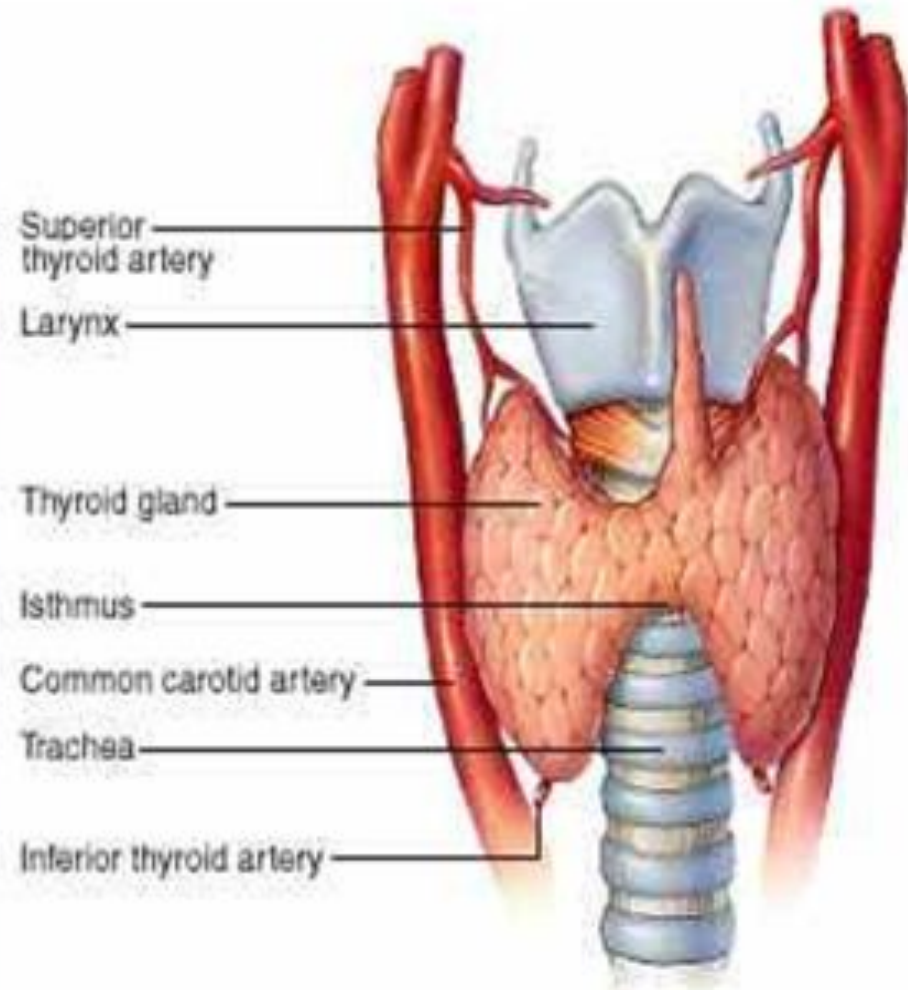


- **Thyroid gland**



THYROID GLAND

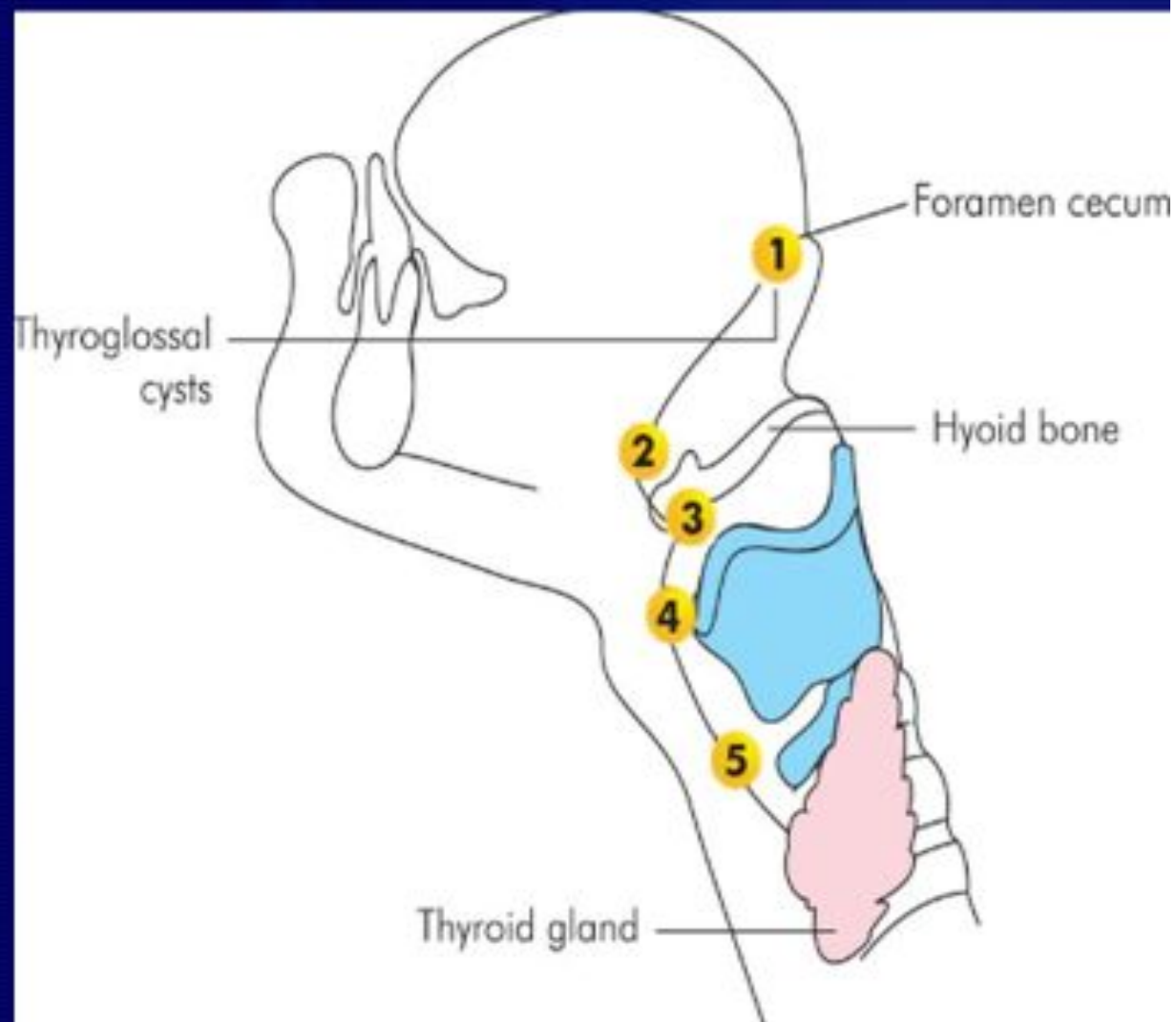
- the largest endocrine gland in the body.
- about 25 gm.
- a butterfly-shaped.
- formed of 2 lateral lobes, connected by isthmus



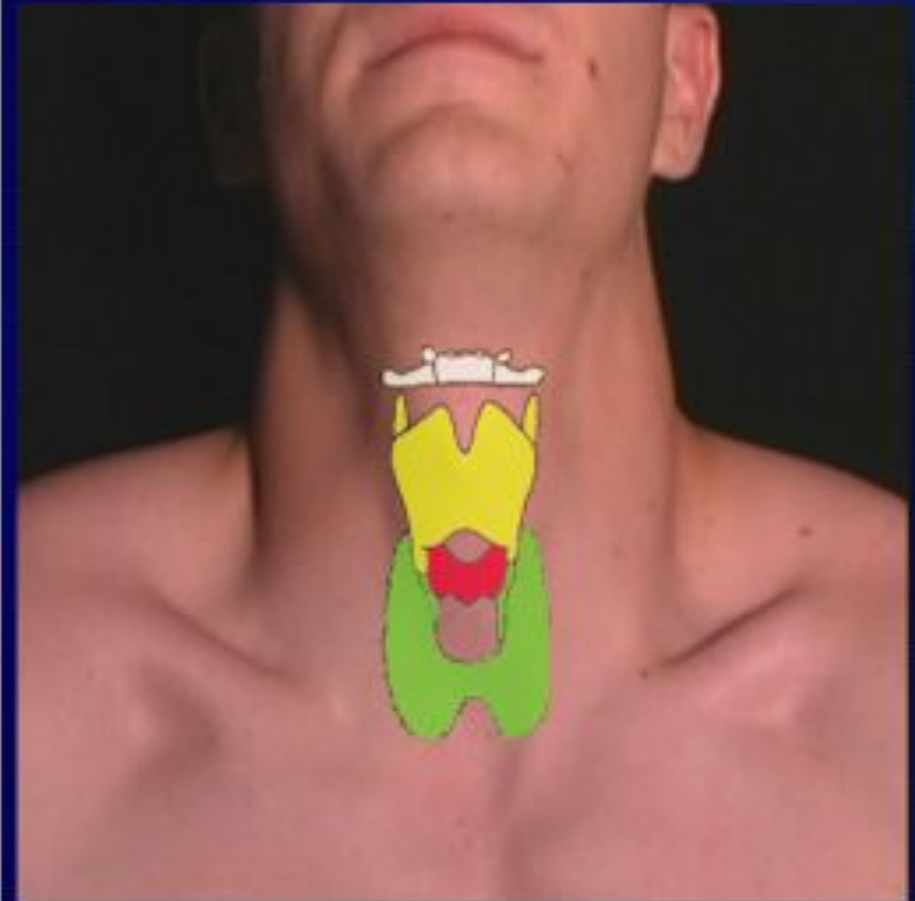
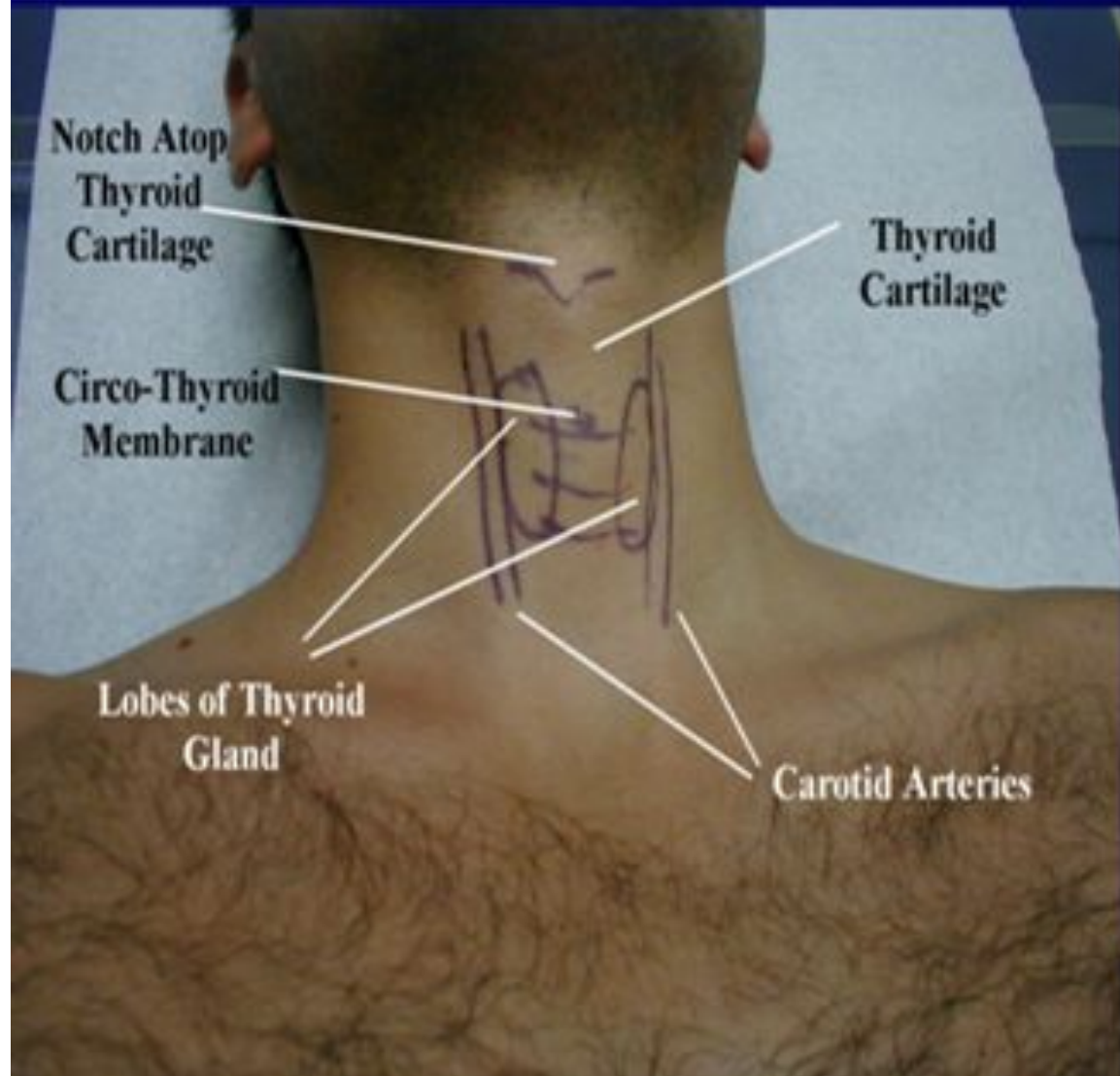
Thyroid gland

