

Anatomy of Thyroid Gland

By

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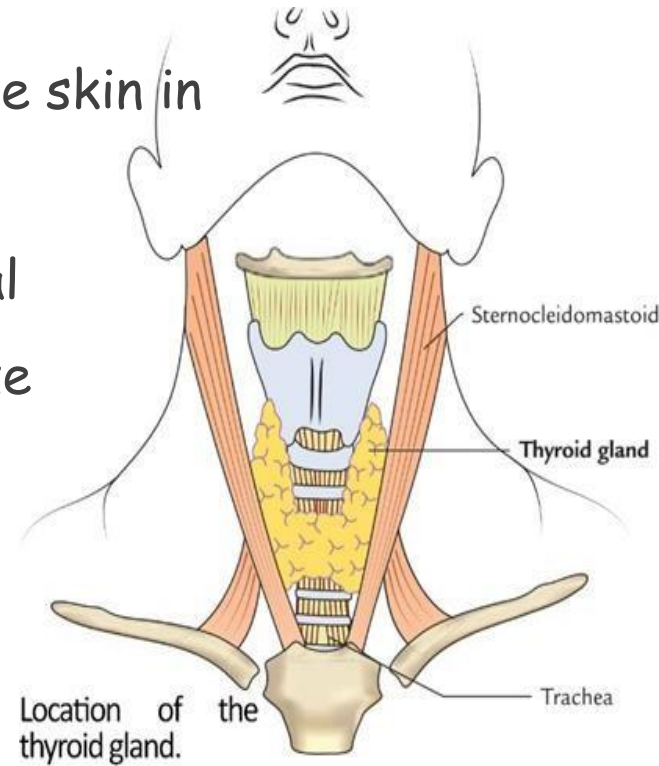


Definition the largest endocrine gland of the body. secretes thyroxine and calcitonin hormones.

تسمى الغدة الصم لأنها تفرز الهرمونات في الدم مباشرة وليس عن طريق قنوات .

Special Features

- The only endocrine gland, which is located near the skin in the body.
- The only endocrine gland that depends on external environment for raw material, iodine, to synthesize its hormones.
- The only endocrine gland, which does not pour its hormones into blood immediately after formation but stores them and then releases them in blood when required.
- It is one of the organ of the body having a very rich blood flow.

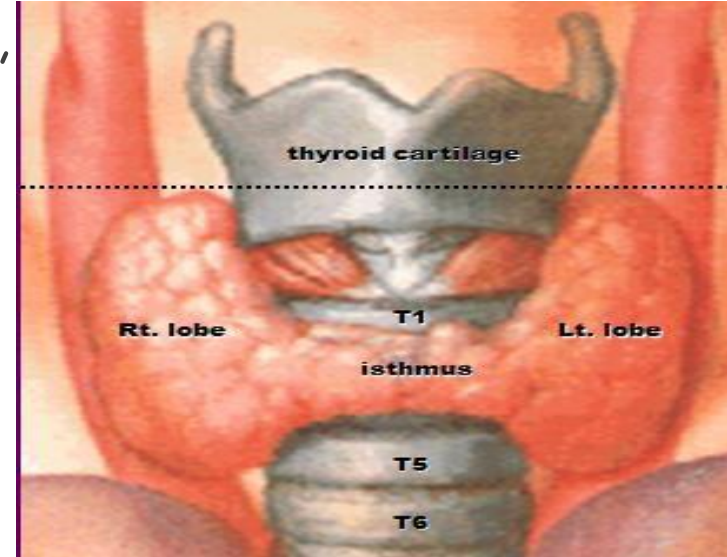


SITE: in muscular triangle. opposite to the C5, C6, C7 and T1 vertebrae

Shape : roughly (H) shaped (butterfly)

PARTS:

- Right and left lobes.
- Isthmus.
- **Pyramidal lobe:** Sometimes a small lobe projects upwards from the isthmus. May be connected to the body of the hyoid bone by a fibrous or fibromuscular band called levator glandulae thyroideae.



Extention:

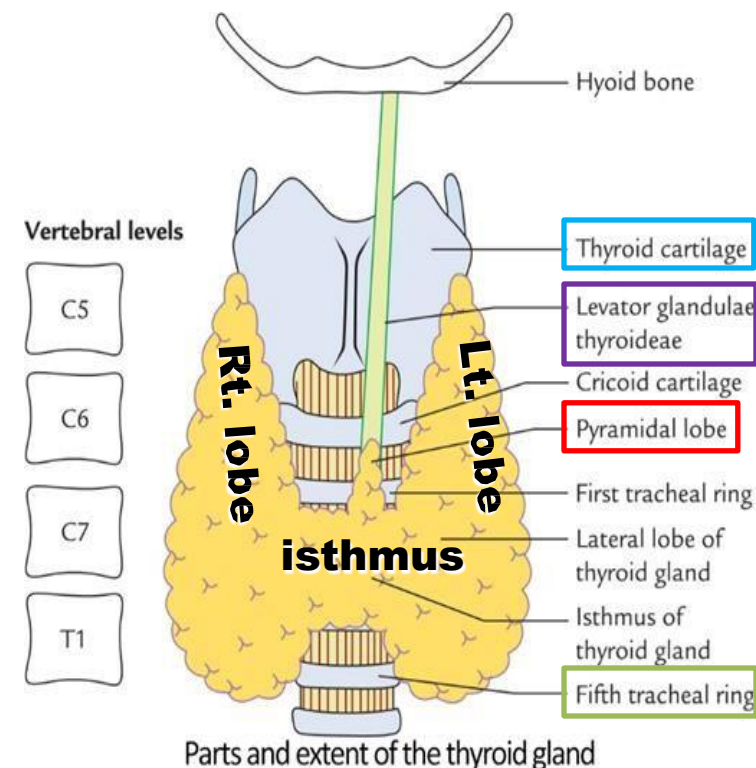
=Anterior level:

1.LOBES:

from the middle of the **thyroid cartilage** to **5th tracheal rings**.

