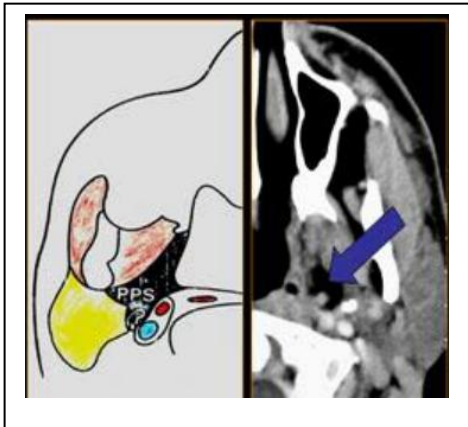


SUMMARY OF PARAPHARYNGEAL SPACES



- **PARAPHARYNGEAL SPACE:**
- Fat filled , triangular space at lateral aspect of pharynx
- It extend from **Base of Skull** , down to **Oropharynx**

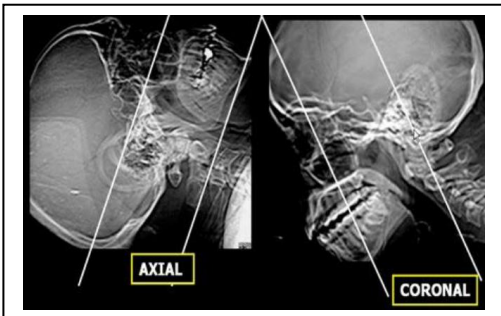


⇒ **Contents :**

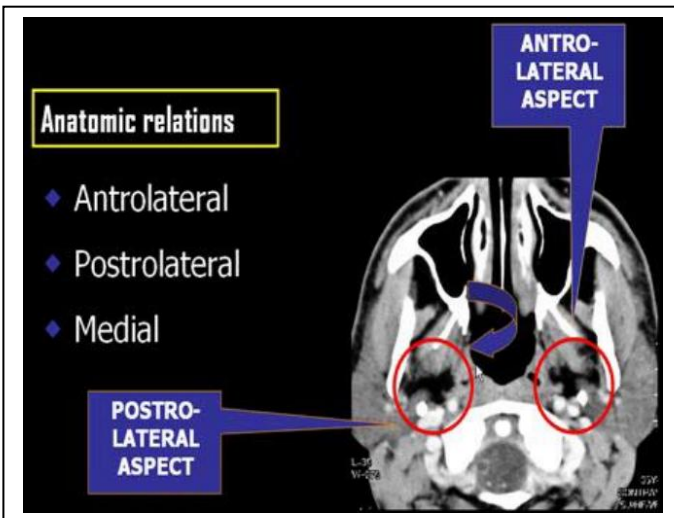
FAT	Arteries	Veins	Nerves
	-Ascending pharyngeal -Internal maxillary	-Pharyngeal veins	-branches of Mandibular N

⇒ **Imaging :**

- **CT & MRI * Axial & Coronal * 3 : 5 mm * Contrast is a must**
- **CT is better than MRI ← better bone delineation** (*Calc , erosions & Hyperostosis*)



⇒ **Anatomic Relations**

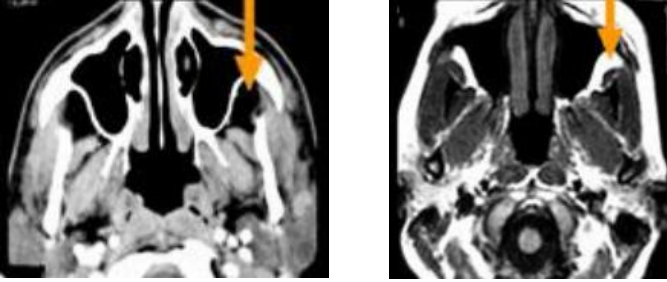



⇒ **Clinical Aspect:**

-Difficult to be evaluated clinically

-Presenting Symptoms:

- Sore Throat
- Dysphagia
- Voice change
- Post. Mandibular Mass

Antero-Lateral Aspect "Infra-temporal fossa"		Postero-lateral Aspect	
	☒ Masticator Space	☒ Parotid Space	
Contents	-Muscles of Mastication (massetter,temporalis, ptrygoid) -Mandibular Ramus -Mandibular N. Branch -FAT "arrow"	*Styloid Process divide it to :	
		Stylomandibular tunnel -Parotid gland "deep part" - ECA - Retromandibular v. -Facial N -Lymph n "seen if enlarged"	Retrostyloid space - ICA - IJV -Cranial N 9 , 12 - Lymph n
			



☒ Medial Aspect "Pharyngeal Mucosal space"

