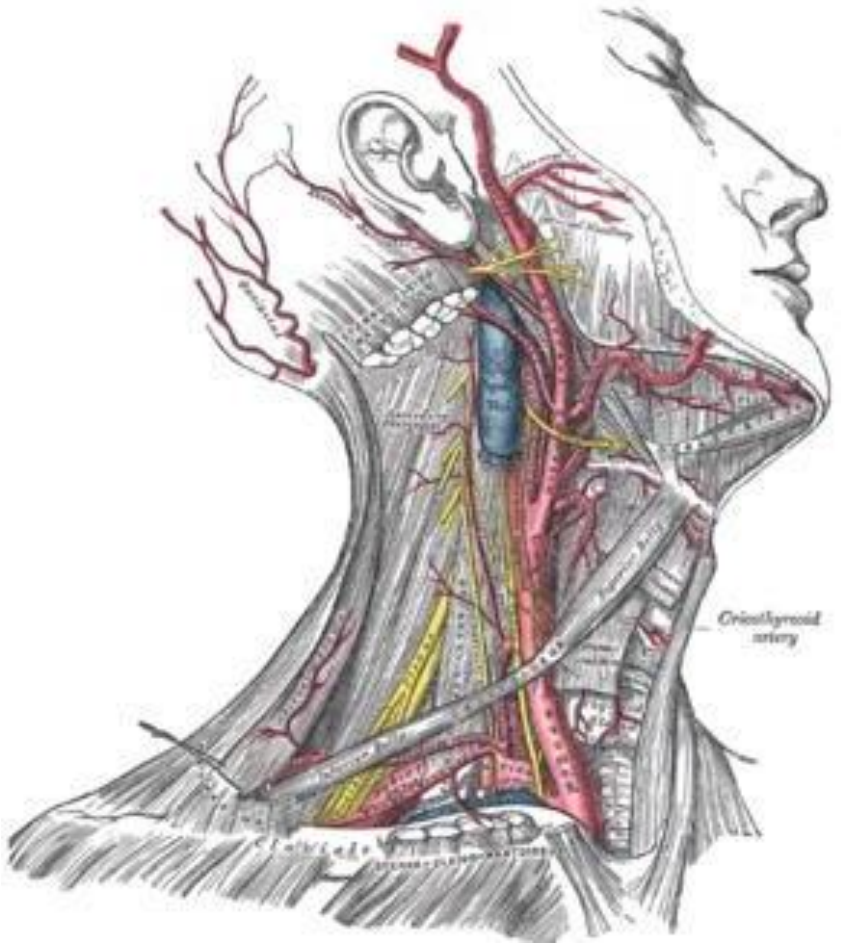
Parotid gland



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Parotid Gland

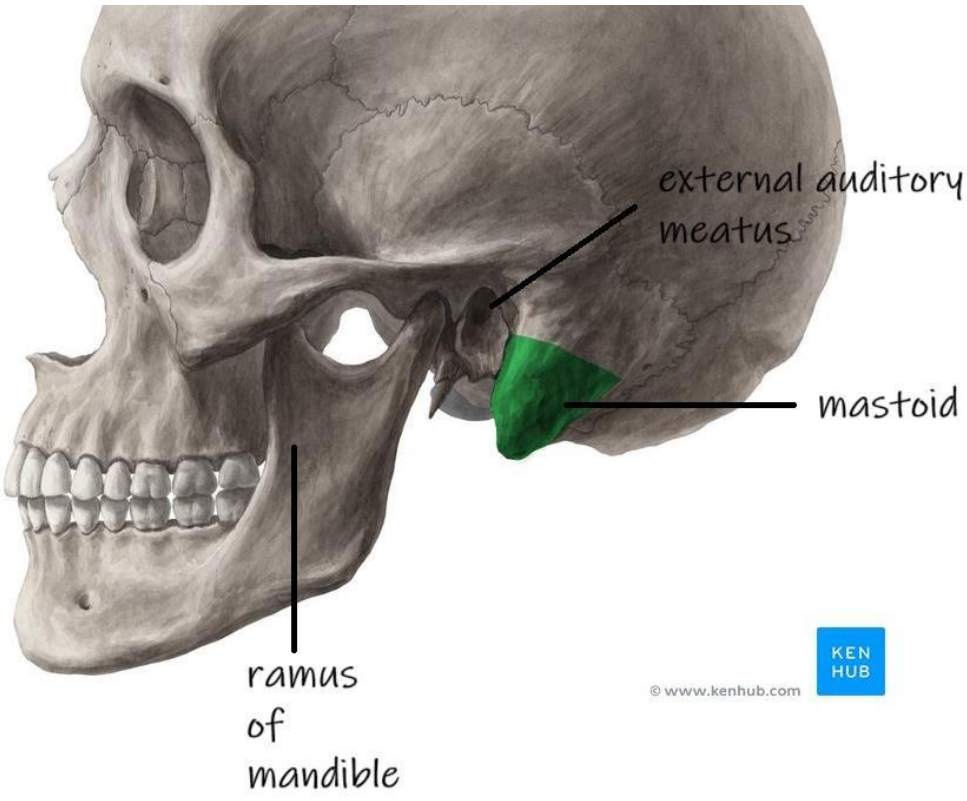
It is the largest salivary gland.

Shape:

- pyramidal in shape.

Site: it lies in a space which is bounded by:

- Anteriorly → ramus of the mandible.
- Posteriorly → mastoid process.
- Superiorly → external auditory meatus.
- Inferiorly → stylo-mandibular ligament.
- Medially → styloid process.