Embryology

- Median thyroid diverticulum
- Floor of the pharynx
- Base of the tongue
- Foramen cecum
- Descend caudally (anterior)
- Para follicular C cells



Surface anatomy



Anomalies

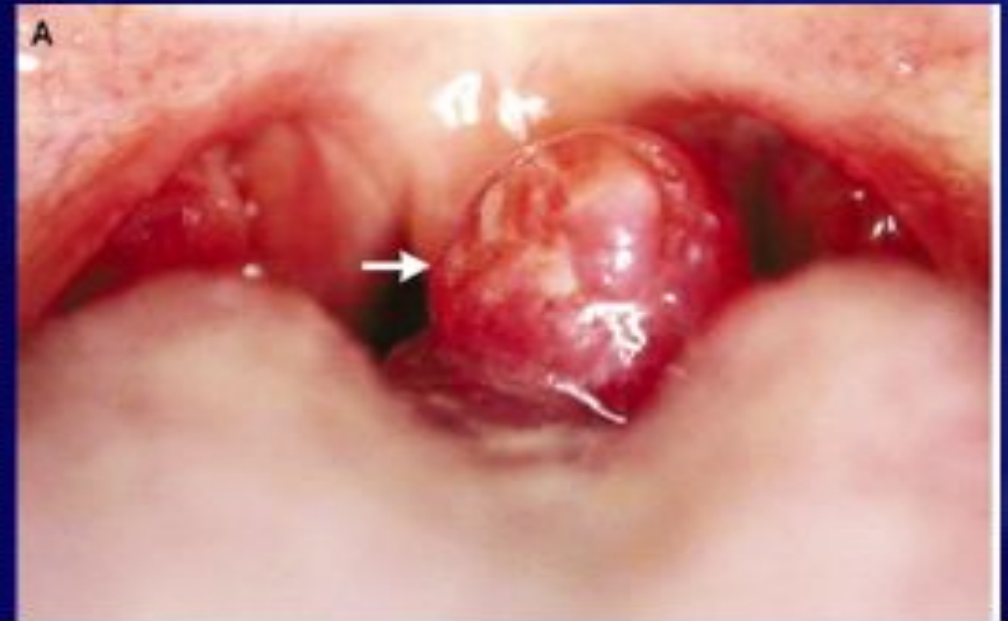
Pyramidal lobe

- Distal end of Thyroglossal tract
- Left of midline.

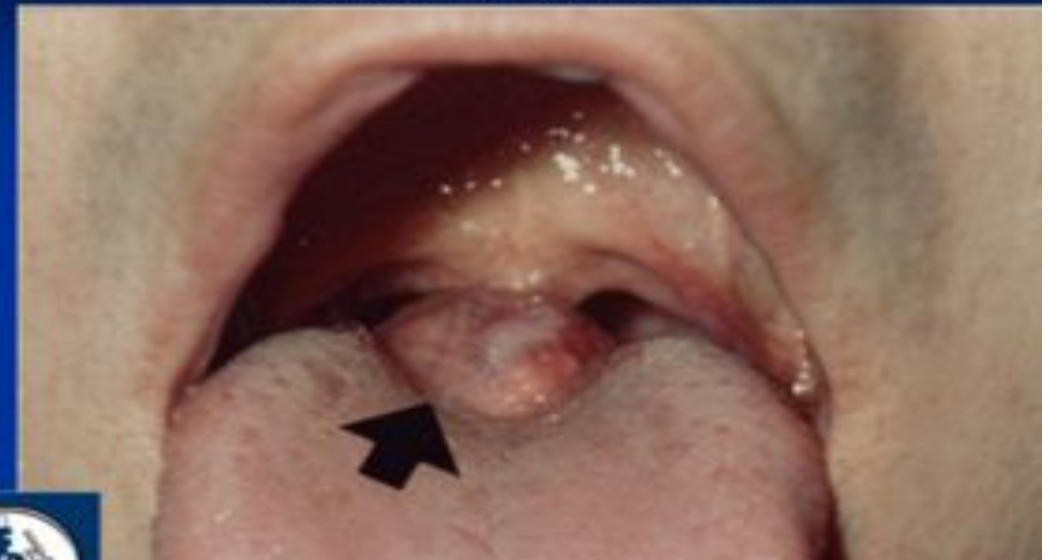
Lingual thyroid

- Failure of descend
- Asymptomatic posterior tongue mass
- Only functioning thyroid
- Treatment is by thyroid suppression

Lateral aberrant thyroid

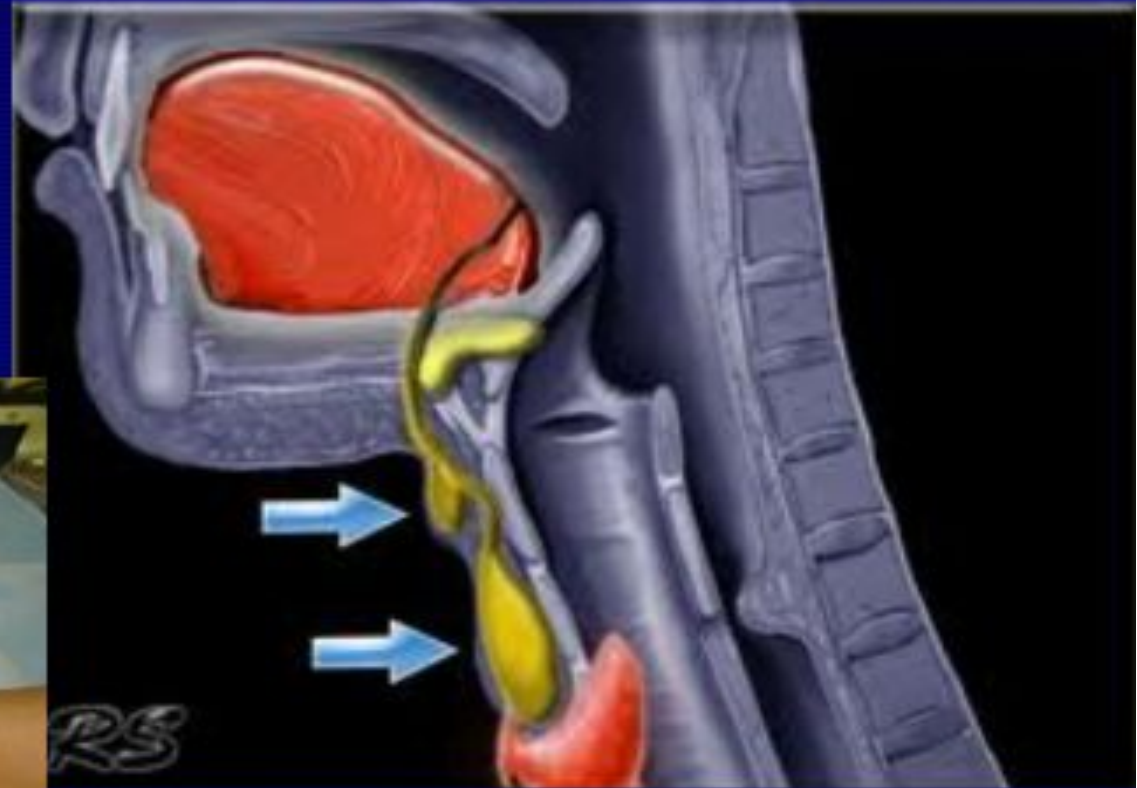


Differential Dx: Lingual Thyroid (Ectopic Thyroid Gland)
Caution! A mass in the posterior midline might be the only thyroid in the patient's body.



- Remnants of thyroglossal tract
- Midline swelling
- Move up and down with swallowing and tongue protruding.
- Below hyoid bone
- *Sistrunk's op*