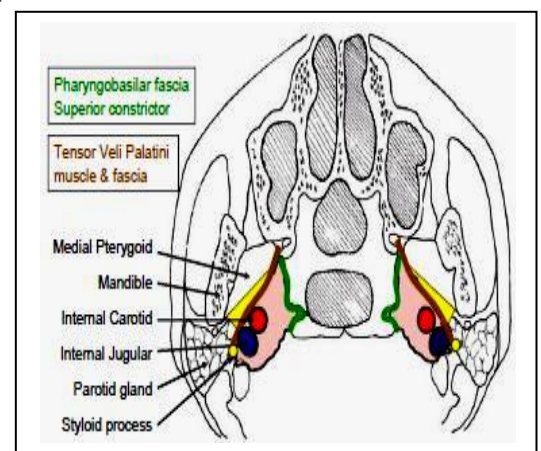
⇒ **(PBF) Pharyngo-Basilar Fascia**

at medial aspect of PPS

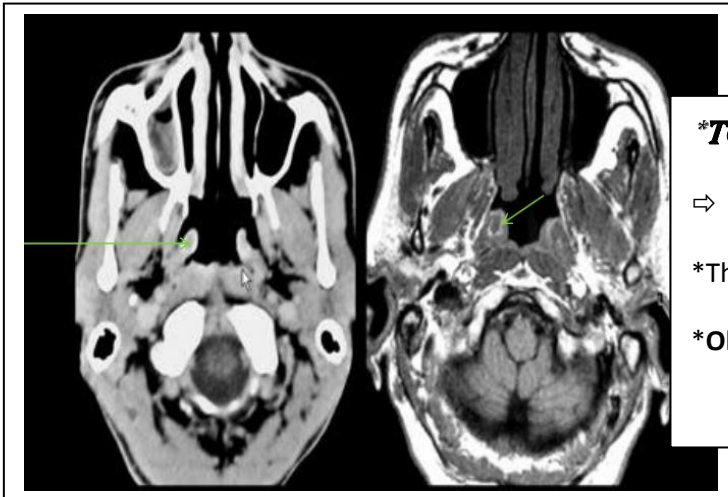
Separating Pharynx from para pharyngeal space

- Tough membrane
- Difficult to be infiltrated

"malignancy or sever infection"



→ Anatomy of Nasopharynx :



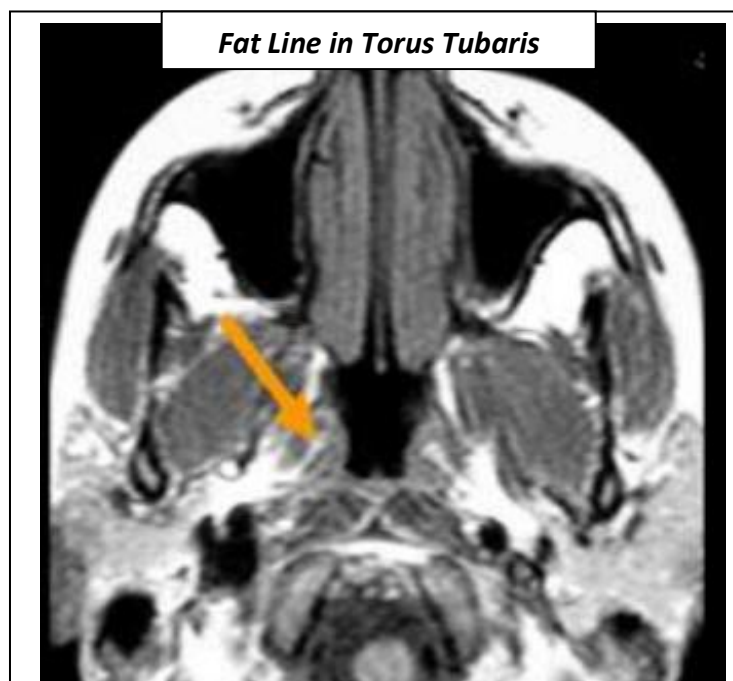
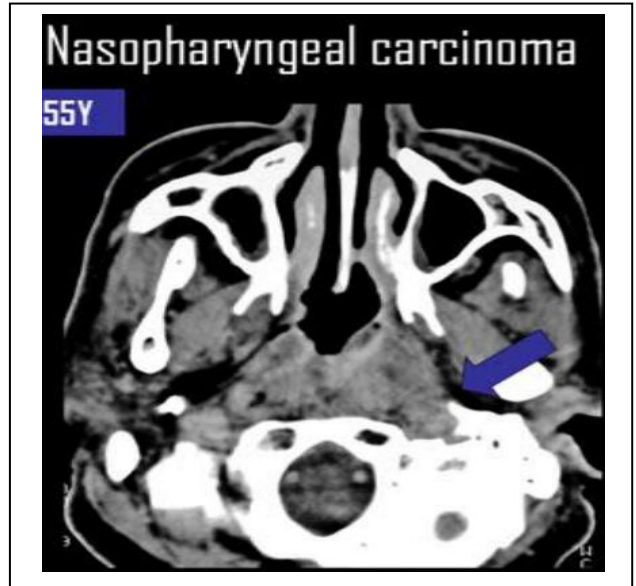
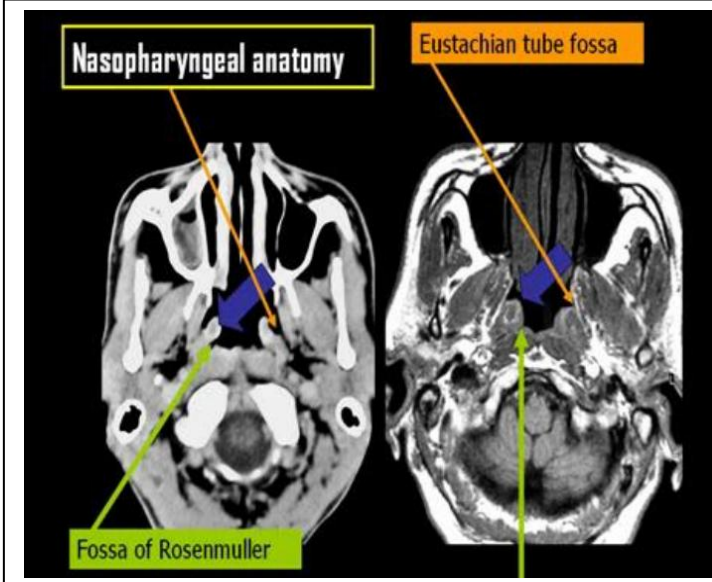
***TORUS TUBARIS :**