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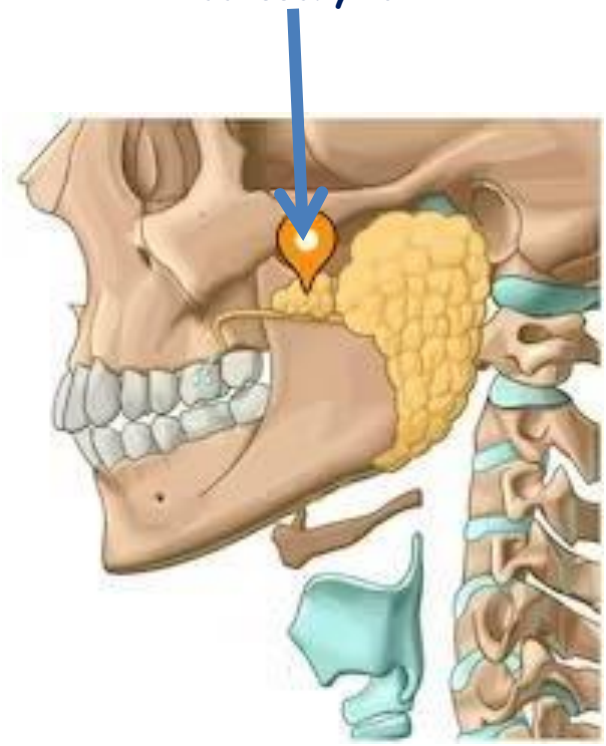
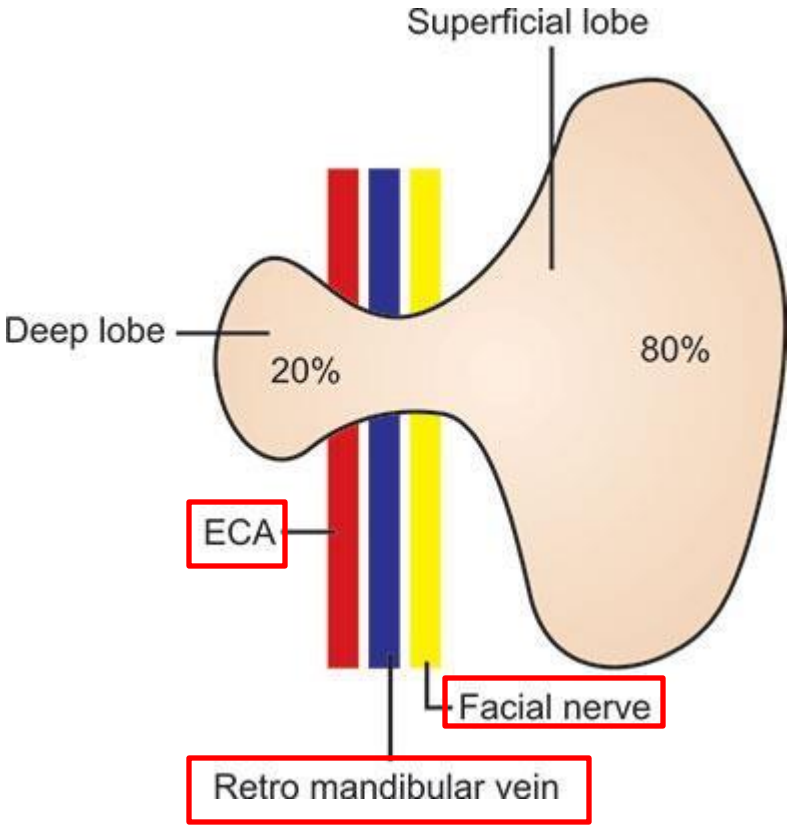
Division: it is subdivided in to:

- **Superficial lobe** → superficial to facial nerve.
- **Deep lobe** → deep to facial nerve.
- **Accessory lobe** → above the duct of the gland.



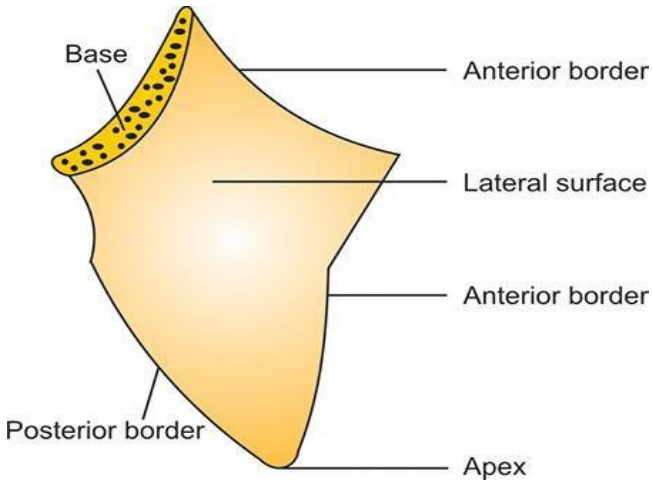


Relations: The parotid gland has:

3 surfaces → lateral – anteromedial – posteromedial.

2 borders → anterior – posterior.

2 poles → upper – lower.



A) Surfaces

1 The lateral surface (superficial surface): related to

- Skin.
- Superficial fascia containing platysma muscle and great auricular nerve.
- Superficial parotid lymph nodes.

