Neck Cysts and Sinuses_

R3 Pornchai Achatsachat

Embryology_

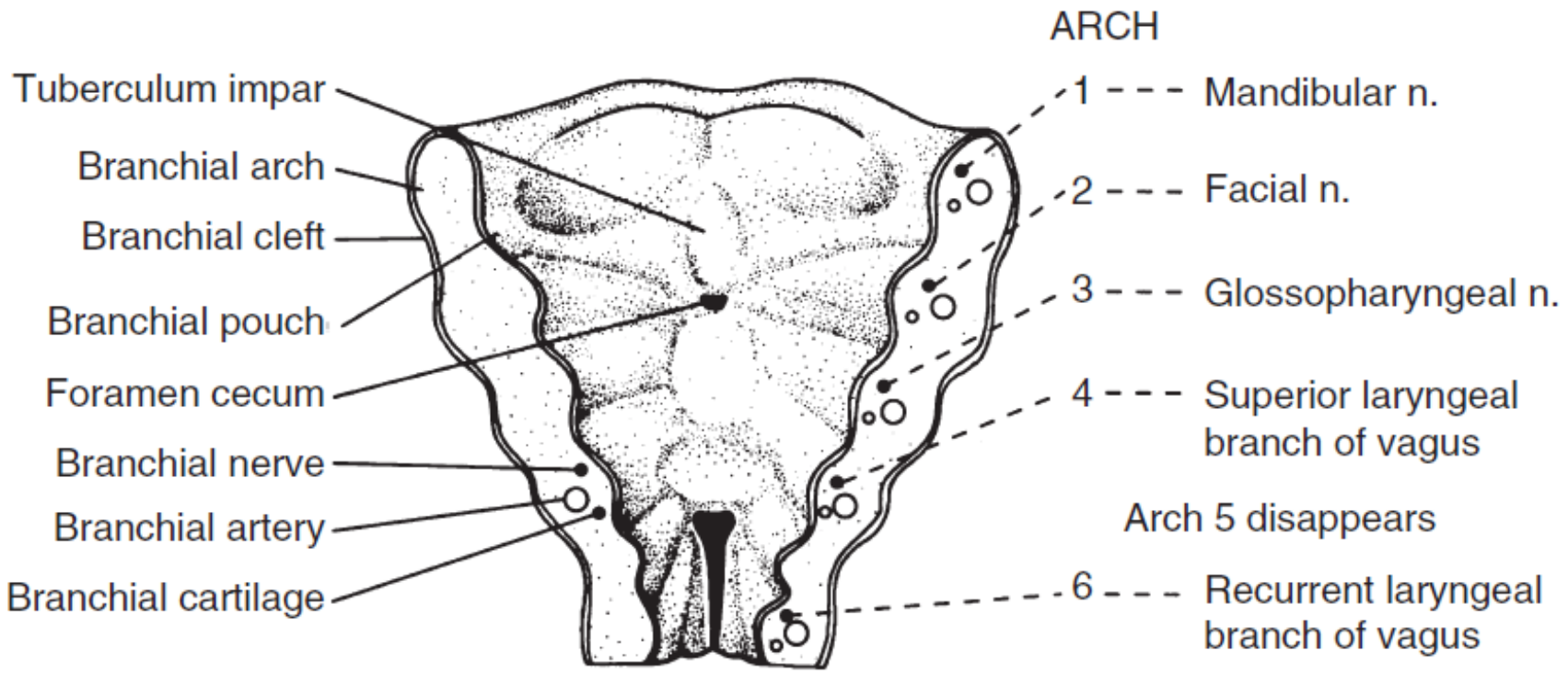


FIGURE 59-1 Early development of branchial apparatus. (From Donegan JO: Congenital neck masses. In Cummings CW, Fredrickson JM, Harker LA, et al [eds]: Otolaryngology—Head and Neck Surgery, ed 2. St Louis, Mosby-Year Book, 1993.)

TABLE 59-1

Derivatives of Branchial Arches, Clefts, and Pouches

	Dorsal	*Ventral*	*Midline Floor of Pharynx*
I			
Arch	Incus body	Meckel cartilage	Body of tongue
External maxillary artery	Malleus head	Malleus	
Nerve V	Pinna		
Cleft	External auditory canal		
Pouch	Eustachian tube		
	Middle ear cavity		
	Mastoid air cells		
II			
Arch	Stapes	Styloid process	Root of tongue
Stapedial artery		Hyoid (lesser horn and part of body)	Foramen cecum
Nerves VII and VIII			Thyroid gland's median anlage
Pouch	Palatine tonsil		
	Supratonsillar fossa		
III			
Arch		Hyoid (greater horn and part of body)	
Internal carotid artery		Part of epiglottis	
Nerve IX		Thymus	
Pouch	Inferior parathyroid		
	Piriform fossa		

IV		
Arch		Thyroid cartilage
Arch of aorta (L)		Cuneiform cartilage
Part of subclavian artery (R)		Part of epiglottis
Nerve X		
Pouch	Superior parathyroid (lateral anlage of thyroid gland)	Thymus (inconstant)
V		
Arch		
Pouch	Ultimobranchial body (lateral anlage of thyroid gland)	
VI		
Arch		Cricoid
Pulmonary artery		Arytenoid
Ductus arteriosus (L)		Corniculate cartilage
Nerve X (recurrent laryngeal)		

From Skandalakis JE, Gray SW, Todd NW: The pharynx and its derivatives. In Skandalakis JE, Gray SW (eds): Embryology for Surgeons, ed 2. Baltimore, Williams & Wilkins, 1994.

