

# Salivary Glands

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# Anatomy

## Paired Major Salivary glands

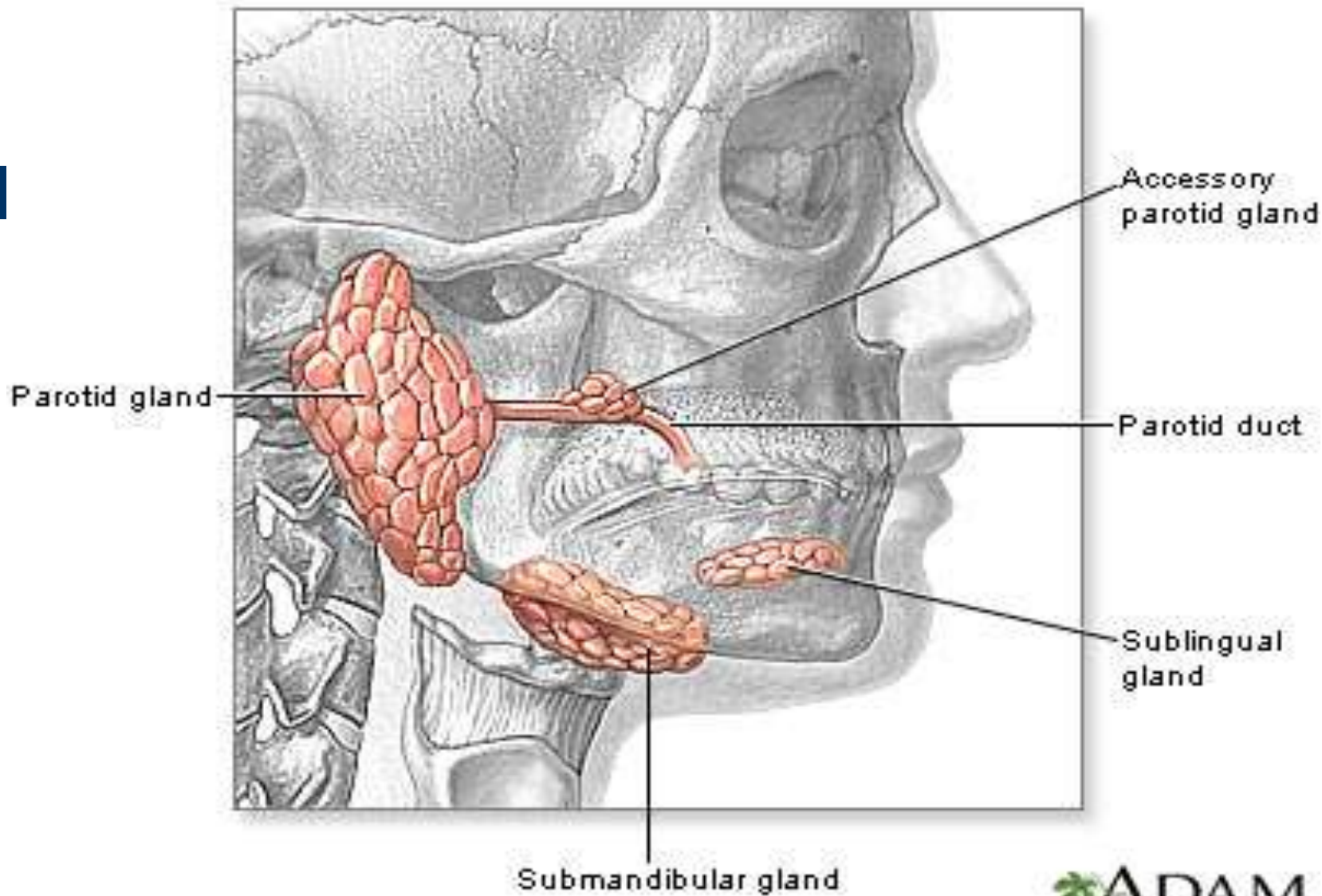
- Parotid: Stenson duct → 2° molar tooth.
- Submandibular: Warton duct → lateral to frenulum.
- Sublingual: in Warton duct.

# Anatomy

## Minor Salivary Glands

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- In Soft palate, Hard palate , gingiva, lips.
- In all oral mucosa except the upper surface of the tongue.



A decorative graphic on the left side of the slide, consisting of a light green vertical bar and a dark blue horizontal bar with rounded ends.

Saliva: 1000 – 1500 ml/day

# Sialadenitis

- Acute
- Chronic

# Acute

- Viral: Mumps
  - Self limited viral infection.
  - Common in children.
  - Diffuse inflammation of one or both parotid glands.
  - May be associated with pancreatitis, orchitis in adults, oophritis is rare.

- Acute Bacterial:
  - Dryness of mouth.
  - Ascending infection.
  - Cause Staphylococcus aureus.
  - Seen in elderly post.op and common in Parotid gland.



# Chronic

- Autoimmune (sjogren syndrome)
  - Inflammation causes destruction of major and minor salivary glands)
  - 90 % women 35- 45 years of age.
  - 60% associated with SLE, Rheumatoid arthritis or scleroderma.

# Sialolithiasis

- Most common in the duct of submandibular salivary glands.
- Intermittent obstruction → chronic sialadenitis  
→ dilatation of the ducts and atrophy of acinar cells → superimposed infection and microabscesses .



# **SALIVARY NEOPLASMS**

- 70-80% of Salivary tumors → Parotids.
- 70-80% of Parotid tumors → benign.
- 80% of benign tumors → pleomorphic adenoma.

