DEEP STRUCTURES OF NECK

DESCRIBE THYROID GLAND UNDER THE FOLLOWING HEADINGS: POSITION, PARTS, CAPSULE AND LIGAMENTS, RELATIONS, BLOOD SUPPLY AND VENOUS DRAINAGE, HISTOLOGY, DEVELOPMENT, APPLIED ANATOMY (LE)

Position

Situated in front and sides of lower part of neck opposite 5th, 6th, 7th cervical and 1st thoracic vertebrae

Parts

Two lateral lobes and a connecting part isthmus

Capsule and ligaments

True capsule: condensation of fibrous connective tissue on the periphery of gland

False capsule: Pretracheal layer of deep cervical fascia which splits to enclose the gland

Relations

Lobes:

Anterolateral surface: sternohyoid, sternothyroid, sternomastoid

Posterior surface: carotid sheath and its contents

Medial surface: trachea, esophagus, external laryngeal nerve, recurrent laryngeal nerve, thyroid cartilage, Cricoid cartilage

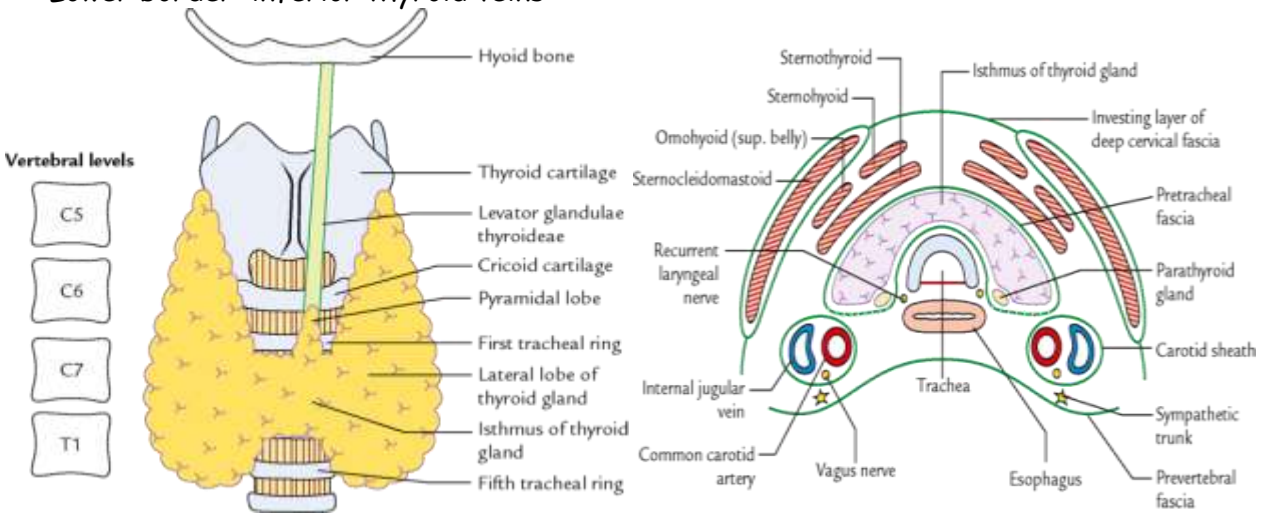
Isthmus:

Anterior surface: skin, superficial fascia, deep fascia

Posterior surface: 2nd, 3rd, 4th tracheal rings

Upper border: levator galndulae thyroideae, anastomosis of superior thyroid arteries

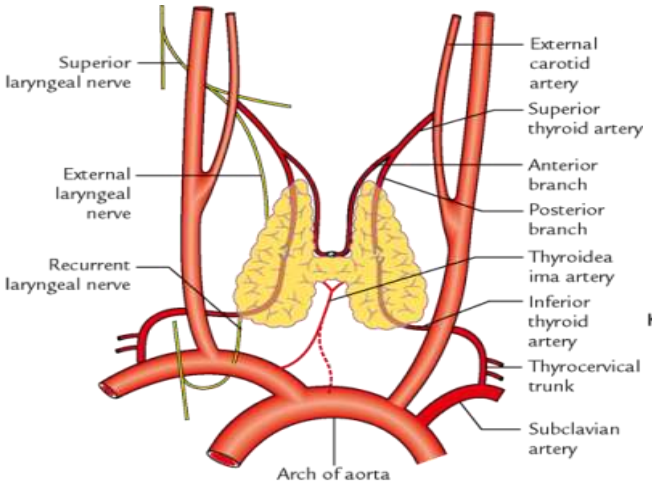
Lower border: inferior thyroid veins

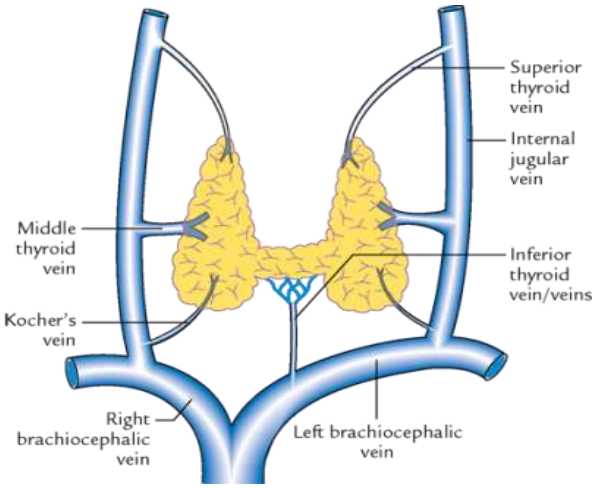


Blood supply

Arterial supply: superior thyroid artery branches of external carotid arteries, inferior thyroid artery branch of thyrocervical trunk, occasionally ateria thyroidea ima