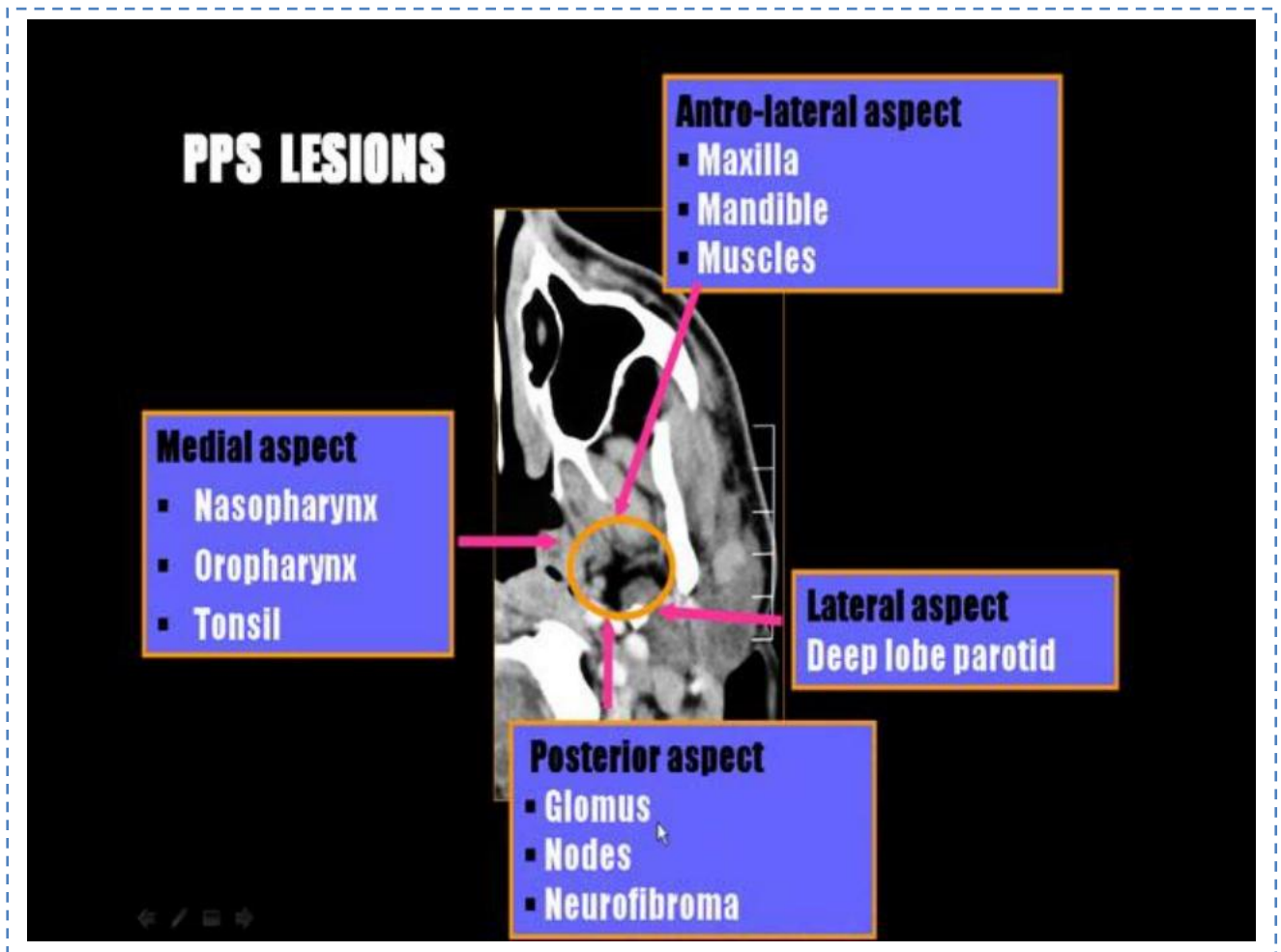
⇒ composed by **Tensor & levator palatine** Muscles