2.ISTHMUS: 2nd,3rd & 4th tracheal rings

=Posterior level: C5,6,7 and T1 vertebrae



Capsules

(1) True capsule :

=is the peripheral condensation of the connective tissue of the gland

(2) False capsule :

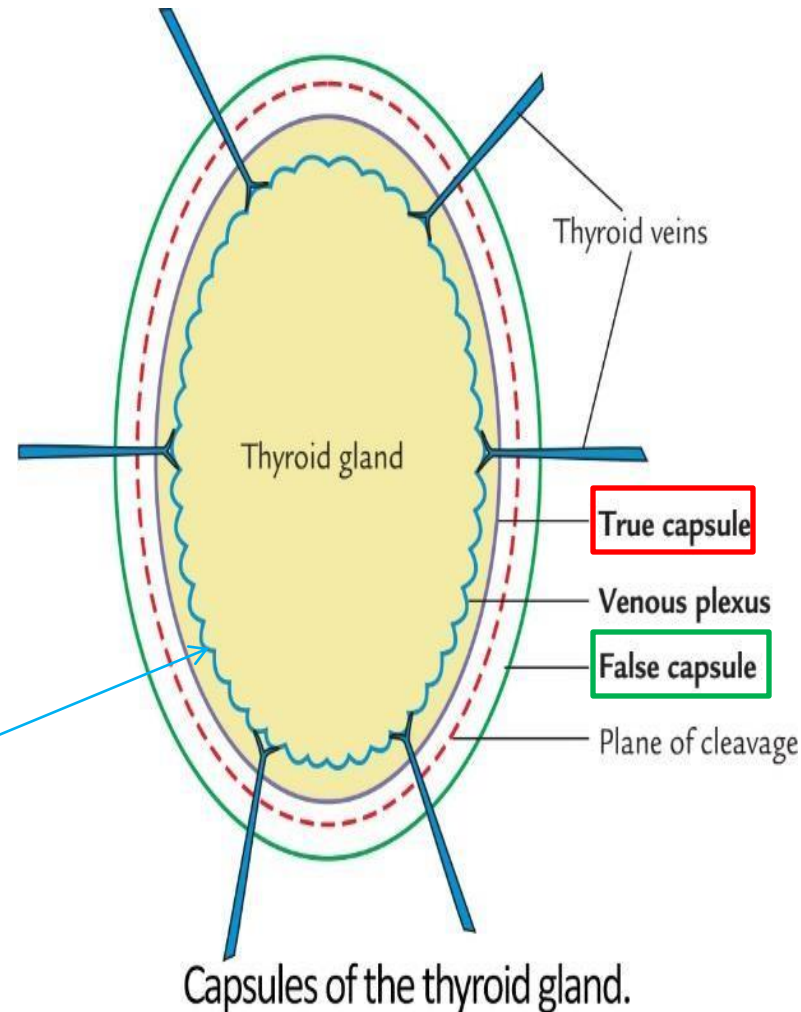
=lies outside the true capsule.

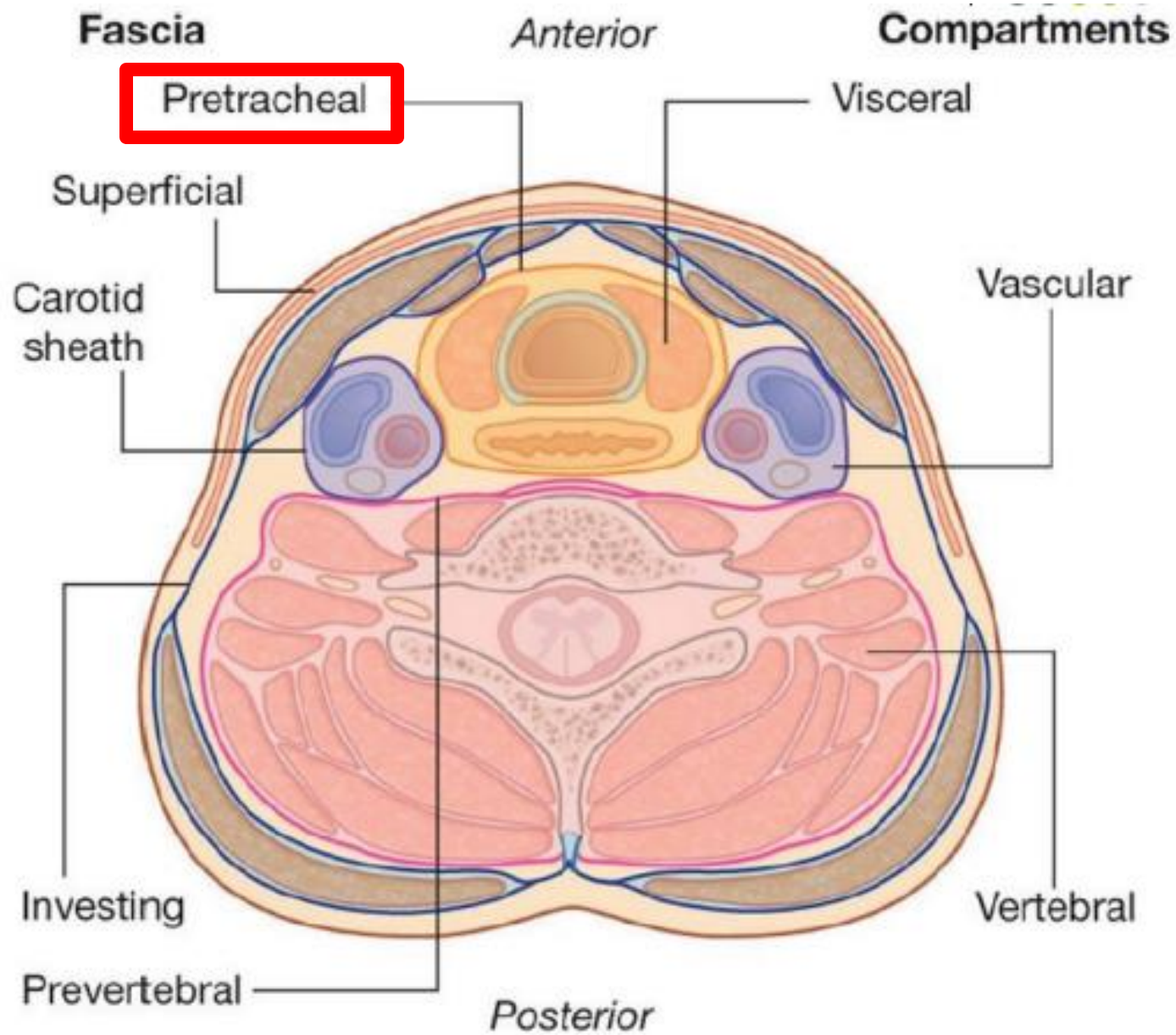
=a sheath of pretracheal layer of deep cervical fascia.

