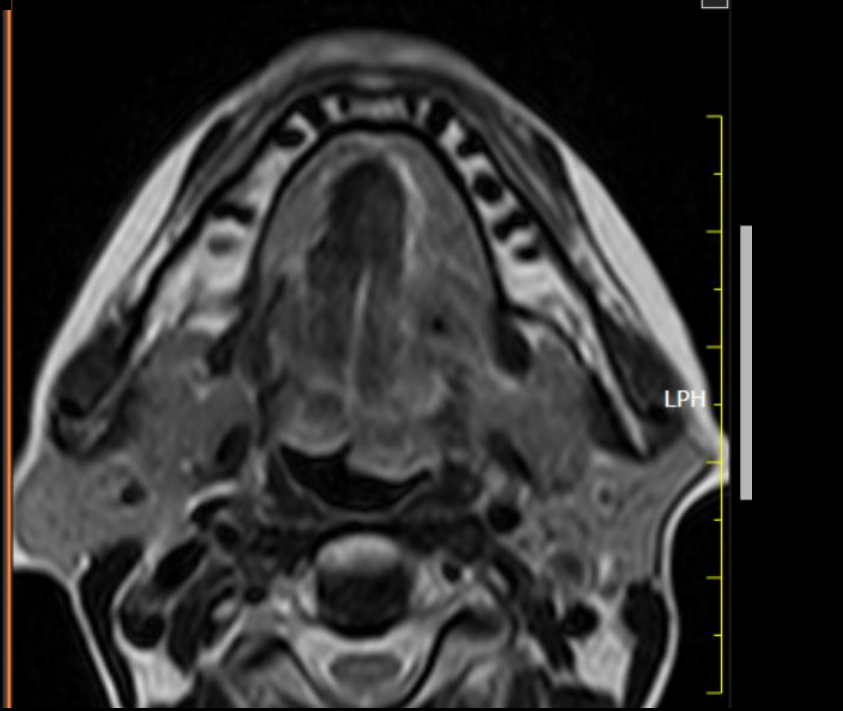
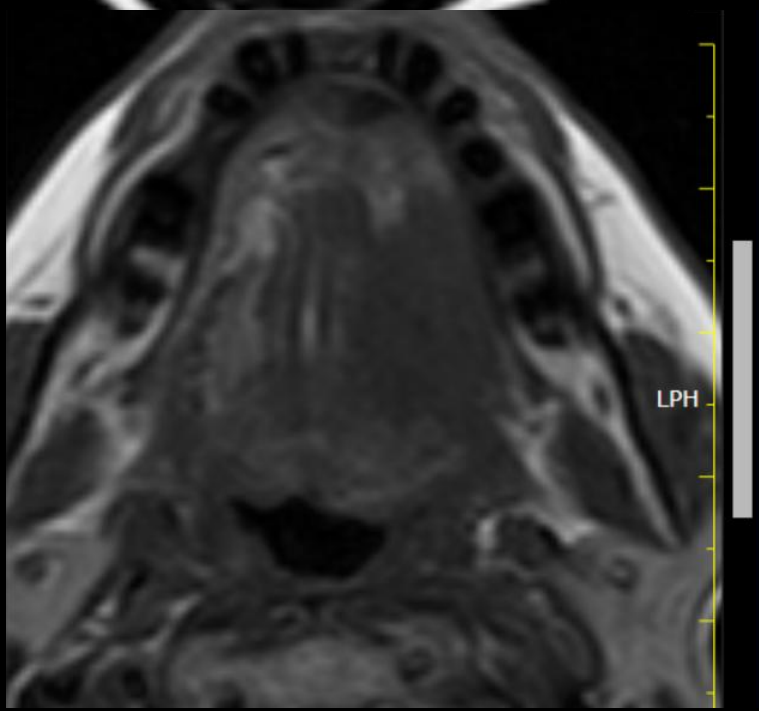
