

professional skills 1
3rd year
semester 6
radiography

Sialography

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The Mouth

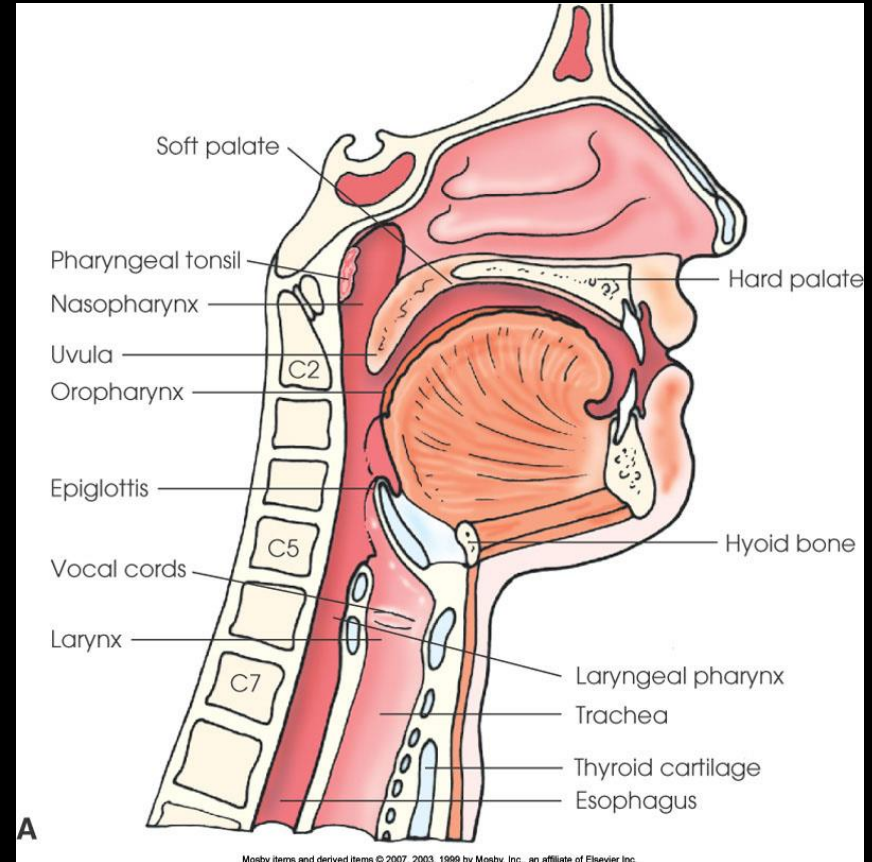
- Also called oral cavity
- Beginning digestive system
- Encloses dental arches (rows of teeth)
- Receives saliva from salivary glands

Anatomy: Mouth

- 2 Divisions
 - Oral vestibule: Space between teeth and cheeks
 - Oral cavity or mouth proper
 - Space between dental arches
 - Roof formed by hard and soft palates
 - Floor formed by tongue
 - Communicates with pharynx posteriorly via oropharynx

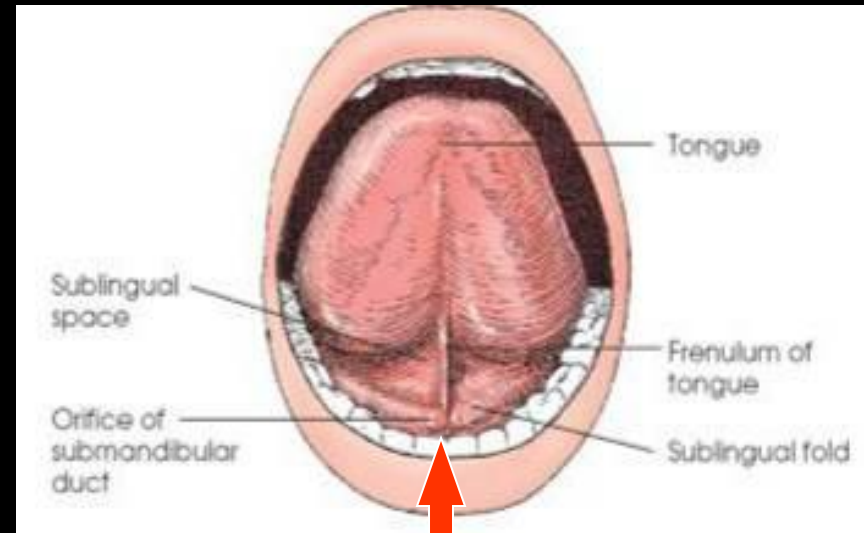
Anatomy: Mouth

- **Hard palate**
 - Most anterior portion of roof
 - Formed by maxillae and palatine bones
- **Soft palate**
 - Begins behind last molar
 - Movable musculomembranous structure



Frenulum

- Median vertical band on inferior surface of tongue
- Restricts posterior movement of anterior part of tongue



Teeth

Purpose?

