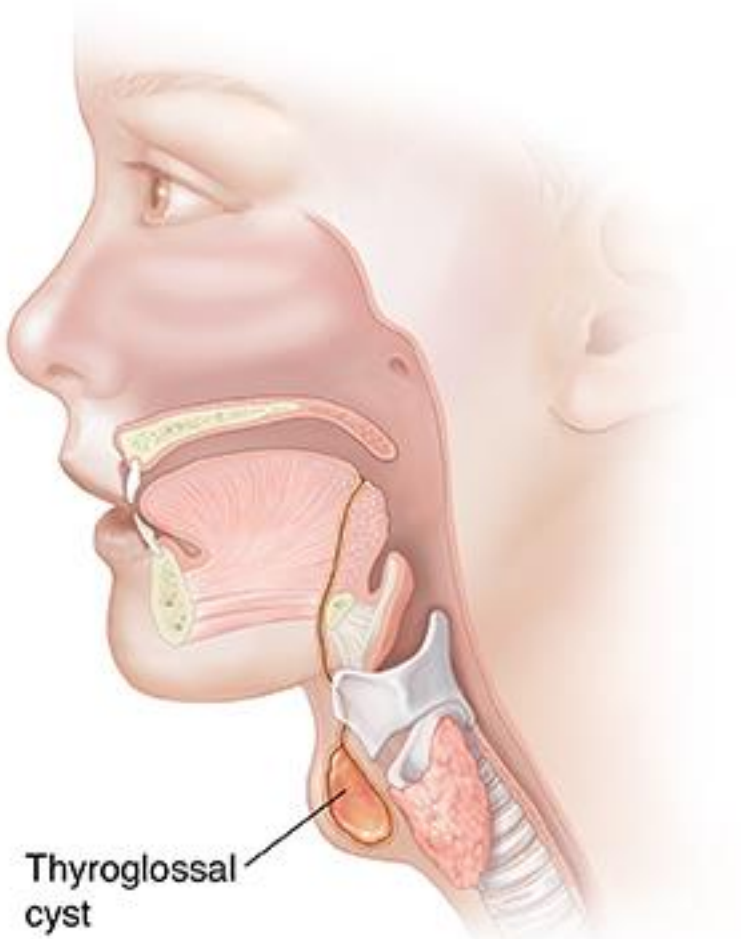
Thyroglosal Cyst



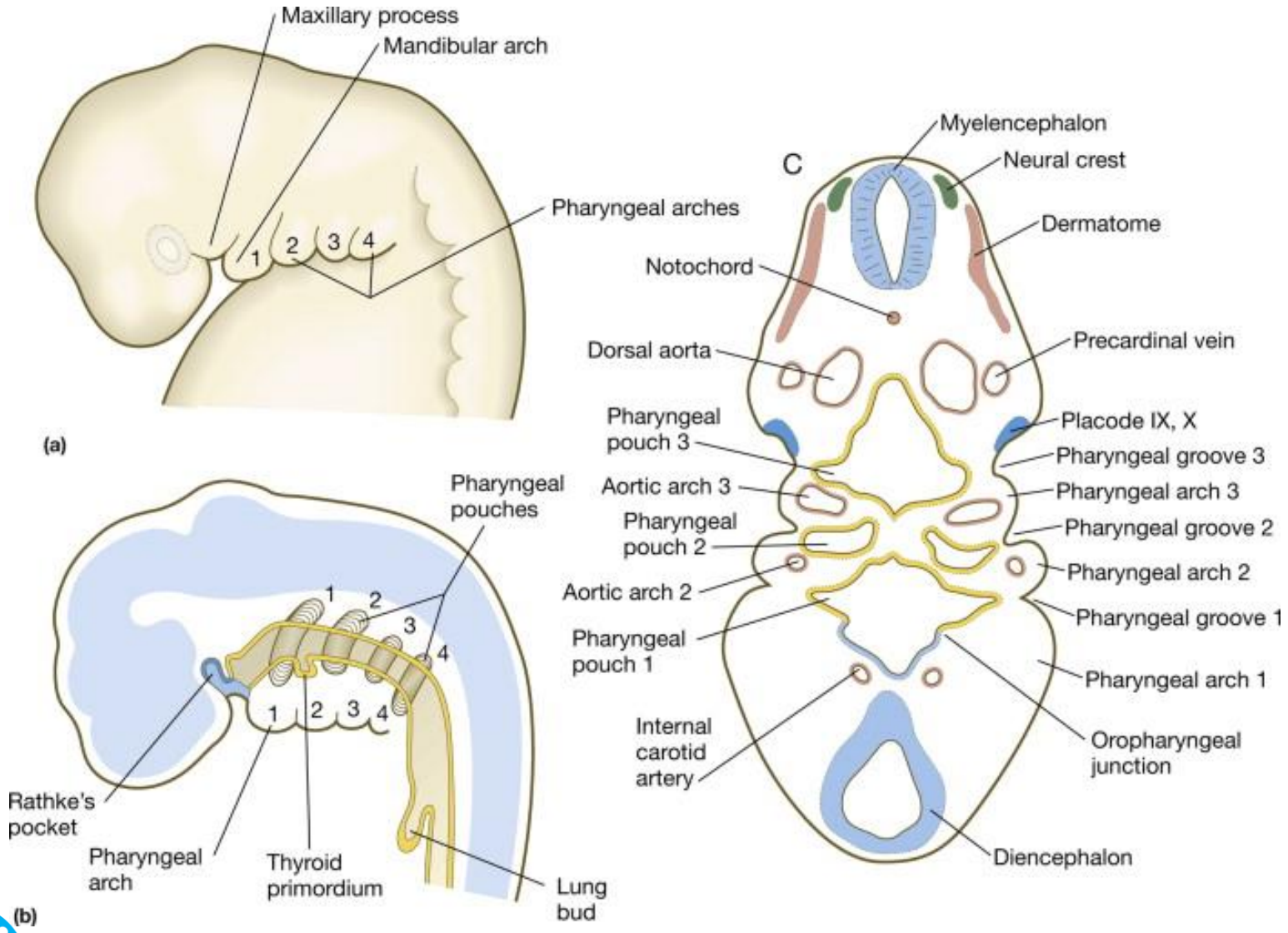
Pharyngeal arches and pouches

- Mesodermal condensations develop in the side walls of the primitive pharynx to form the **pharyngeal arches** and they grow around towards each other ventrally, where they fuse in the midline
- In this way a series of six horseshoe-shaped arches (also called branchial arches) comes to support the pharynx