# Pleomorphic adenoma

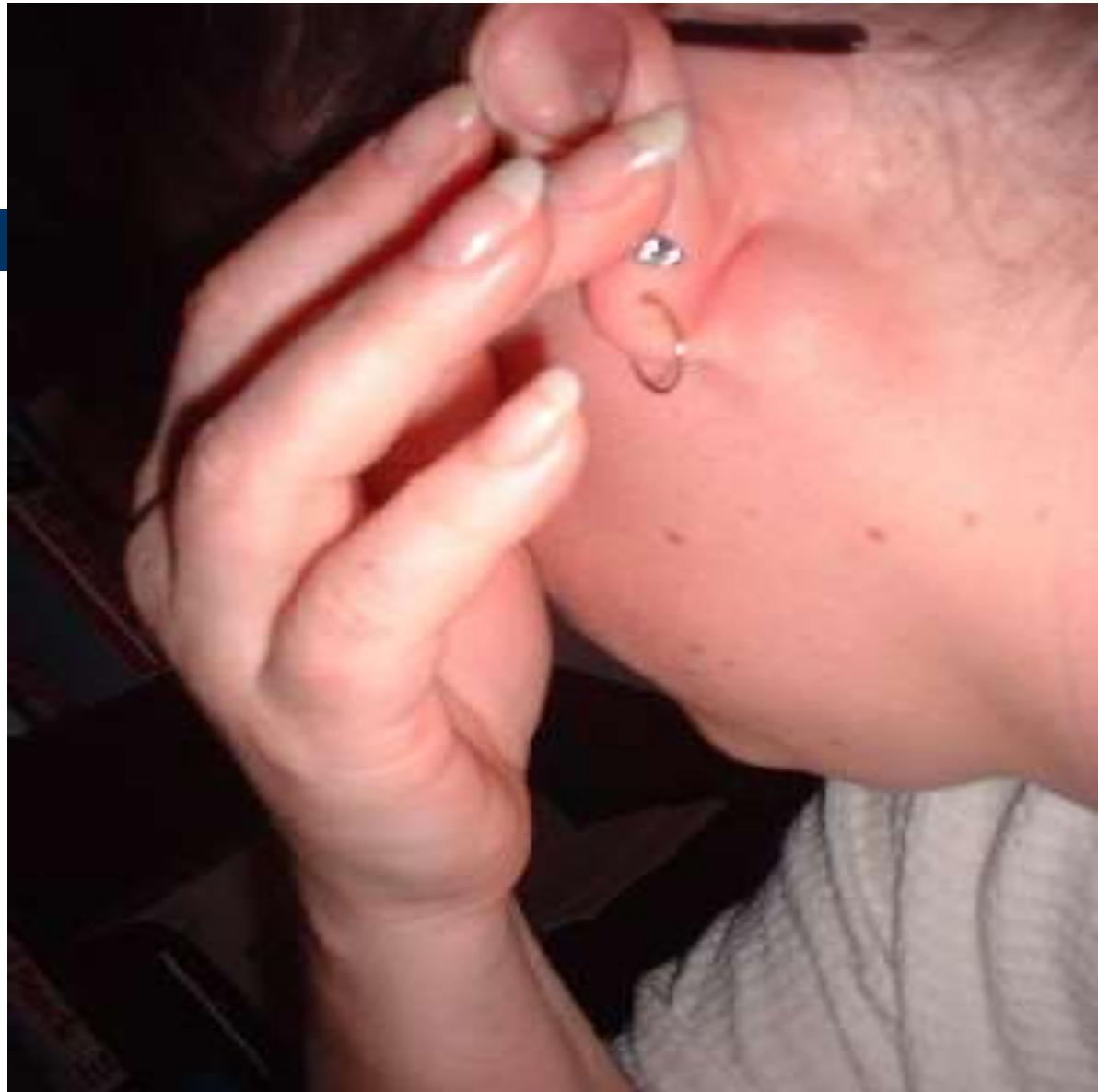
- Most common.
- Peak age: 5<sup>o</sup> decade.
- Proliferation of:
  - epith.
  - myoepith.
  - stroma tissue → resemble cartilage and bone.

# presentaion

- Solitary Painless mass in Parotid area, firm, slowly growing, mobile.
- Intraoral pharyngeal mass extending from parapharynx (deep lobe)
- 2-10% may turn into malignant (usually adenocarcinoma)



8/23/2002 3:08 PM







- Gross appearance: irregular round to ovoid mass, well defined borders, white to tan cut surface.
- Sometimes have haemorrhage and infarcted areas.



# Papillary Cystadenoma Lymphomatosum(Warthin)

- Occurs only in Parotid.
- 10% bilat.
- More in males(90%)
- More in smokers.
- Cystic mass(may be fluctuant)
- Doesnot change into malignancy.

- Gross appearance: ovoid to spherical mass with variable no. Of cysts that excude a clear fluid.



# Rare Benign Types

- Oxyphilic adenoma, oncocytic adenoma, basal cell adenoma, sebaceous adenoma, canalicular adenoma.

# Benign non epithelial tumors

- Haemangioma:most common in children,compressible mass,ttt include steroids , angiogram & surgery,spontaneous regression may occur.
- Lipoma
- Lymphangioma(cystic hygroma):50% manifest at birth,80% by 2 years.



# Malignant Tumors

- 96% → discrete mass.
- 4% → diffuse enlargement.
- 12-24% → painful.
- 17% → fixed to masseter.
- 8-26% → fascial nerve dysfunction.
- 9% → skin ulceration.
- Formication: parasthesia described as feeling of ants crawling on skin.

- LN metastases increase with high grade mucoepidermoid and squamous cell ca.
- Less with adenoid cystic acinic cell ca.