Mastication (chewing)



Tongue

Apex- anterior

Base- posterior

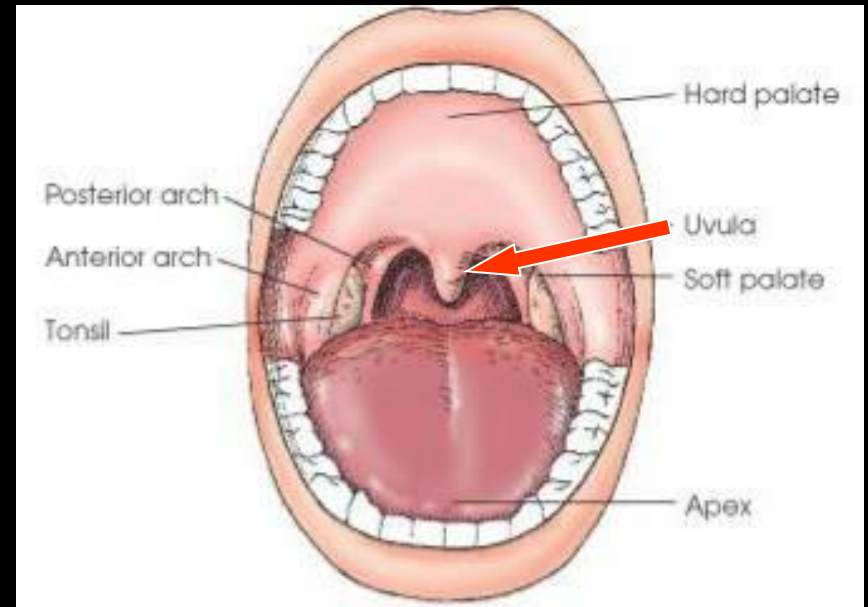
- Sublingual space
 - Part of floor that lies under tongue

Uvula

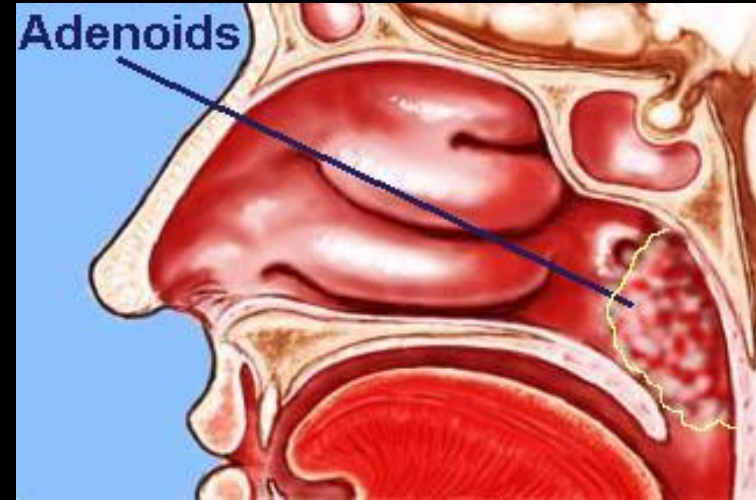
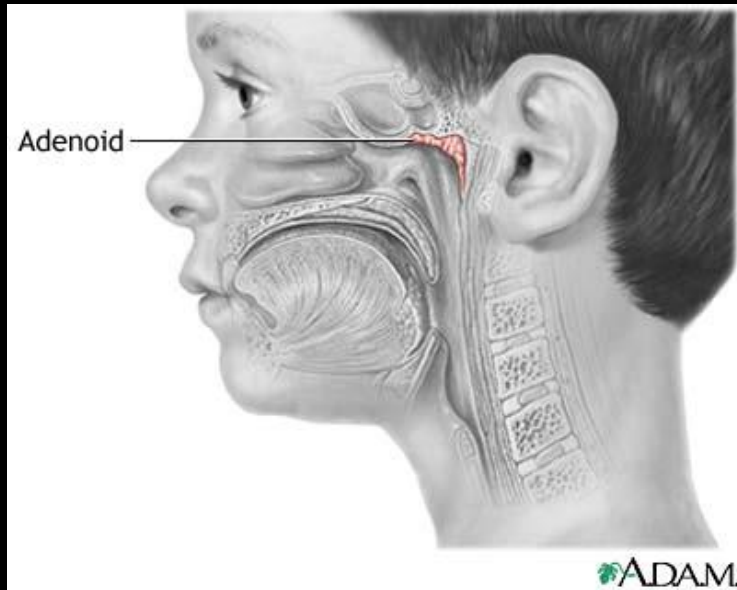
Small pendulous process in center of inferior border of soft palate