*Thin Fat plane in between them , only seen by MRI ,

***Obliteration of this fat line =**

earliest sign of nasopharyngeal cancer





N.B. Most Lesions arising from Parotid are Malignant

⇒ **PATHOLOGY**

@ **Medial Aspect of PPS:** → Displacement of PPS Fat Laterally

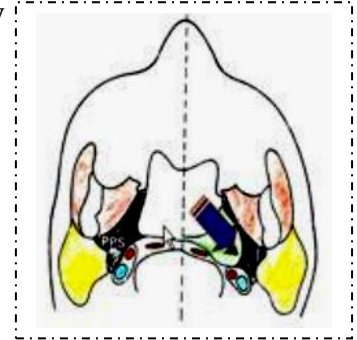
⇒ **98 % Carcinomas :**

- 80% **Squamous** cell type
- Others: Adenoid , Mucoepidermoid

⇒ **OTHERS**

- **Lymphomas**
 - **Sarcomas**
- } **In Children**

⇒ **Rare : Angiofibroma – Melanoma – Plasmacytoma**



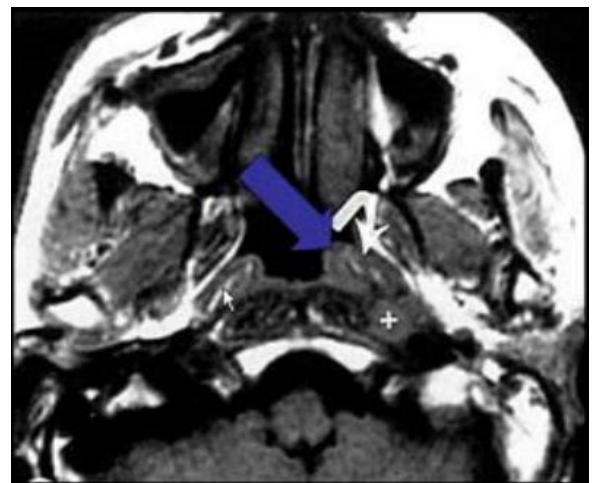
NASOPHARYNGEAL CARCINOMA

⇒ **Early Diagnosis :** "Beast seen by MRI "

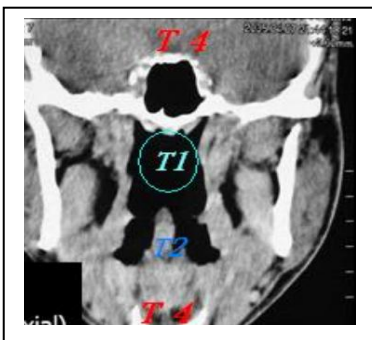
- **Signs :**
- T1 → **Obliterated fat** line between tensor & levator palate Ms.
- Extension in PPS Fat
- Obliteration of fat plane between Nasopharynx / Prevertebral ms

⇒ **STAGING :**

- T1 **Nasopharynx** confined
- T2 to **Orophar.** Or nasal Fossa
- T3 **Bones** or Sinus invasion
- T4 **Intracranial/Orbit/Hypophar.**

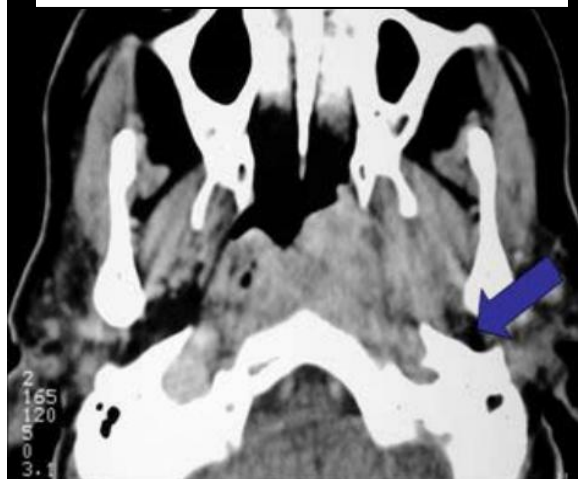


Rt intact Fat plain / Lt obliterated "early stage" + L.N.



Nasopharyngeal Carcinoma

parapharyngeal fat is displaced laterally





Invading Fat Of infra temporal Fossa
 "Very important note in reporting"

- Extensions**
- **Anteriorly** nasal fossa, maxillary sinus, infratemporal fossa
 - **Posteriorly** prevertebral muscles, carotid sheath
 - **Laterally** parapharyngeal space, mastecator space

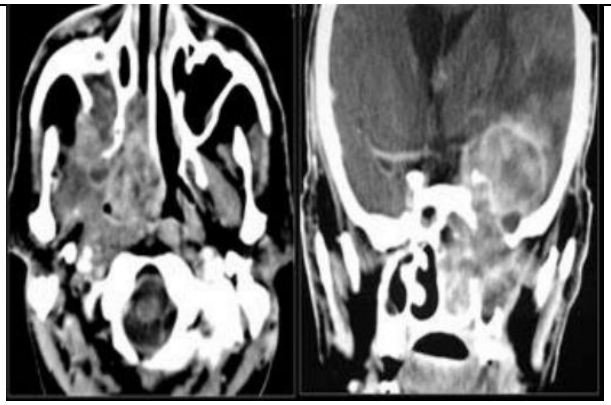
Medially nasopharyngeal air space, retropharyngeal to the contra lateral side
Inferiorly Oropharynx, tongue
Superiorly skull base, intracranial