## Risk of malignancy:

20% in Parotids.

40% in submandibular.

60% in minor salivary glands

# Malignant Tumors

- Mucoepidermoid:
  - most common.
  - usually in parotid, 2° site is palate.
  - peak age 5° decade.
  - high or low grade.
  -

# Malignant Tumors

- Adenoid cystic :2° most common, but is the most common in other glands than parotid.
- Usually well defined but not encapsulated.
- Rarely involves lymph nodes, may have perineural invasion, may reach base of skull.
- Has a tendency for distant mets. specially lung.

# Malignant Tumors

- Acinic cell Ca.: 2° most common parotid and paediatric ca.
- Has a good prog.:
  - 5 years-----85%
  - 10 years-----68%
  - 25 years-----50%

# Malignant Tumors

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- Adenocarcinoma and Squamous Cell Carcinoma are rare and aggressive types.

# Evaluation

- A complete hx. Including onset(first time the mass was noticed, uni or bilat., progression,hx. Of pain, hx. Of trauma,contact hx. ....etc)



# Evaluation

- P/E. Should include in addition to the mass :
  - The rest of salivary glands.
  - Fascial Nerve examination with all its branches.
  - Oral examination for pharyngeal bulge, and orifices of salivary ducts.
  - Cervical lymphnodes.

# Evaluation

- In Diffuse Swelling: to rule out sialadenitis
  - Antibiotic trial for 10 days.
  - Sialogram.

# Radiological Evaluation

- CT Scan and MRI:

To determine the extension of the  
disease.

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Se: 4  
SN S140.56  
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QXI

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DOB: May 12 1943  
Aug 27 2001  
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MF:1.1

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STND

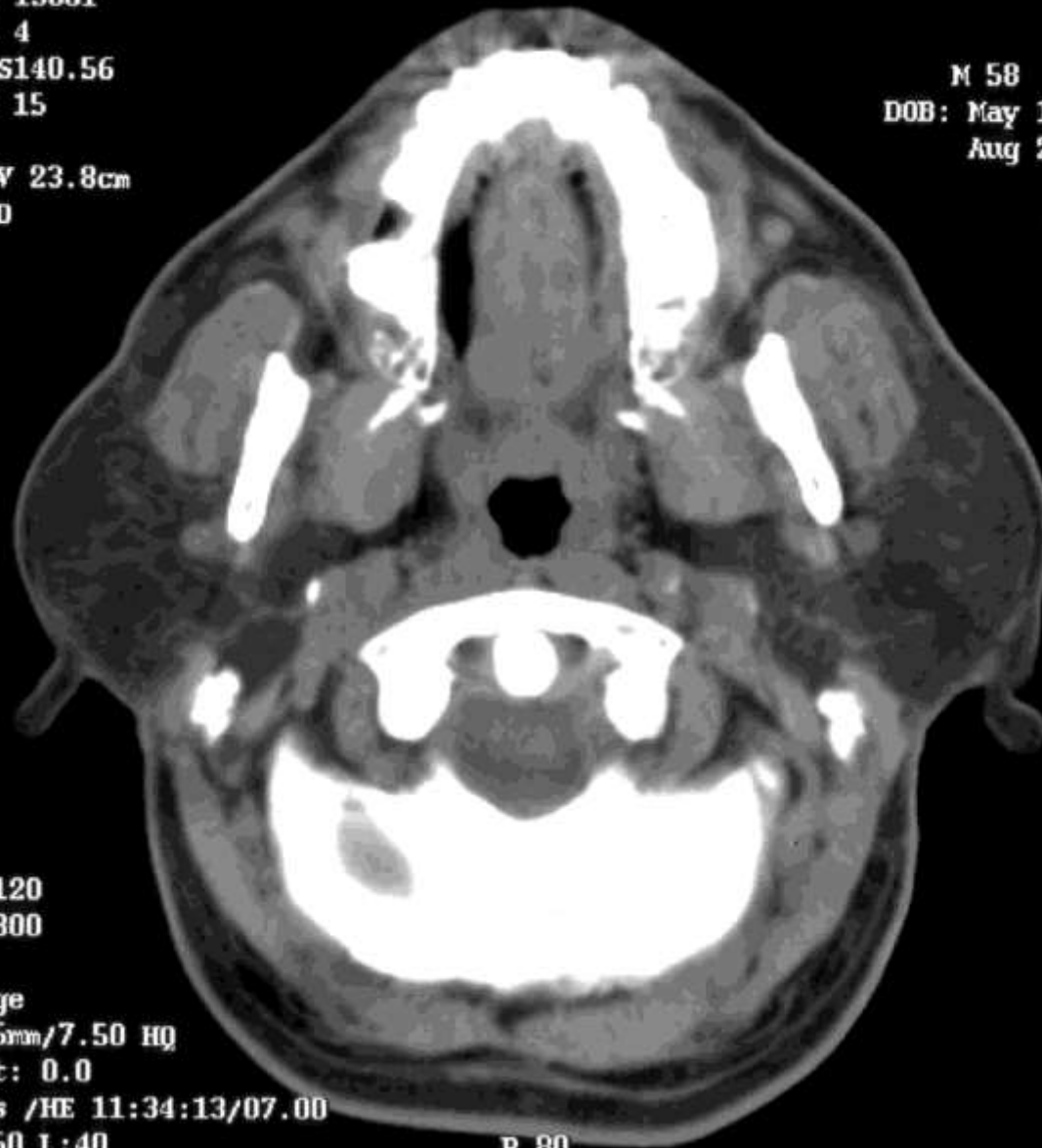
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P 80