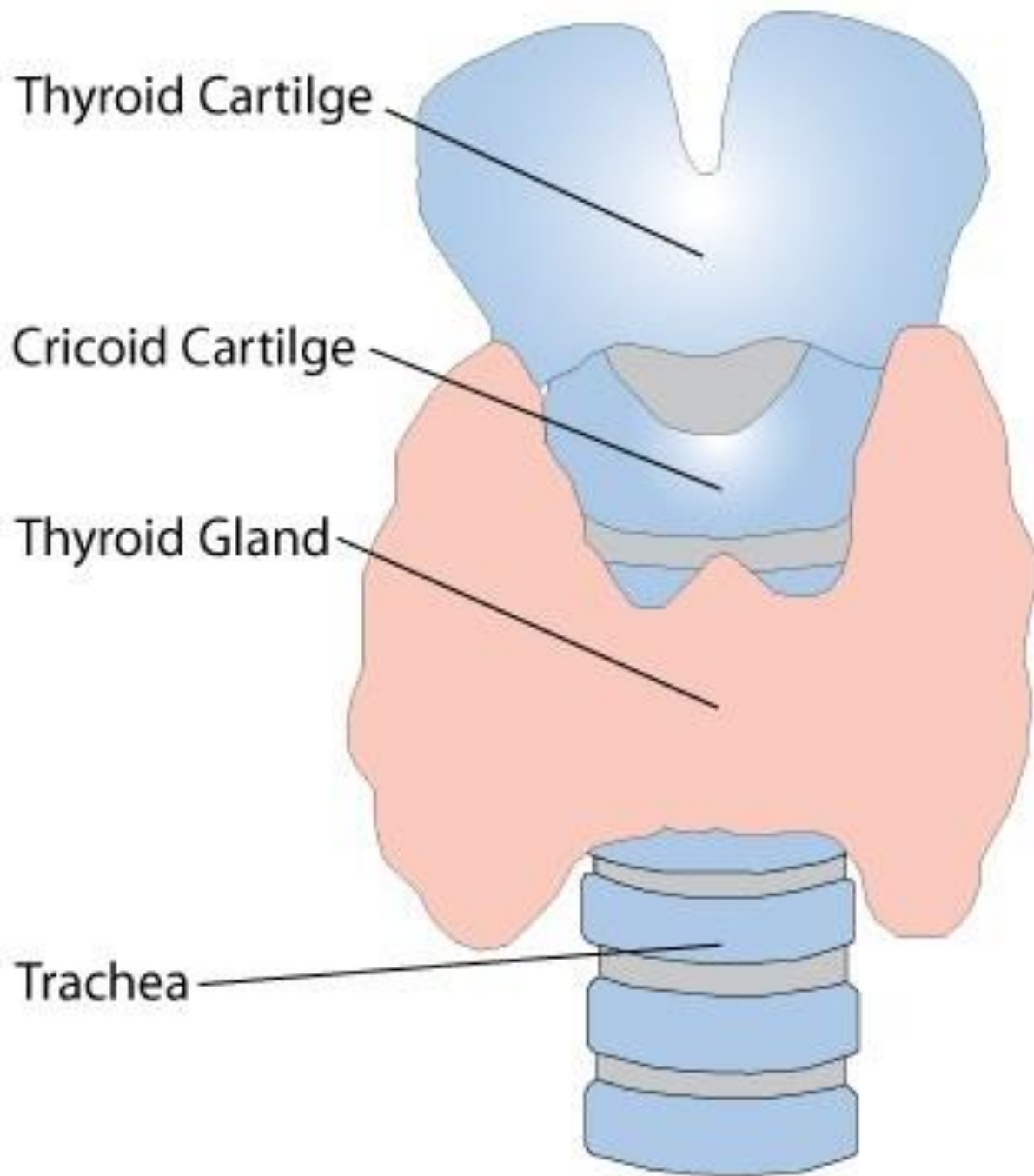
=fixes the gland to the thyroid and cricoid cartilage. So the gland moves with the larynx during deglutition.

(3) A dense venous plexus:-

=is present deep to the true capsule.







Relations:

A) Lobes : conical in shape & has apex and base - 3 surfaces - 2 borders.

1. **Apex**: upwards & Reach the oblique line of the thyroid cartilage.

2. **Base**: downwards & Reach the 5th tracheal ring.

3. **Surfaces**: 3

a. Lateral (superficial)

- Sternomastoid, Sternohyoid - Sternothyroid.
- superior belly of omohyoid.