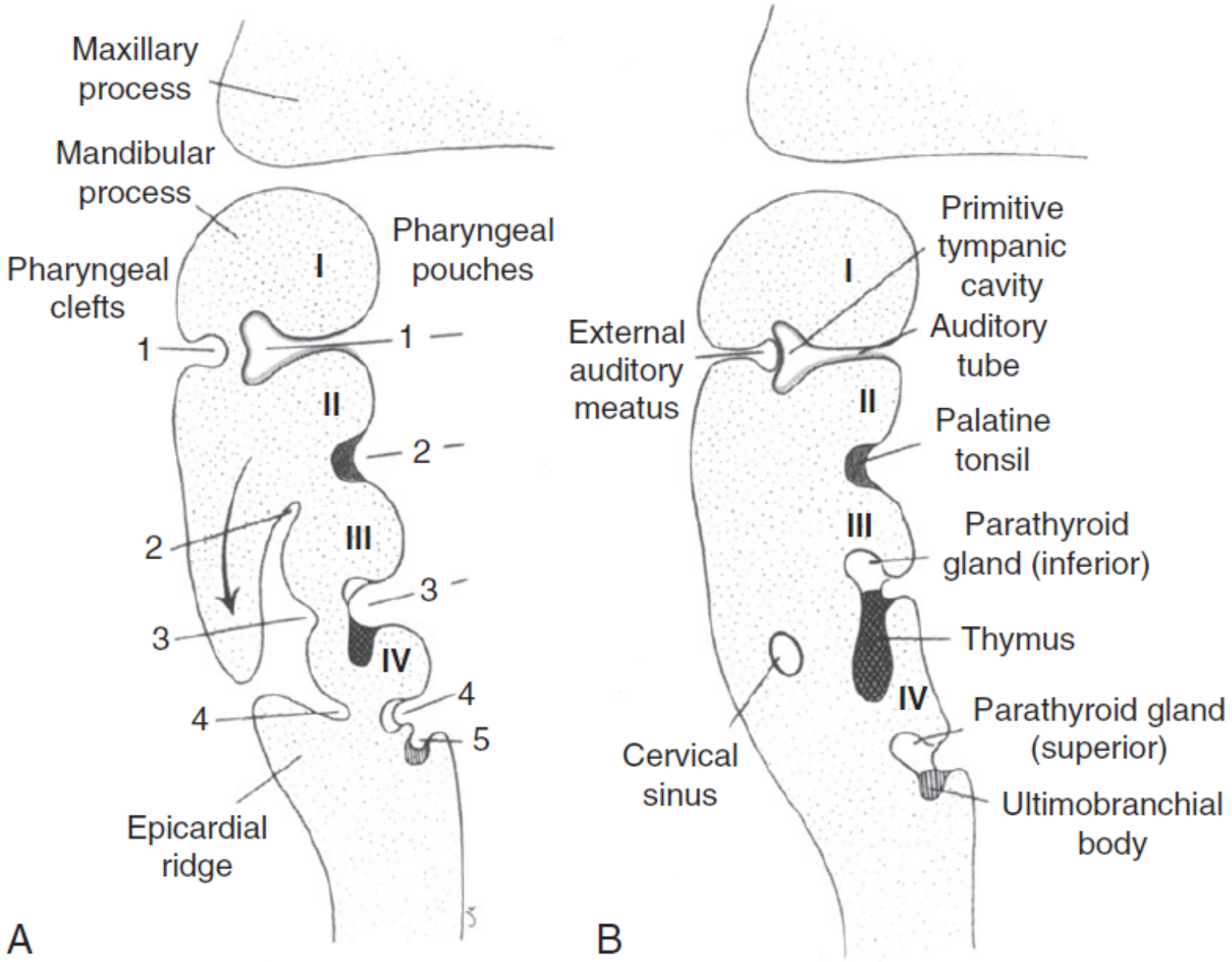


FIGURE 59-2 **A,** Schematic representation of the development of the pharyngeal (or branchial) clefts and pouches. Note that the second arch grows over the third and fourth arches, thereby burying the second, third, and fourth pharyngeal clefts. **B,** Remnants of the second, third, and fourth pharyngeal clefts form the cervical sinus, which is normally obliterated. Note the structures formed by the various pharyngeal pouches. (From Sadler TW: Head and neck. In Langman J, Sadler TW (eds): Langman's Medical Embryology, ed 7. Baltimore, Williams & Wilkins, 1995.)

