Head and Neck CA
General Concepts
Rules of Thumb

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When to apply

- **Oral cavity**
- **Nasopharynx**
- **Oropharynx**
- **Hypopharynx**
- **Larynx**

- Diverse tissues , a wide variety of tumours may occur in this region.

- Histopathological diagnosis
  - **Staging** : Site / subsite
  - **Management** : pathology
  - Treatment of choice
  - Prognosis : pathology
- Example :
  - Minor salivary gland tumour in oral cavity / oropharynx and larynx
  - **Adenoid cystic CA in base of tongue**
  - Staging : oropharyngeal CA (non HPV) TNM
  - Management : Surgery is mainstay
  - Prognosis : similar to adenoid cystic CA elsewhere

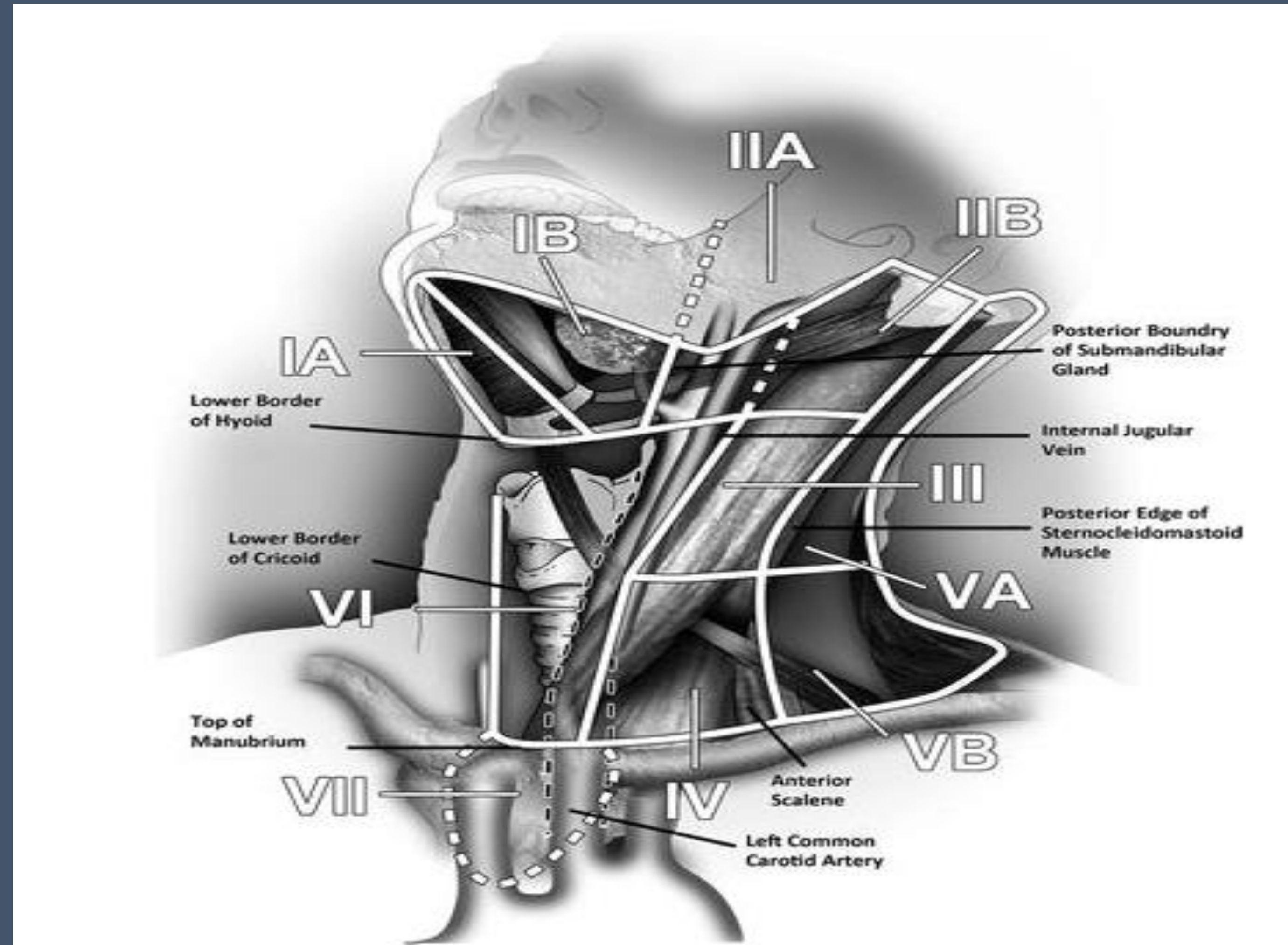
History

- Present complaint :
  - Lesion / symptom
  - Onset , duration and progress
- History of present illness
  - Other symptoms (in relation to site/ subsite)
  - Associated symptoms (aerodigestive symptoms)
  - Constitutional symptoms (B symptoms)
- Medical history : (comorbidities)
- Risk factors
  - According to site (elaborated more in coming lectures)

Examination

- Primary tumour assessment
- Fibreoptic examination of all visible upper aerodigestive tract mucosal surfaces
    - Primary tumour extension
    - Synchronous tumours (1-2%)
- **Lymph node assessment**

Lymph node Examination



Laboratories

- CBC
- Ferritin/ Transferrin
- LFT
- Albumin / prealbumin
- TSH
- Renal profile
- ECG