b. Medial

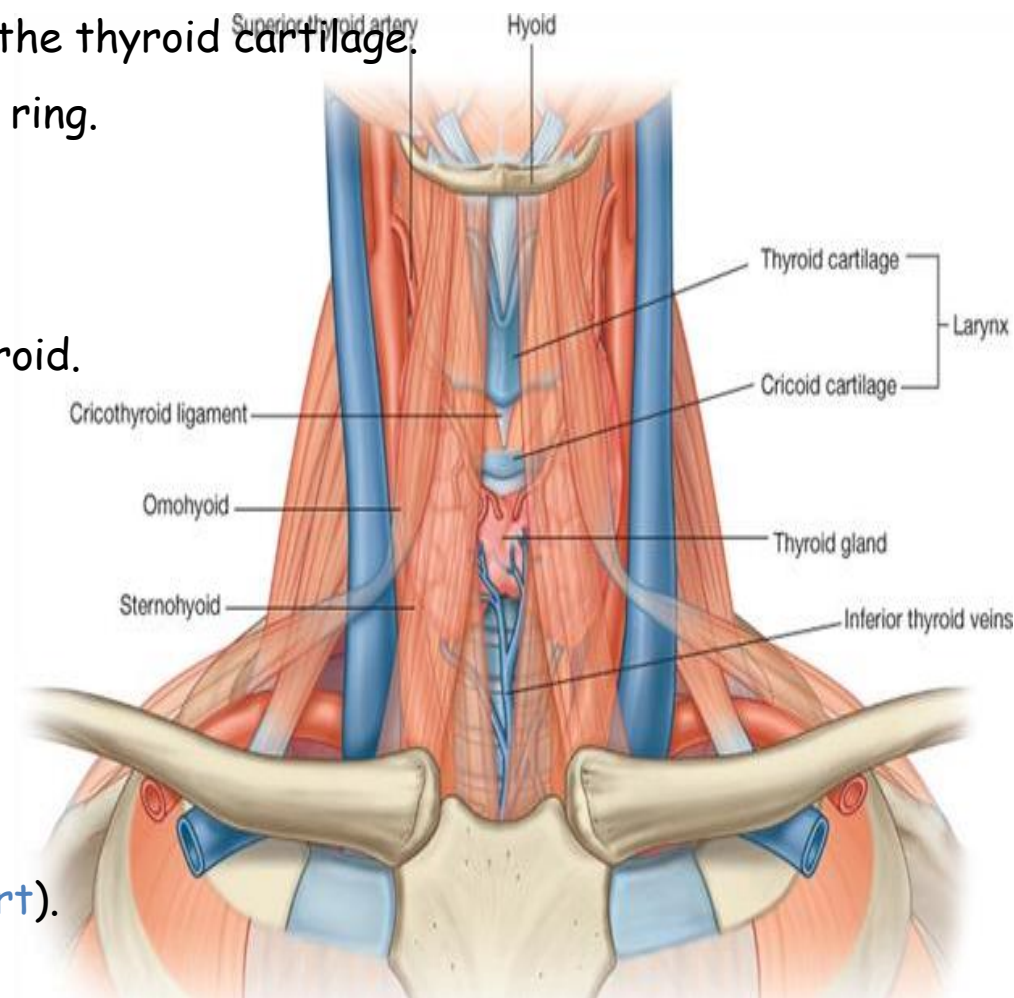
- Upper part: larynx, pharynx & external laryngeal N.
- Lower part: trachea, esophagus & recurrent laryngeal N.

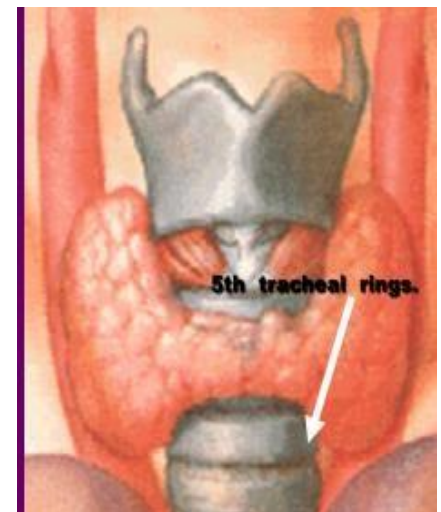