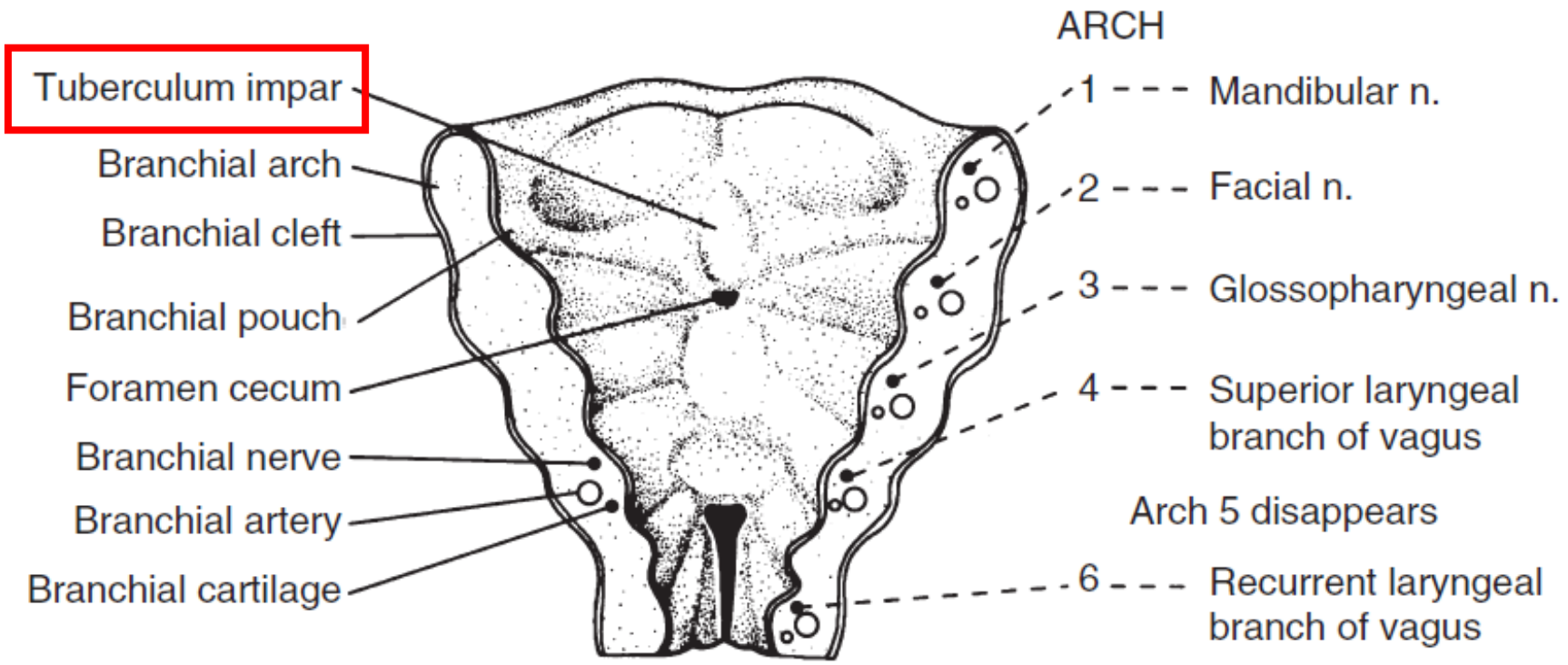


FIGURE 59-1 Early development of branchial apparatus. (From Donegan JO: Congenital neck masses. In Cummings CW, Fredrickson JM, Harker LA, et al [eds]: Otolaryngology—Head and Neck Surgery, ed 2. St Louis, Mosby-Year Book, 1993.)