Purpose?

Helps keep food from going wrong way down esophagus when swallowing



Adenoids



adenoids help keep body healthy by:

- trapping harmful bacteria and viruses that you breathe in or swallow
- contain cells that make antibodies to help body fight infections

How many salivary glands?

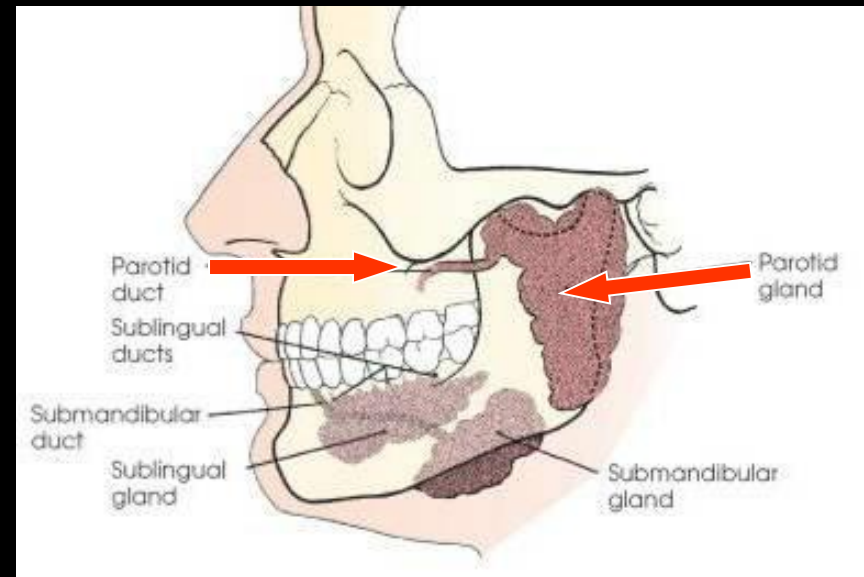
- 3 pairs
 - Parotid (para-otid-situated near the ear)
 - Submandibular
 - Sublingual
- Produce how much saliva per day?
about 1 Liter

What does saliva do?

- Saliva mixes with food during mastication
 - Softens food
 - Keeps mouth moist
 - Contributes digestive enzymes