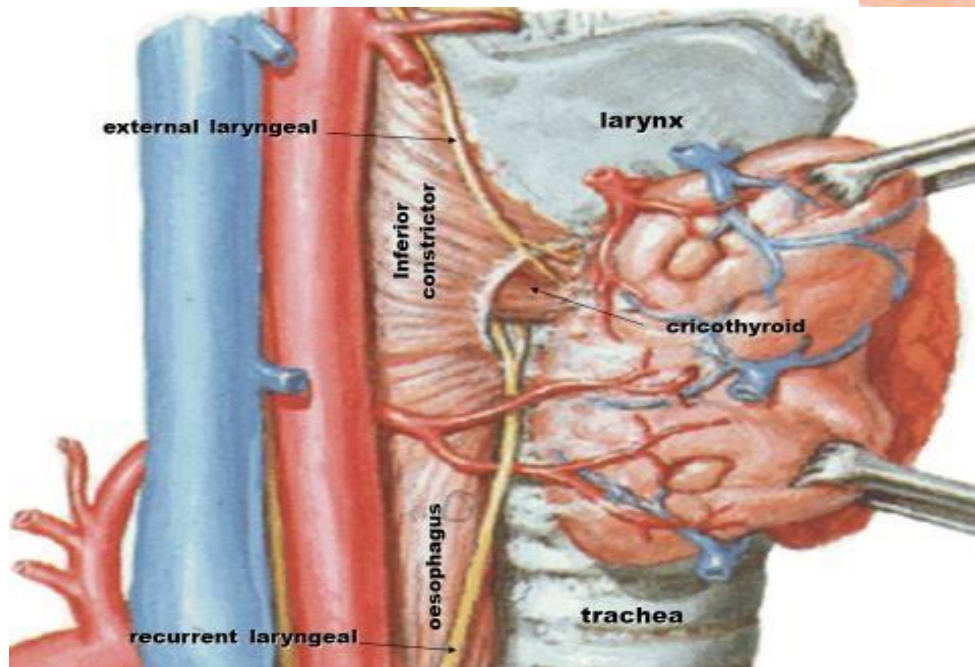
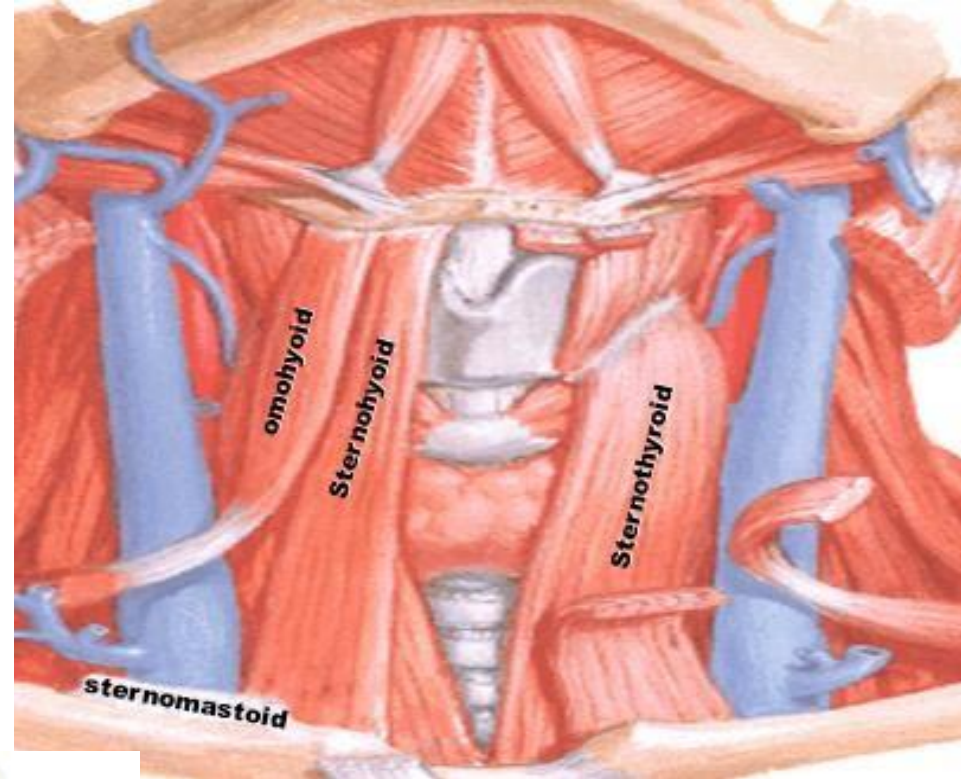
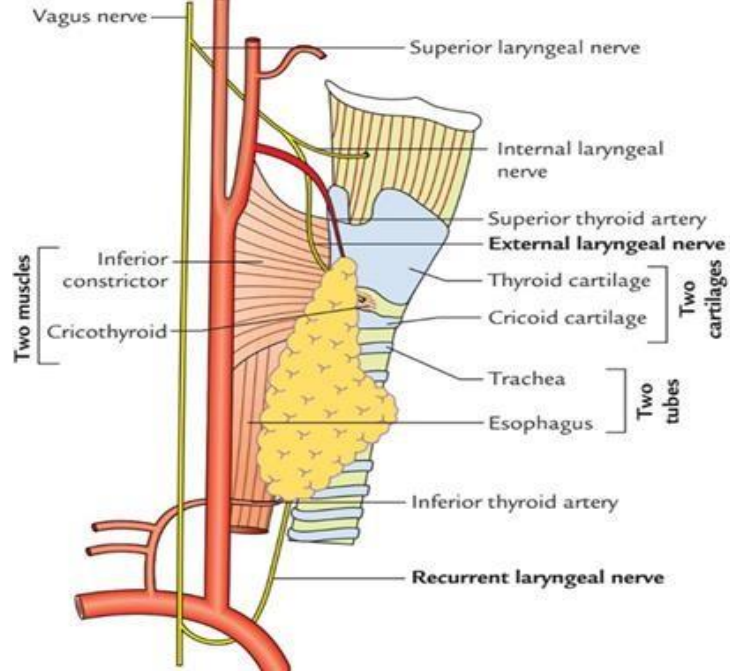
c. **Posterior**: Carotid sheath (CCA= lower part).