Intra orbital Extension



Bulky cervical LN



Other Malignancies

<p>Lymphoma 20% - Child or Adult</p>	<p>Others 10% Melanoma-Palsmacytoma- Rhabdomyosarcoma Adenoid cystic carcinoma</p>
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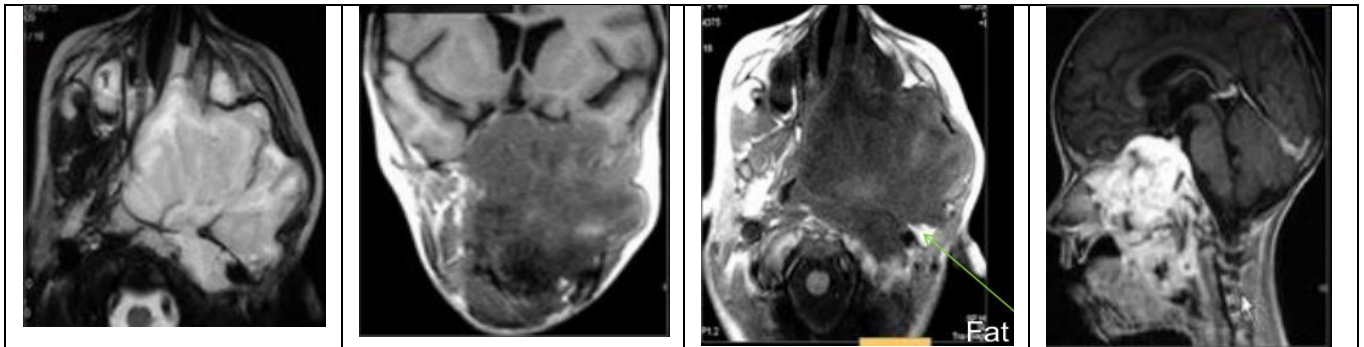
NASOPHARYNGEAL MASS IN CHILD is likely:

=**LYMPHOMA** , "More with *enlarged LN*"

=**RHABDOMYOSARCOMA** "less likely to enlarge LN . as it spread hv blood stream"

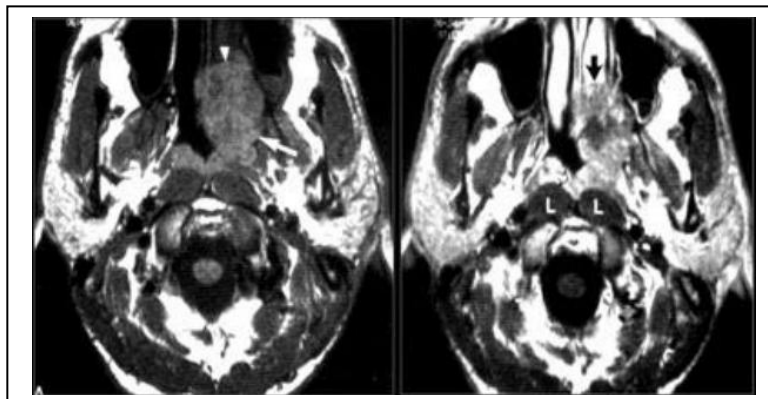
⇒ **Rhabdomyosarcoma**

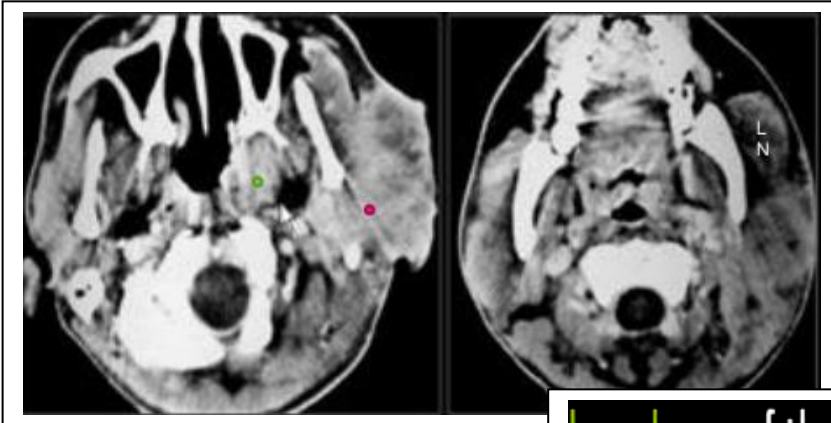
- Commonest Sarcoma in Head & Neck
- 70 % < 12 y
- **Site: "ON TSN"** Orbit > Nasophar.> Temporal bone > Sinuses> Neck
- Presentation : Pain / Cranial N palsy
- D.D.
 - *Nasophar. Carcinoma* → Older age
 - *Angiofibroma* → Boys only - Highly vascular