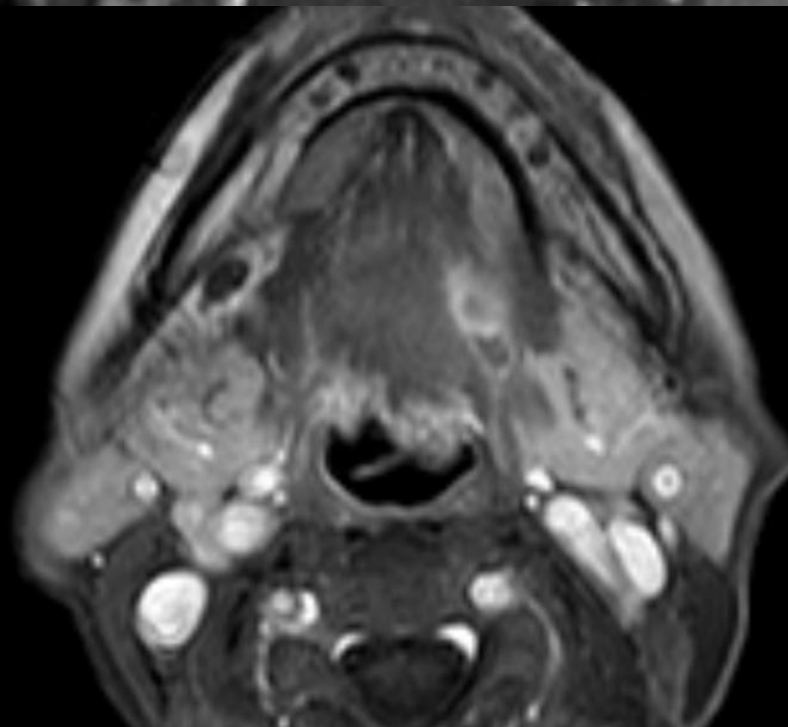
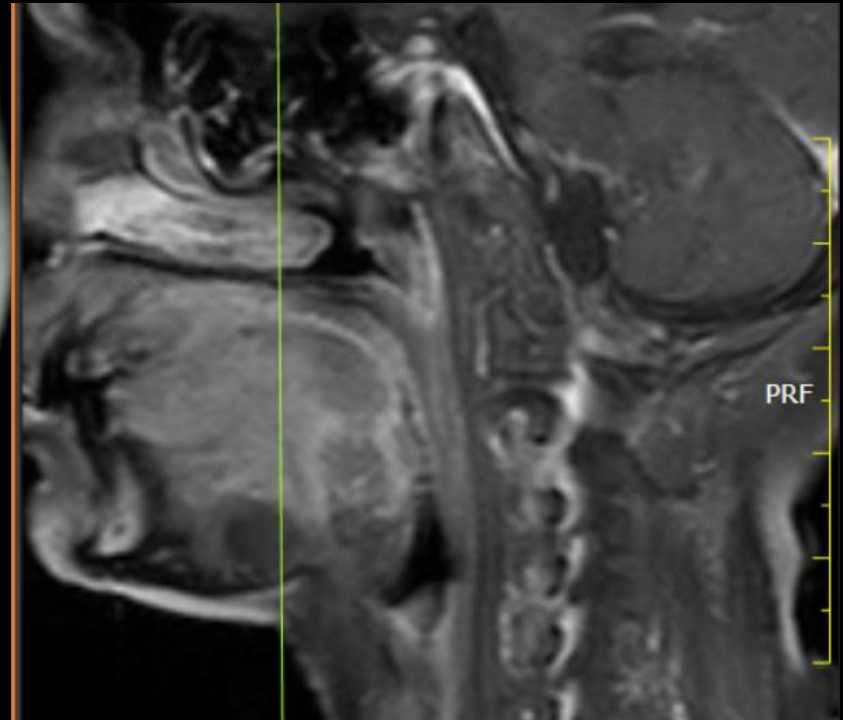
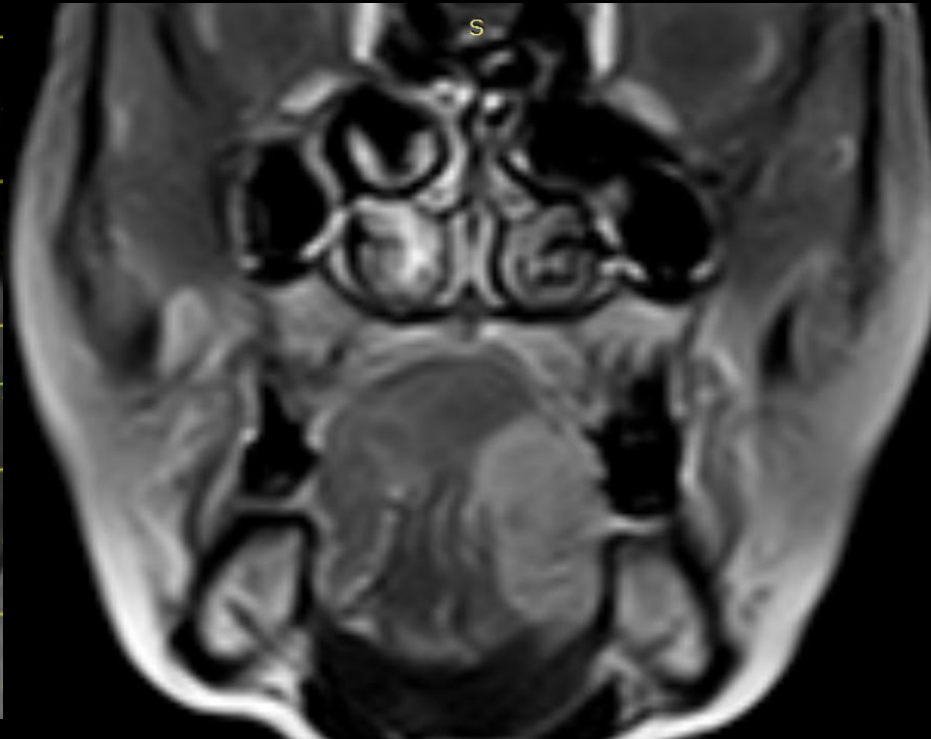