Imaging

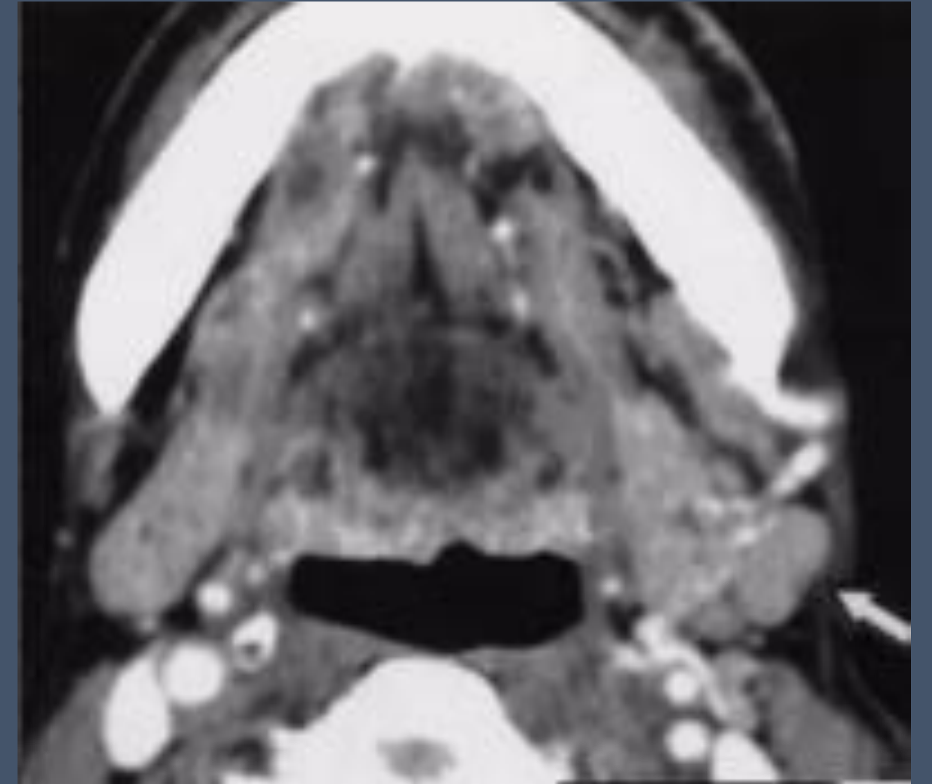
- With contrast (unless it is contraindicated)
- Prior to **tissue acquisition** by biopsy or fine needle aspiration (FNA)
  - Interventions may have effect on radiological findings
  - For example (increase size by blood / oedema / inflammation)
- CT head & neck with IV contrast
  - Imaging of choice
  - 1st to be ordered
  - Reformatting, image acquisition speed, and low-dose scanning

Imaging

	CT neck with contrast	MRI neck with contrast * Fat saturation
Bony : cortical portion	Superior	
Bony : medullary portion		Superior
Soft tissue definition (Tumour / Carotid / prevertebral fascia)		Superior
Perineural spread	None	Yes
Intracranial		Superior
Regional (LN metastasis)	Superior * Limited rule if < 5 mm	

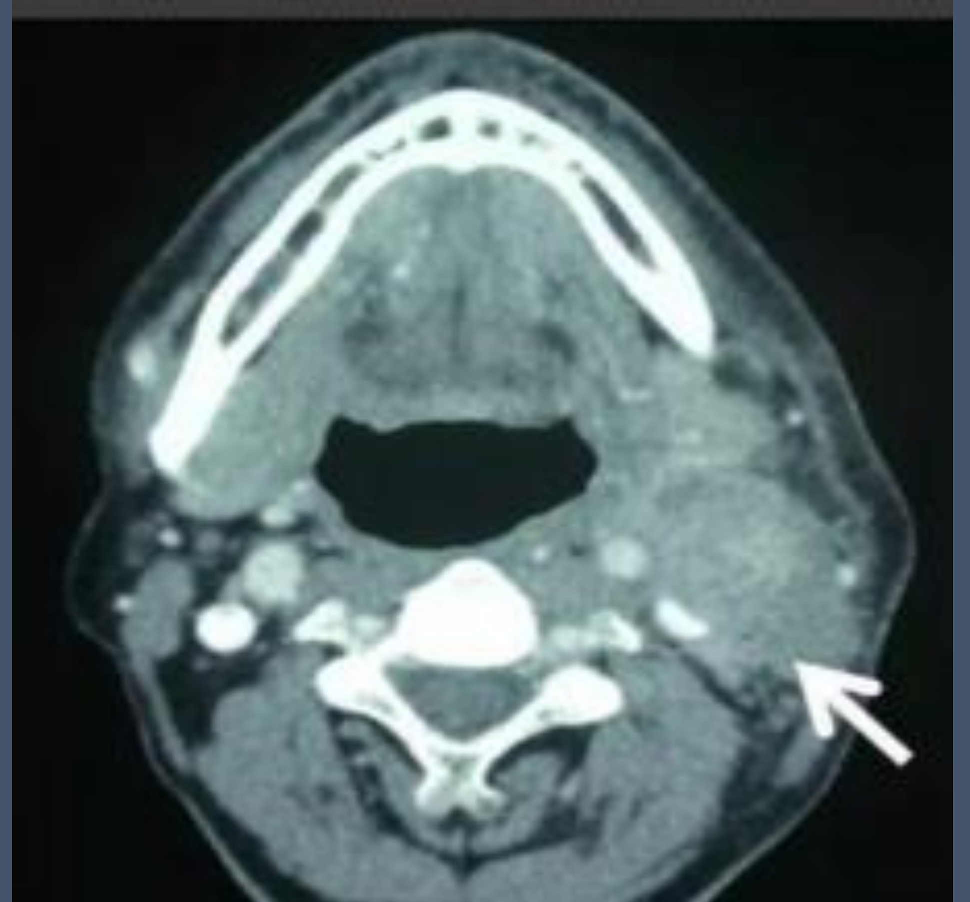
Imaging
Criteria for non neoplastic LN

- Shape : oval
- Faty hilum : present
- Size : < 1-1.5 cm
- Homogenous
- Lack of necrosis , calcification & enhancement