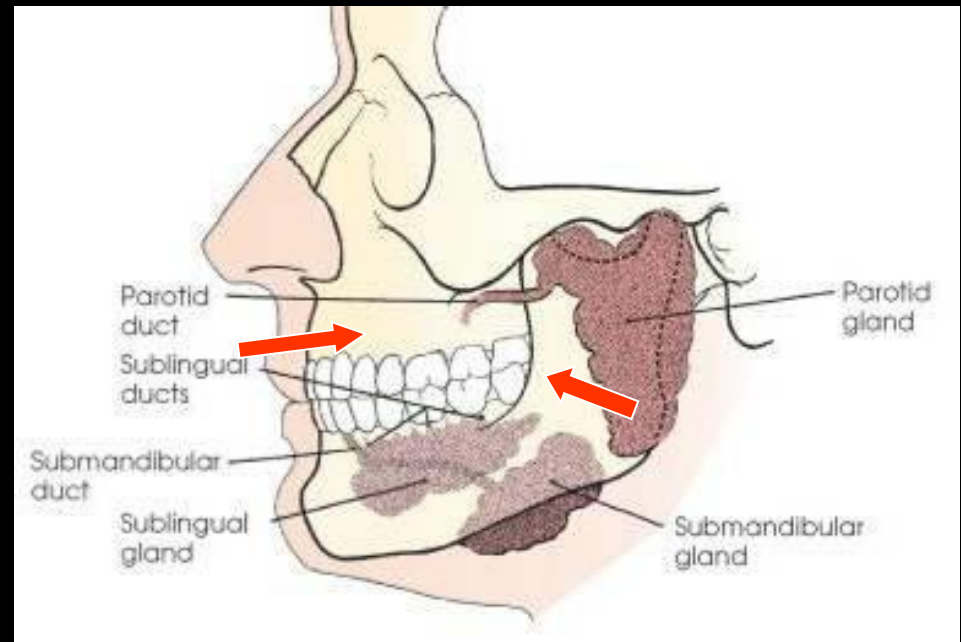
Parotid Glands

- Largest salivary gland
- Lies immediately anterior to external ear
- Parotid duct opens into oral vestibule opposite 2nd upper molar



Submandibular Gland

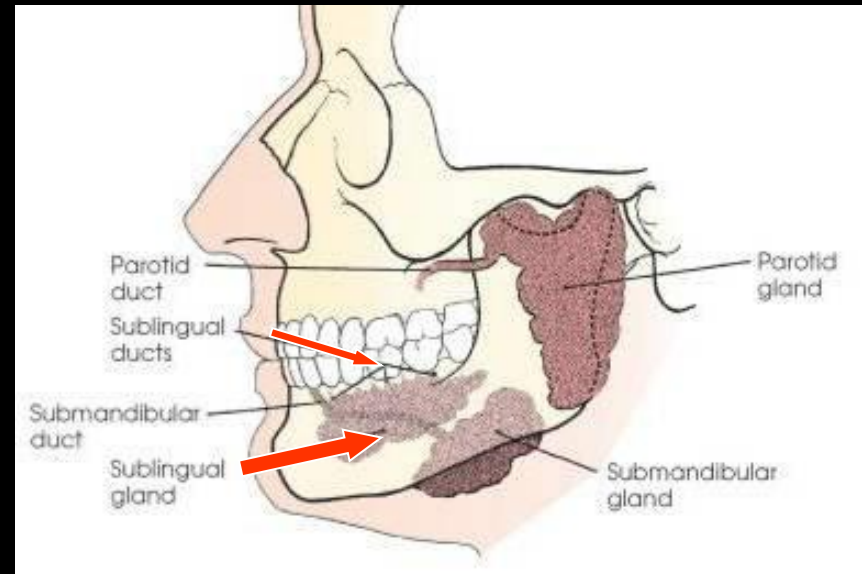
- Extends posteriorly from below 1st lower molar to angle of mandible
- Greater portion extends **below mandible**
- Submandibular duct opens **into mouth** on side of frenulum



Sublingual Glands

Smallest pair

- Located in floor of mouth
- Numerous, small sublingual ducts open into floor of mouth



Sialography

- Radiologic exam of salivary glands and ducts using contrast media
- Infrequently performed to investigate ducts
- CT and MRI have largely replaced this exam

Sialography

May be used to demonstrate:

- Inflammatory lesions
- Tumors
- **Fistulae** (abnormal connection or passageway between two epithelium lined organs or vessels that normally do not connect)
- **Diverticula** (outpouching of hollow structure in body)
- **Strictures** (narrowing of bodily passage)
- **Calculi**
- **Problem -Only one gland can be examined at a time!**

Contraindications

- Severe infection of gland
- Known allergies to contrast media

Procedure

- Preliminary radiographs
 - Detect conditions that do not require contrast
 - Obtain optimum exposure factors
- Give pt secretory stimulant 2 to 3 minutes before contrast administration
 - Pt asked to suck on lemon wedge
 - Opens duct for easy identification

- *Parotid gland:*
 - AP- 5 degree away from the site of inv.
 - Lateral- at the mandibular angle.
 - Lat oblique- 20 degree cephalad tube angulations ,1 cm anterior to the angle of the mandible.