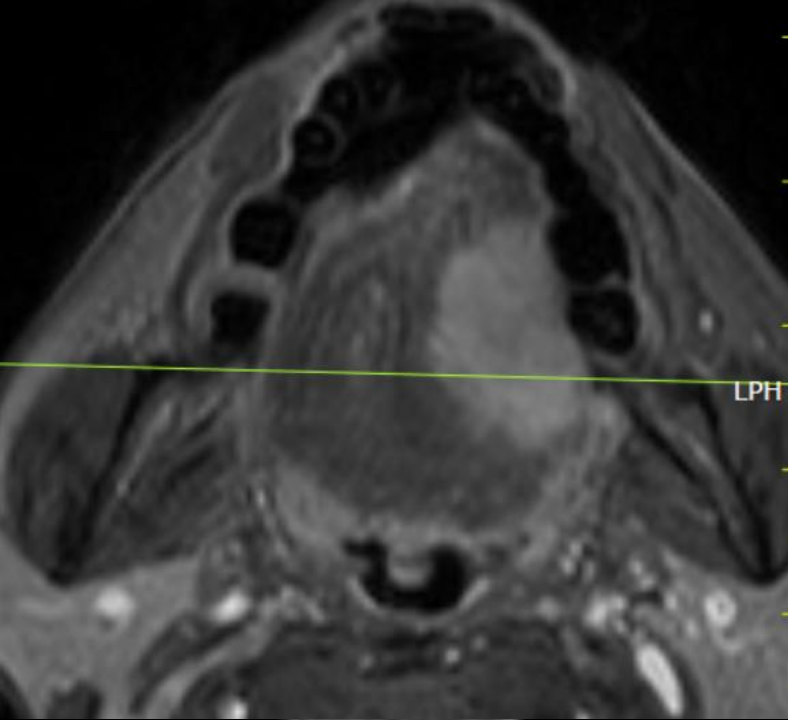
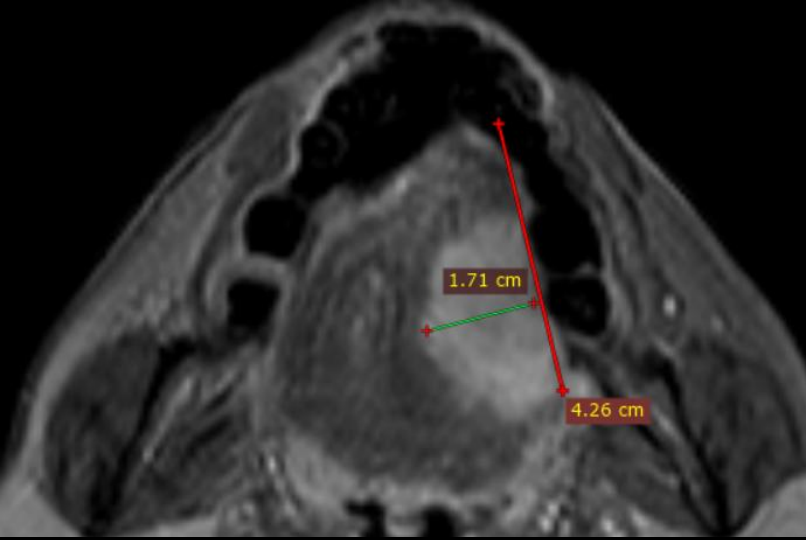