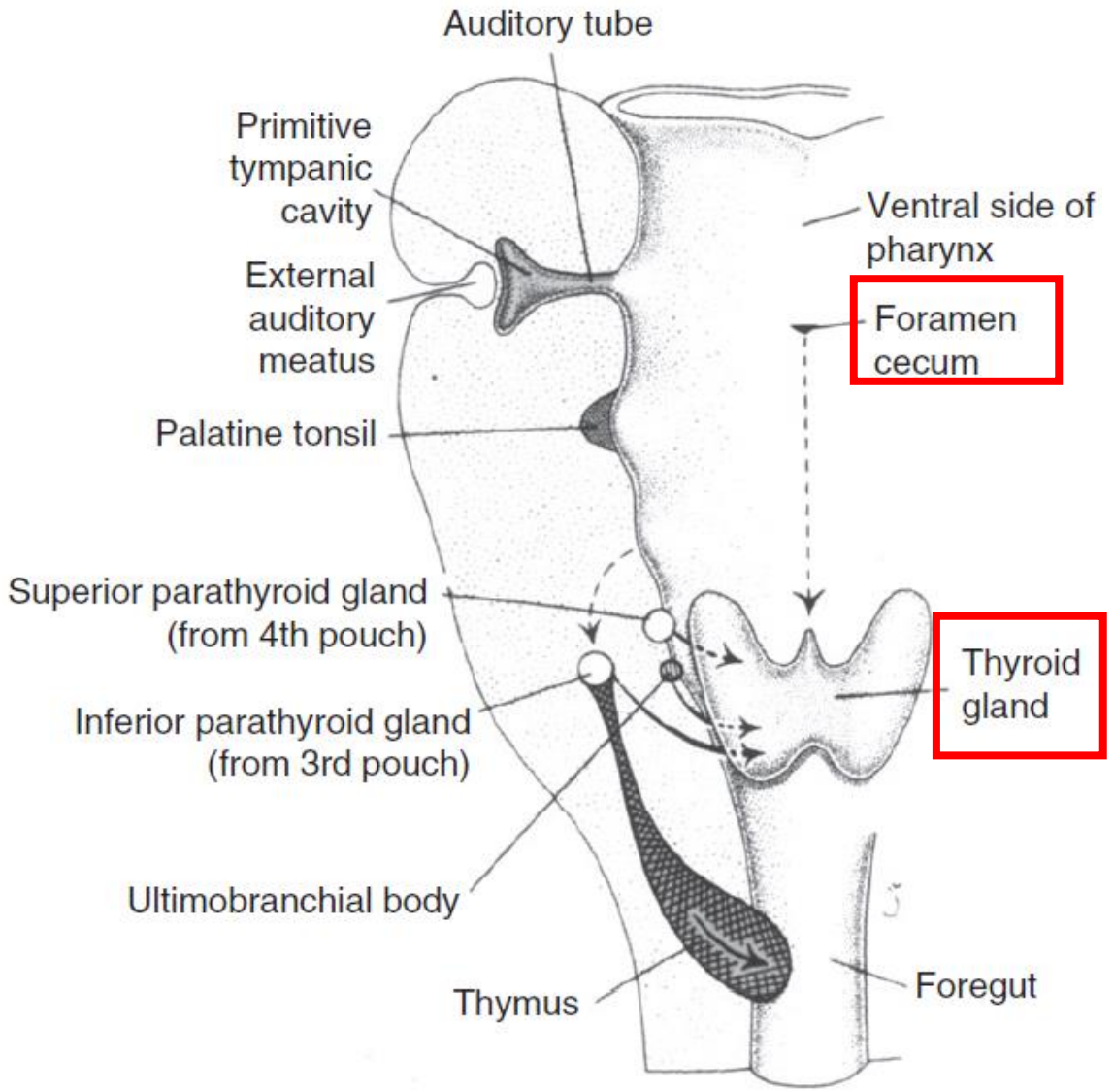


FIGURE 59-3 Schematic representation of migration of the thymus, parathyroid glands, and ultimobranchial body. The thyroid gland originates in the midline at the level of the foramen cecum and descends to the level of the first tracheal ring. (From Sadler TW: Head and neck. In Langman's Medical Embryology, ed 7. Baltimore, Williams & Wilkins, 1995.)