4. **Borders**

a. **Anterior**: Related to ant branch of superior thyroid artery.

b. **Posterior**: Related to anastomotic branches between superior and inferior thyroid arteries & parathyroid glands.





B) Isthmus

1. Anterior surface: is covered by :

- a. sternothyroids & sternohyoids.
- b. anterior jugular veins.
- c. fascia and skin.

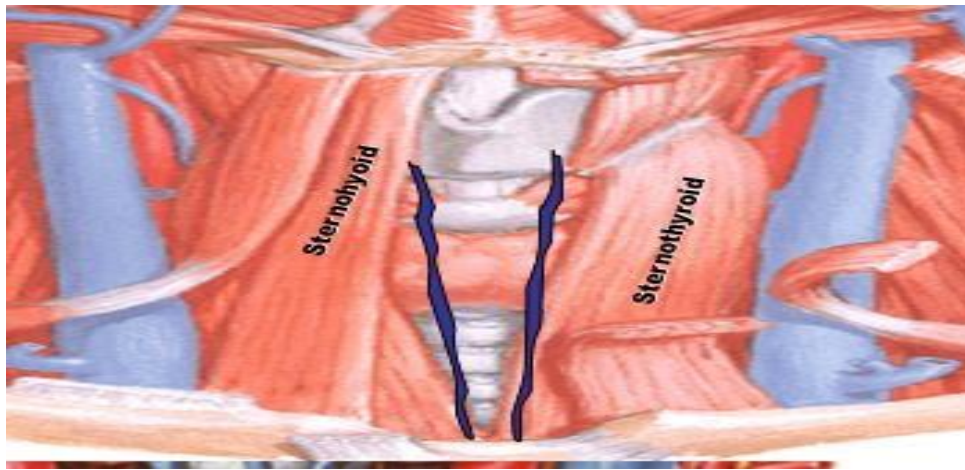
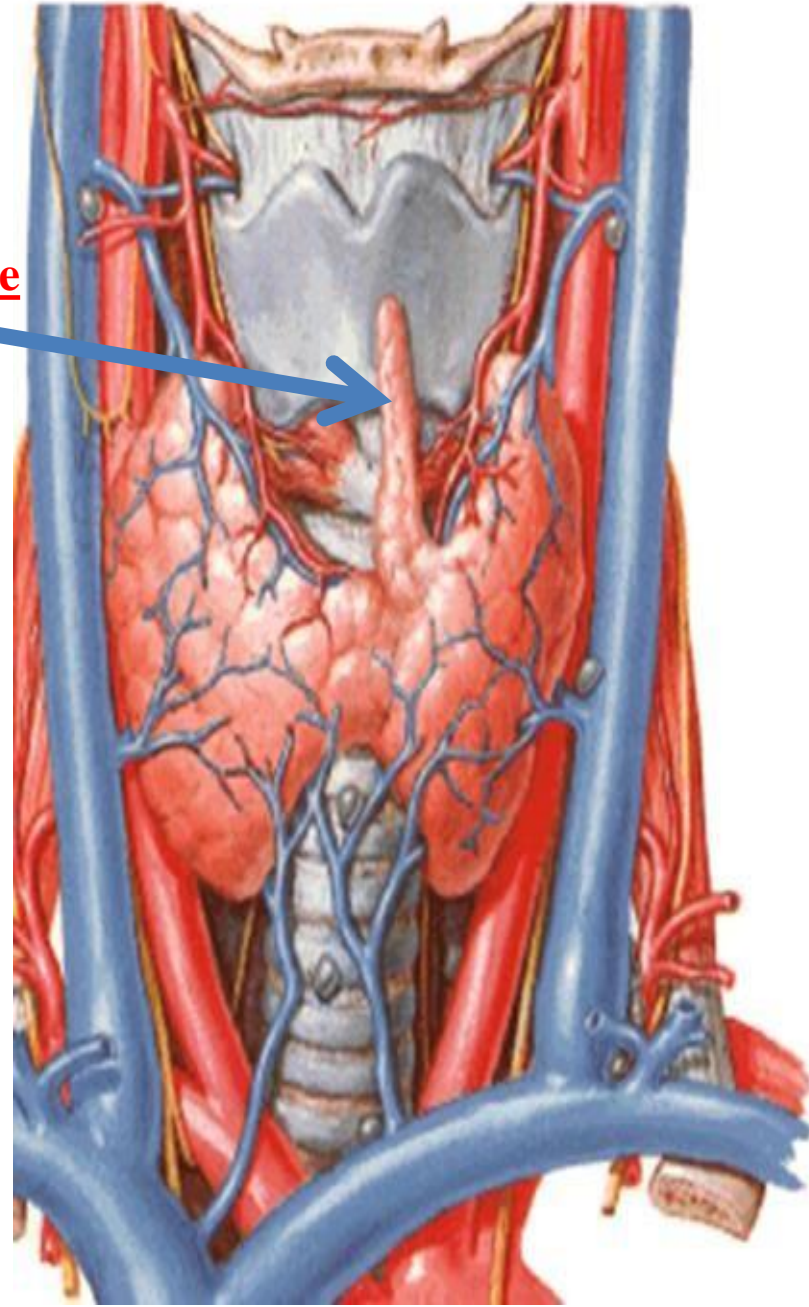
2. Posterior surface:

2nd, 3rd and 4th tracheal rings

3. Upper border : anastomosing branches between the two superior thyroid arteries.

4. Lower border: inferior thyroid veins

Pyramidal lobe



Arterial supply

Very impooooortant

1- Superior thyroid artery:

= branch of external carotid artery. accompanied by external laryngeal n.

= It divides into anterior and posterior branches.

= supplies the upper 1/3 of the lobe and upper 1/2 of the isthmus.

2 Inferior thyroid artery:

=branch from the thyrocervical trunk from the first part of the subclavian artery.

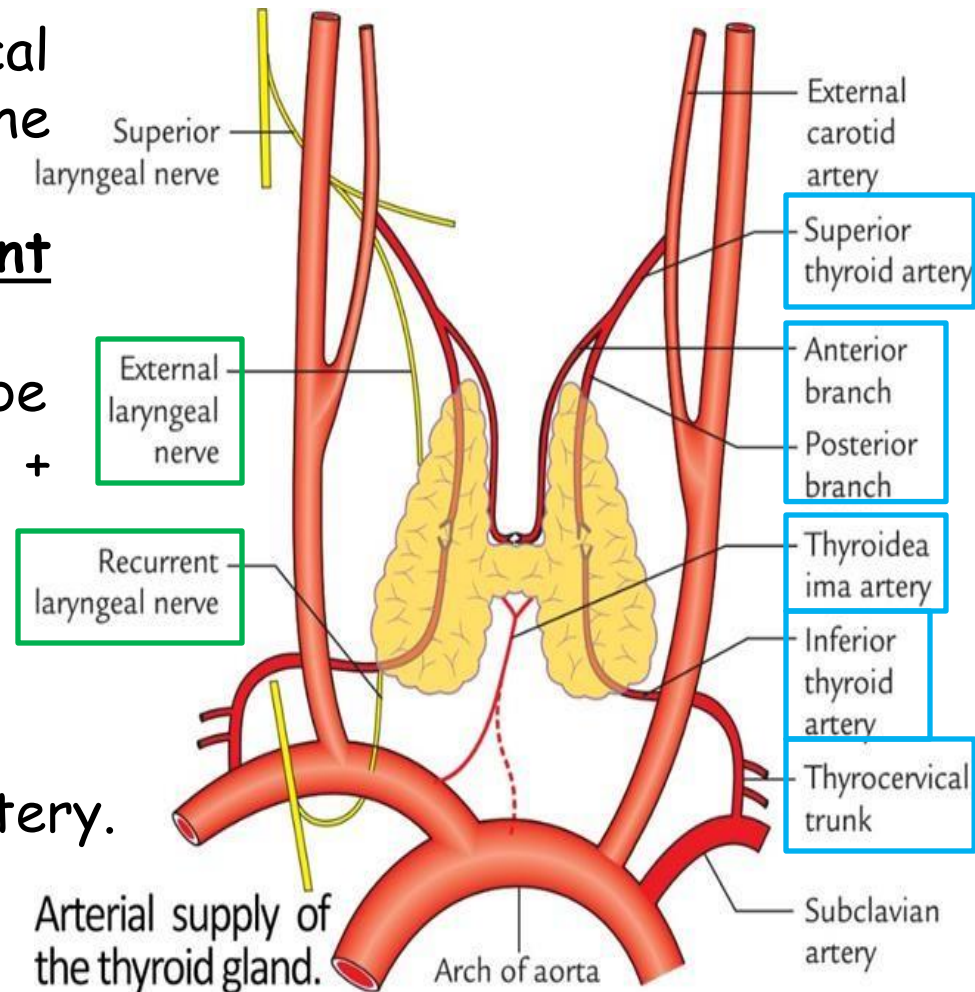
=accompanied by the recurrent laryngeal nerve.