Venous drainage: superior and middle thyroid veins drains into internal jugular vein, inferior thyroid vein drains into brachiocephalic vein





Histology

Thin fibrous capsule covers the gland and sends the septa into the gland. Parenchyma consists of thyroid follicles filled with colloid. Each follicle has basement membrane on which single layer of cuboidal epithelium is present. In between the follicles there is connective tissue with blood vessels, nerves, lymphatics and pale epithelial cells called parafollicular cells.

Development

Isthmus and major portion of lateral lobes develop from median thyroid diverticulum arising from floor of primitive pharynx. Parafollicular cells develop from ultimobranchial body

Applied anatomy

Venous plexus is present beneath true capsule. In surgical procedures, the thyroid gland is removed along with true capsule to avoid bleeding

The superior thyroid artery is ligated near the gland to avoid injury to the external laryngeal nerve and inferior thyroid artery is ligated away from the gland to avoid injury to recurrent laryngeal nerve.

THYROID GLAND – BLOOD SUPPLY (SA)

Arterial supply:

Superior thyroid arteries branch of external carotid arteries,
Inferior thyroid artery branch of thyrocervical trunk,
occasionally ateria thyroidea Ima a direct branch from the arch of aorta.

Venous drainage:

Superior and middle thyroid veins drains into internal jugular vein,
Inferior thyroid vein drains into brachiocephalic vein

PARATHYROID GLANDS (SA)

Parathyroid glands are endocrine glands which secrete parathormone'

2 pairs of parathyroid glands are present on the posterior border of lateral lobe of thyroid gland.

A pair ofSuperior parathyroid present at the junction of upper and middle third of lateral lobe,
A pair of Inferior parathyroid at the level of entry of inferior thyroid artery.
They secrete parathormone which controls calcium and phosphorus metabolism.

Blood supply:

Arterial supply

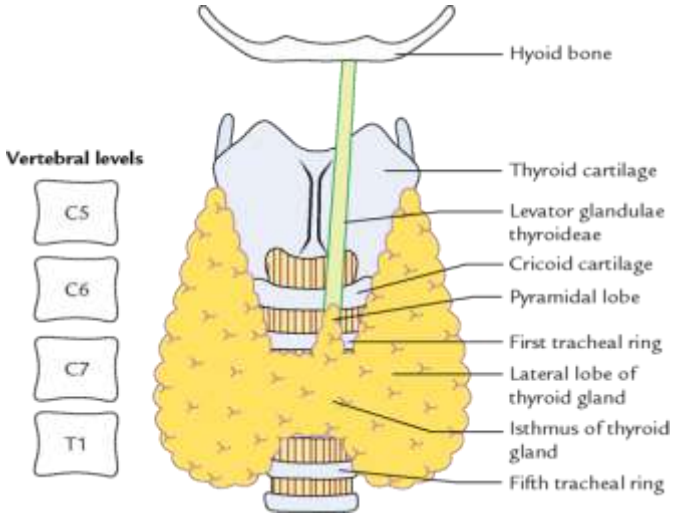
Inferior thyroid artery and anastomosis between superior and inferior thyroid arteries.

Venous drainage

Veins and lymphatics accompany the arteries.

Applied anatomy:

During thyroidectomy posterior part of lateral lobes are left behind to avoid accidental removal of parathyroid.



STRUCTURES RELATED TO MEDIAL SURFACE OF THYROID GLAND (SA)

Structure related to medial surface of thyroid gland are-

Two tubes- Trachea, esophagus,

Two nerves- external laryngeal nerve, recurrent laryngeal nerve,

Two cartilages- thyroid cartilage, cricoid cartilage

THYROID GLAND- BLOOD SUPPLY AND VENOUS DRAINAGE (SA)

Arterial supply:

Superior thyroid arteries branch of external carotid arteries, inferior thyroid artery branch of thyrocervical trunk, occasionally ateria thyroidea ima

Venous drainage:

Superior and middle thyroid veins drains into internal jugular vein, inferior thyroid vein drains into brachiocephalic vein

BLOOD SUPPLY TO ISTHMUS OF THYROID (SA)

Arterial supply

Isthmus of thyroid gland is supplied by-

Anastomosis of the anterior branches of the right and left superior thyroid arteries.
Occasionally third artery- arteria thyroidea Ima, a direct branch from the arch of aorta

Venous drainage

Inferior thyroid veins emerging from the lower border of
isthmus drains into brachiocephalic vein.