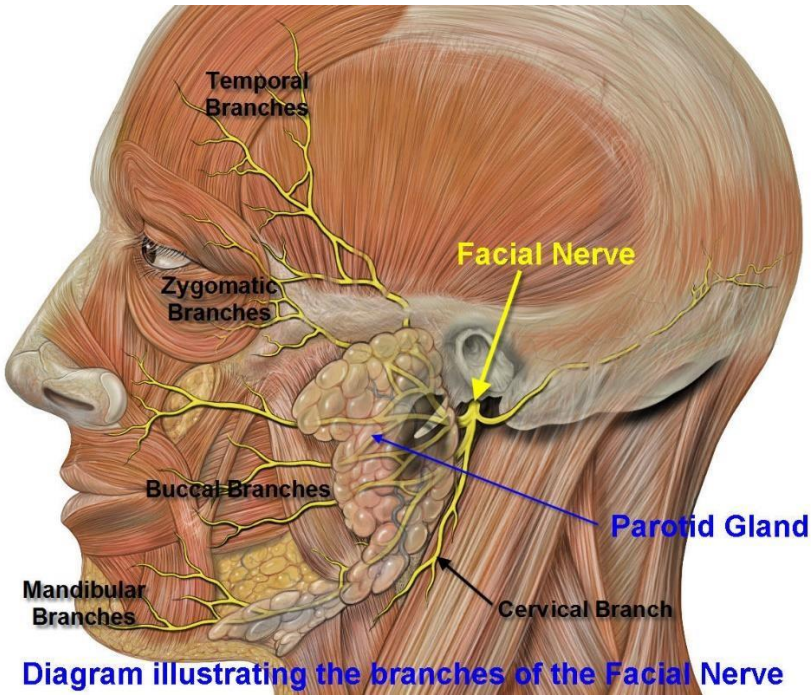
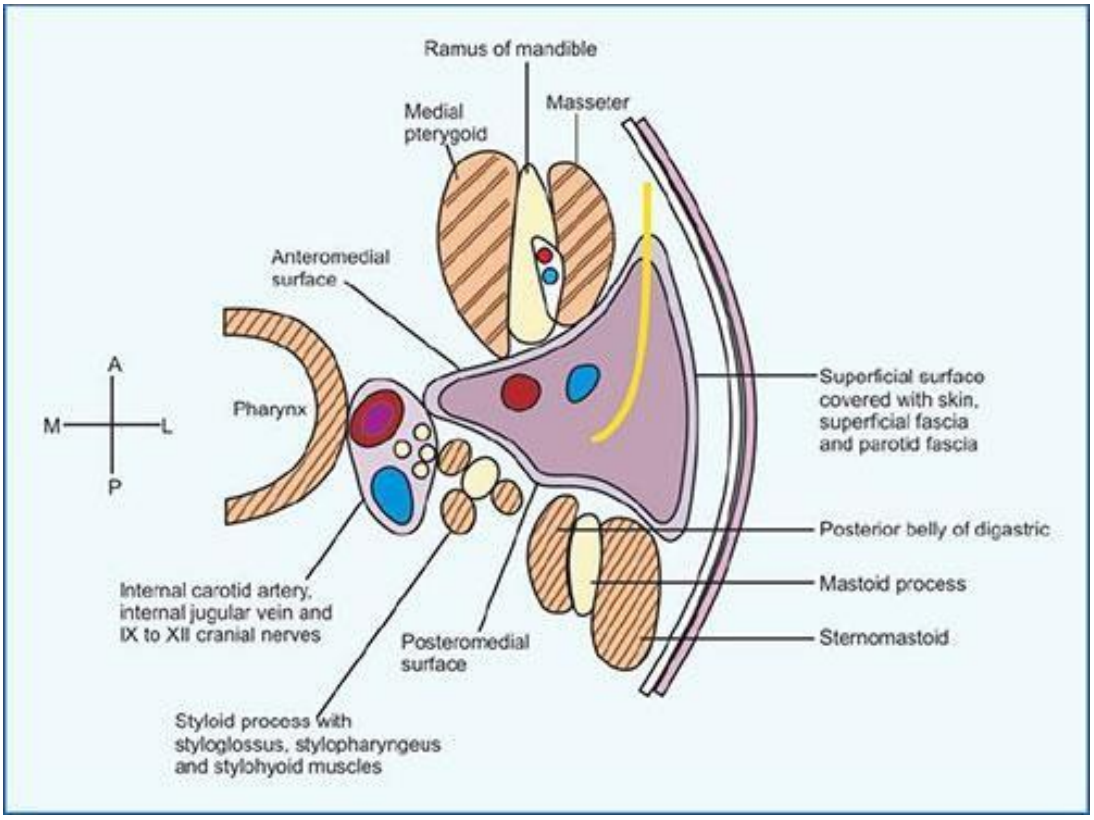


Diagram illustrating the branches of the Facial Nerve

2- anteromedial surface: related to

- Ramus of the mandible.
- Masseter muscle
- Medial pterygoid muscle.



3- posteromedial surface: related to

- **mastoid process and its attached muscles.**

  (Sternomastoid – posterior belly of digastric)

- **styloid process and its attached muscles.**

  (Stylohyoid – styloglossus – stylopharyngeus)

- **carotid sheath and its contents**

  (Internal carotid artery – internal jugular vein – lower 4 cranial nerves).

From previous lectures

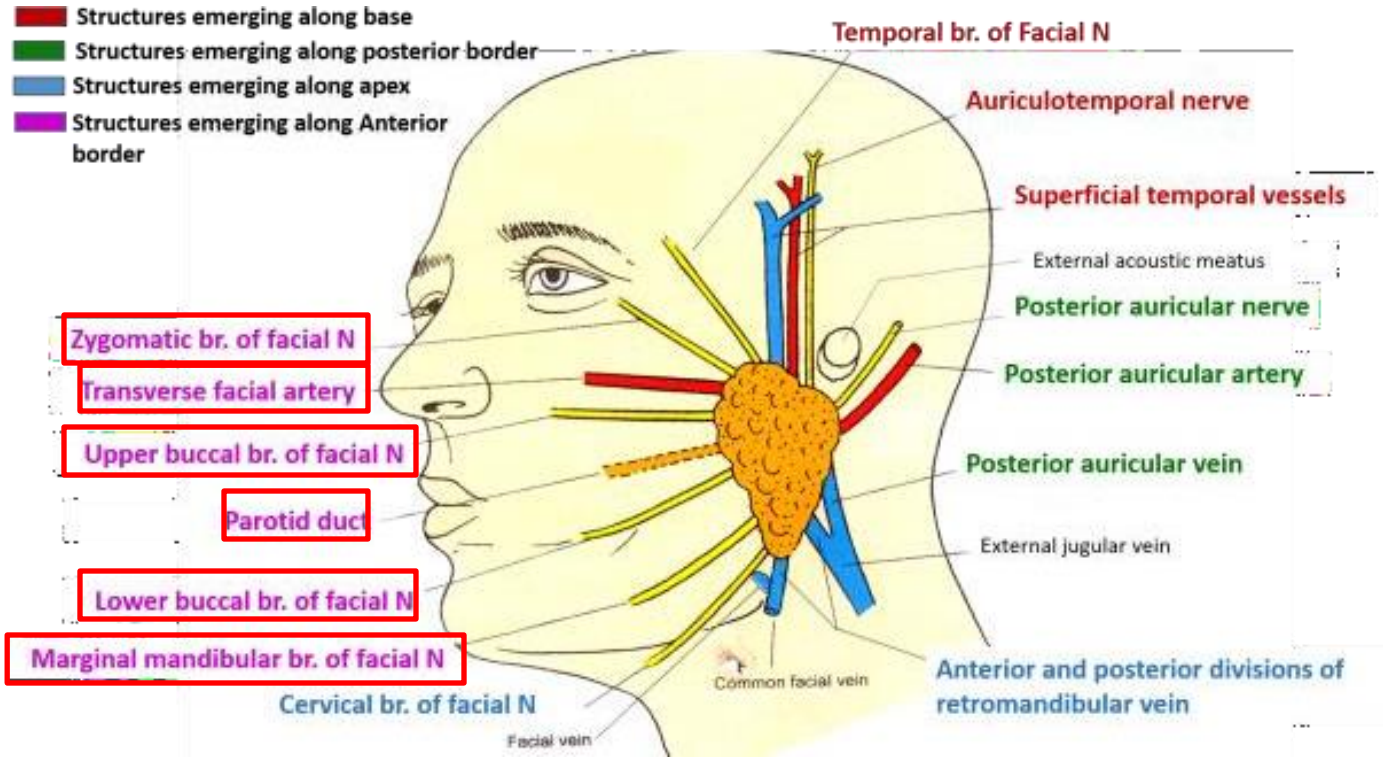
Upper part	Lower part
Internal carotid artery	common carotid artery
Internal jugular vein	Internal jugular vein
Last 4 cranial nerves	vagus nerve