Thyroglossal cyst



THYROID GLAND

- **Position:**

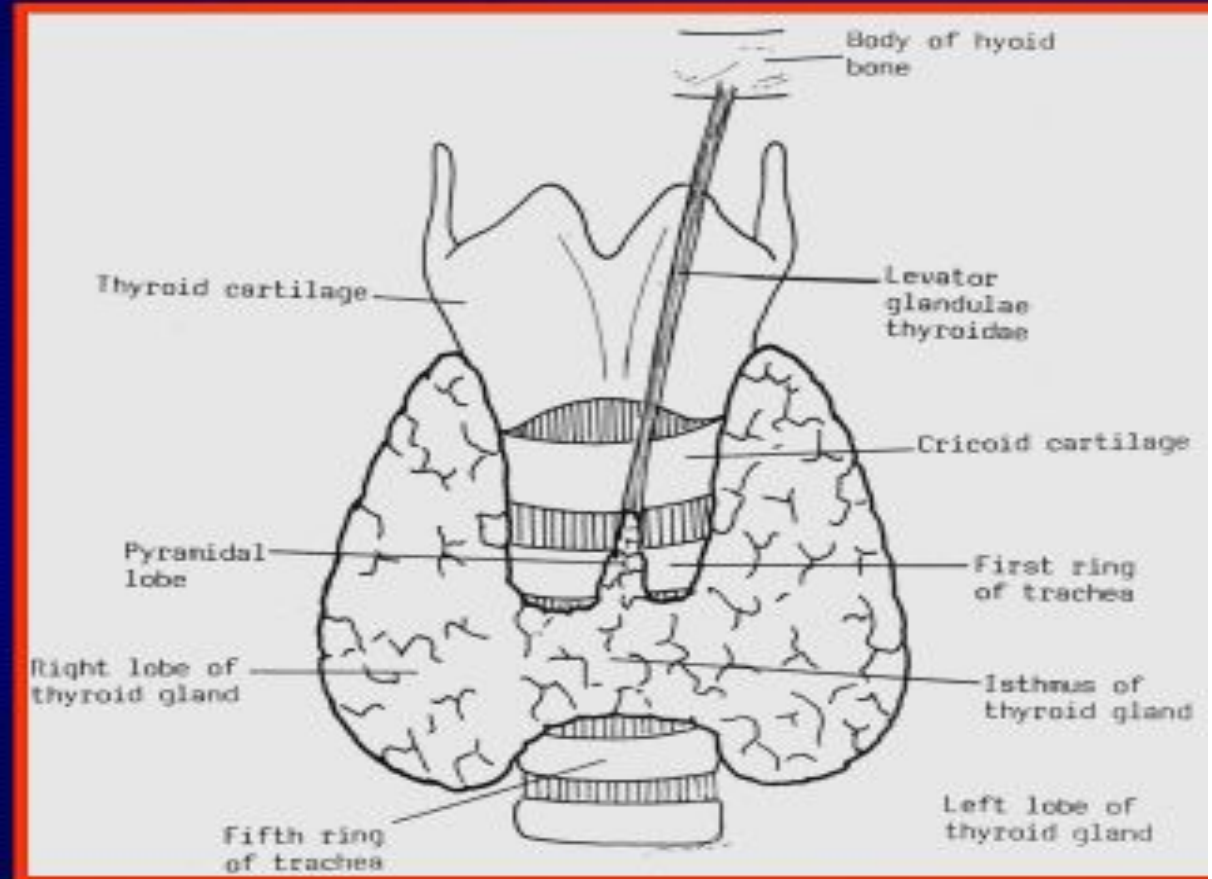
- It lies on front & sides of the lower part of neck.
- The apex of each lobe rests on the thyroid cartilage, reaching its oblique line.
- The base of each lobe reaches the level of 5th or 6th tracheal ring.
- The isthmus crosses the trachea opposite the 2nd, 3rd & 4th tracheal rings



- **Structure:**

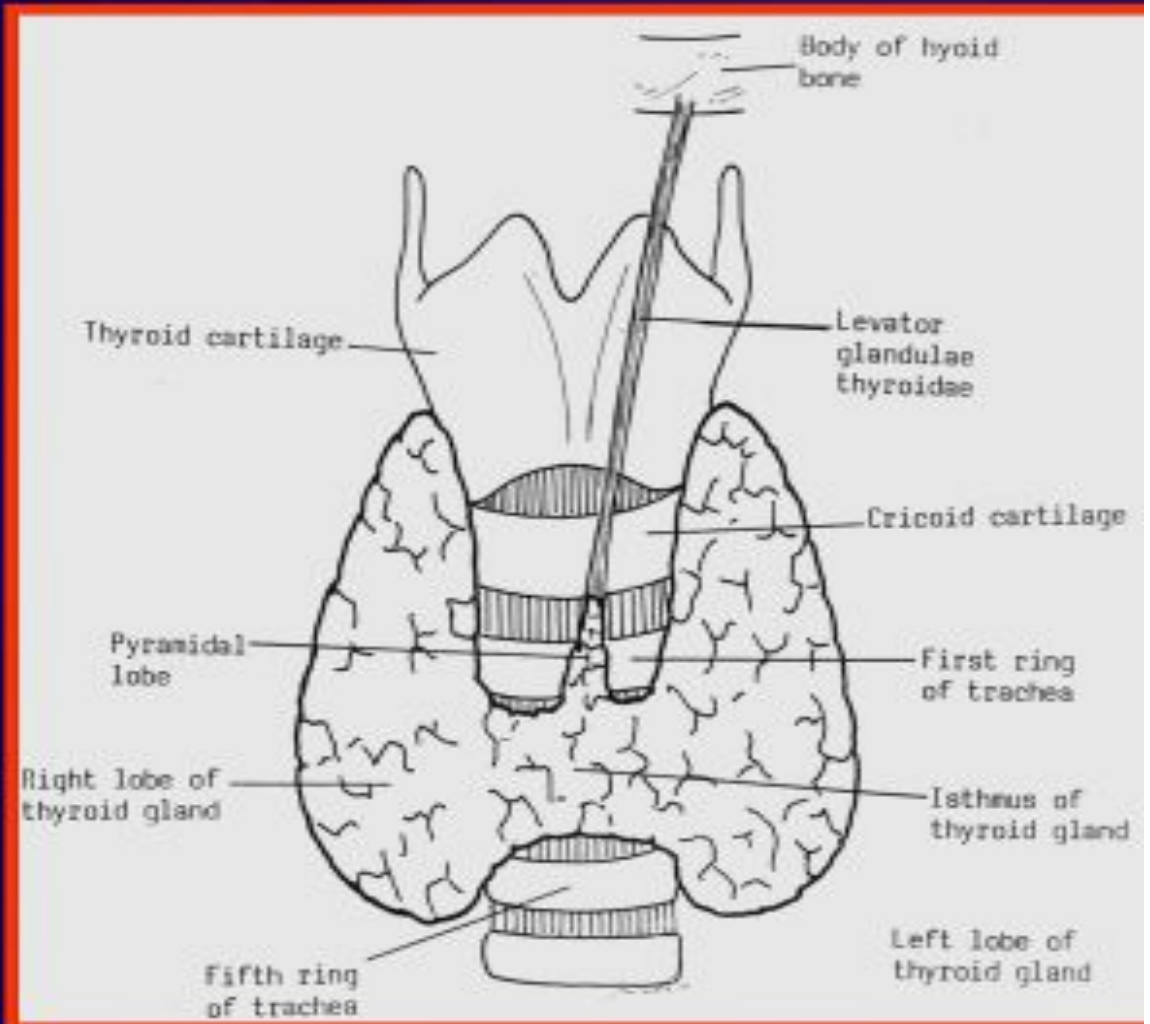
- Each lobe is pear-shaped, which has:

- **Apex**
- **Base**
- **3 surfaces:**
 - Medial surface
 - Antrolateral surface
 - Posterior surface

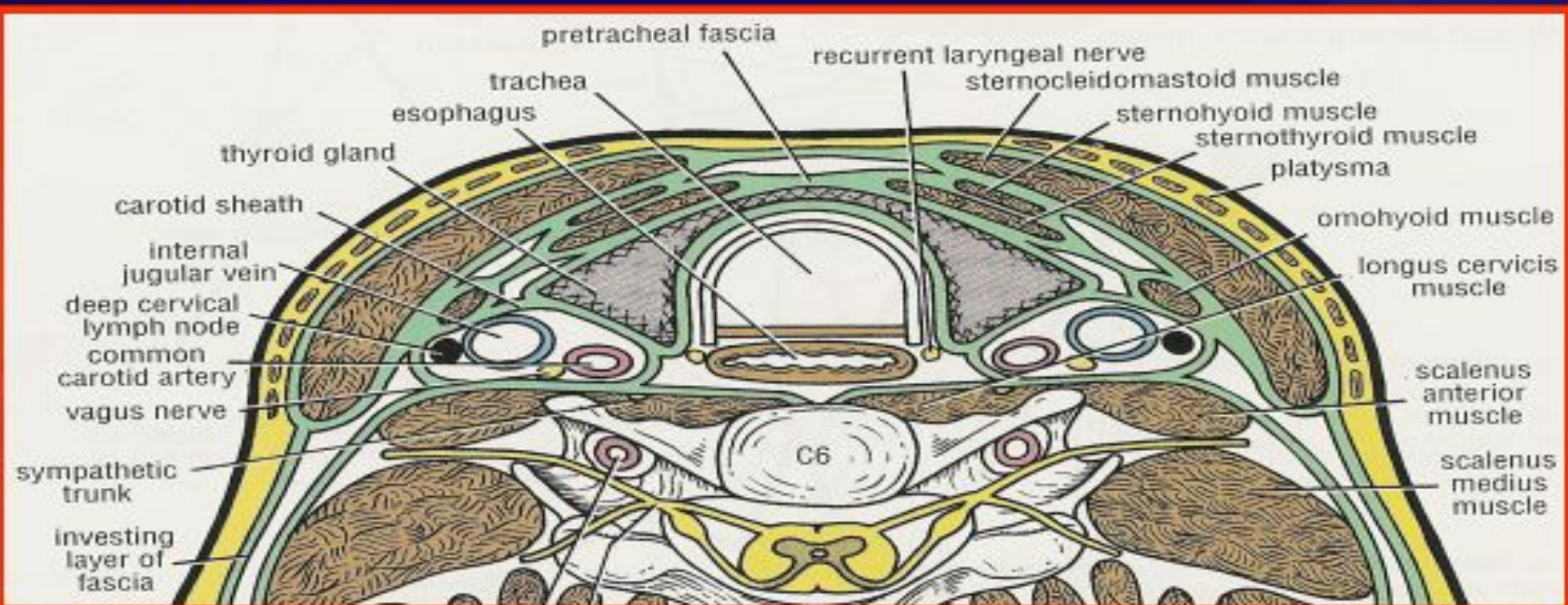


N.B.

- A narrow median isthmus connecting the 2 lateral lobes.
- A small “pyramidal lobe” may project upwards from the upper border of the isthmus and may be connected to the hyoid bone by a fibromuscular band called ***“levator glandulae thyroideae”*** (remnant of Thyroglossal duct in the embryo).



- **Capsule:** the gland has 2 capsules:
 - **True fibrous capsule:** enclosing the gland
 - **False facial capsule:** derived from the pretracheal fascia.



N.B.