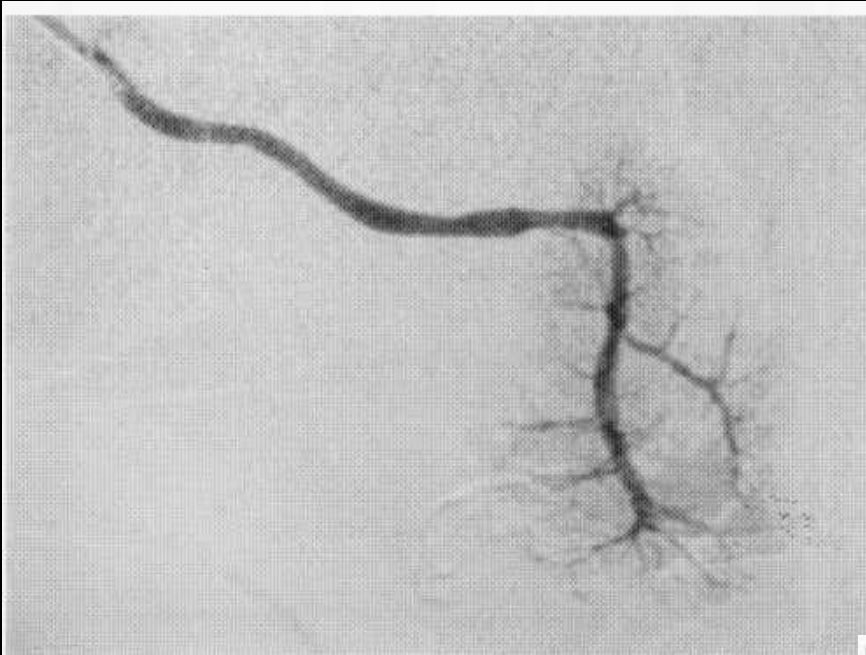
- Submandibular gland:
 - Inferosuperior by occlusal film.
 - Lateral- with tongue depressor.
 - Lat oblique- 20 degree cephalad tube angulations ,1 cm anterior to the angle of the mandible

- *Technique:*
 - identify the orifice of the parotid at the second upper molar, and for the submandibular at the frenulum of the tongue(at the base).
 - insert the canula to the duct.

- *Contrast:*
 - 2 ml of LOCM is sufficient.
 - Stop if pain occur. Don't over distend.

- *Films:*
 - Plain film.
 - Immediate films.
 - Post secretion? Ectasia of the ducts.

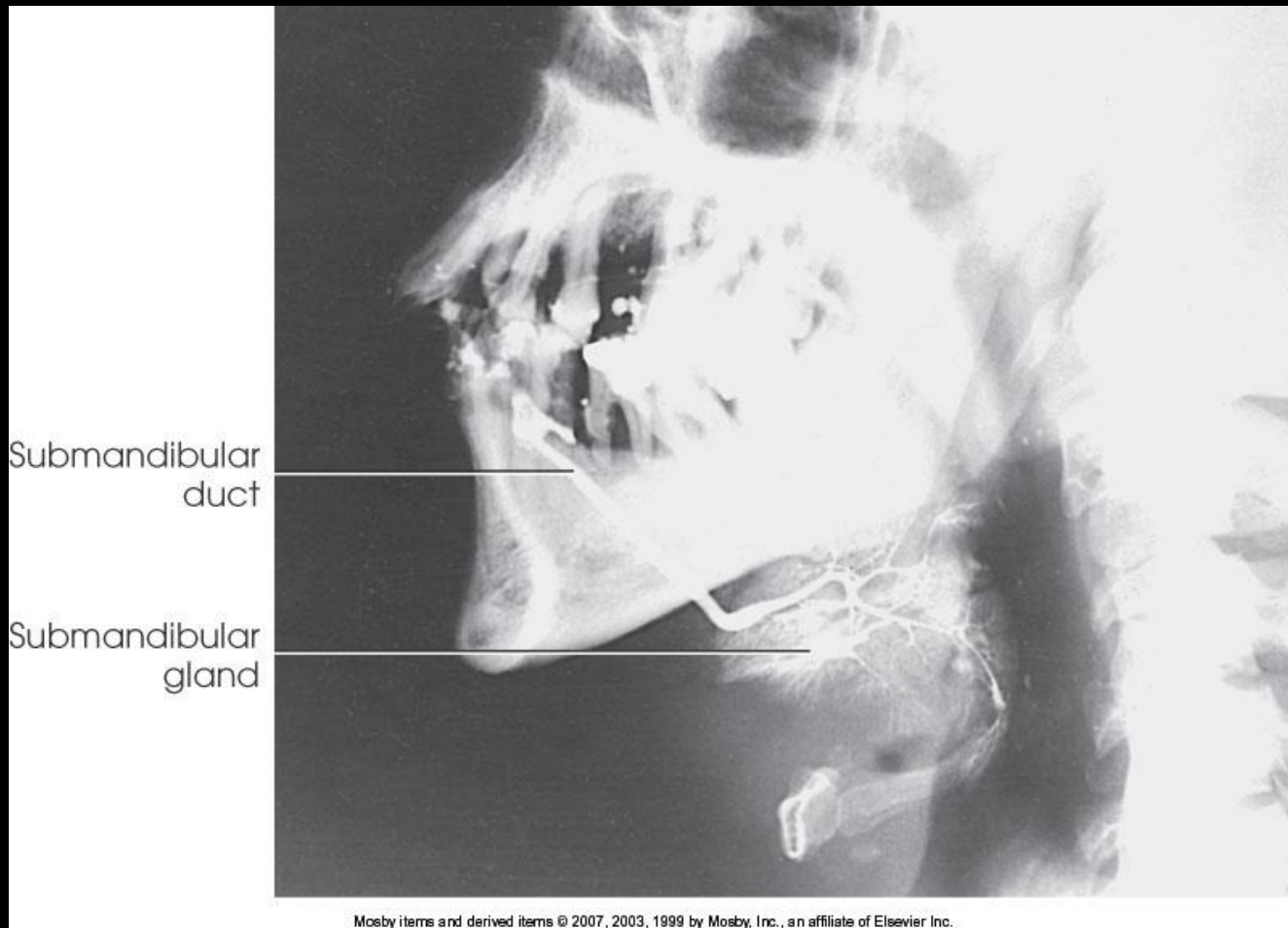
Normal
submandibular
gland.