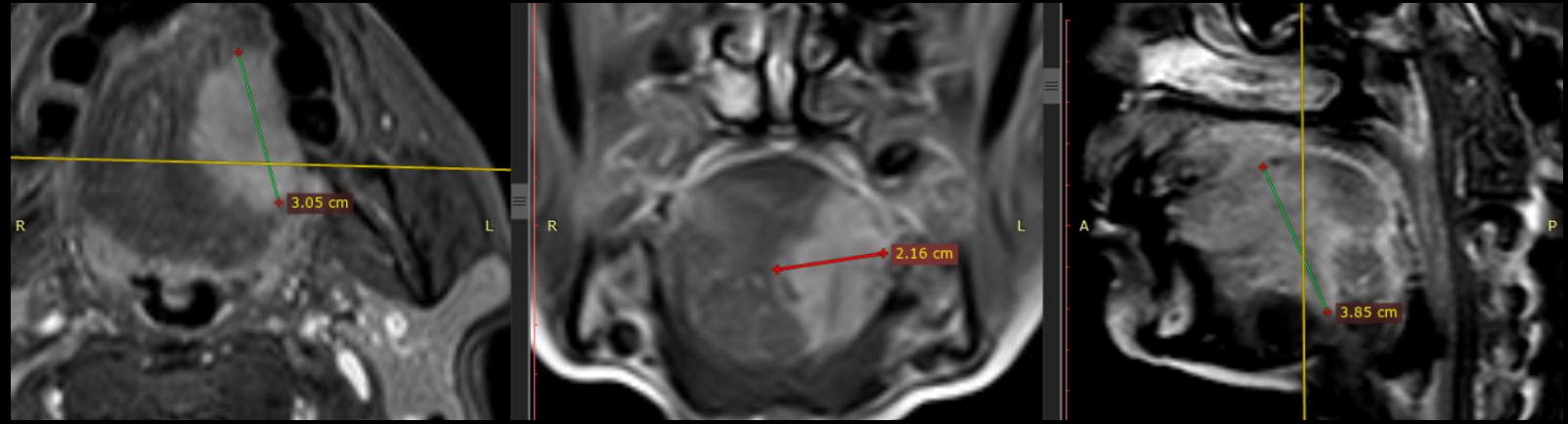
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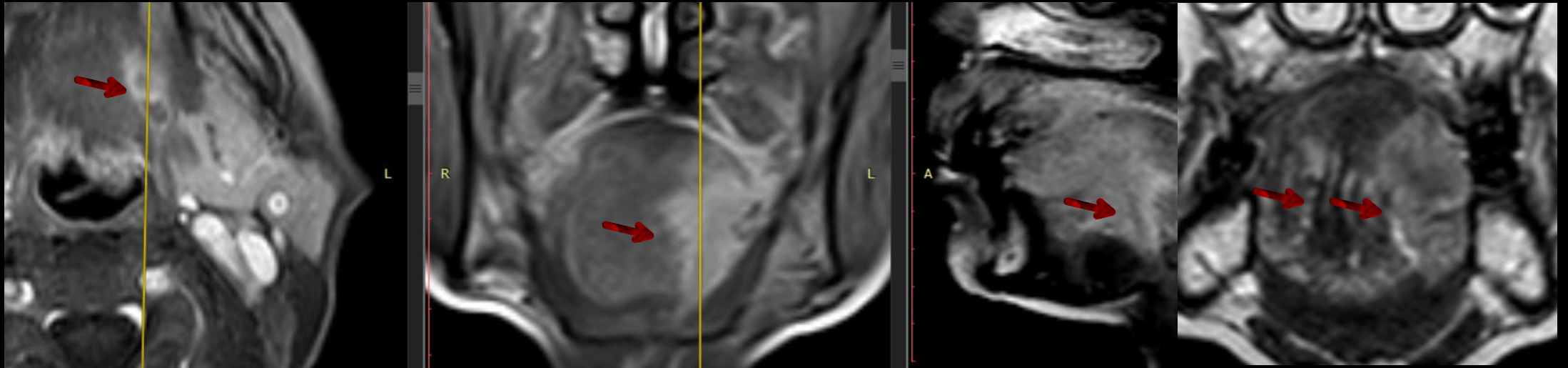