⇒ **Adenoid cystic carcinoma**

- Low grade tumor → Mets very late
- More suggested with presence of *Muscles atrophy of the same side* of
- the lesion ← as it invade & thickening the supplying Nerve



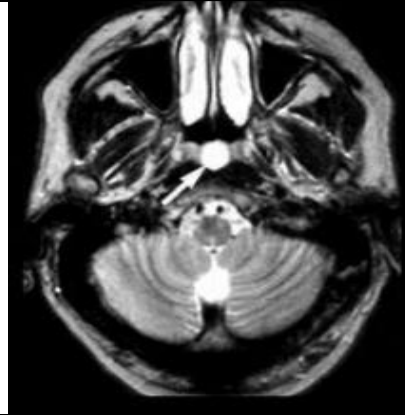


Lymphoma of the nasopharynx and parotid gland

BENIGN LESIONS OF NASOPHARYNX

Tornwaldt's cyst

- ◆ A mucous retention cyst
- ◆ Occurs in the midline nasopharynx
- ◆ Low signal in T1 and high signal in T2 WIs



Nasopharyngeal angiofibroma

⇒ Teenager BOYS ONLY

⇒ Arise near to *Sphenopalatine Foramen*

"Sphenopalatine foramen determined opposite to ptergo-palatine fossa"

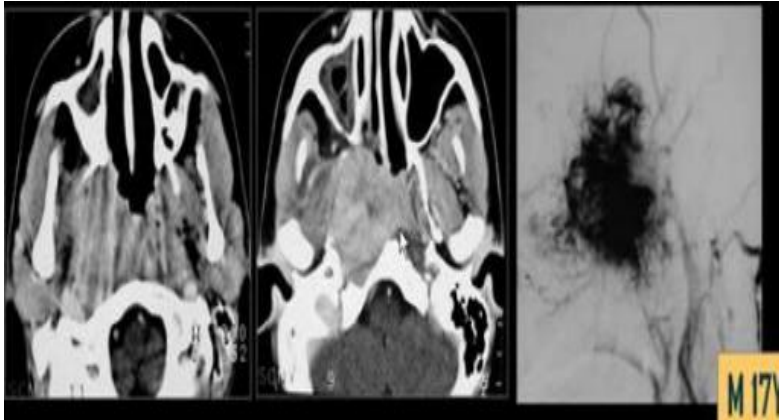
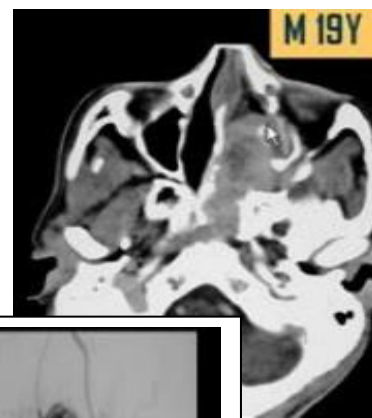
⇒ **Highly vascular** → Intense enhancement

⇒ **Holman-Miller sign** "Classical"

= *Forward displacement of Maxillary sinus posterior wall*

⇒ **STAGING:**

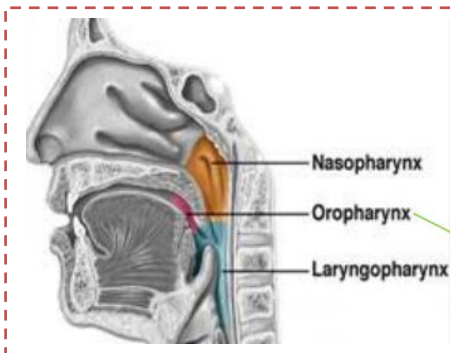
- I Confined to the nasopharynx
- II Extension into pterygopalatine fossa or masticator space
- III Intracranial or intraorbital extension



*Nasopharyngeal Angiofibroma Has a characteristic extension to sphenoid sinus.