LightSpeed QX/i SYS#CT01\_0C0 A 103

QXI

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SN S235.13

Im: 6+C

M 34

May 11 2001

512

MF:1.1

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STND

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mA 200

Large

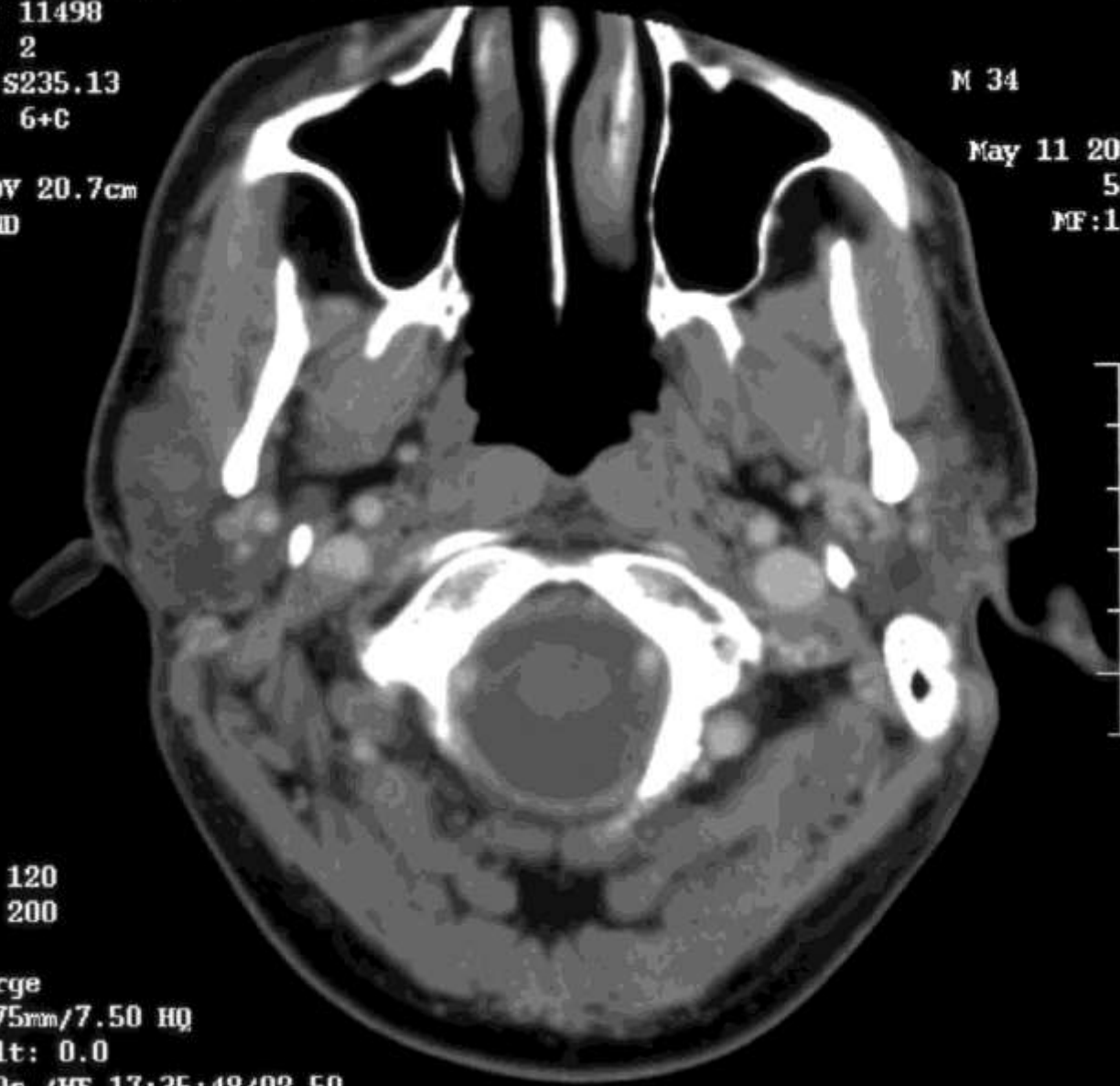
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QXI