=supplies the lower 2/3 of the lobe and the lower 1/2 of the isthmus + the parathyroid gland.

3 Thyroid ima artery

= (may be absent) arises from the arch of aorta or brachiocephalic artery.

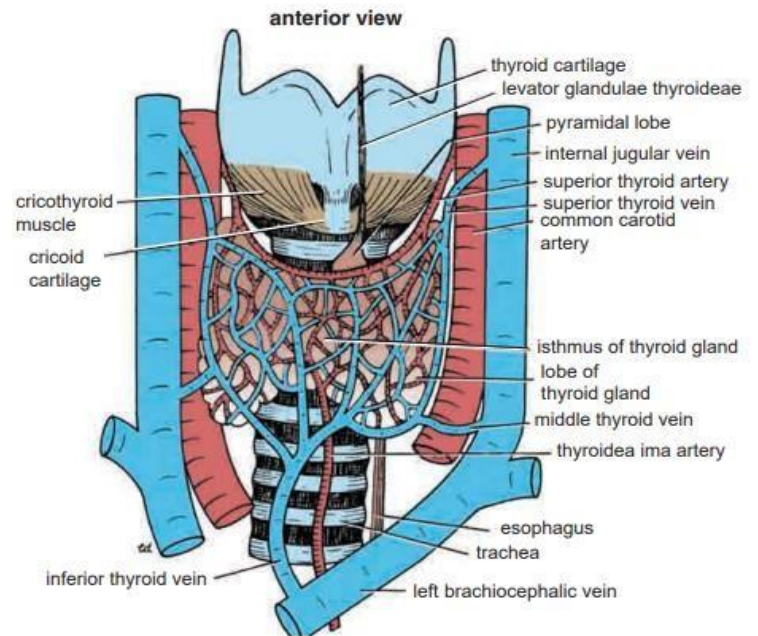
=It supplies the isthmus.



Venous drainage

1) Superior thyroid vein:

- * Emerges at the upper pole.
- Ends either in the internal jugular vein or the common facial vein.

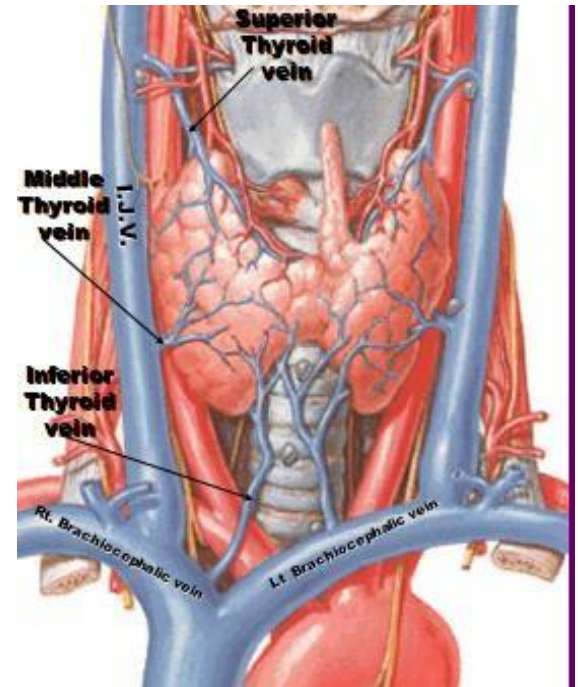


(2) Middle thyroid vein:

- * Emerges at the middle of the lobe.
- Ends in the internal jugular vein.

(3) Inferior thyroid veins:

- Emerge at lower border of the isthmus .
 - drain into corresponding brachiocephalic vein
- (or unit together to end in the left brachiocephalic vein)