Imaging
Criteria for Pathological (metastatic LN)

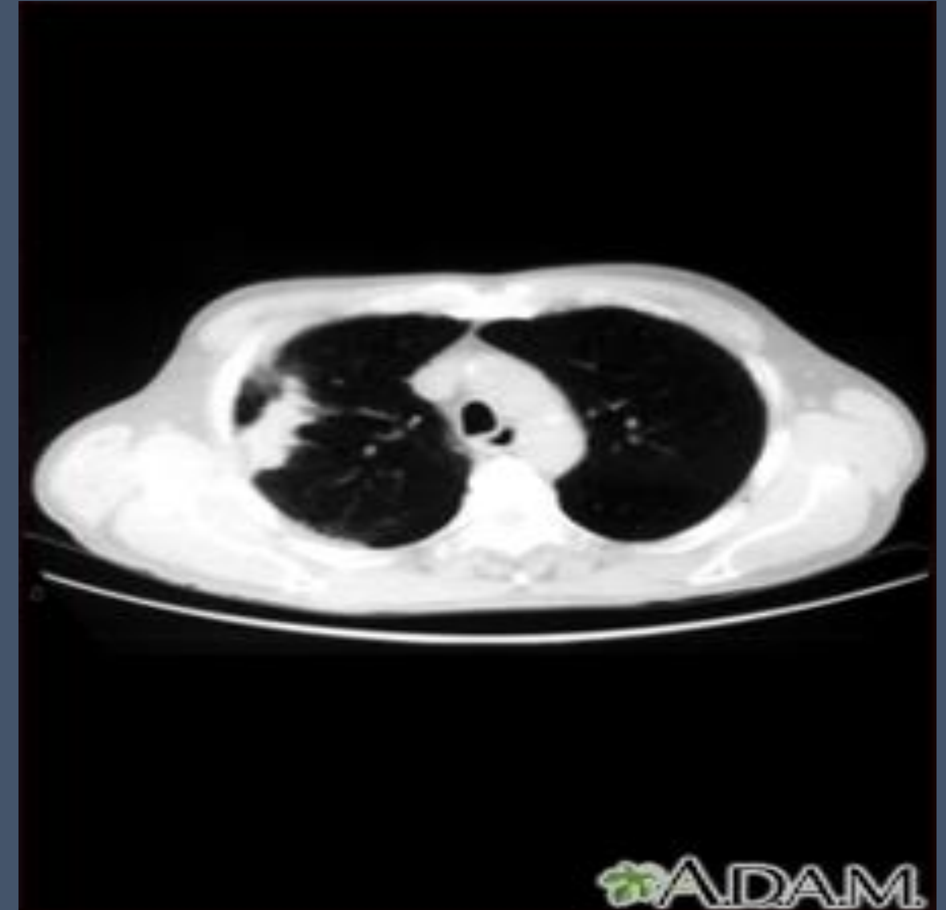
- Shape : round
- Loss of fatty hilum
- Size : > 1 cm
- Heterogenous
- Presence of **any** of the following
  - Central necrosis
  - Calcification
  - Enhancement
  - Extranodal extension



** CT /MRI

CT chest

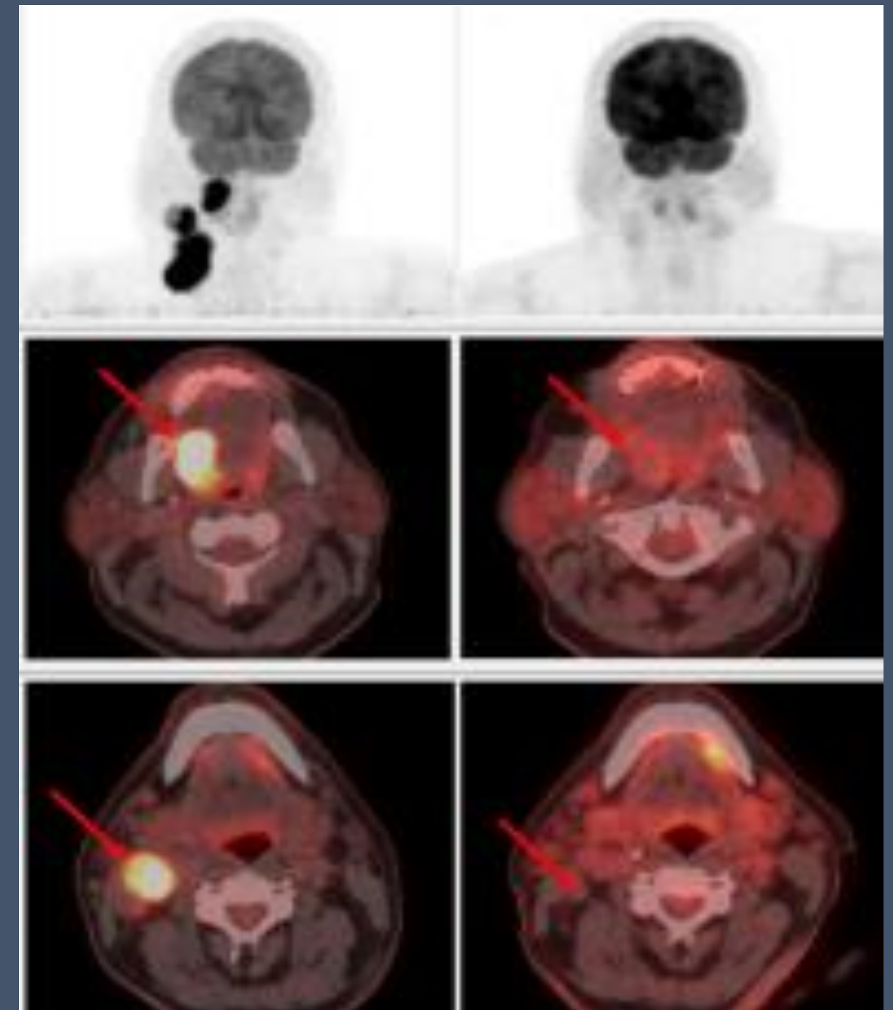
- Low to moderate risk
  - Distant spread (lung)
  - Primary lung cancer,