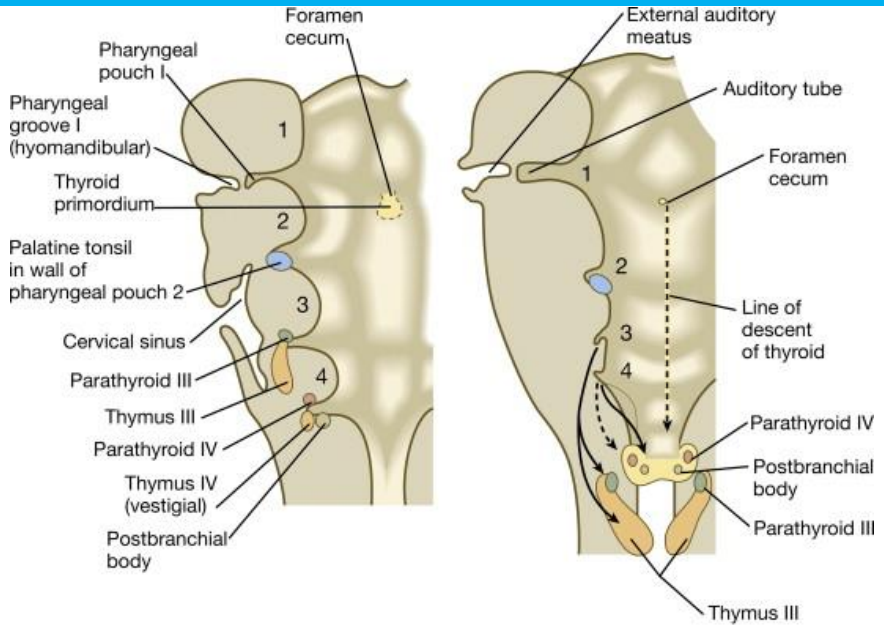
Thyroglossal Duct

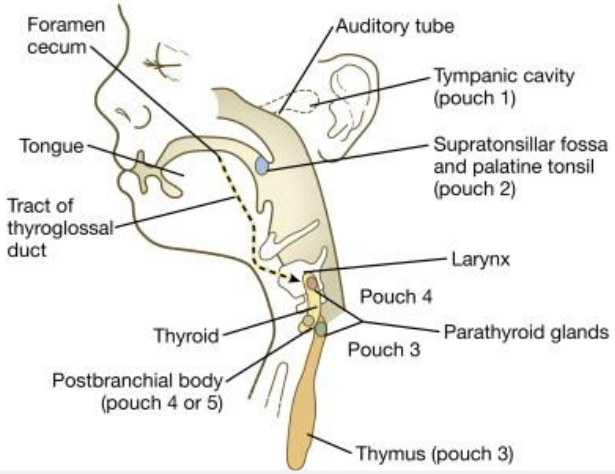
- Deep grooves appear on the surface of the embryo at the intervals between the arches; these are the **pharyngeal (or branchial) clefts**
- The fifth arch is rudimentary and only four clefts are visible
- Outpouchings develop from the lining of the pharynx in between the arches and opposite the clefts: the **pharyngeal (or branchial) pouches**