B) Borders

1 The anterior border

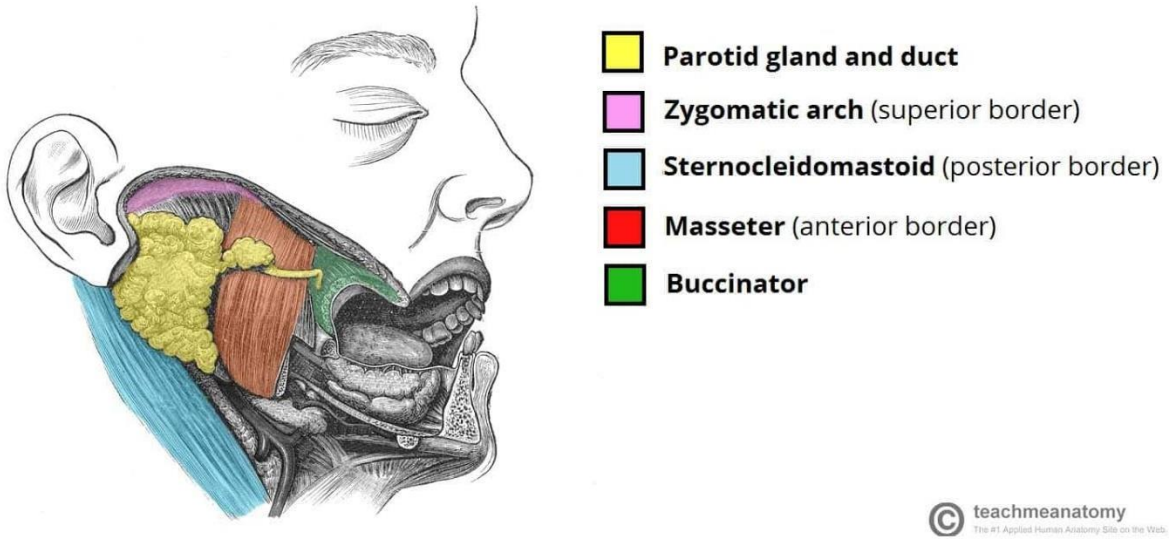
- It is **a convex border** lying on **masseter muscle**.
- The following structures come out from it **(from above downwards).**

1. Zygomatic branch of the facial nerve.
2. Transverse facial artery from the superficial temporal artery.
3. Upper buccal branch of the facial nerve.
4. Parotid duct and accessory lobe.
5. Lower buccal branch of the facial nerve.
6. Mandibular branch of the facial nerve.



2- The posterior border

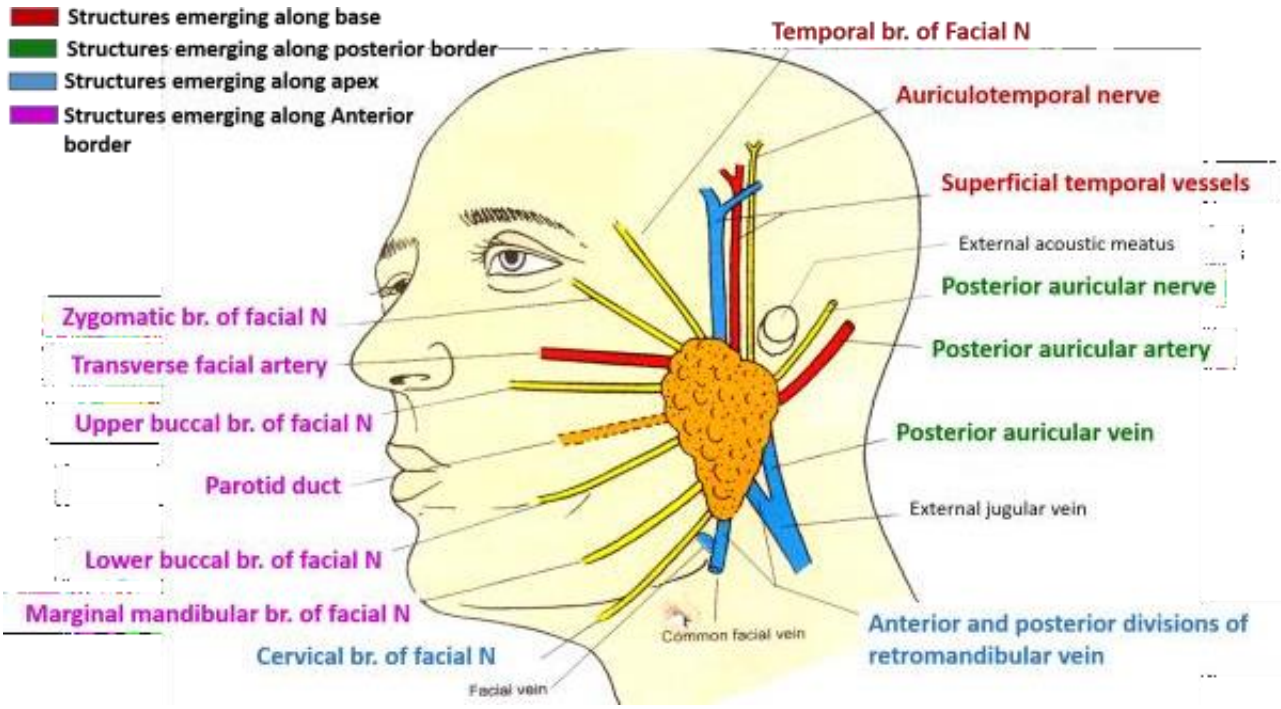
- It is **a straight** border
- It is **parallel** to the anterior border of sternomastoid.