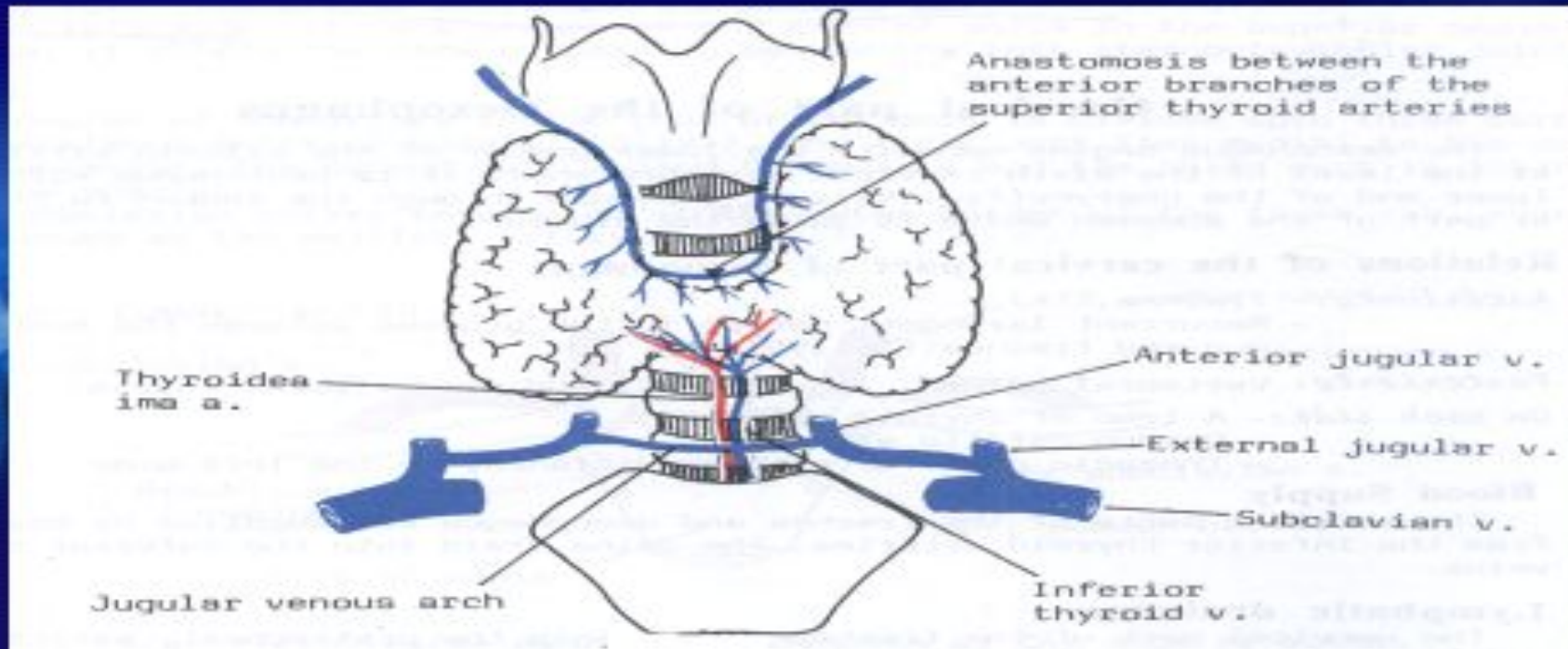
- **The big vessels of the gland run between the 2 capsules**
- **The attachment of the fascial capsule to larynx causes the movement of the gland up and down during the deglutition.**



- **Relations of the thyroid gland**

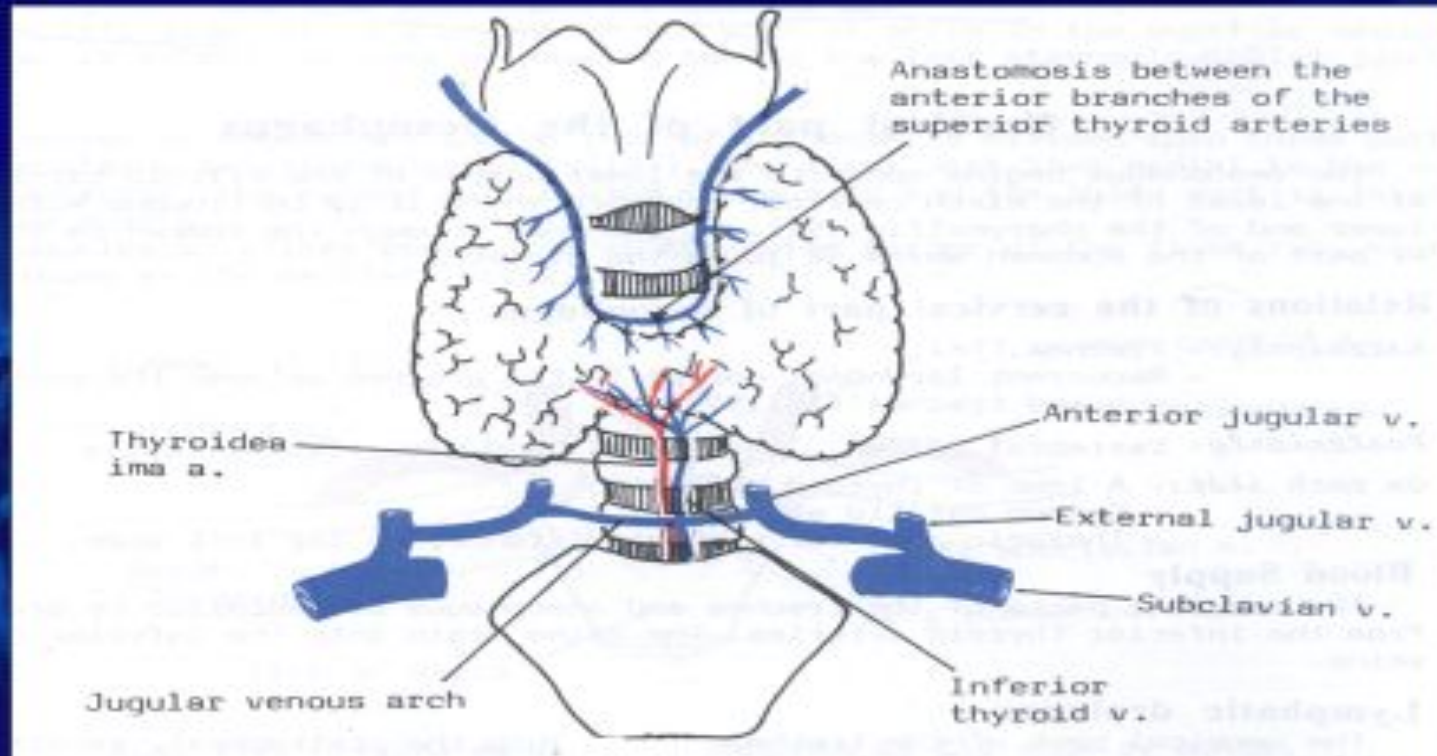
Its upper border:

Is related to anastomotic branch between the 2 superior thyroid arteries.
The pyramidal lobe may project upwards from it.



Relations of the thyroid gland

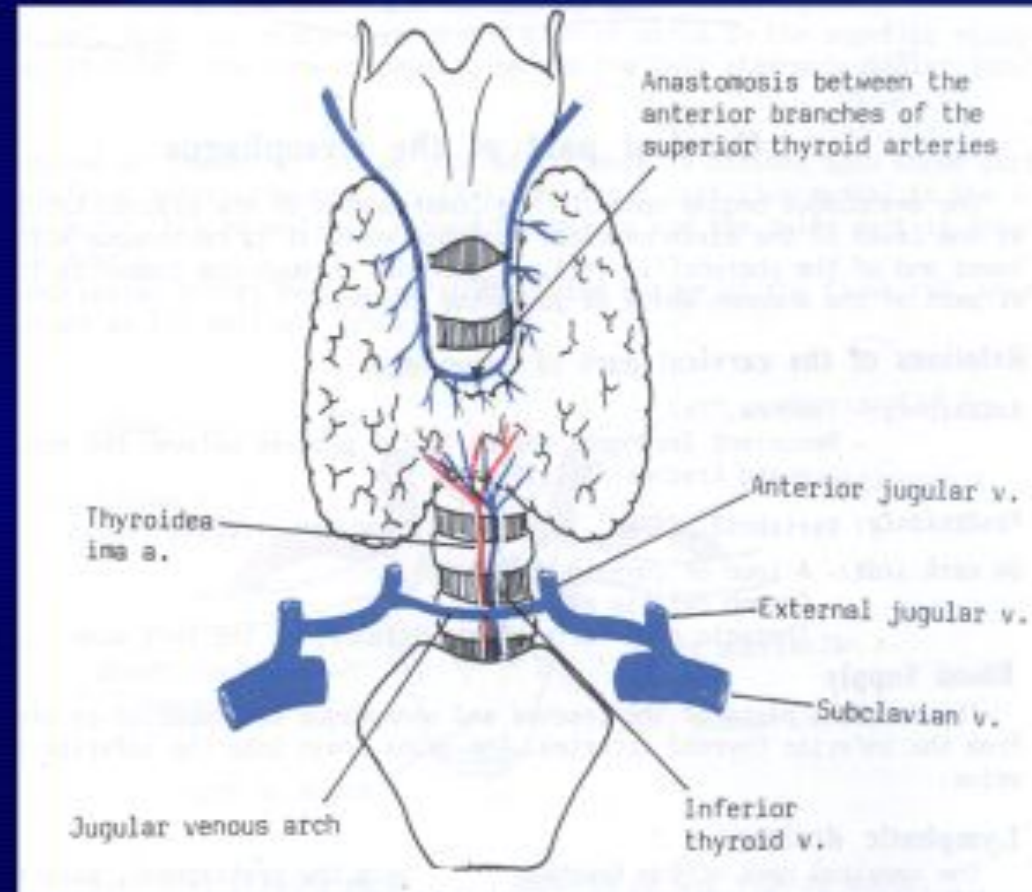
- **Its lower border:**
 - Is related to the inferior thyroid veins, which emerge from the isthmus and the lower parts of both lobes.
 - The thyroidea i



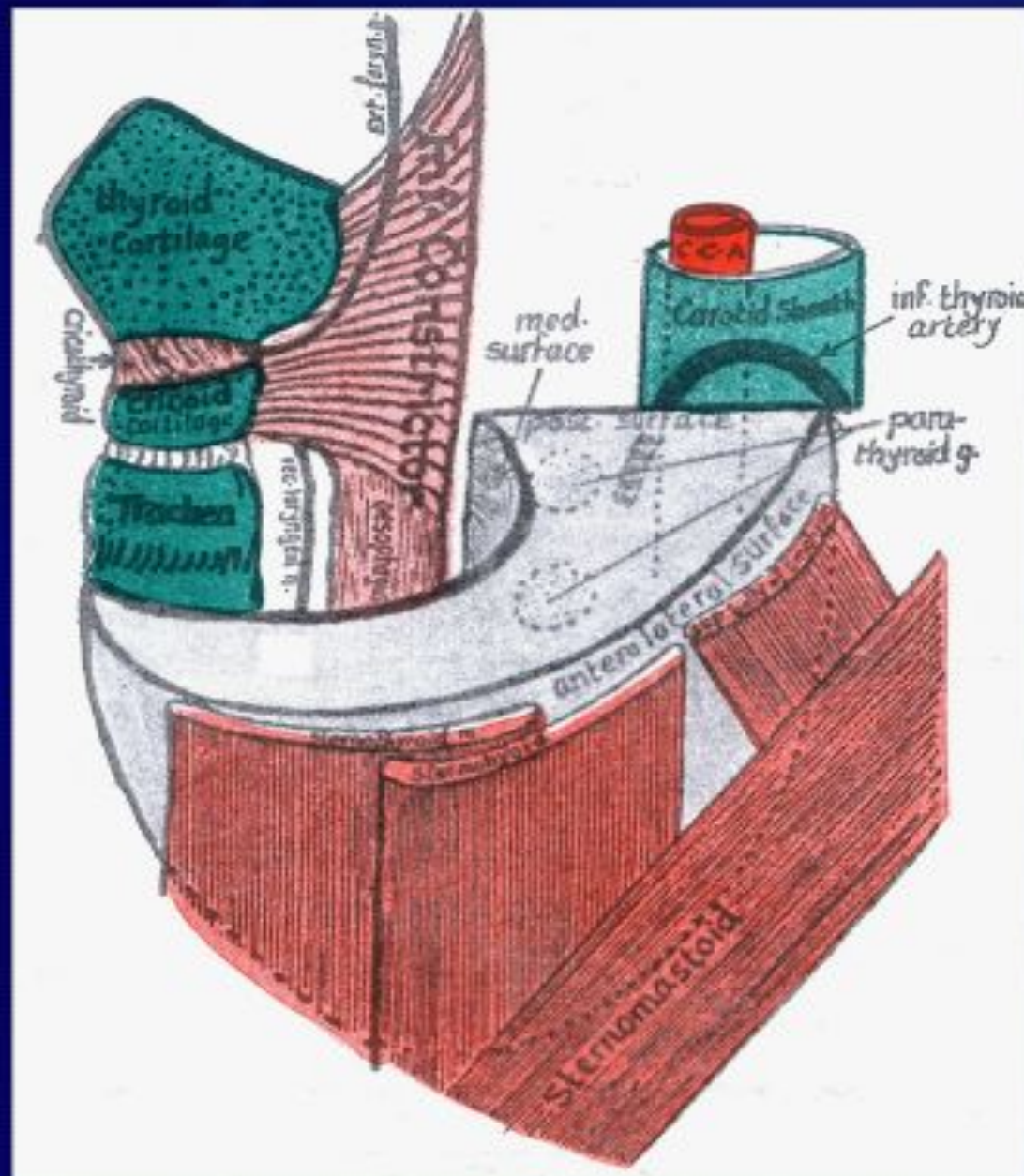
Relations of the thyroid gland

Isthmus:

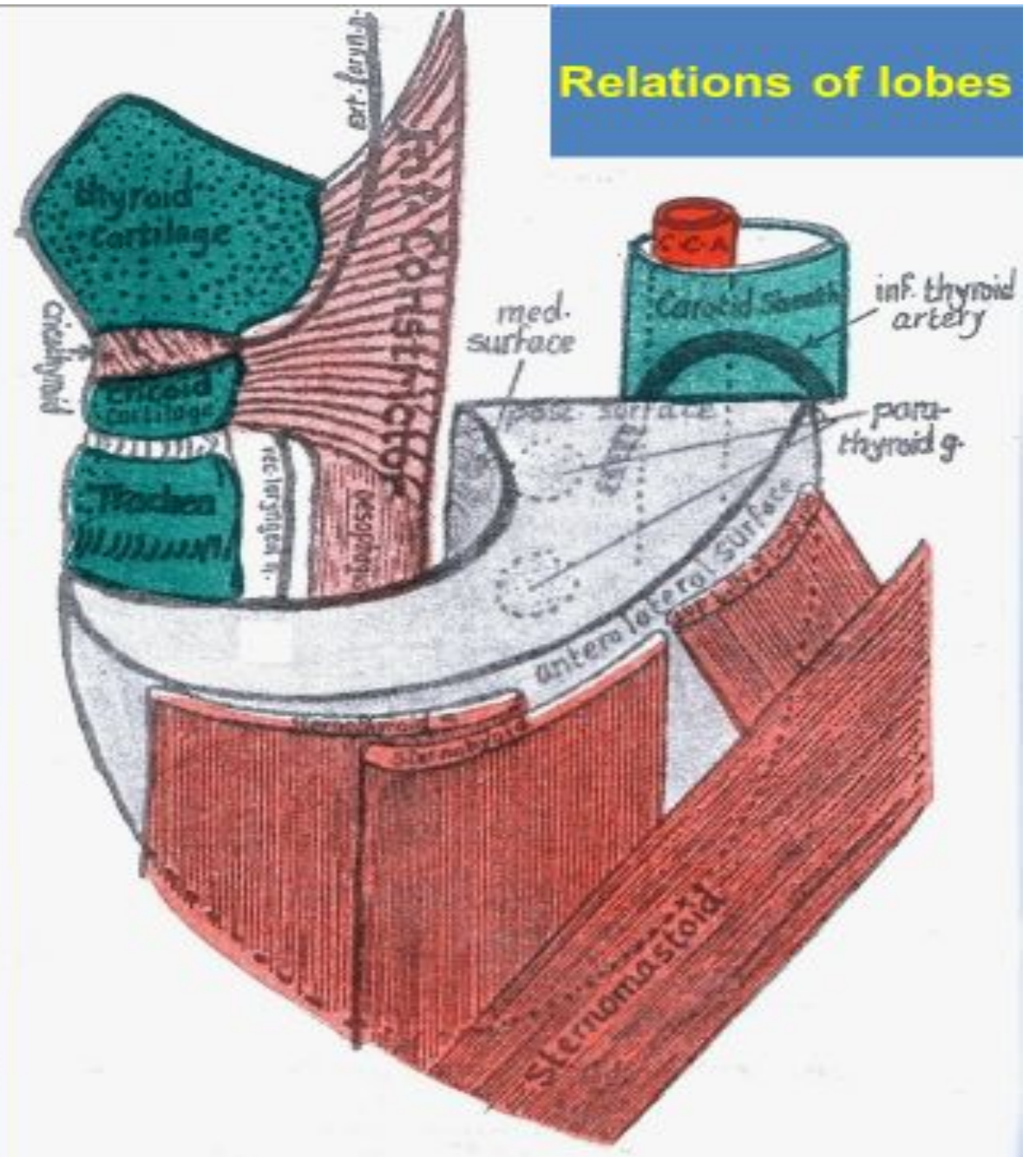
- It is nearer to the bases than the apices of the 2 lobes of the gland.
- It has:
 - **2 surfaces:** anterior & posterior
 - **2 borders:**
 - upper & lower
- **Anteriorly:** it is covered by the
 - Skin & S. fascia.
 - Anterior jugular veins.
 - Deep fascia.
 - Sternohyoid & Sternothyroid muscles.
- **Posteriorly:** it is related to 2nd, 3rd & 4th tracheal rings



- **Medial surface:**
 - **Above →** is related to:
 - **Larynx** (thyroid and cricoid cartilages & cricothyroid muscle).
 - **Pharynx** (inferior constrictor muscle).
 - **External laryngeal nerve.**
 - **Below →** is related to:
 - Upper 6 rings of Trachea.
 - Esophagus.
 - Recurrent laryngeal nerve in groove between them.

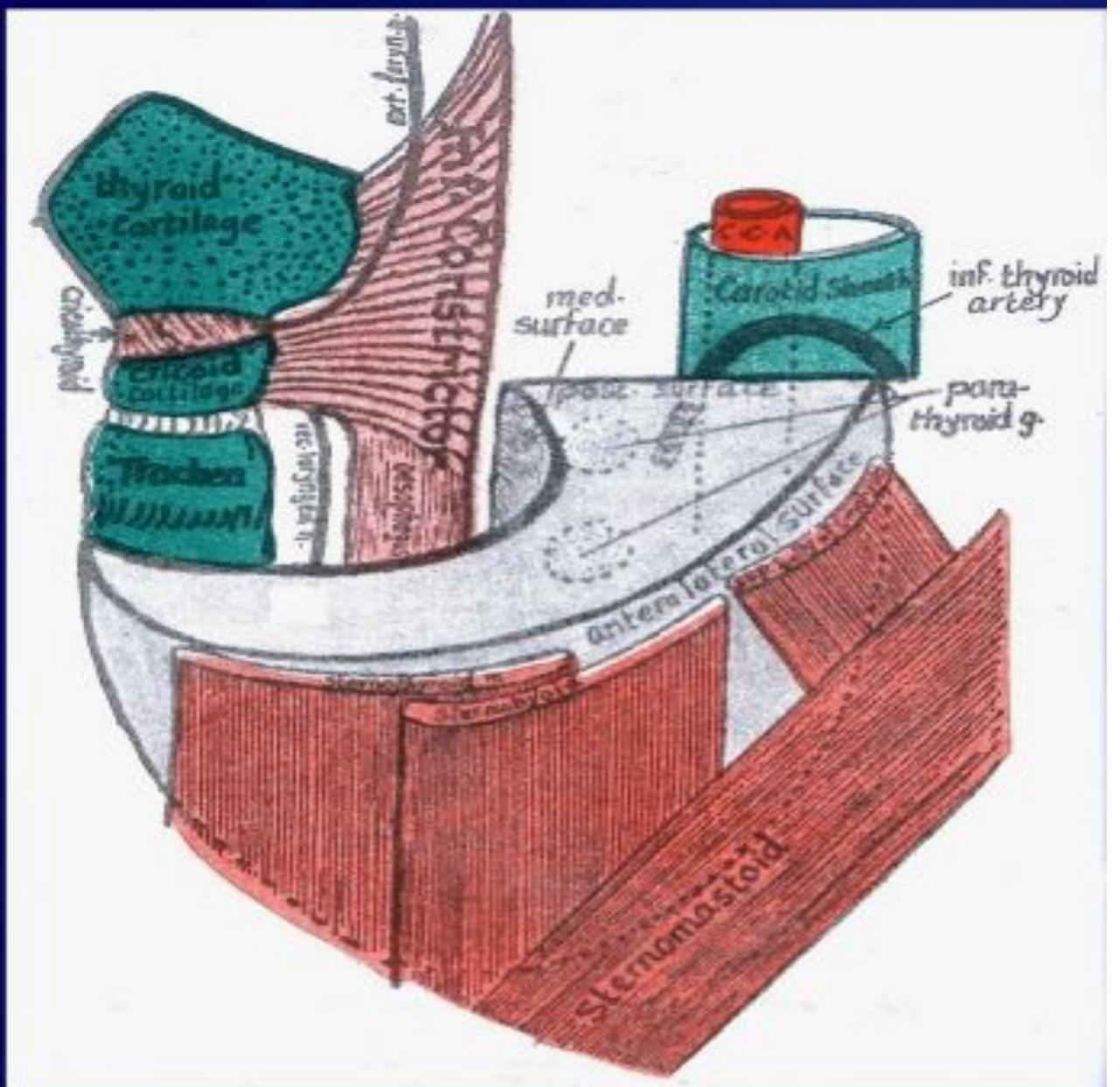


- **Antrolateral (superficial) surface:**
 - Is covered by skin, superficial and deep fasciae Platysma m.
 - It is overlapped by the sternothyroid, sternohyoid, superior belly of omohyoid and anterior border of sternocleidomastoid



- **Posterior surface:**

- Is related to the carotid sheath where it overlaps the common carotid artery.
- 2 parathyroid glands
- ITA