Pharyngeal arches and pouches



Pharyngeal arches and pouches





Thyroglossal Duct

- Basically arises from floor between 1st and 2nd pharyngeal Pouches
- Floor later developed into foramen caecum of tongue
- The **thyroglossal duct originates from the endoderm of the floor of the pharynx at the foramen caecum** in the region of the developing tongue

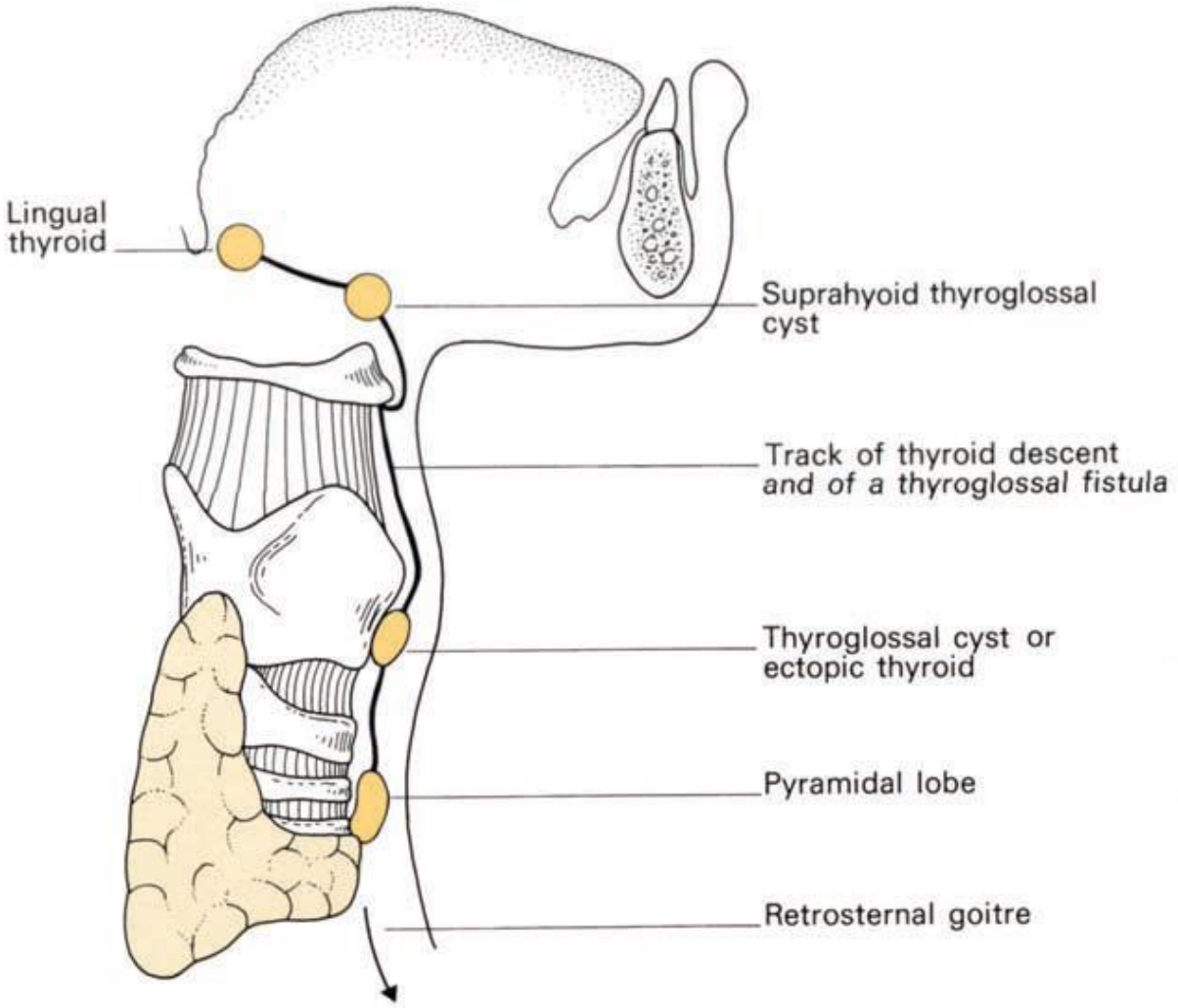
Descends of Thyroglossal Duct

- The thyroid gland descends early in fetal life from the base of the tongue towards its position in the lower neck with the isthmus lying over the second and third tracheal rings
- At the time of its descent, the hyoid bone has not been formed and the track of the descent of the thyroid gland is variable, passing in front, through or behind the eventual position of the hyoid body