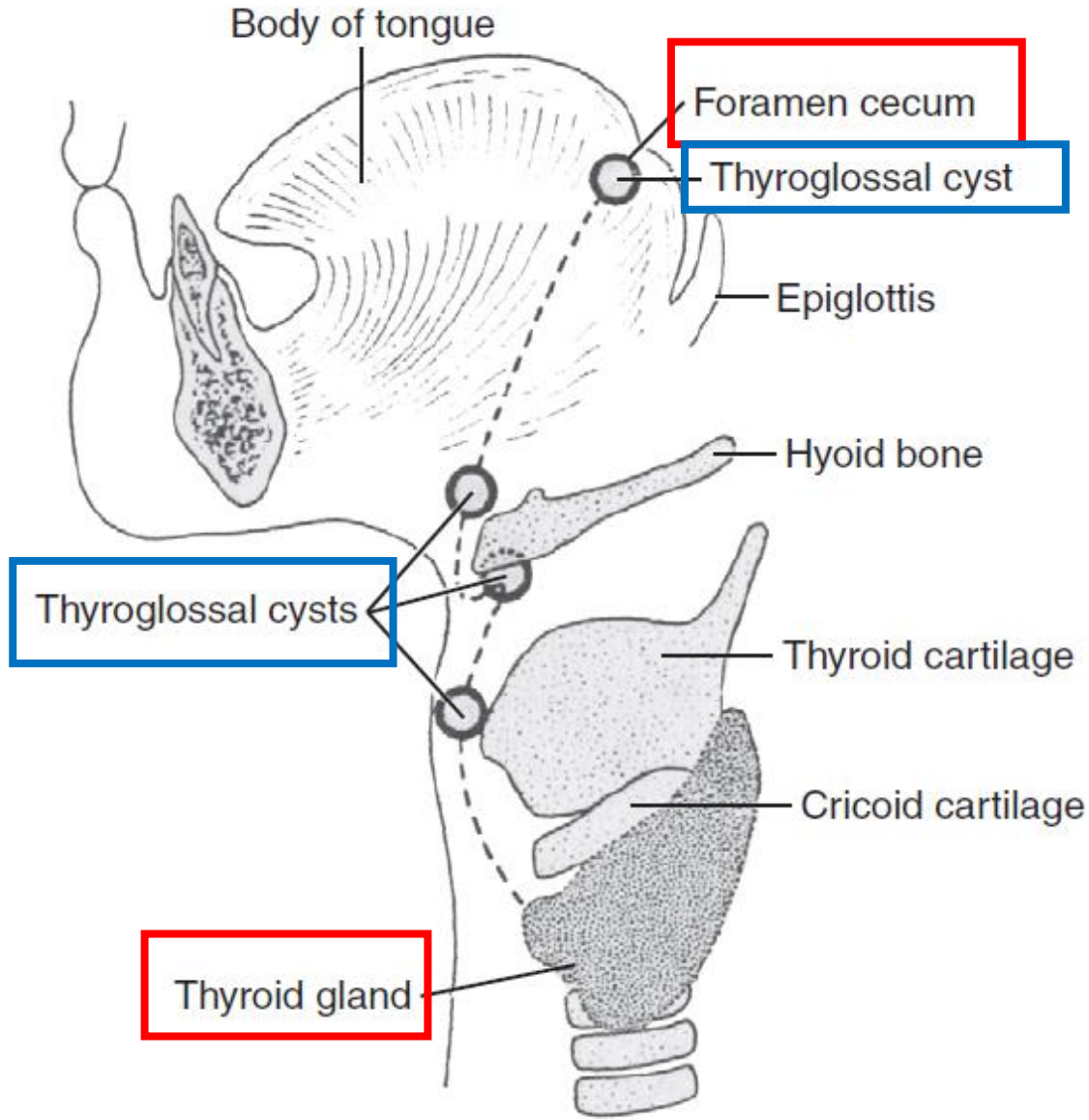


FIGURE 59-4 Various locations of thyroglossal duct cysts. (From Sadler TW: Head and neck. In Sadler TW (ed): Langman's Medical Embryology, ed 11. Baltimore, Lippincott Williams & Wilkins, 2010.)

Thyroglossal Duct Cyst_

Thyroglossal Duct Cyst

- One of the **most common lesions in the midline of the neck**
- Thyroglossal duct remnants: 7% of the population
- Most are asymptomatic
- Common in preschool-aged children

Thyroglossal Duct Cyst - Embryogenesis

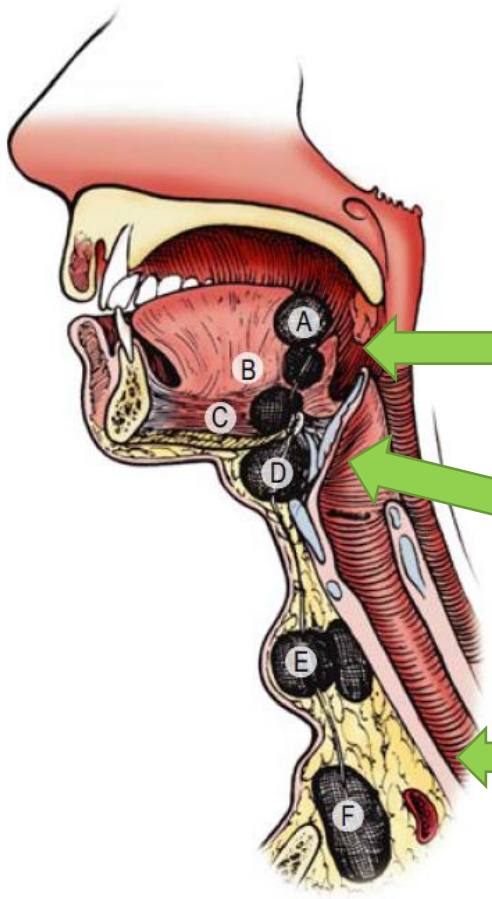


Fig. 72.1 Thyroglossal duct cysts can be located anywhere from the base of the tongue to behind the sternum. A and B, lingual (rare); C and D, adjacent to hyoid bone (common); E and F, suprasternal fossa (rare). (From Welch KJ, Randolph JG, Ravitch MM, et al. editors. Pediatric Surgery. 4th ed. Chicago: Year Book Medical; 1986. p. 549.)

A,B: Lingual (rare) 8%
Risk for acute airway obstruction in neonate

C,D: Adjacent to hyoid bone (common)

E,F: Suprasternal fossa (rare)

Thyroglossal Duct Cyst - Location

- The thyroglossal duct may pass in front of or behind the hyoid bone, but **most commonly, it passes through it**
- Occasionally, the cysts attach to the pyramidal lobe or may be intrathyroidal
- Complete failure of migration of the thyroid results in a lingual thyroid >> no thyroid tissue is found in the neck

Thyroglossal Duct Cyst

- 2/3 discovered within first three decades of life
- Suprahyoid thyroglossal cysts: DDx with
  - Submental dermoid cysts
  - Submental lymph nodes
- **US**
  - Presence of solid components
  - Internal septae
  - Wall irregularities

Thyroglossal Duct Cyst - Clinical Presentation

- **Painless mass in the midline of the neck**
  - 60-66% found adjacent to the hyoid bone
  - 24% lie above the hyoid
  - 13% lie below the hyoid
  - 40% may lie just lateral to the midline
- Smooth, soft, and nontender
- **Moves cephalad when the tongue protrudes**
- 1/3 concurrent or prior infection
- 1/4 draining sinus from spontaneous or incisional drainage of an abscess