Arterial supply

Superior thyroid artery

□
branch of
external carotid
artery

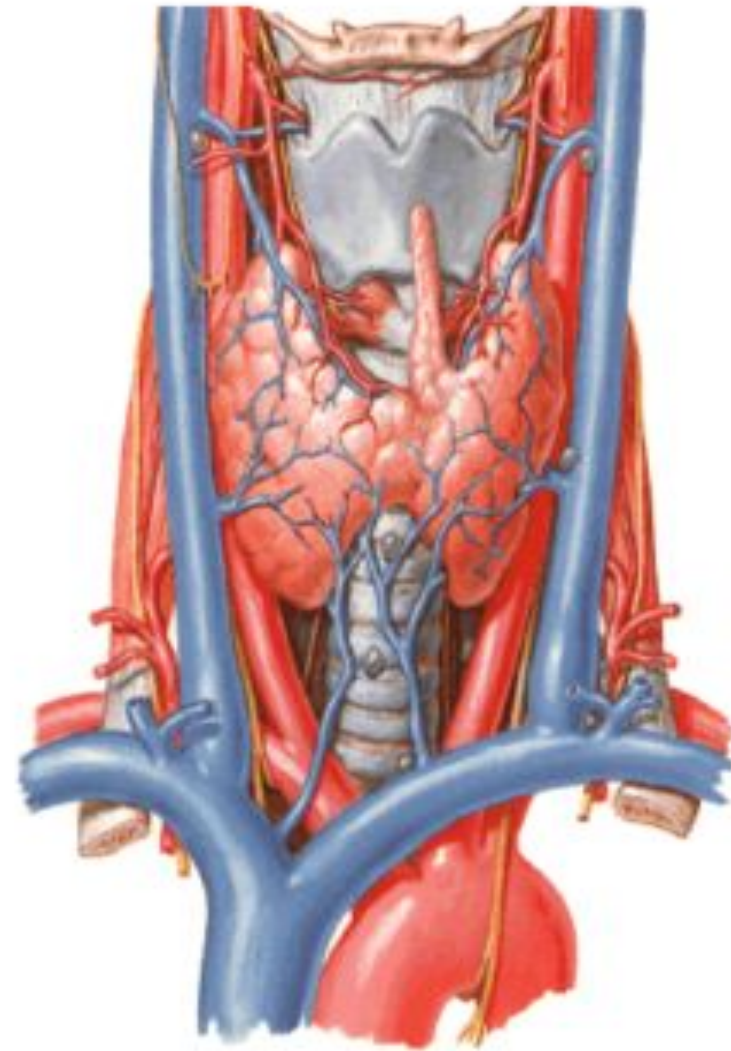
Inferior thyroid artery

□
branch of
thyrocervical
trunk

Thyroidea ima artery

□
branch of
brachiocephalic
trunk or arch of
aorta

- ***Superior thyroid artery:***
 - It supplies:**
 - Upper 1/3 of the lateral lobe.
 - Upper 1/2 of the isthmus.
 - It is closely accompanied by:
 - Superior thyroid vein.
 - External laryngeal nerve.
 - It terminates by dividing into anterior and posterior glandular branches:
 - Anterior branch: runs along anterior border of the lobe.
 - Posterior branch: descends on the posterior border of the lobe

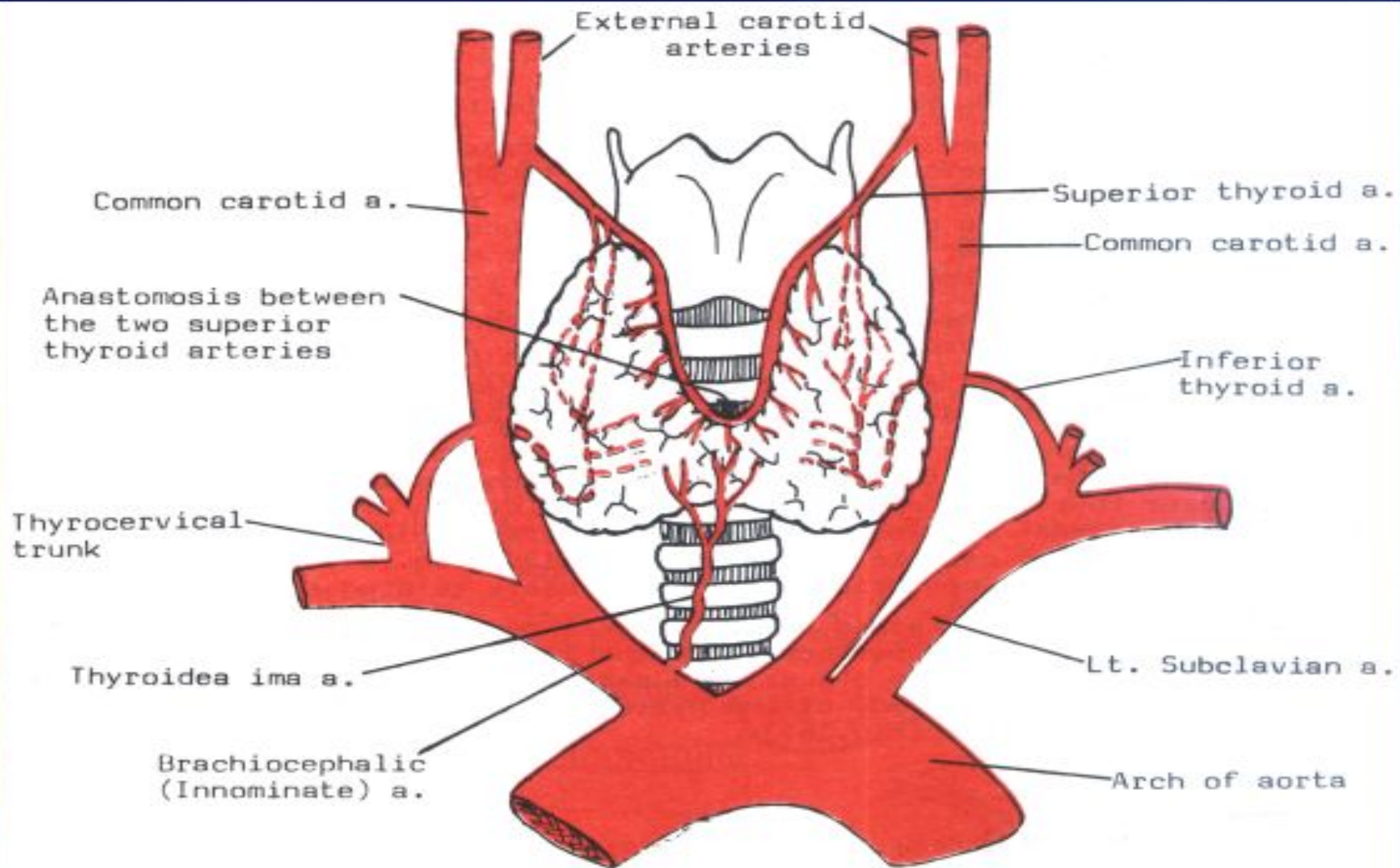


■ *Inferior thyroid artery:*

- **It supplies:**
 - Lower 2/3 of the lateral lobe.
 - Lower 1/2 of the isthmus.
- The **recurrent laryngeal nerve** is related to the artery *close to the gland*.
- It gives an ascending branch that supplies the parathyroid glands and anastomoses with the posterior branch of the superior thyroid artery.

■ *Thyroidea ima artery:*

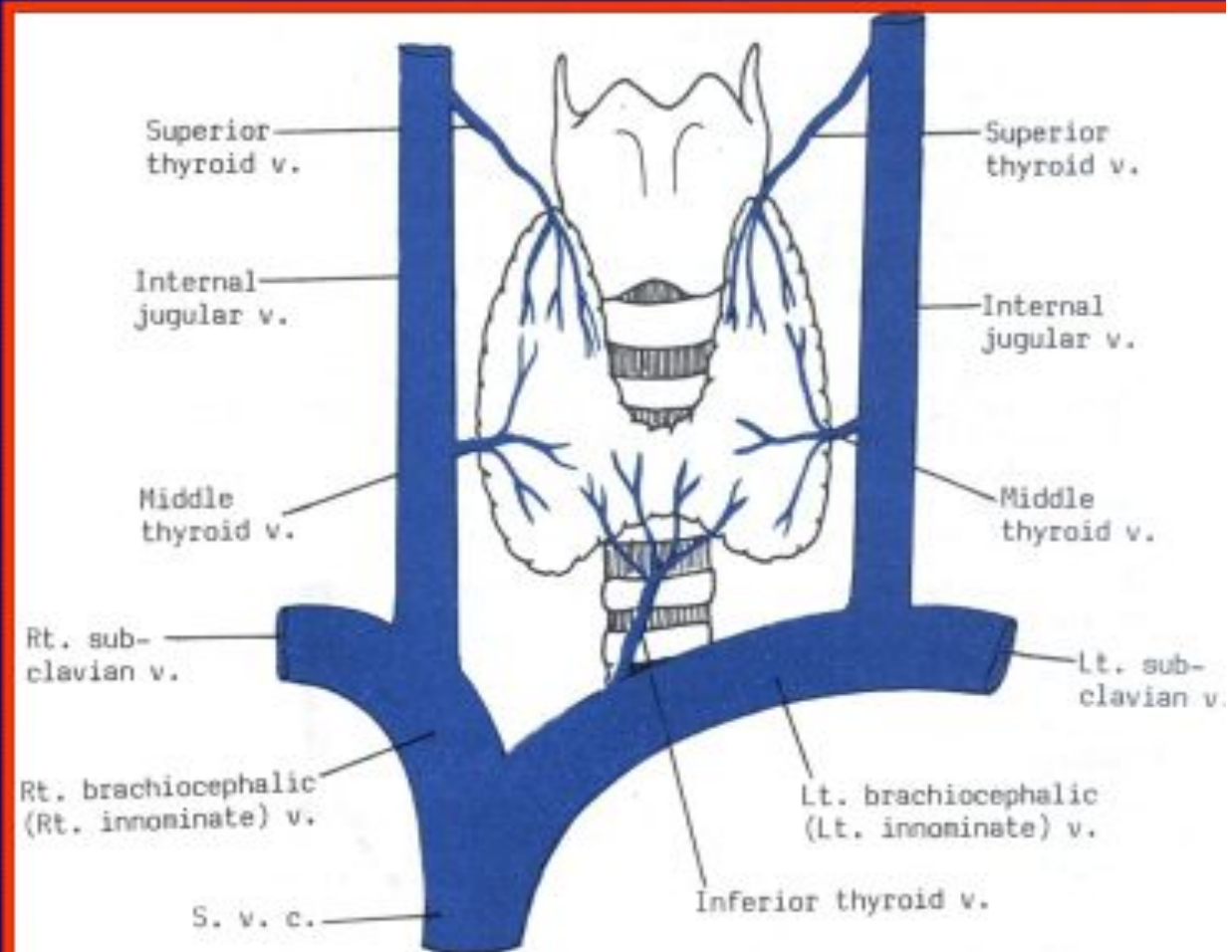
- It ascends in front of the trachea and supplies the isthmus of the gland.