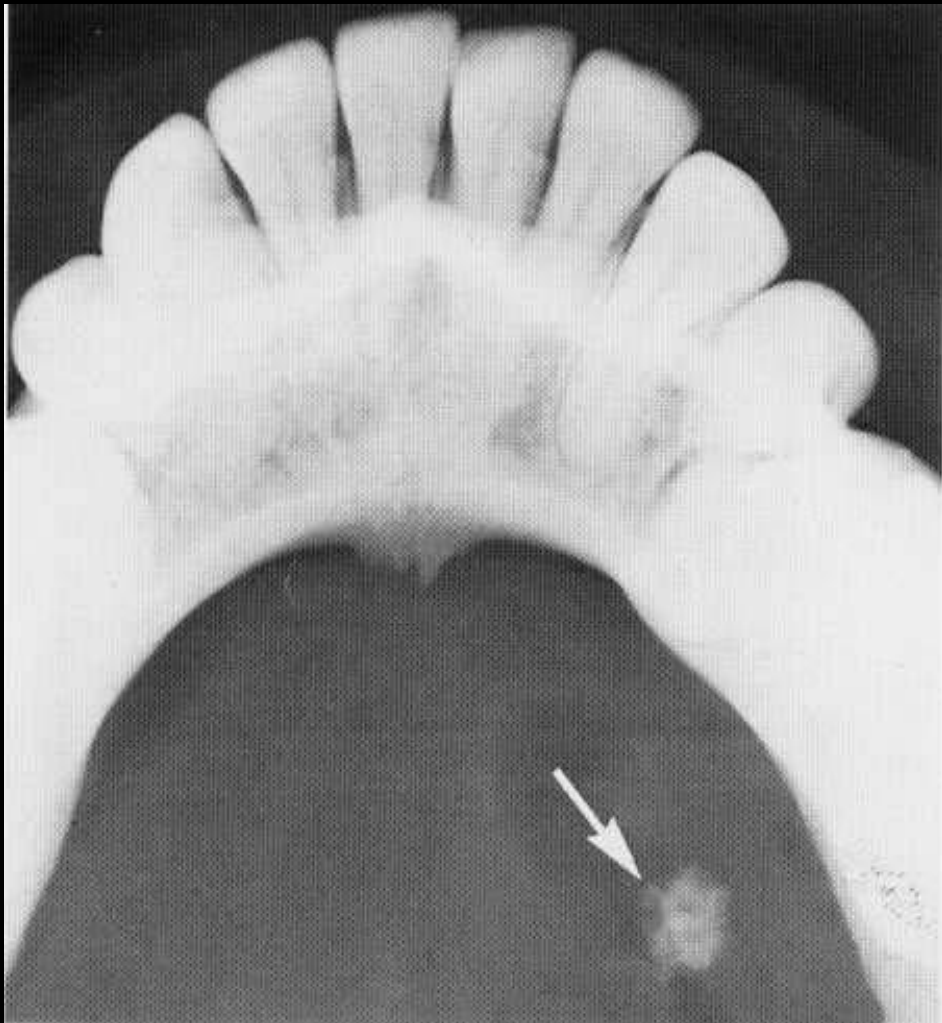


Normal parotid gland.