Ex: 8064

Se: 2

SN S77.92

Im: 14+C

F 84

DOB: Dec 15 1916

Jan 24 2001

512

DFOV 20.8cm

STND

R

1  
0  
4

kV 120

mA 240

Large

3.75mm/11.25 HQ

Tilt: 0.0

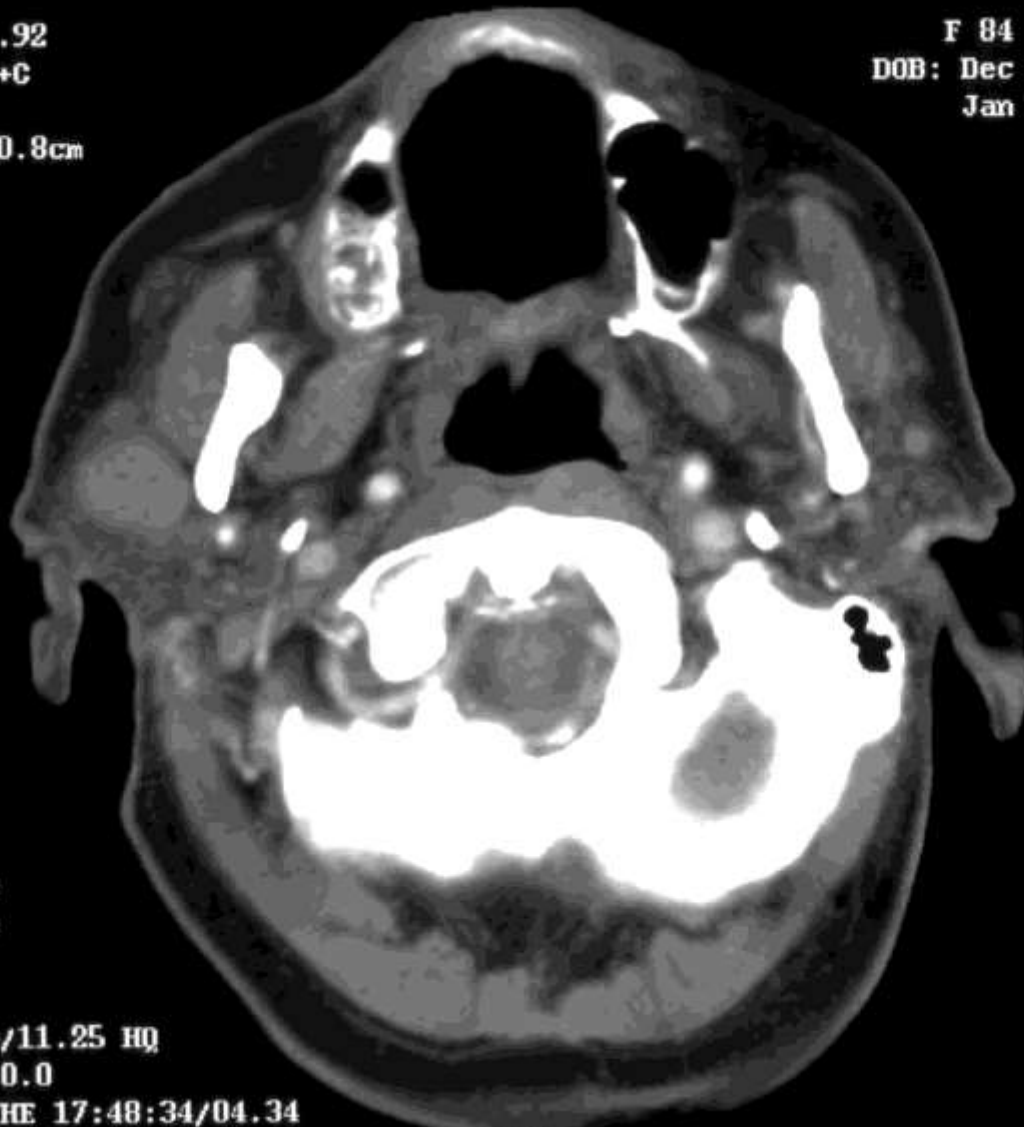
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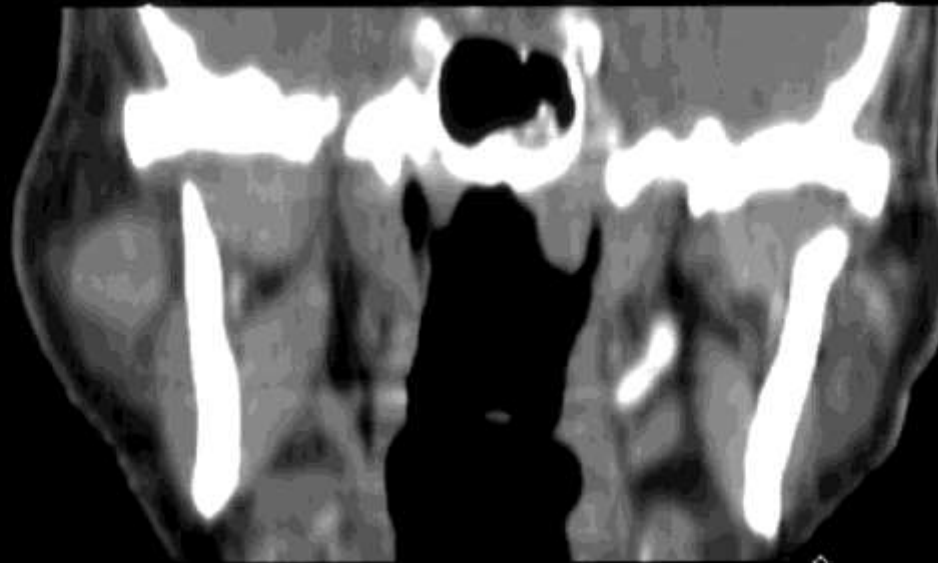
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P 69



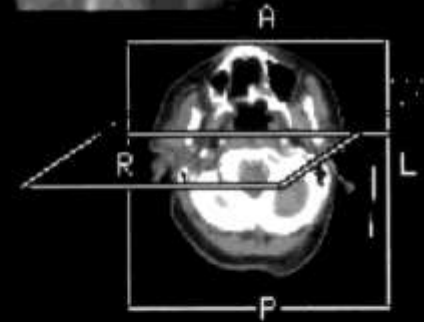
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0.4/  
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mA 240  
1.8  
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Tilt: 0.0  
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W = 300 L = 35

I 22



Reformat 21  
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Se: 102 +c  
A: 42.9