PET scan (FDG)

- PET/CT provide additional anatomical details and management guidance
- Indications (absolute)
  - Carcinoma unknown primary
  - **<u>High risk of metastasis :</u>**
  - Large primary tumour (> T3)
  - Extensive and low neck adenopathy
  - Locoregional recurrence
  - Evaluation of potential **<u>distant metastasis</u>** in Patient requiring surgical intervention with significant potential morbidity

** **<u>Not a replacement of CT and /or MRI</u>**



PET scan

- **Diagnostic** : Known Primary tumour site
  - Limited role

- **Diagnostic :** Regional (lymph node) metastasis :
  - Clinically negative neck (< 7 mm)

Tissue diagnosis

- FNA cytology
  - Submucosal mass (intact mucosa)
  - Cervical lymph nodes if primary lesion biopsy is not diagnostic for malignancy
- Core needle biopsy
  - Cervical lymphadenopathy if FNA not diagnostic
  - Additional information about **Immunohistochemistry**
- Primary lesion biopsy
  - Office based if accessible , under LA
  - Incorporate the deepest region to be able to histologically assess the DOI (Oral cavity , Cutaneous)
  - Punch biopsy
  - Formalin and fresh (flow cytometry)

Tissue diagnosis
Open lymph node biopsy

- **<u>Indications</u>**
  - If FNA and core needle biopsy doesn't provide a diagnostic details
  - Avoid incisional biopsy
    - Acceptable if lymphoma is a top differential Dx **<u>or</u>**
    - Large lymph node with possibility of ENE
    - Frozen section +/- Neck dissection
  - Excisional biopsy (entire removal of a lymph node)
- Through EUA & panednoscopy (biopsy) should be performed prior to lymph node open biopsy

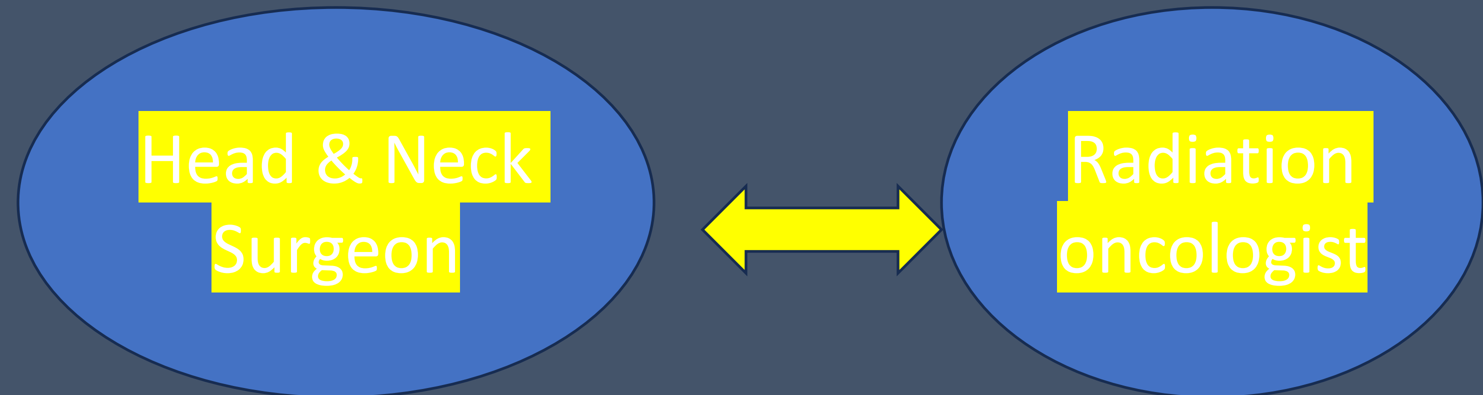
** Do no harm if bilateral neck involvement

Diagnostic procedures

- **Pharyngoscopy , Laryngoscopy** , Esophagoscopy and Bronchoscopy
  - Indications
    - Carcinoma unknown primary (CUP)
    - Limited proper **office based** assessment (severe pain , trismus, patient comfort)
    - Imaging suspious of second primary
  - Advantages
    - Identification & extension of primary tumour
    - Obtain a biopsy from highly suspious areas
- Be aware in case of difficult airway/ intubation
    - Might include tracheostomy

Management

- Staging (AJCC 8th edition)
- Multidisciplinary tumor board
- Pathologist --- Head and neck /soft tissue
- Radiologist --- Head and neck / neuroimaging
- Medical oncology
- Dental (prior to XRT)
- Dietitian
- Speech / swallowing
- Psychosocial
- If for surgical intervention :
  - Anaesthesia clearance
  - Cariology (risk assessment)



Management

Primary

Neck

Reconstruction
When ?