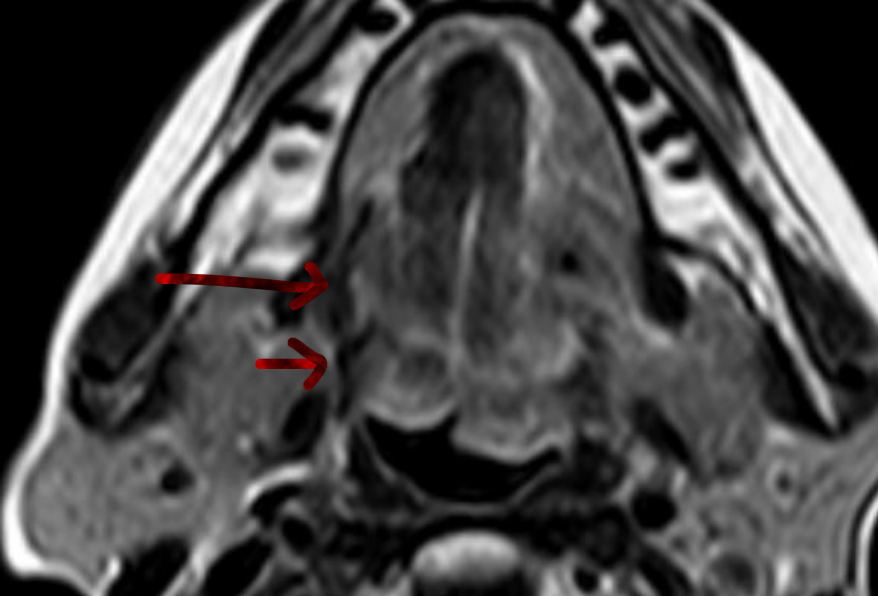
DOI= ~17 mm from expected mucosal line



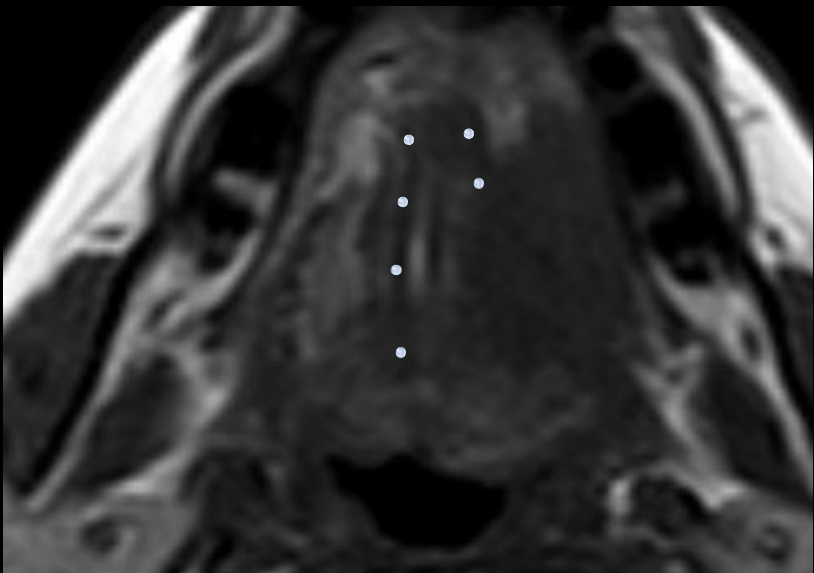
Measurement along the longest dimensions



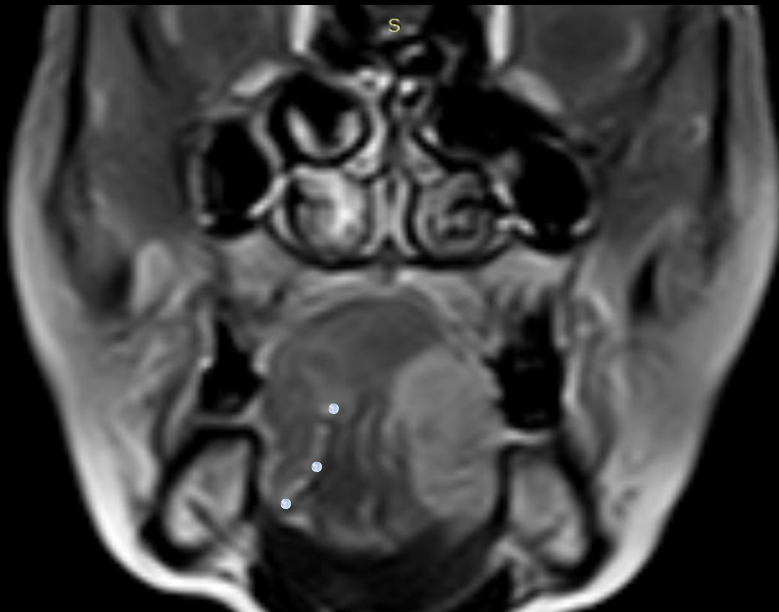
Extension along left neurovascular bundle