S 186

QXI

F 84  
Jan 24 2001

DFOV 20.8 cm  
STANDARD

LightSpeed QX/i SYS#CT01\_000

AXI

QXI

Ex: 11749

Se: 3

SN S152.57

Im: 4+C

M 41

DOB: Jan 10 1960

May 19 2001

512

MF:1.2

DFOV 19.2cm

STND/P

R

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2

L

7  
8

kV 120

mA 250

Small

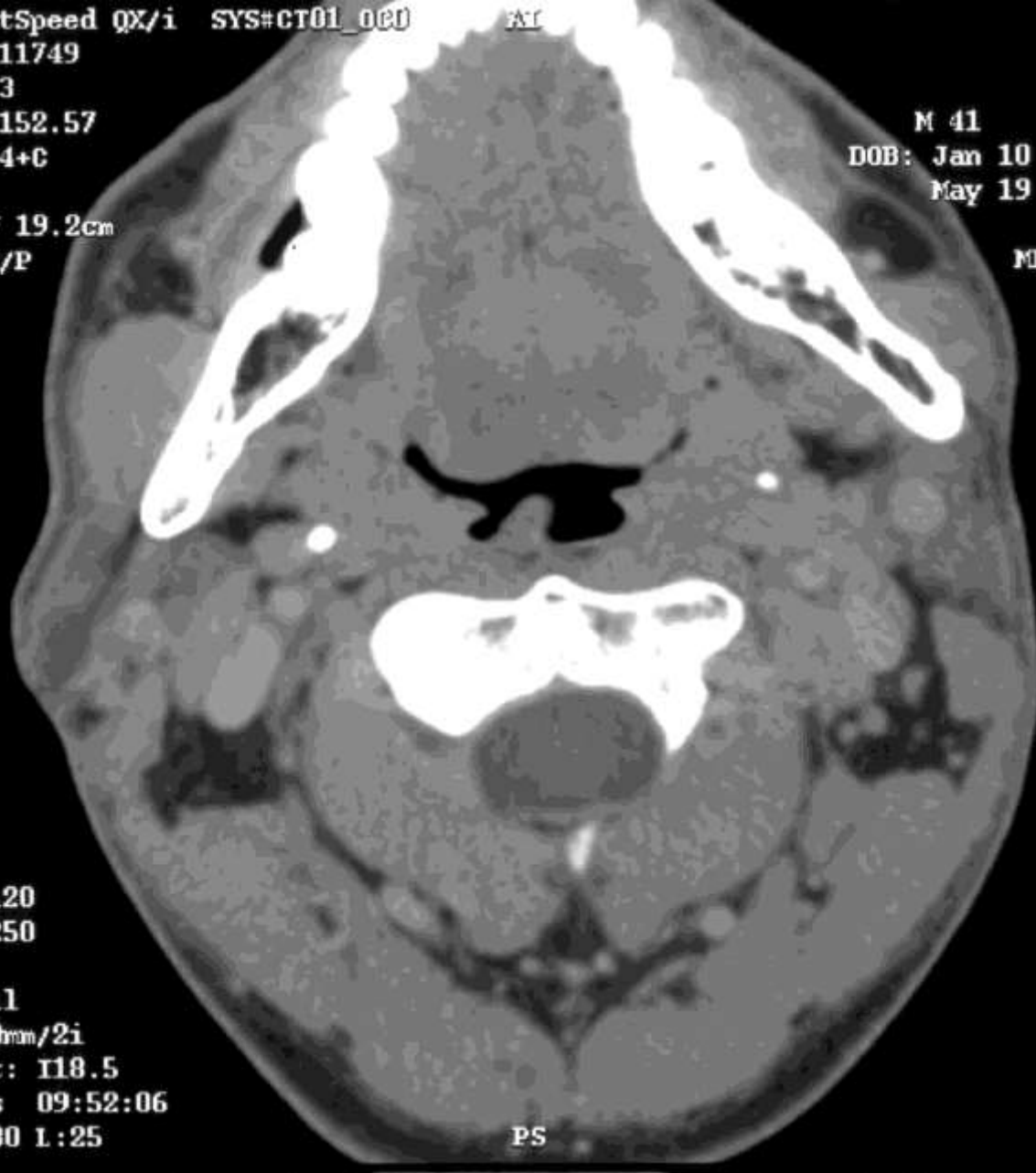
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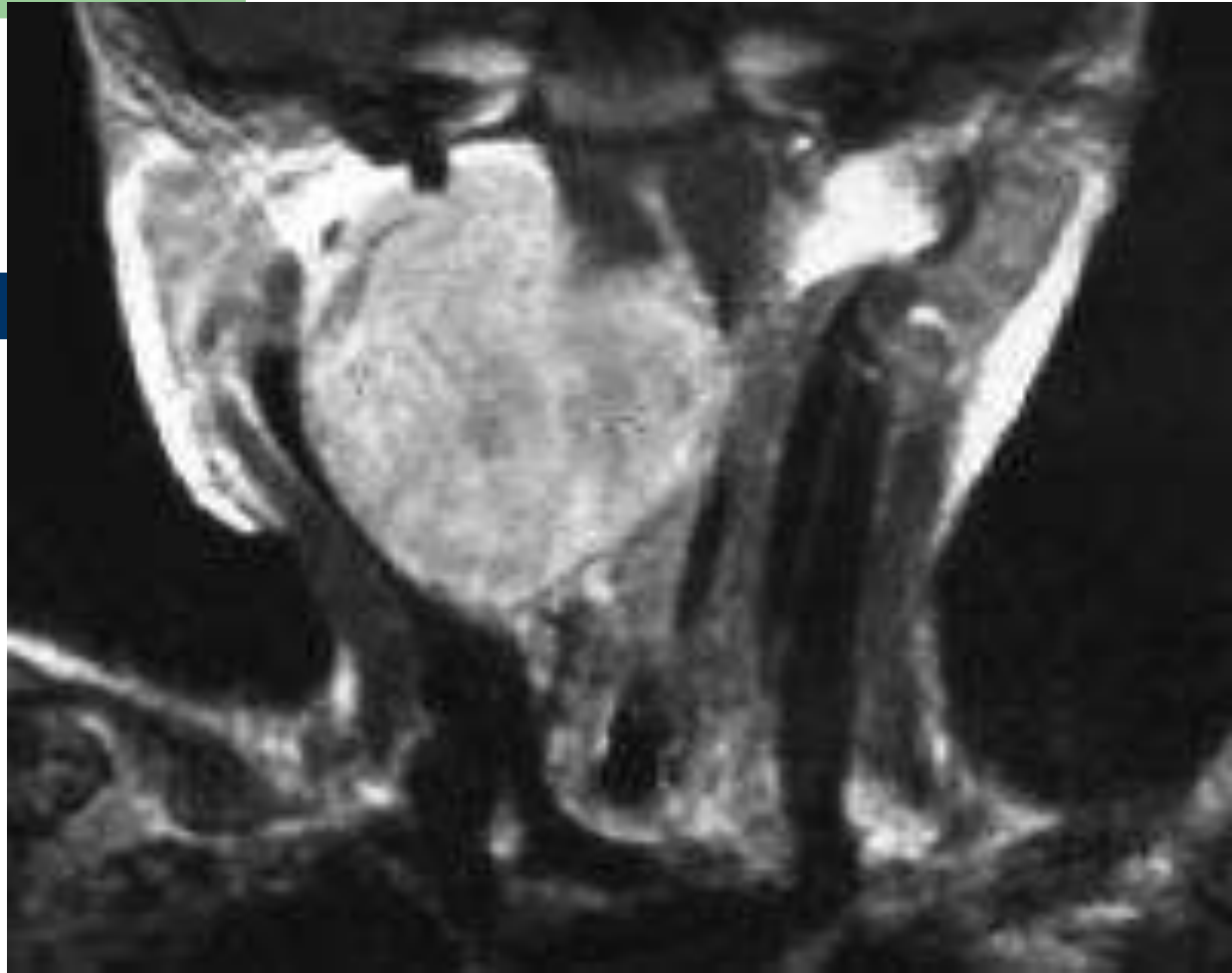
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PS