Management
Early stages (T1/2 , N0/1)

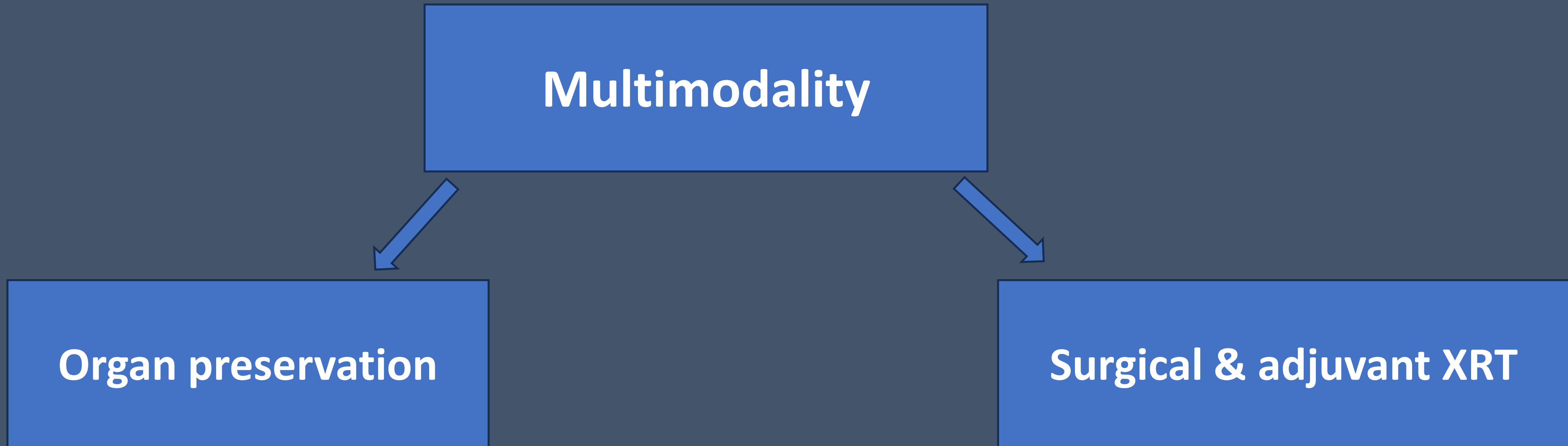
- Single modality
- **Surgery or radiotherapy (IMRT)**
- **Primary (surgery) :**
  - Approach (per oral / endoscopic / TORS)
  - Extension of resection (bone , soft tissue , nerve)
  - +/-Reconstruction (retain the function and cosmesis) ,
- **Neck**
  - N0 : Observation (selected site/ subsite)

  If occult metastasis > 15 -20 % :
  - Elective /selective ND Vs IMRT
  - Midline lesion : Bilateral ND Vs IMRT
  - Sentinel lymph node biopsy (ongoing researches for oral cavity T1N0)

Management
Early stages (T1/2 , N0/1)
Adjuvant Radiotherapy

- **Indications:**
- Positive surgical margins
- Perineural or lymph vascular invasion
- T3– T4 tumors
- Node-positive disease

Management
Advanced (T3/4 , N 2/3)



Management
Advanced (T3/4 , N 2/3)

Surgical arm : (surgery and post operative radiotherapy +/- Chemotherapy

- **Primary** :
  - Approach (per oral / endoscopic / TORS)
  - Extension of resection (bone , soft tissue , nerve)
  - **Reconstruction (retain the function and cosmesis)**
- **Neck**
  - RND /MRND
  - Bilateral must be considered
- **Adjuvant chemotherapy :**
  - Positive margin
  - Extranodal extension

Management
Advanced (T3/4 , N 2/3)

- In any treatment protocol, every effort should be made to reduce the **treatment package time** (from surgery to the completion of radiation therapy) $<$ 85 days
  - Increases locoregional control and overall survival

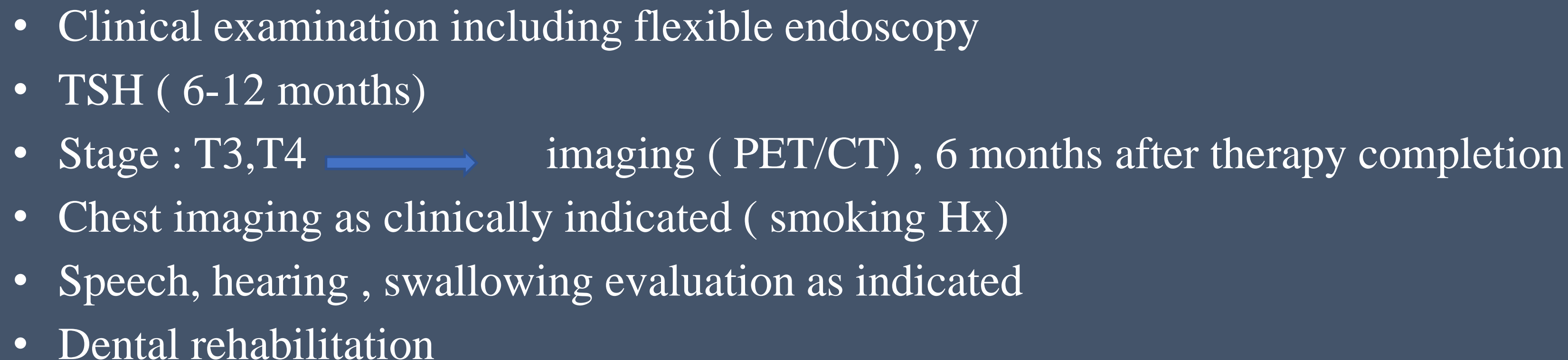
Management
Advanced (T3/4 , N 2/3)