Left hyoglossus and styloglossus not seen



Left genioglossus shows early infiltration



Neurovascular bundle is encased on left

Carcinoma tongue – anterior two thirds / oral cavity

T – Primary Tumour

cTX Primary tumour cannot be assessed

cT0 No evidence of primary tumour

cTis Carcinoma in situ

cT1 Tumour 2 cm or less in greatest dimension and 5 mm or less depth of invasion ^{1,2}

cT2 Tumour 2 cm or less in greatest dimension and more than 5 mm depth of invasion or

Tumour more than 2 cm but not more than 4 cm in greatest dimension and depth of invasion not more than 10 mm

cT3 Tumour more than 2 cm but not more than 4 cm in greatest dimension and depth of invasion more than 10 mm

or

Tumour more than 4 cm in greatest dimension and not more than 10 mm depth of invasion

cT4a Tumour more than 4 cm in greatest dimension and more than 10 mm depth of invasion

or

Tumour invades through the cortical bone (with involvement of spongiosa/spongy bone) of the mandible or maxilla or involves the maxillary sinus, or invades the skin of the face ²

cT4b Tumour invades masticator space, pterygoid plates or skull base, or encases internal carotid artery

Carcinoma tongue

1. Anatomic and Clinical Context:

- Divided into **oral tongue** (anterior two-thirds, oral cavity) and **base of tongue** (posterior one-third, oropharynx) — each with different lymphatic drainage, staging systems, and treatment strategies.
- Presents with **non-healing ulcer, pain, dysarthria, odynophagia, or cervical nodal mass**.

2. Etiopathogenesis:

- **Oral tongue SCC:** Tobacco, alcohol, betel nut, poor oral hygiene.
- **Base of tongue SCC:** Frequently **HPV (p16) positive**, with distinct molecular profile and better prognosis.
- Both arise from **stratified squamous epithelium**, with potential for submucosal infiltration and perineural spread.

3. MRI — Modality of Choice:

- Defines **tumor volume, depth of invasion (DOI), and muscle involvement** (genioglossus, hyoglossus, intrinsic muscles).
- **T1:** iso- to hypointense; **T2:** hyperintense; **post-contrast:** heterogeneous enhancement.
- Diffusion restriction helps delineate tumor margins; assess for **midline crossing and floor-of-mouth spread**.
- MRI DOI measurement directly determines **pT category** (≥ 10 mm = pT3) in oral tongue.

4. CT and PET/CT Roles:

- **CT:** essential for **mandibular cortical breach, dental infiltration, and nodal necrosis**.
- **PET/CT:** evaluates **metabolic tumor volume, nodal and distant metastases, and occult primaries** when primary is small or ulcerated.

5. Patterns of Spread:

- **Direct:** to floor of mouth, mandible, sublingual space, base of tongue.
- **Perineural:** along lingual or hypoglossal nerves.
- **Lymphatic:** levels I–III (oral tongue) and II–III/retropharyngeal (base of tongue).
- **Venous/lymphovascular invasion (LVI)** important for prognosis.

6. Key Imaging Determinants for Staging:

- **Depth of invasion (DOI)**
- **Crossing midline** or floor-of-mouth extension
- **Mandibular/hyoid cortical involvement**
- **Nodal metastasis and extranodal extension (ENE)**
- **Perineural spread** along lingual/hypoglossal nerves.

7. Imaging-Pathology Correlation & Prognostic Value:

- **DOI >10 mm** and **ENE-positive nodes** predict recurrence and need for adjuvant therapy.
- MRI and CT findings directly influence **surgical planning** (partial glossectomy, composite resection, or mandibulectomy) and **radiotherapy contouring**.

8. Oncoradiologic Perspective:

- Provide a **structured report** detailing tumor site, size, DOI, crossing midline, muscle/bone invasion, nodal levels, and ENE.
- Imaging determines resectability, radiotherapy volume, and follow-up differentiation between recurrence and post-treatment fibrosis.

Contributor

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