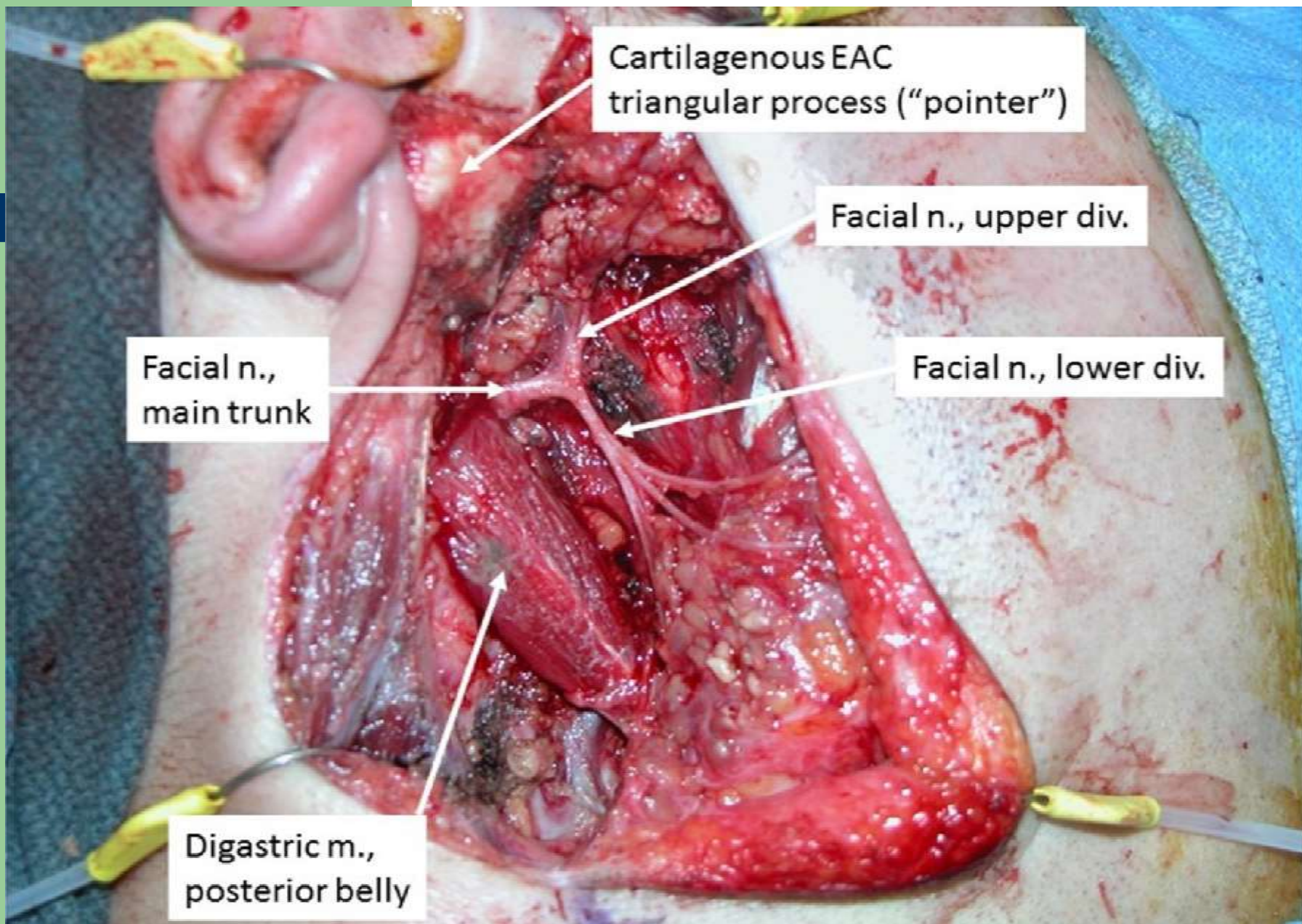


# Fine Needle Aspiration

- The accuracy, sensitivity and specificity reported in the literature vary from 84-97%, 54-95% and 86-100% respectively.
- Some surgeons argue its importance:
  - ttt always surgery.
  - tumor implantation.