- **Organ preservation arm**: Radio/chemotherapy
- **Primary** :
  - Intensity modulated radiotherapy (IMRT)
- **Neck**
  - Bilateral

**Surgery for salvage

Post therapy follow up (surveillance)

visit	Duration post treatment
1st	1-3 months
2nd	2-4 months
3rd	3-6 months
4th& 5th	4- 6 months
After 5th	Every 12 months



Management
Radiation failure

<u>T3N1M0 Glottic SCC</u>

- Organ preservation
- Concurrent chemoradiotherapy
- Persistent / Recurrent
  - Lesion in the glottic area
- Salvage surgery
  - Salvage total laryngectomy
- Flap for coverage

Management Radiation failure

- **<u>T2N1M0 Nasopharyngeal Undifferentiated SCC</u>**
- Neoadjuvant chemotherapy then Concurrent chemoradiotherapy
- T2N1M0 (PET /CT : persistent regional disease)
    - Right level II
- Salvage right Radical ND
- Flap for coverage

Reconstruction

<u>Basic goals of reconstruction</u>

Restore form

- Replace with “like” tissue
- Replace adequate volume

Restore function

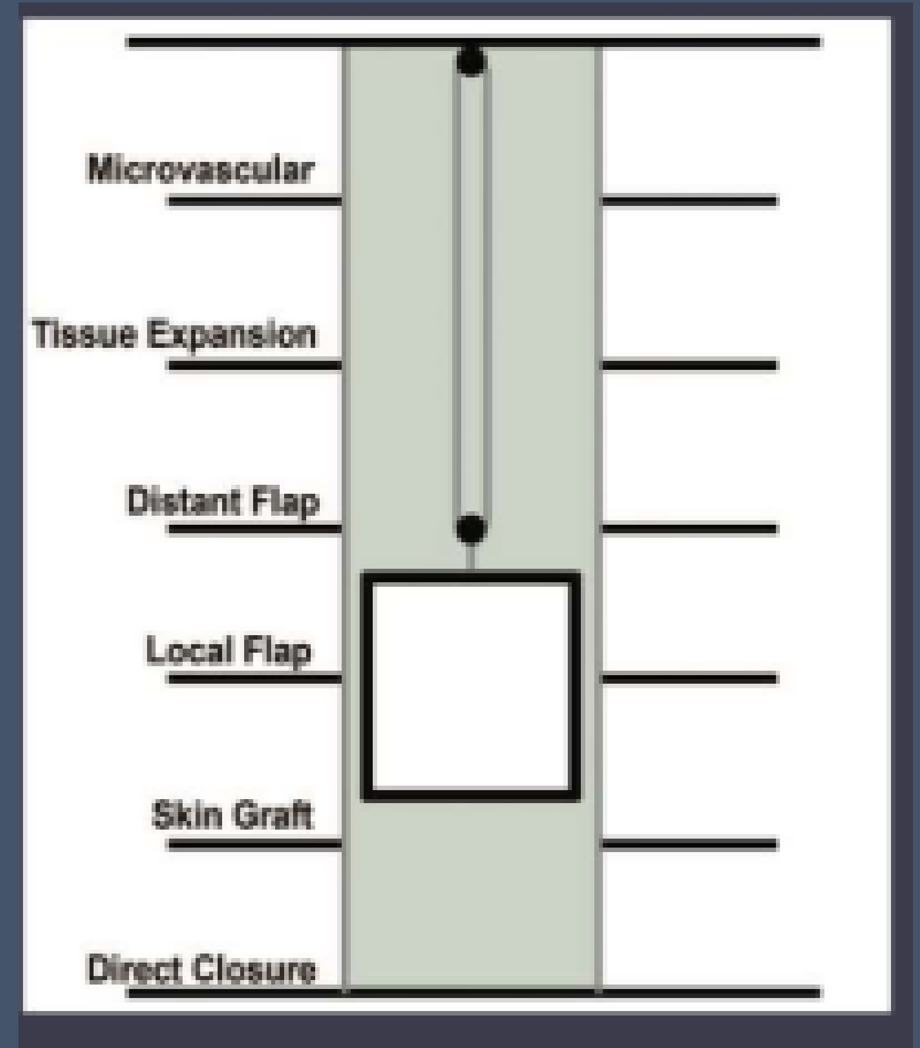
- Breathing
- Speech
- Swallow

Prevent fistula, cover important structures

- Sometimes overshadows form and function

Consider aesthetics aesthetics

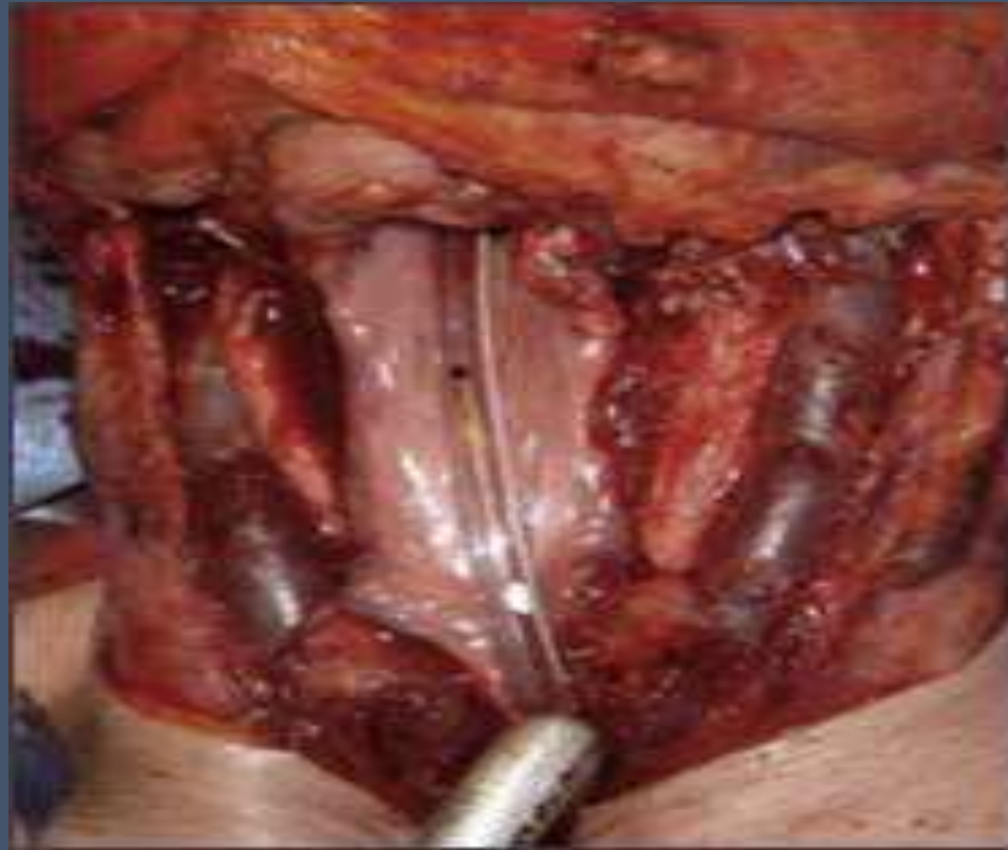
- – Consider aesthetics



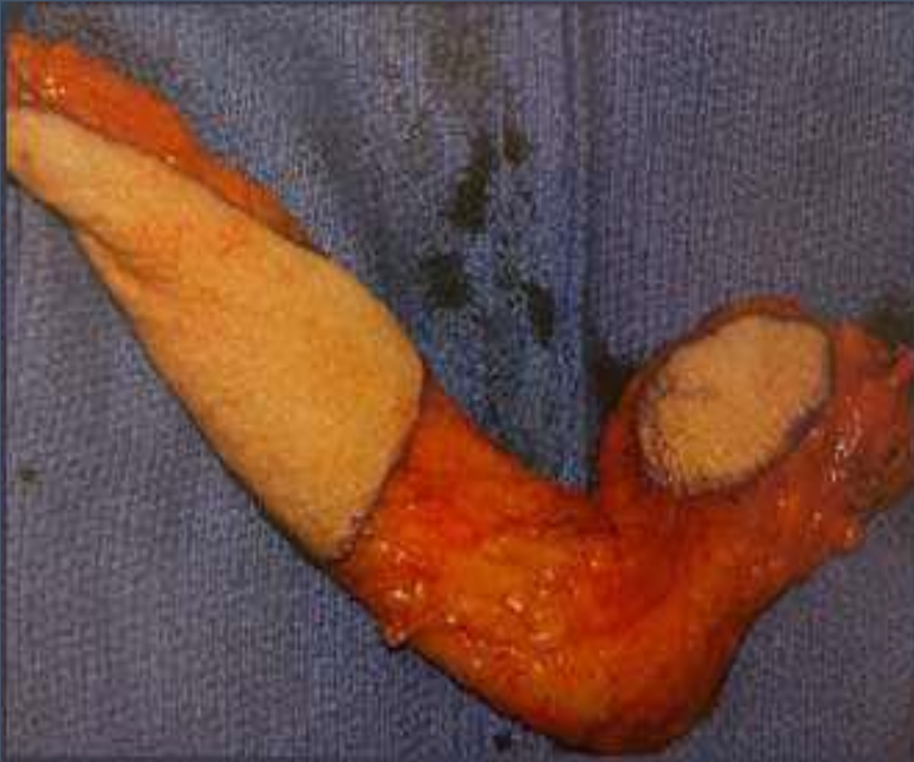