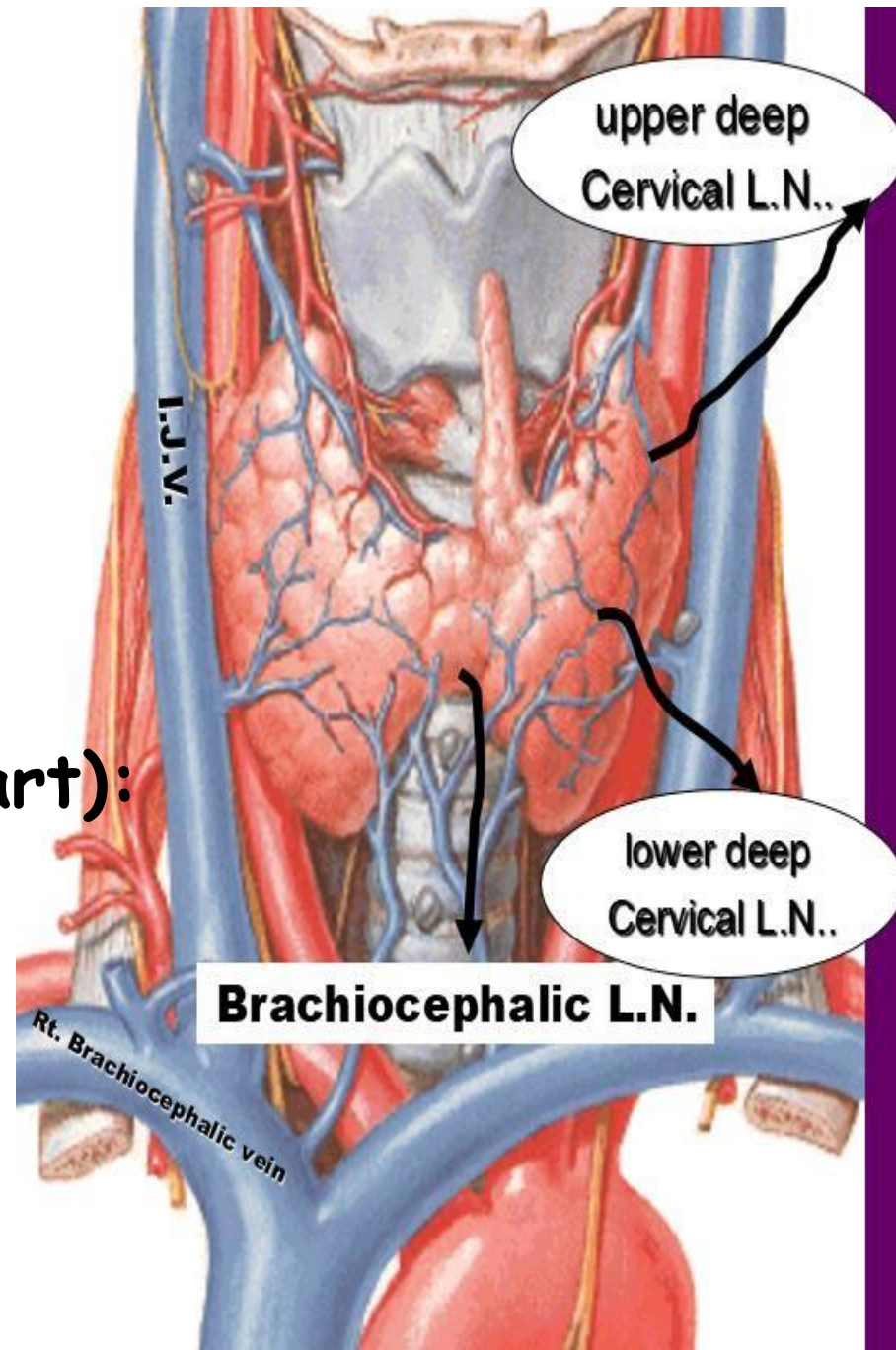


Lymphatic drainage

(1) The upper part:
drains into the upper deep
cervical lymph nodes.

(2) The lower part:
drains into the lower deep
cervical lymph nodes.

(3) The isthmus (middle part):
drains into the
brachiocephalic lymph
nodes.



Parathyroid Glands

❑ There are 4 parathyroid glands

❑ Two on each side

Site:

- They are adherent to the posterior border of the thyroid gland.

Size:

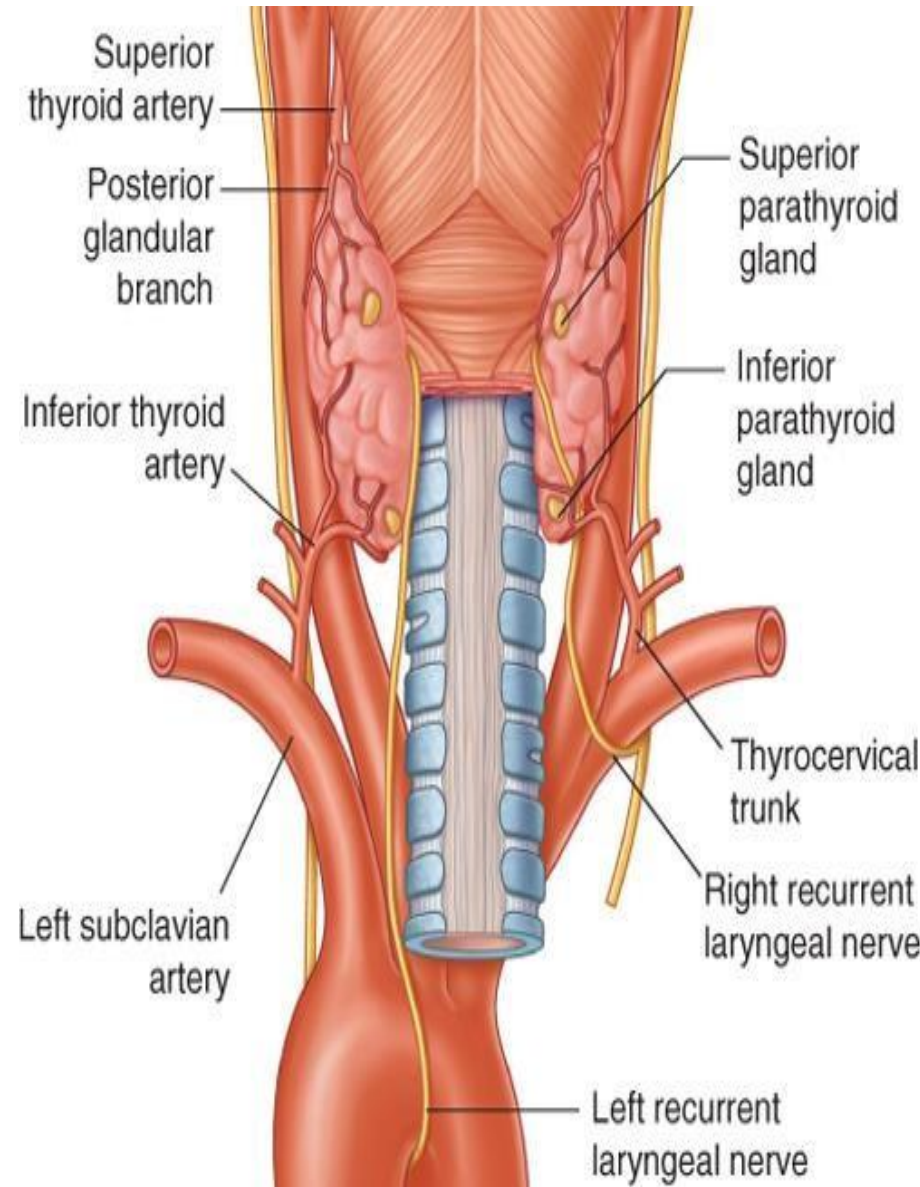
- They are small in size ($2 \times 4 \times 6$ mm)

Arterial supply:

- Inferior thyroid artery.
- Anastomotic branches between superior and inferior thyroid arteries.

Nerve supply:

- Sympathetic fibers arise from the superior and middle cervical ganglia.



Superior
cervical
ganglion

Longus colli

Sympathetic
trunk

Middle
cervical
ganglion

Scalenus
anterior
muscle (cut)

Brachial
plexus

Stellate
ganglion

Vertebral
artery

Common
carotid
artery

* I A

Esophagus

Trachea