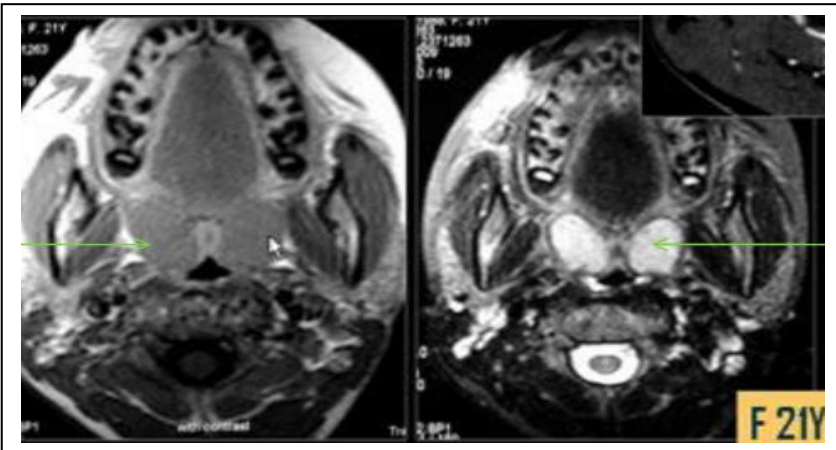
OROPHARYNX



⇒ Pathologies : - Tonsillitis - Adenoids - Orophar. Cancer
⇒

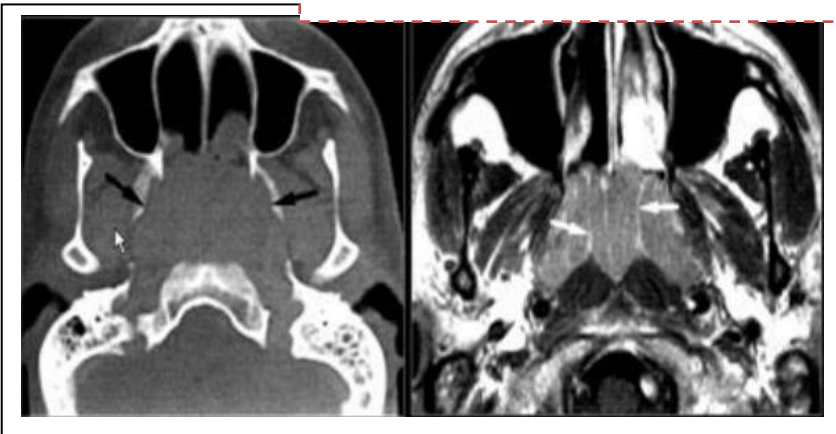


→ Tonsillitis

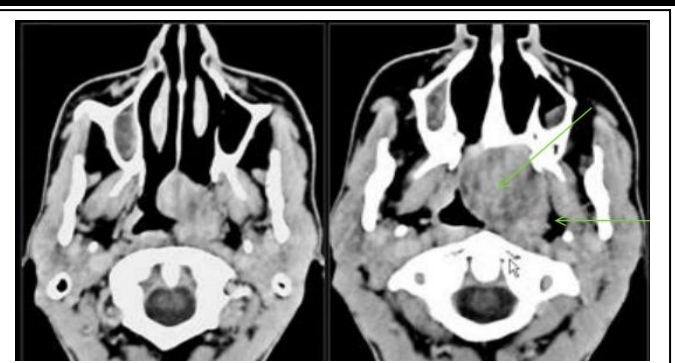
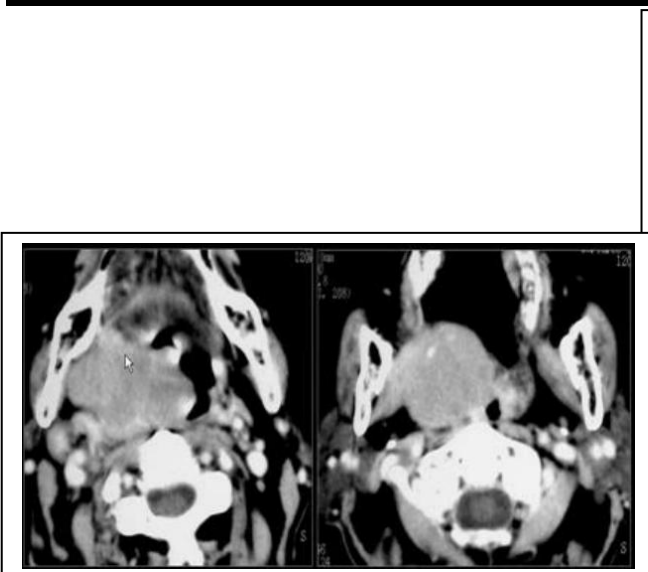


→ Lymphoid Hyperplasia "Adenoids"

Confirmed by presence of Fat Lines with in the lesion in T1

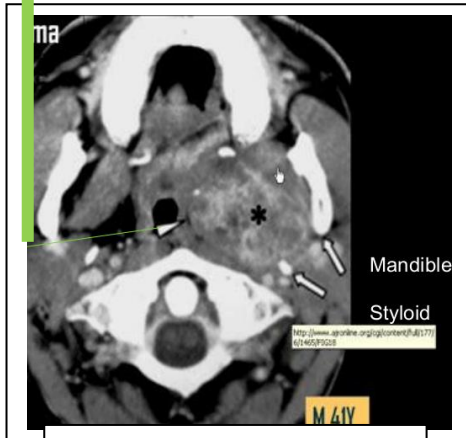


→ Oro-pharyngeal Carcinoma

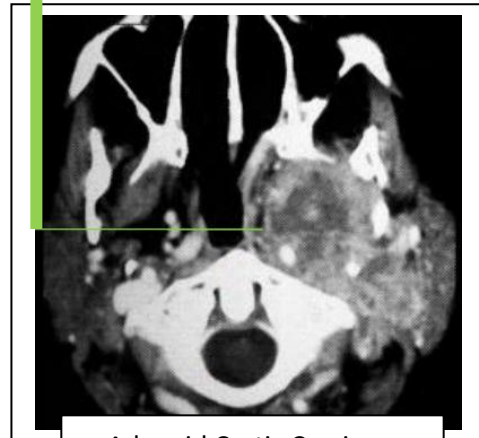


* ttt Radiation ← **NASO-PHARYNGEAL (CARCINOMA) ORO-PHARYNGEAL** → ttt surgical
 = Differentiation of both types mainly by site of main bulk of the lesion.