C) Poles

1 The upper pole (base)

- It is **concave** upwards.
- It surrounds **external auditory meatus**.
- The following structures **come out of it**.
  1. Temporal branch of the facial nerve.
  2. Superficial temporal vessels.
  3. Auriculotemporal nerve.



2- The lower pole (apex)

- It is tapering.
- It lies **between** the angle of mandible & sternomastoid.
- The following structures **come out of it**.
  1. External carotid artery.
  2. Posterior facial vein and its anterior and posterior divisions.
  3. Cervical branch of facial nerve.

The structures within the substance of parotid gland (arranged from deep to superficial): important

1. The external carotid artery.
2. The posterior facial vein.
3. The facial nerve.

deep

↓

Superficial

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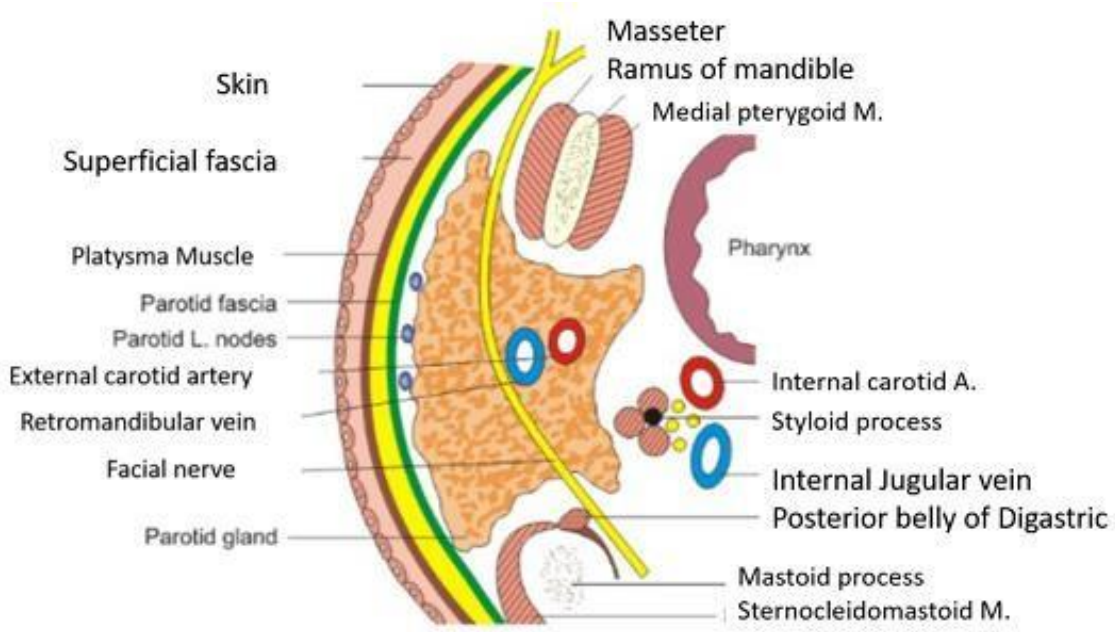


Nerve supply

1 Sensory

- capsule → great auricular nerve.
- parenchyma → auriculotemporal nerve.