Venous drainage

- The veins of the gland form a plexus on its surface, which gives rise to

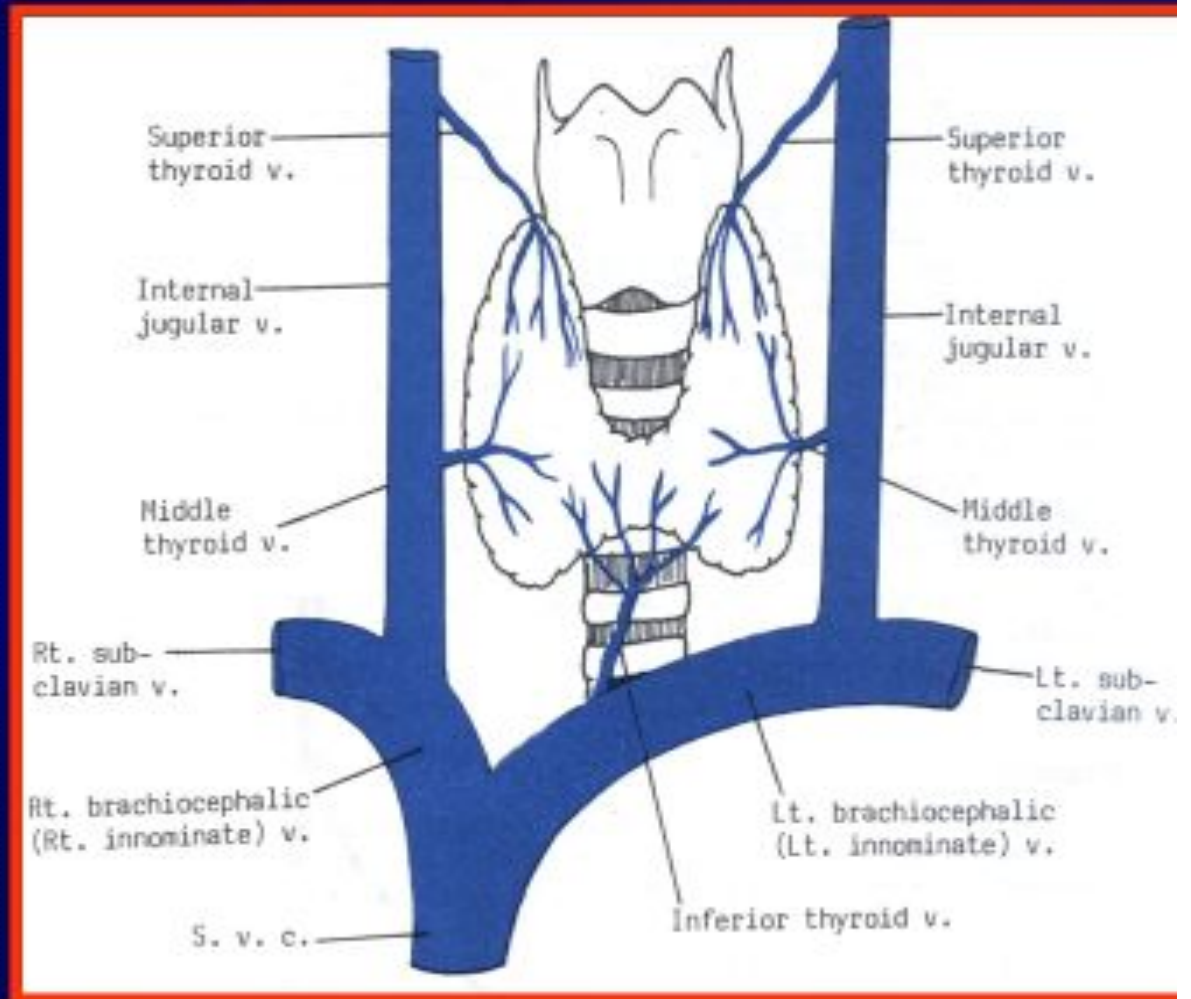
- Superior thyroid vein:** runs close to the superior thyroid A. & ends in the internal jugular vein.



Venous drainage

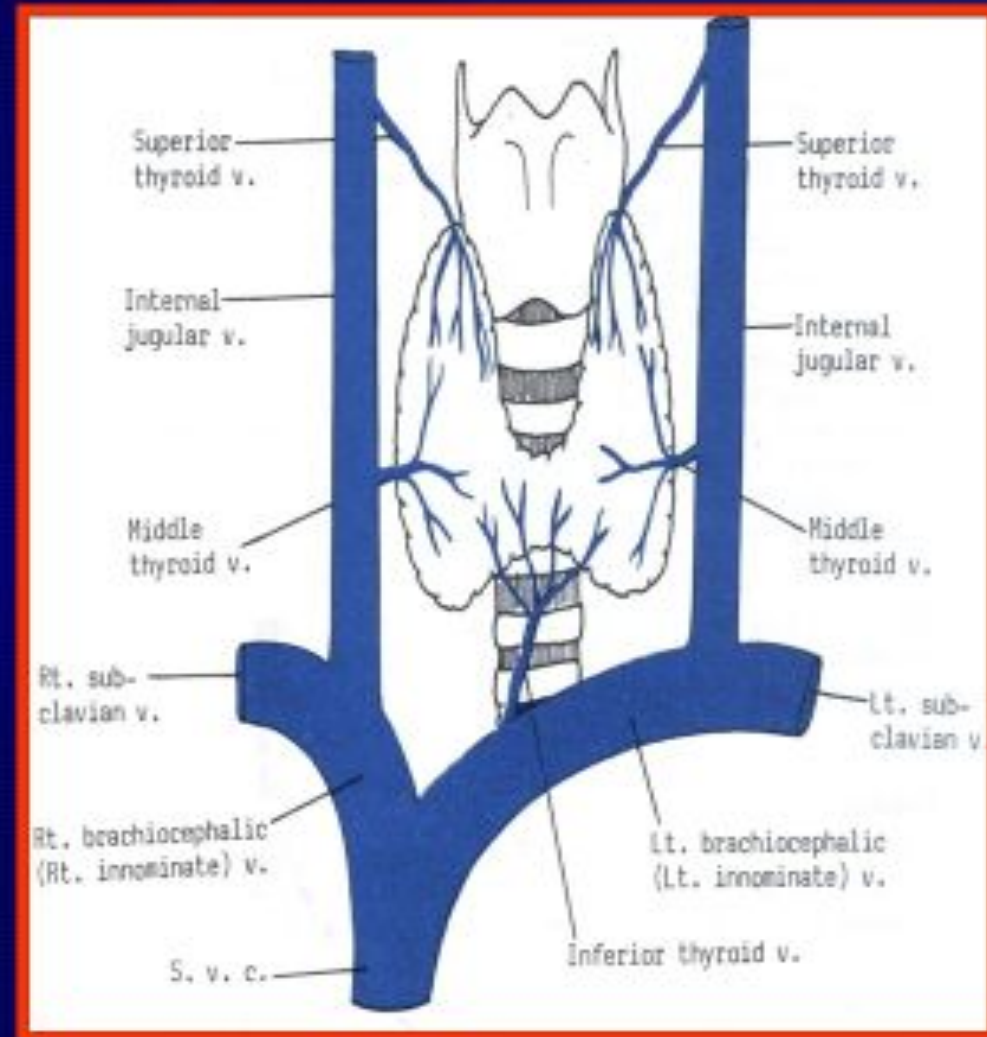
Middle thyroid vein:

a short vein, which arises near the base of the lobe. It ends in the *internal jugular vein*.

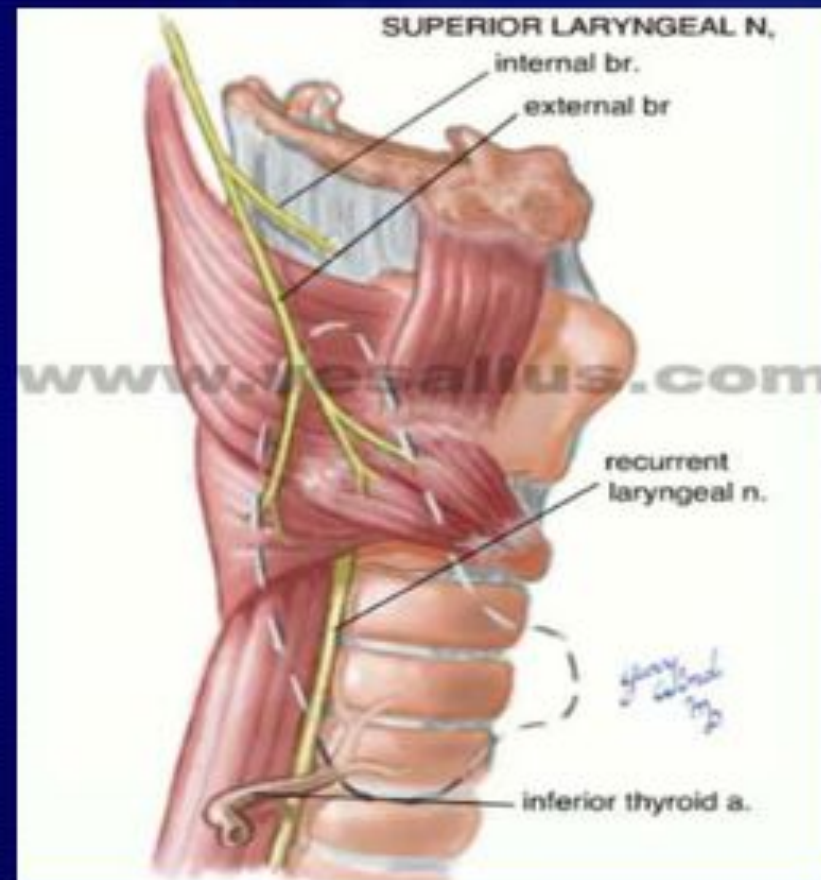
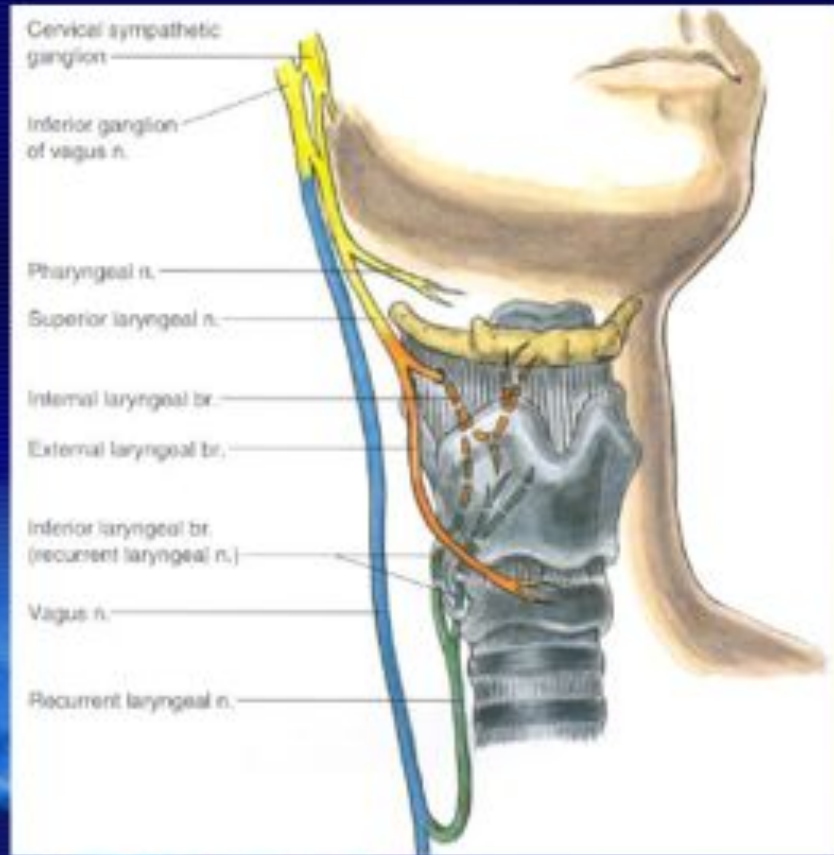


Venous drainage

- **Inferior thyroid vein:**
1- 2 veins that arises from the lower parts of the isthmus and both lobes. It descends in front of trachea to open in **Lt. brachiocephalic vein.**