Look For Direction of Fat displacement to Assess source of

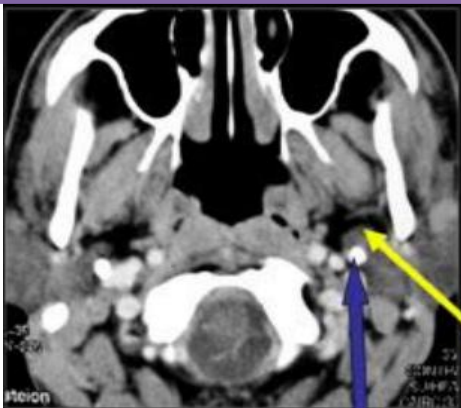


Mucoepidermoid Carcinoma



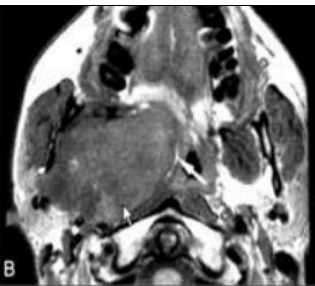
Adenoid Cystic Carcinoma

⇒ Parotid Space Masses displace styloid Process Posteriorly

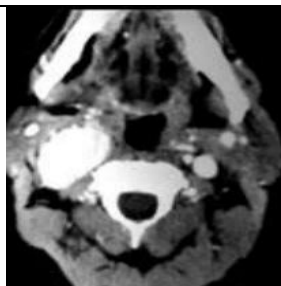


- Glomus
- ◆ Nodes
- ◆ Neurofibroma

⇒ Post Styloid Space Masses displace styloid Anteriorly



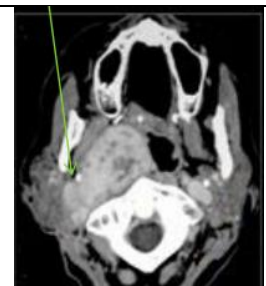
Deep lobe parotid T



Glomus



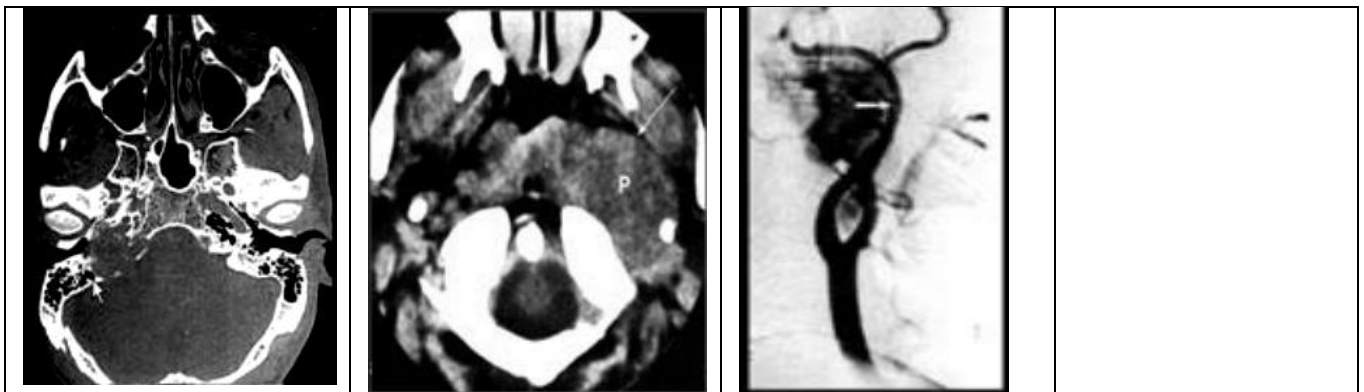
Cystic Neurofibroma



Neurofibroma

GLOMUS

- Rare / 1 : 1300000
- Slow growing, , Hypervascular Tumor
- Male 1 : 3 Female / 40 : 60 y
- Arise from glomus bodies of IJV
- 4% → Mets @ Lungs, Liver, Nodes , Bones
- **Imaging:**
 - Assessed by Conventional or CT Angio **NOT** MR Angio
 - Large at presentation 2:6 cm→ Mass in Jugular Fossa with bone destruction
 - Intra & Extra cranial Extension.
 - MRI → **Salt & Paper appearance**



Lymphadenopathy

- ◆ **Reactive** homogenous ,young patient less than 1cc
- ◆ **Lymphoma** bulky homogenous
- ◆ **Direct** invasion from near –by malignancy
- ◆ **Inflammatory** septic focus abscess formation

⇒ **Mets Node:**

- **Commonest** nodal disease
- **Enlarged**>0.8cm+**Central** necrosis +**fat** stranding

JUNE 2018

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From Lecture of Prof. Mamdouh Mahfouz