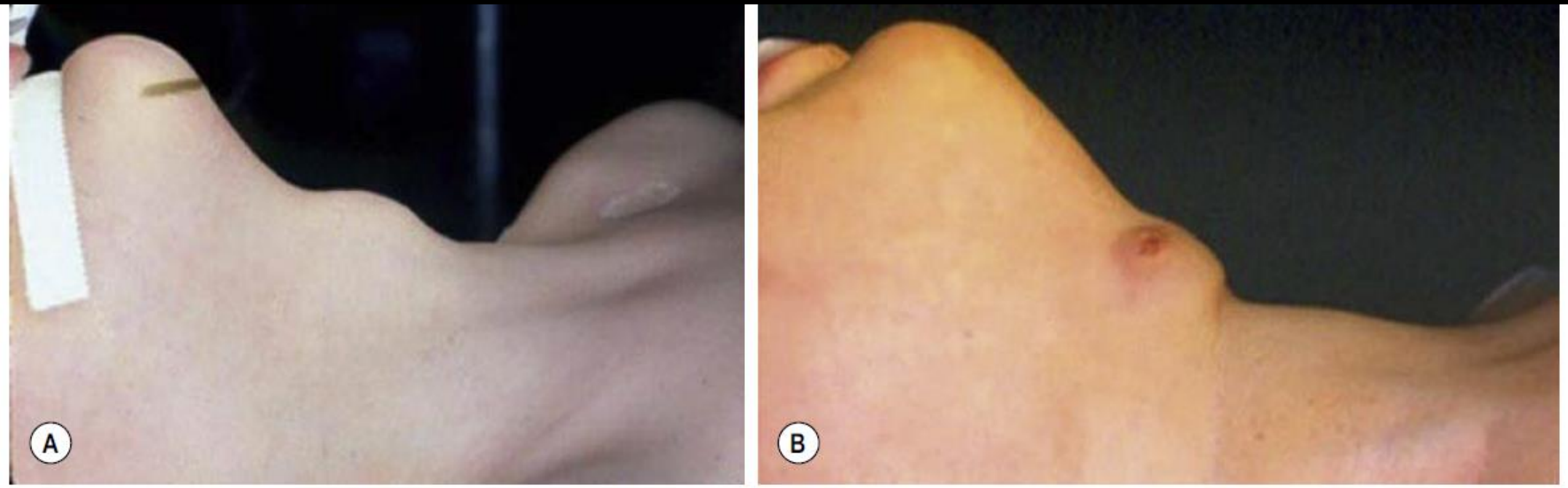


Fig. 72.2 These two children have thyroglossal duct cysts. **(A)** On the left, the cyst is noted on this lateral photograph. There is no evidence of prior infection. **(B)** On the right, the area developed an infection and required incision and drainage prior to operative excision.

Thyroglossal Duct Cyst - Pre-operative Evaluation

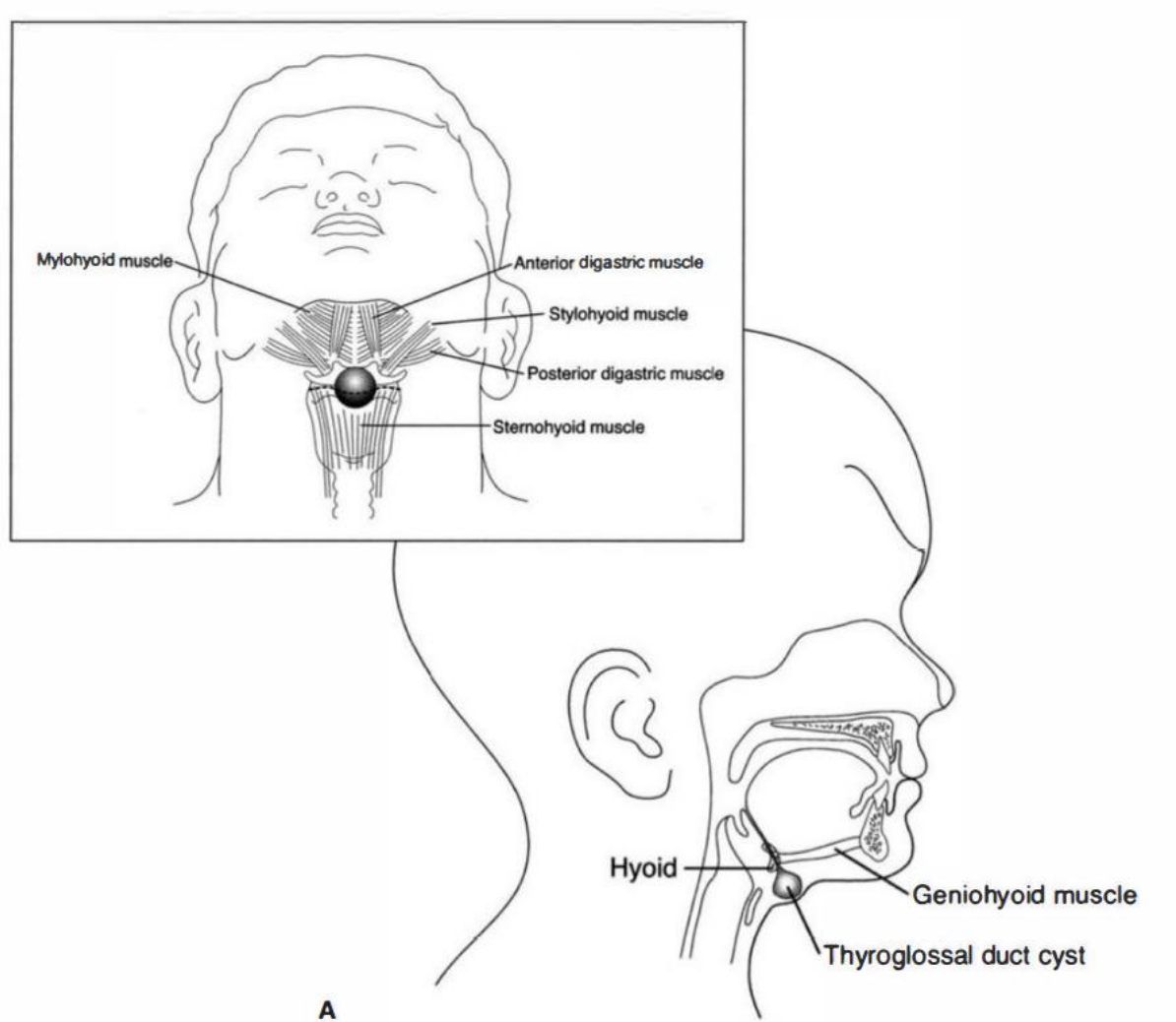
- **Concerning for hypothyroidism**
  - Thyroid function testing
  - Additional imaging to exclude median ectopic thyroid
    - Thyroid scanning
    - US: accurate (limitations in differentiating from other midline neck masses)