Reconstruction

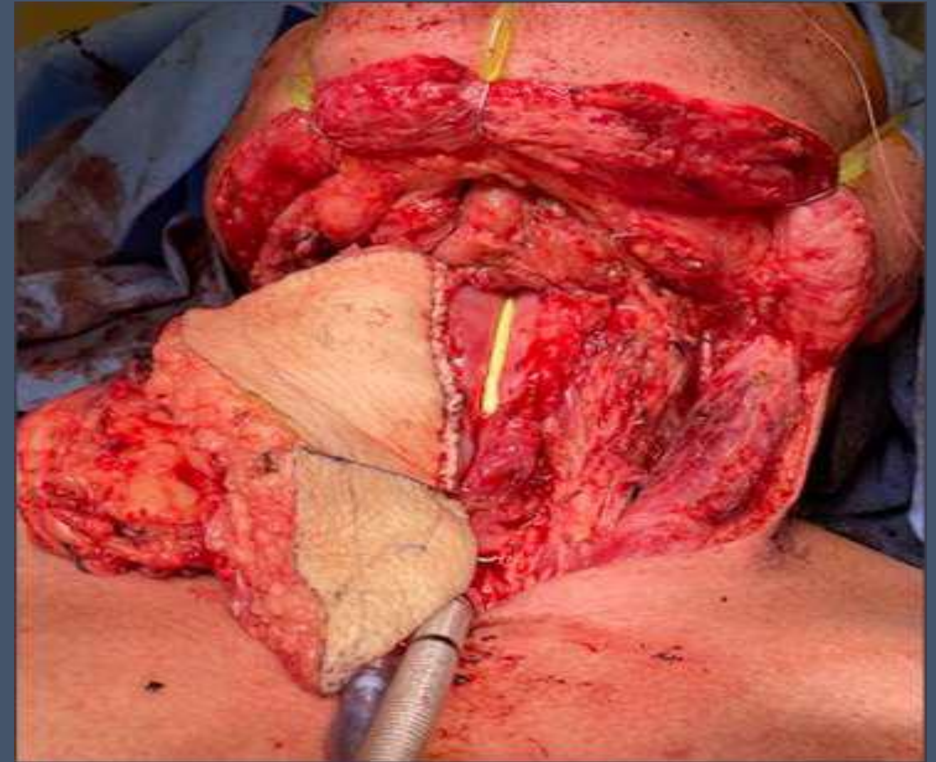
- Location
- Size
- Tissue types
- Priorities
- Reconstructive options
  - Consider the reconstructive “ladder”

Reconstruction

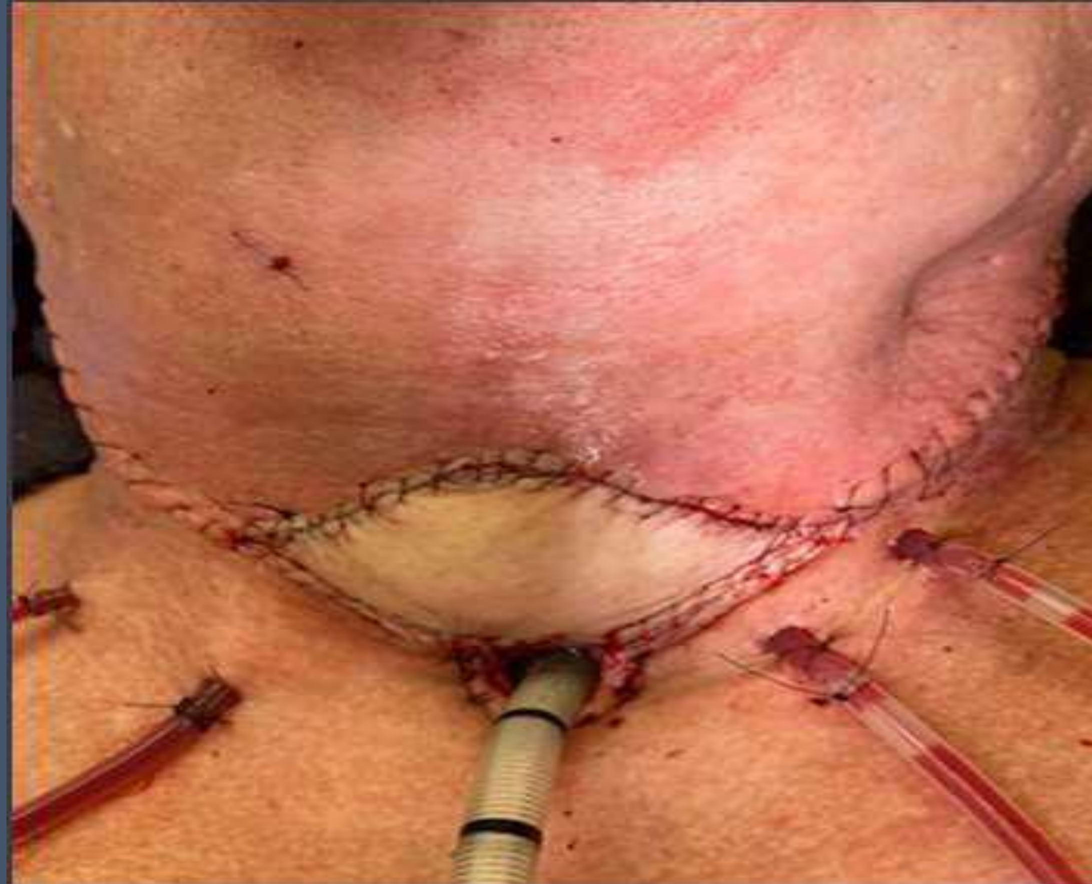


Reconstruction





Reconstruction



Words to patients

- Counselling patient with T1N0 tongue is different than ones with T4N2b.
  - 5 year overall survival (90% vs 50%)
  - Impact on patient and **family** wishes
  - Curative vs palliative treatment
  - Locoregional recurrence
  - Functional impairment
  - Psychosocial concerns
  - Disfigurement

Thank you

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