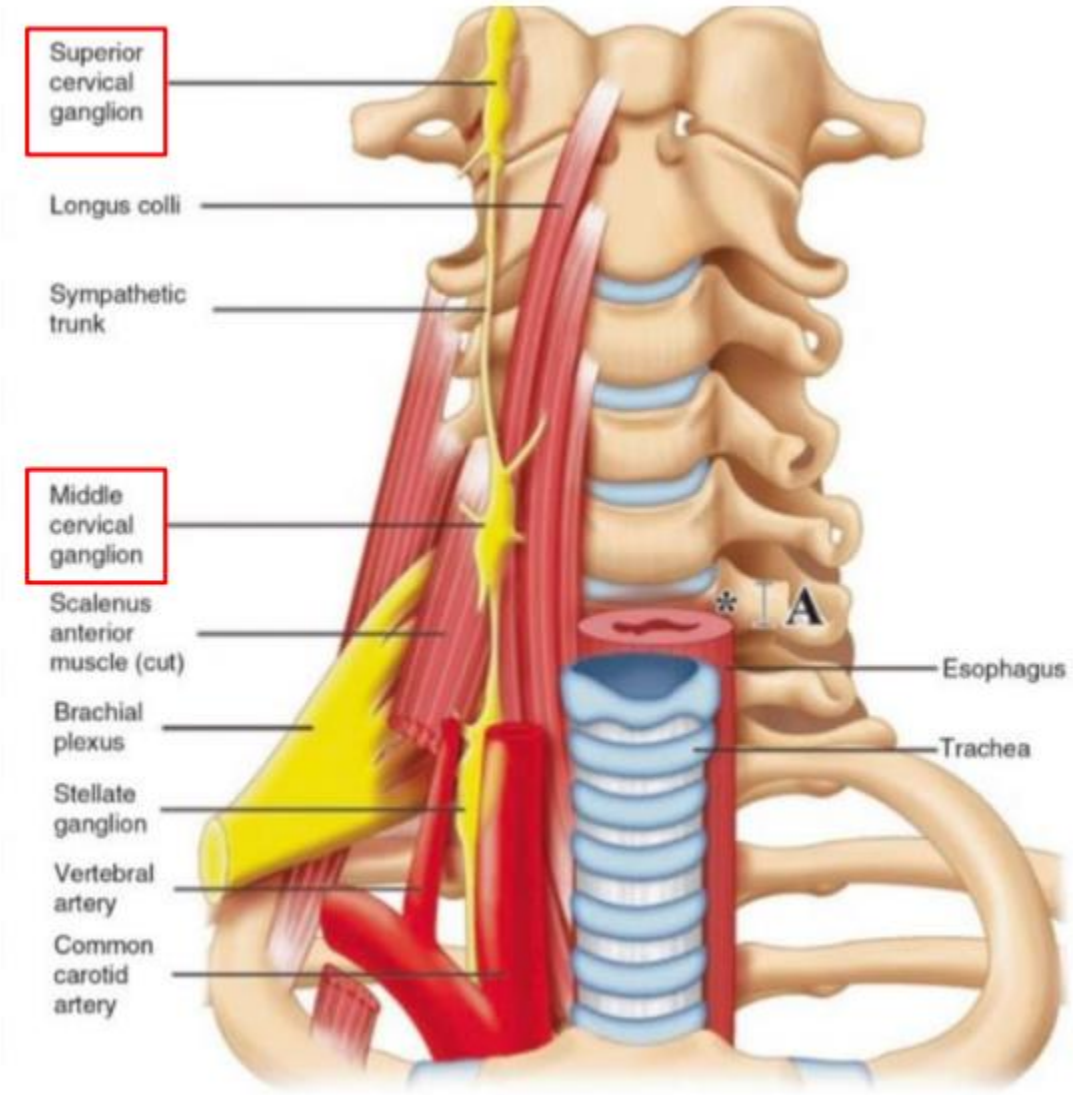
Parenchyma means the gland itself

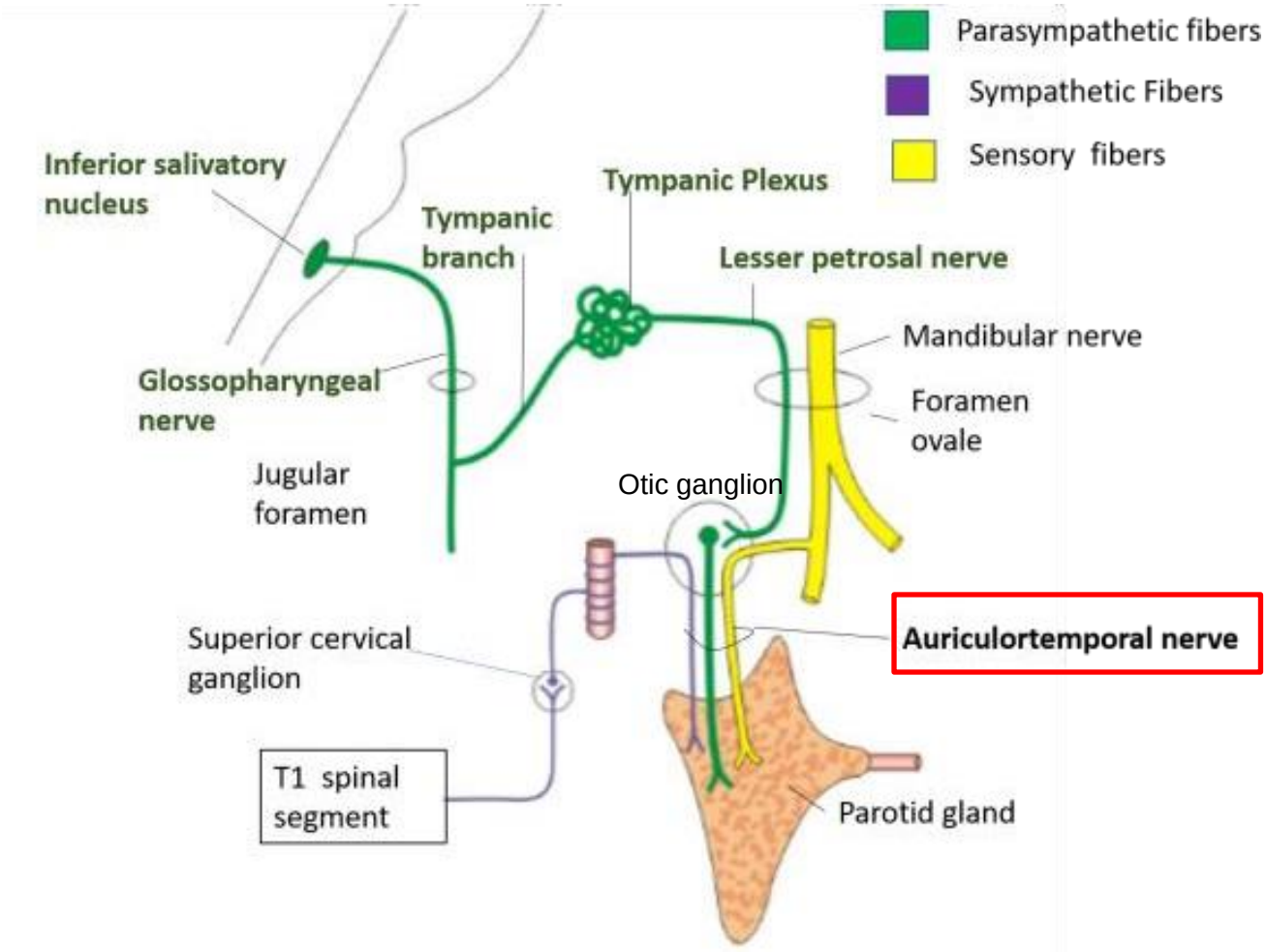
2 parasympathetic (secretomotor)

- Inferior salivary nucleus in medulla oblongata → preganglionic parasympathetic fibers → Glossopharyngeal nerve → tympanic branch → tympanic plexus → lesser superficial petrosal nerve → otic ganglion → Postganglionic fibers reach parotid via auriculotemporal n.