Lateral Submandibular Glands

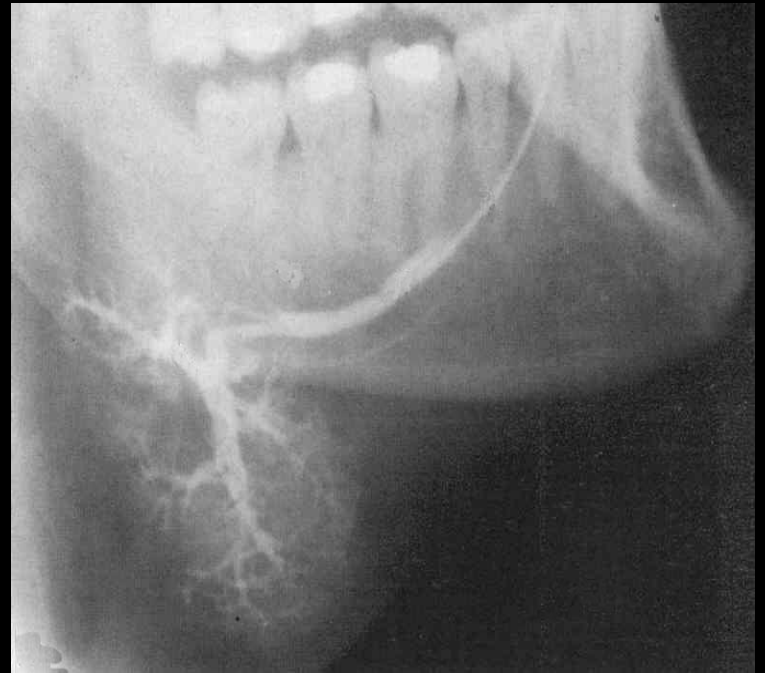




Plain film/ sup.inf
view: showing
submandibular
calculi.



Lateral oblique views to visualize the submandibular gland.



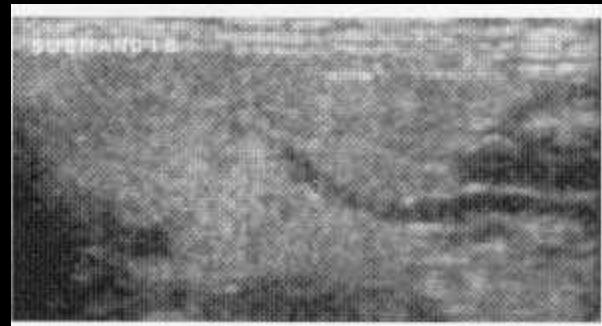
Abnormal enlarged submandibular gland.

- Complications:
 - Extravasation of contrast.(trauma from the catheter, hidden inflammation, over distention).

ROLE OF US:

- Visualize the ducts.
- Calcifications.
- Pathologies of the gland.

US of the submandibular duct.



Role of CT:

- Axial or coronal cuts.
- Volume acquisition with MPR.
- Parotid gland: thin cuts parallel to the hard palate, angulation to avoid dental filling.

- From the skull base to the hyoid bone.
- Dynamic examination with contrast, shows the presence of any masses, and visualize the duct clearly.
- Visualization of the duct by CT is now replaced by MRI.

Role of MRI

- Non invasive.
- No need for contrast unless pathology is suspected.
- Multiplaner imaging.
- Heavy T2 weighted images alone or, sometimes with fat saturation are used to visualize the duct

Procedure (cont'd)

- Duct is cannulated, **not punctured**, contrast introduced with fluoroscopic guidance
- Take Radiographs
- After radiographs, pt sucks on a lemon wedge again to evacuate contrast
- Take post-procedure radiographs after 10 minutes to confirm evacuation of contrast

Radiographs

- Parotid

- Tangential

- Lateral (Right or left)