# Treatment

- Problem: fascial nerve passes through the Parotid.
- Benign: superficial parotidectomy with nerve preservation.
- Malignant: total parotidectomy with nerve preservation.  
if one branch is involved → excision of that branch.



Cartilagenous EAC  
triangular process ("pointer")

Facial n., upper div.

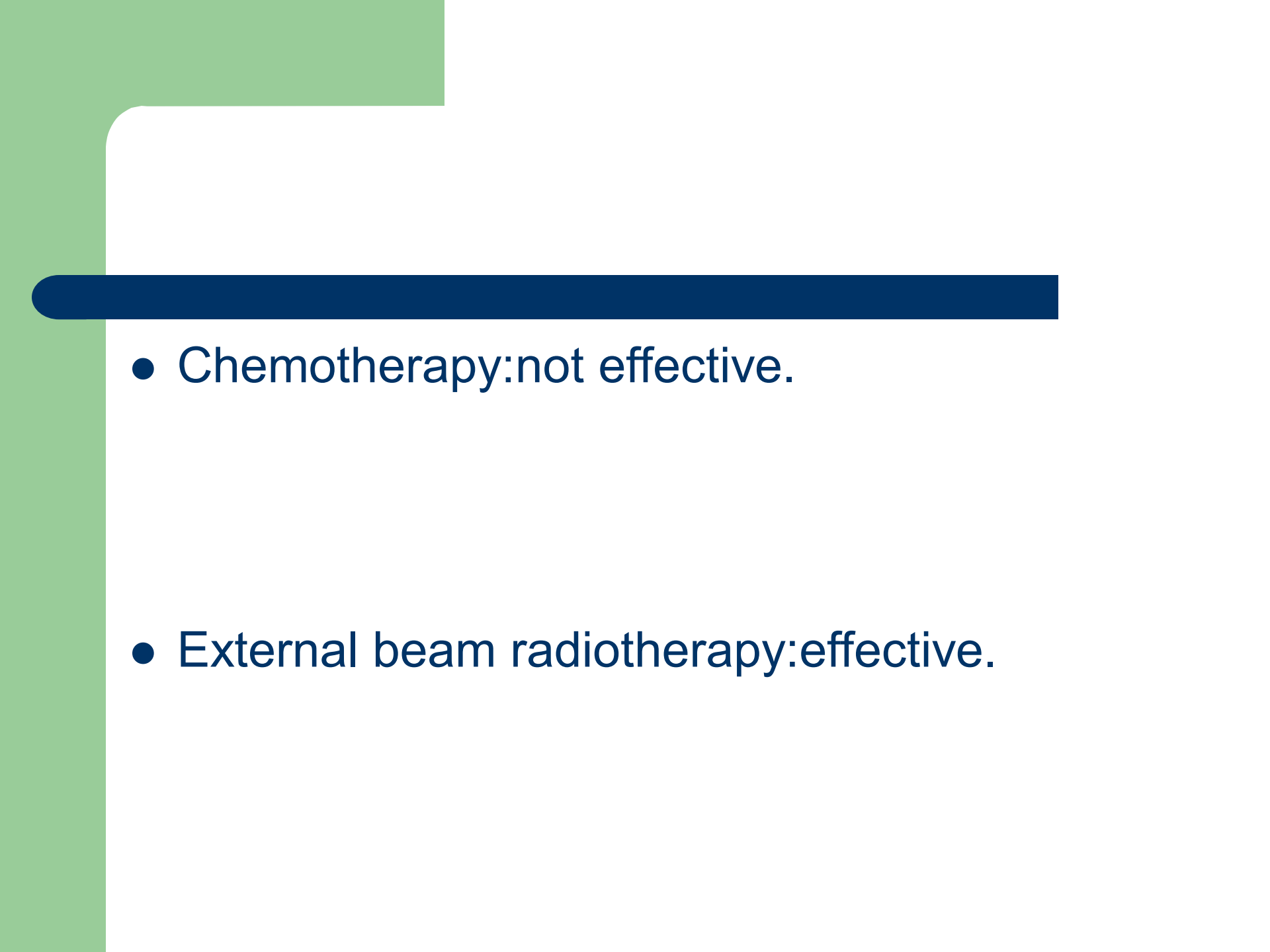
Facial n.,  
main trunk

Facial n., lower div.

Digastric m.,  
posterior belly

# Neck Dissection

- If positive LNs → Neck Dissection.
- No consensus on neg LNs.
  - in high grade mucoepidermoid, squamous or adenocarcinoma → prophylactic neck dissection may be justified.

- 
- Chemotherapy: not effective.
  - External beam radiotherapy: effective.

# Submandibular

- Total excision of the mass with preservation of marginal mandibular, hypoglossal, lingual nerves if possible.
- If involved should be sacrificed, sometimes with platysma and skin.

# Minor Salivary Glands

- Excised sometimes with adjacent bone as hard palate.
- Necrotizing sialometaplasia: a self limiting disease between hard and soft palate that may ulcerate and mimic malignancy.