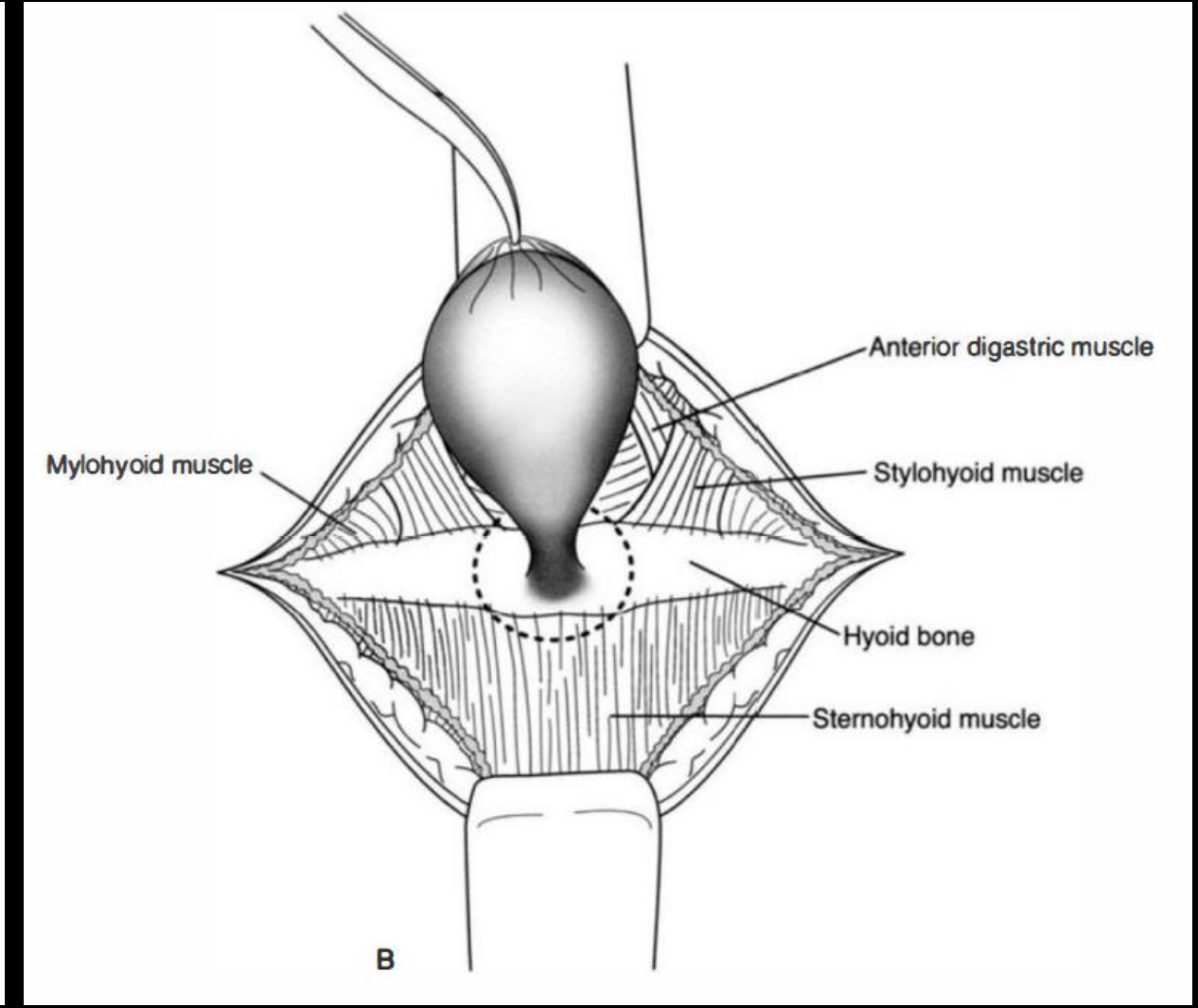
Thyroglossal Duct Cyst - Ectopic Thyroid