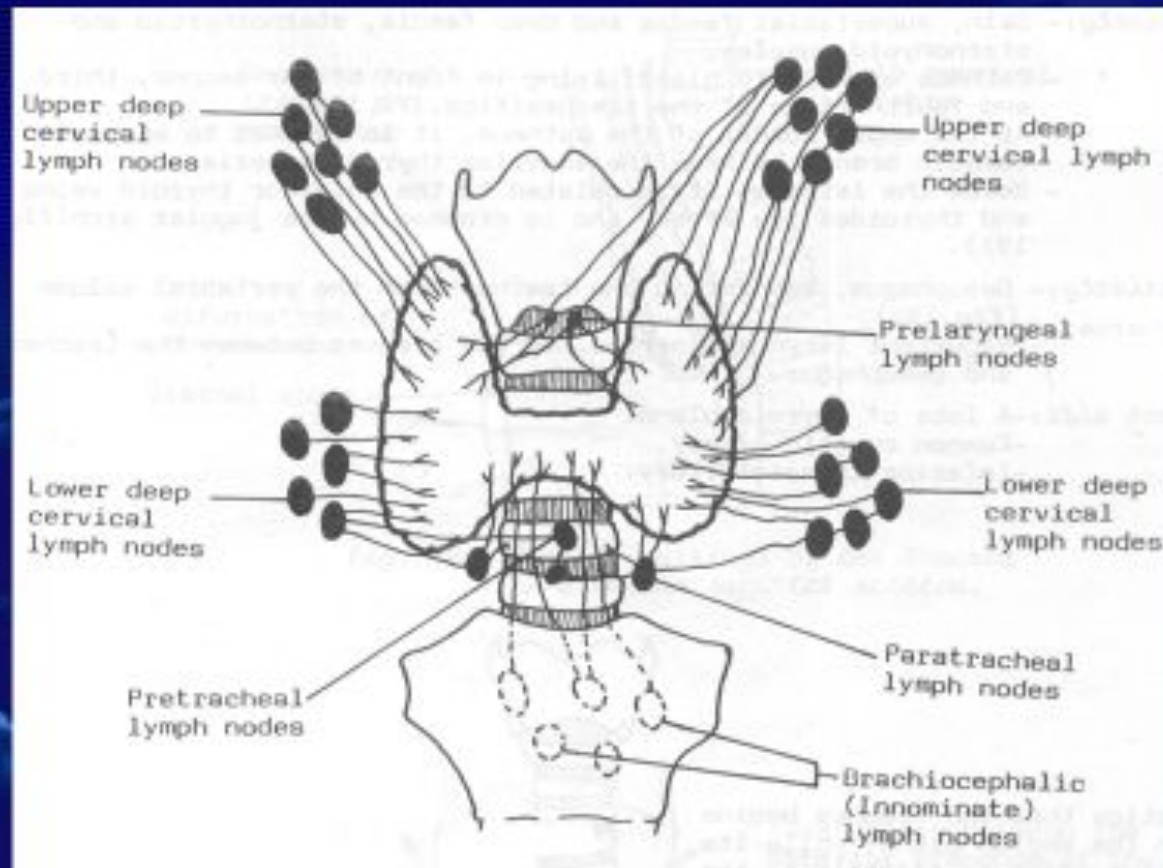


Nerves related to thyroid

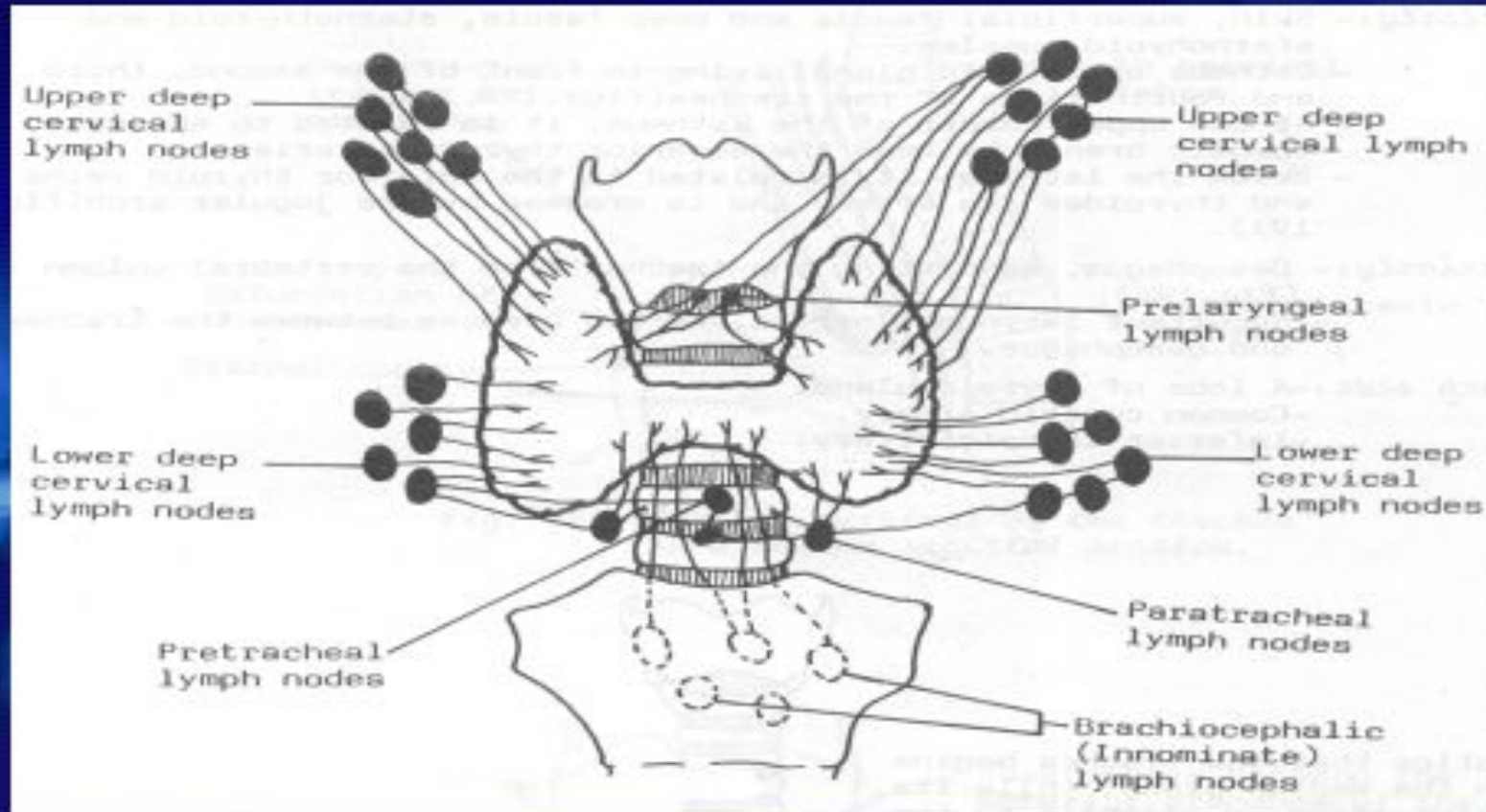


• Lymphatic drainage:

- The upper part of the gland drains into the upper deep cervical L.Ns. (present along the I.J.V.).
- The lower part of the gland drains into the lower deep cervical L.Ns. (present along the I.J.V.).



- **Some vessels** drain in the
 - **Prelaryngeal L.Ns. → in front of cricothyroid membrane.**
 - **Pretracheal L.Ns. → in front of trachea.**



Parathyroid glands

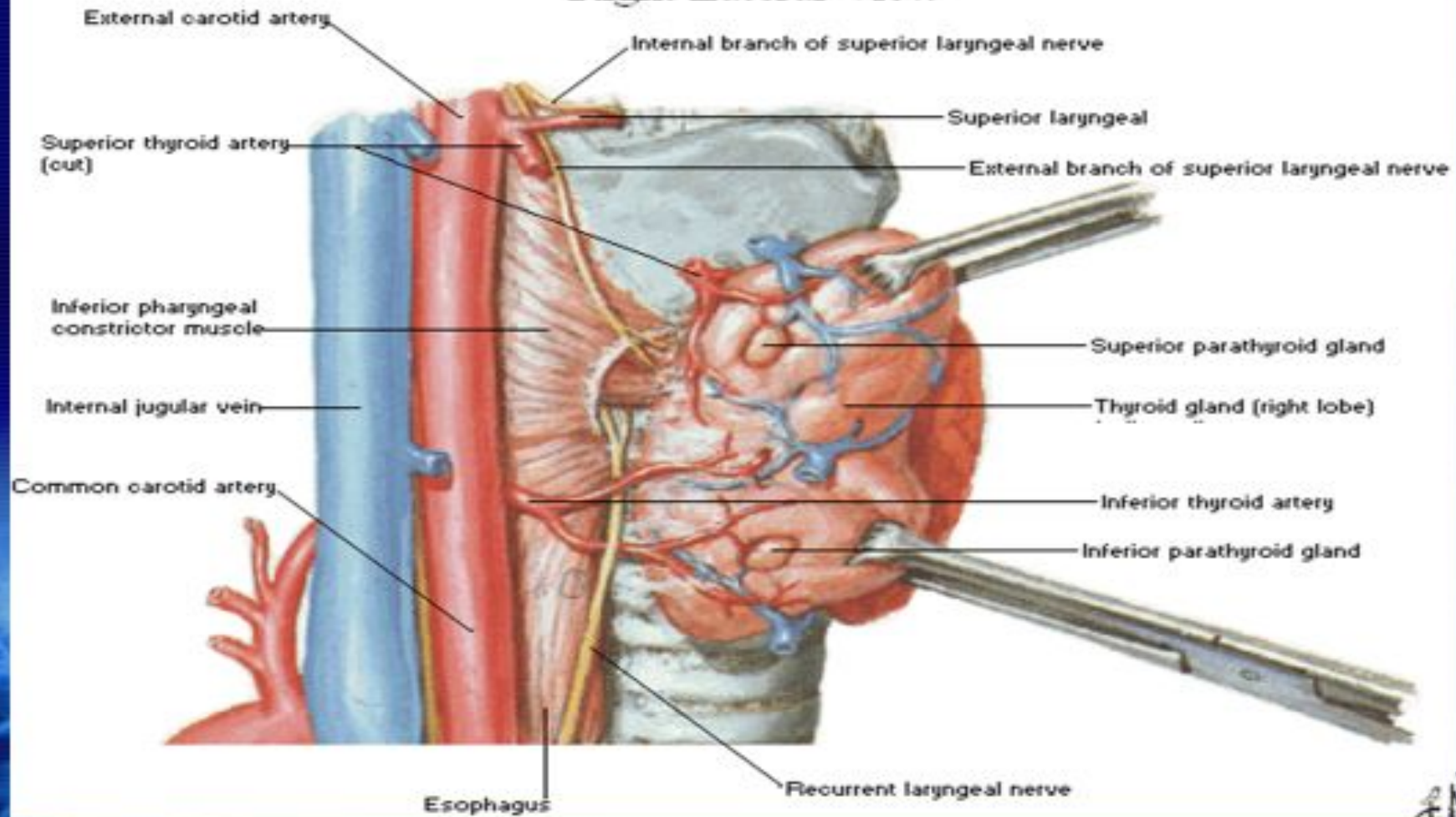
- These are 4 small yellowish ovoid glands; 2 on each side: superior & inferior.
- They measure about 6 mm long in their greatest diameter, wt 30 mg.
- They are intimately related to the posterior border of the thyroid gland, lying within its fascial capsule.

Parathyroid glands

- ***The 2 superior parathyroid glands:*** are the more constant in position and lie at the level of the middle of the posterior border of the thyroid gland.
- ***The 2 inferior parathyroid glands:*** usually lies near the base of the thyroid lobe, but it may be embedded in the substance of the thyroid gland or outside the thyroid capsule.

Parathyroid Glands

Right Lateral View



- **Arterial supply:** are supplied by the inferior thyroid arteries.
- ⌘ **Venous drainage:** into the inferior thyroid veins.
- ⌘ **Lymphatic drainage:** into the lower deep cervical L.Ns.
Some lymphatics are drained in the paratracheal L.Ns