3 Sympathetic (vasomotor)

- Superior cervical ganglion of the sympathetic chain → nerve plexus around external carotid artery.


Superior cervical ganglion
Longus colli
Sympathetic trunk
Middle cervical ganglion
Scalenus anterior muscle (cut)
Brachial plexus
Stellate ganglion
Vertebral artery
Common carotid artery
A
Esophagus
Trachea



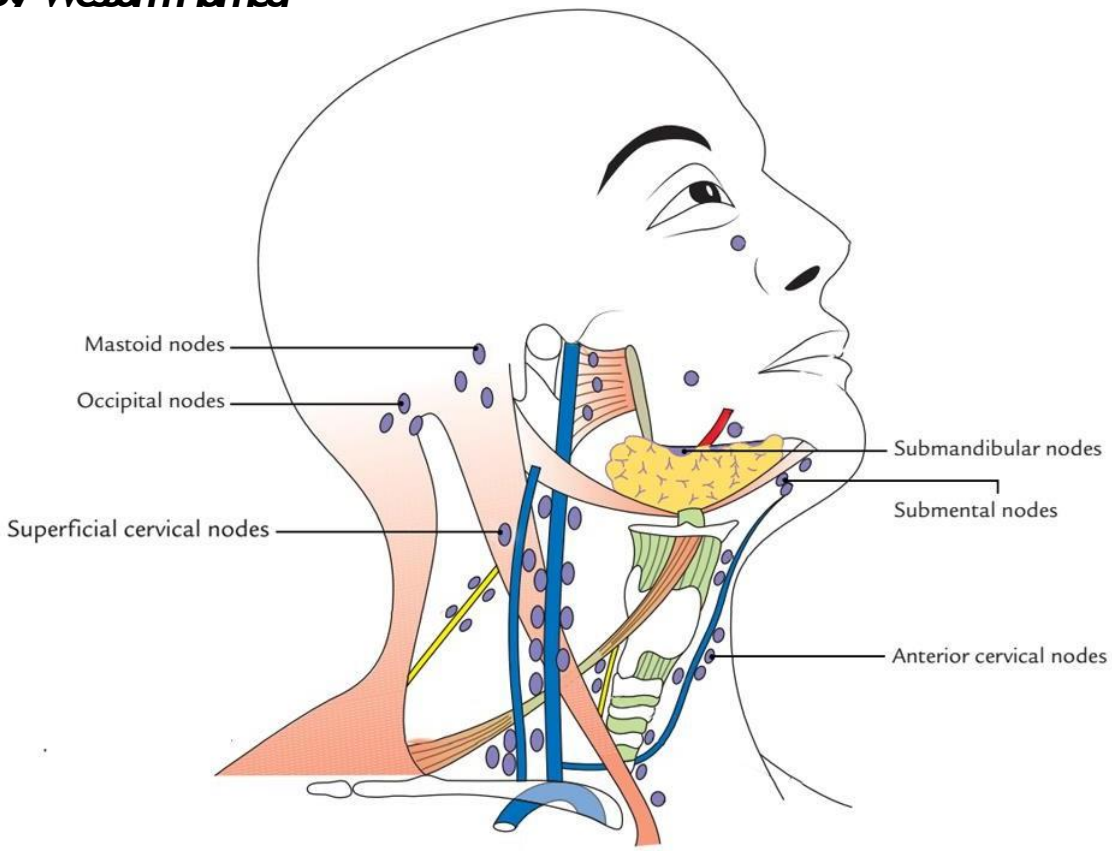
Lymphatic drainage:

1 Superficial nodes (pre-auricular nodes).

- Lie superficial to the capsule of the parotid gland.
- Drain in to L.N. along external jugular vein.

2- Deep nodes

- Lie in the substance of the parotid gland.
- Drain in to L.N. along internal jugular vein.



Clinical note:

- ✓ facial nerve passes through substance of parotid gland, damage to the gland leads to paralysis of the muscles of expression on same side of the face.

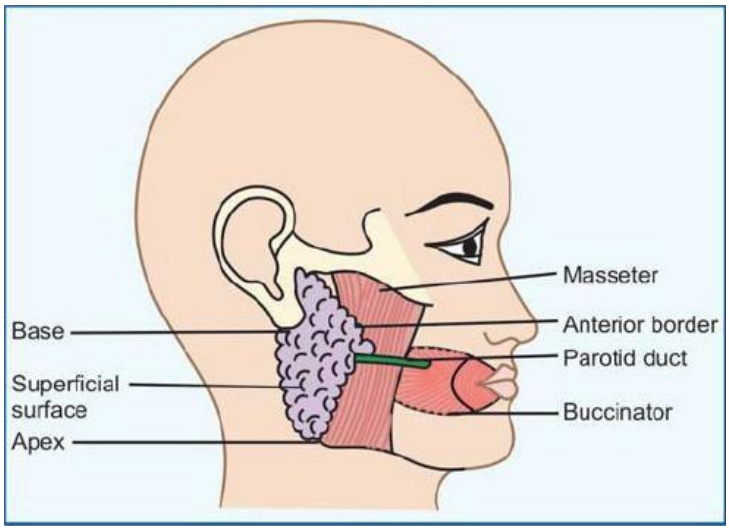
- ✓ **Acute mumps** is a viral disease affecting parotid gland. **Pain** from swollen gland is sever because parotid gland is firmly enclosed by **fascial sheath** from **deep cervical fascia** that does not stretch readily.

mumps

Parotid duct (Stensen's duct)