Thyroglossal Cyst

- Thyroglossal duct cysts represent a **persistence of this track** and may therefore be found anywhere in or adjacent to **the midline from the tongue base to the thyroid isthmus**
- Rarely, a thyroglossal cyst may contain the only functioning thyroid tissue in the body

Decent of the Thyroid

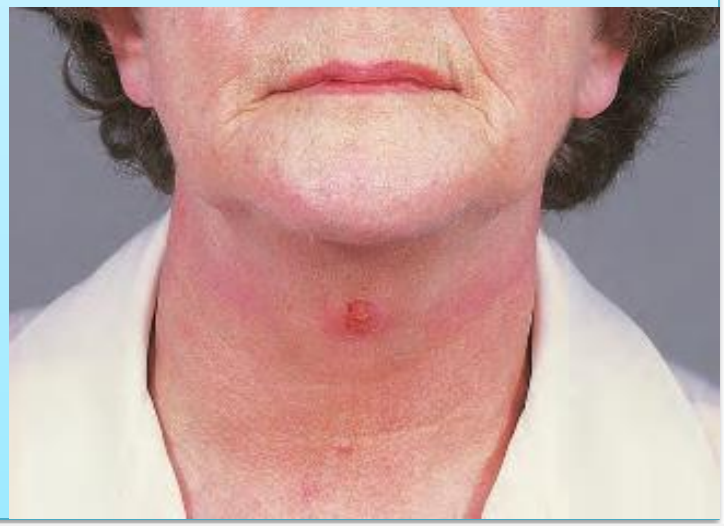


Clinical Features

- The cysts almost always arise in the **midline**
- But when they are adjacent to the thyroid cartilage, they may lie slightly to one side of the midline
- Classically, the **cyst moves upwards on swallowing and with tongue protrusion**
- But this can also occur with other midline cysts such as dermoid cysts, as it merely indicates attachment to the hyoid bone

Thyroglossal Fistula

- Thyroglossal cysts may become infected and rupture onto the skin of the neck presenting as a discharging sinus (thyroglossal fistula)
- Although they often occur in children, they may also present in adults, even as late as the sixth or seventh decade of life



Management

- Treatment must include **excision of the whole thyroglossal tract**
- Which involves removal of the body of the hyoid bone and the suprahyoid tract through the tongue base to the vallecula at the site of the primitive foramen caecum, together with a core of tissue on either side
- This operation is known as **Sistrunk's operation** and prevents recurrence

Differential diagnosis for Neck Lump

- Thyroglossal cyst
- Branchial cyst
- Branchial fistula
- Cystic hygroma

Branchial Cyst

- Develops from the vestigial remnants of the second branchial cleft
- The cyst usually presents in the upper neck in early or middle adulthood and is found at the junction of the upper third and middle third of the sternomastoid muscle at its anterior border
- It is a fluctuant swelling that may transilluminate and is often soft in its early stages so that it may be difficult to palpate

Branchial Cyst

- If the cyst becomes infected, it becomes erythematous and tender and the differential diagnosis is broadened
- **Ultrasound** and **fine-needle aspiration** both aid diagnosis
- Treatment is by **complete excision**
- In patients over 40 years of age, a high index of suspicion for a necrotic metastatic lymph should exists and malignancy should be excluded before excision

Branchial Fistula

- A branchial fistula may be unilateral or bilateral
- Represent a persistent second branchial cleft
- The external orifice is nearly always situated in the lower third of the neck near the anterior border of the sternocleidomastoid
- Internal orifice is located on the anterior aspect of the posterior faucial pillar just behind the tonsil

Branchial Fistula

- The tract is lined by ciliated columnar epithelium therefore there may be a small amount of recurrent mucopurulent discharge onto the neck
- The tract follows the same path as a branchial cyst
- Requires **complete excision** to avoid recurrence

Cystic Hygroma

- Cystic hygromas usually present in the neonate or in early infancy, and occasionally may present at birth and be so large as to obstruct labour
- Swelling usually occurs in the neck and may involve the parotid, submandibular, tongue and floor of mouth areas
- The swelling may be bilateral and is soft and partially compressible, visibly increasing in size when the child coughs or cries
- The characteristic that distinguishes it from all other neck swellings is that it is **brilliantly translucent**

Cystic Hygroma

- The cheek, axilla, groin and mediastinum are other less frequent sites for a cystic hygroma
- Sometimes the cyst expands rapidly and occasionally respiratory difficulty ensues, requiring immediate aspiration and even occasionally a tracheostomy
- The cyst may become infected

Cystic Hygroma

- Definitive treatment involving **complete excision** of the cyst at an early stage is best if possible
- Injection of a sclerosing agent is an alternative strategy and may reduce the size of the cyst