogenous	None (benign)
Prognosis	Indolent but relentlessly recurrent; late metastases	Depends on grade; low-grade good prognosis	Excellent if completely excised
Key MRI Signature	T2 low–intermediate, perineural spread, infiltrative margins	Cystic-solid mix, intermediate T2, variable enhancement	Encapsulated, T2 very bright, delayed enhancement
FDG-PET/CT	Variable uptake; highlights perineural spread and metastases	High-grade = high uptake; low-grade may be mild	Mild or low uptake

Contributor

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