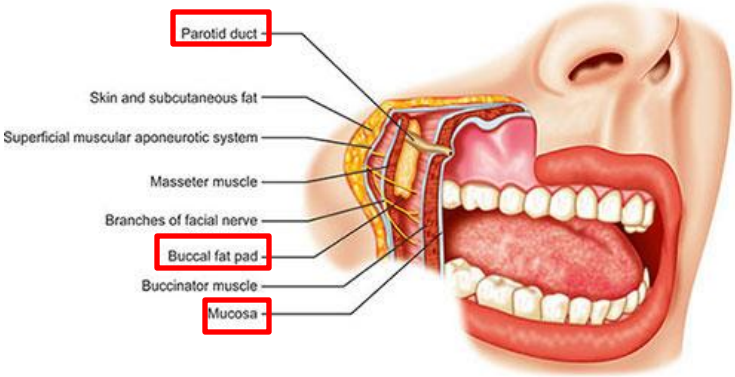
Beginning:

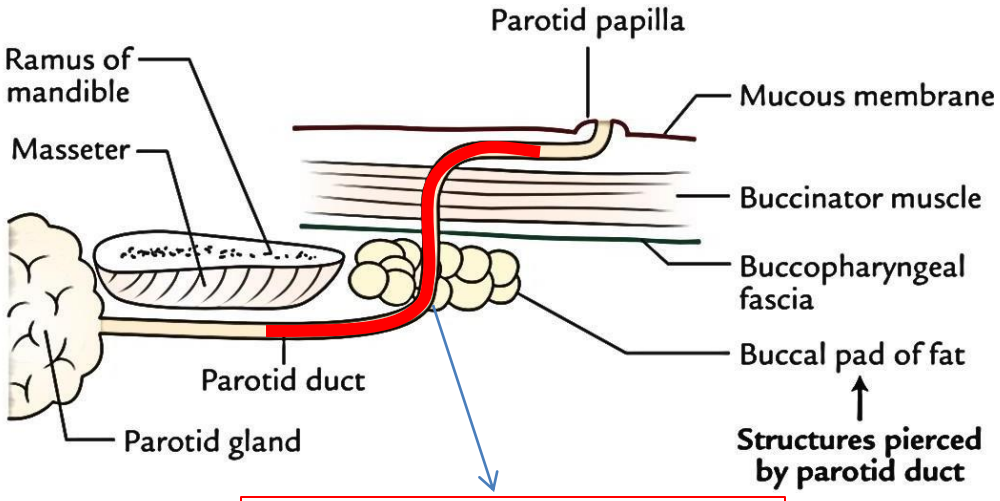
- It appears at the anterior border of the parotid gland.



Course: 5cm

- It runs forwards over masseter muscle about one inch below zygomatic arch.
- At the anterior border of the masseter, it curves medially piercing
  - Buccal pad of fat.
  - Buccopharyngeal fascia.
  - Buccinator muscle.
  - Pharyngeo-basilar fascia.
  - Mucous membrane of the check.





This curvature acts as sphincter to the duct

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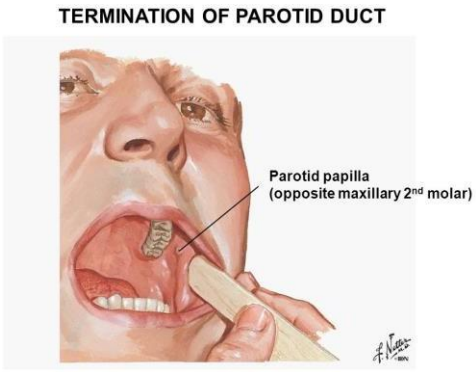
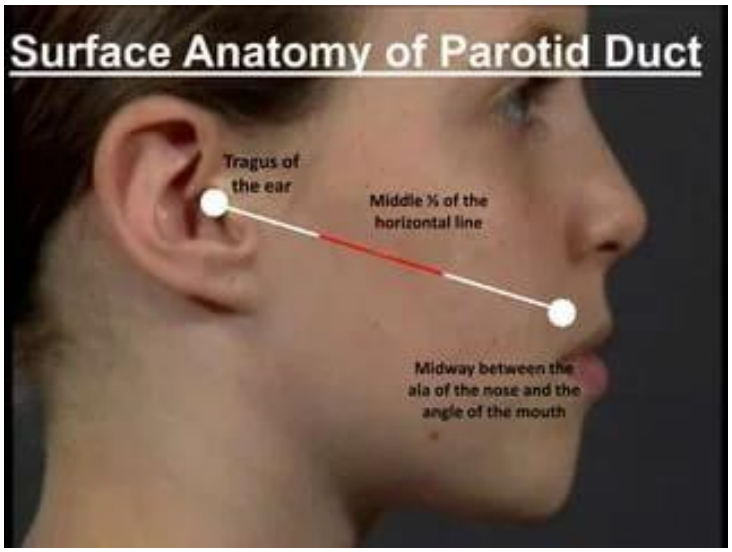
Termination:

- It opens in vestibule of the mouth, opposite upper 2nd molar tooth.

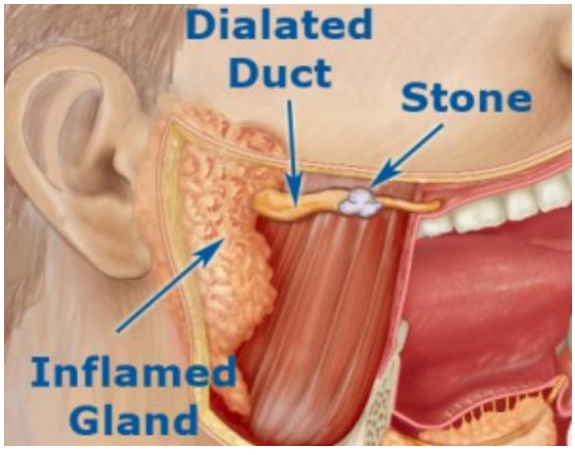


Surface anatomy:

- It is represented by the middle 1/3 of a line drawn from lower border of the tragus of the ear to a point midway between ala of the nose and red margin of upper lip.



A stone lodged in parotid duct is a cause of painful swelling. Pain is often referred to (ear, temple and temporomandibular joint) by the auriculotemporal nerve (click here) & (click here)



Goodbye & good luck
Wessam Hamed