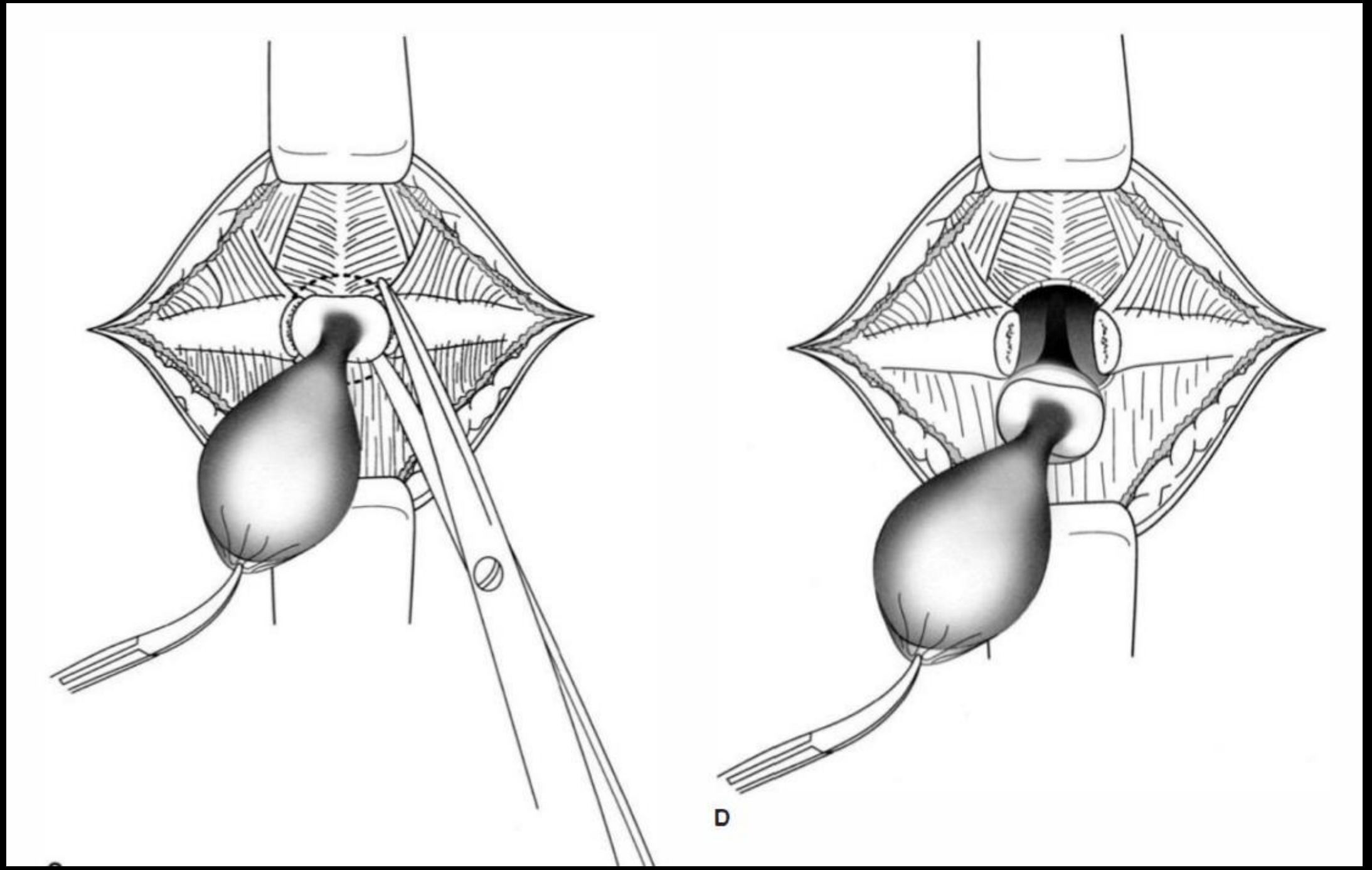
- 1-2% of patients with presumed thyroglossal duct cysts: Median ectopic thyroid
- The incidence of ectopic thyroid tissue in or near the duct is reported to be from 10–45%
- 90% of ectopic thyroid tissue lies at the base of the tongue
- If ectopic thyroid tissue is found
  - Management is controversial
  - Trial of medical suppression to decrease the size of the mass

Thyroglossal Duct Cyst - Treatment

- Elective surgical excision of a thyroglossal duct cyst
  - Avoid the complications of infection
  - Risk (<1%) of cancer (papillary thyroid carcinoma)
- **Sistrunk operation**
  - Complete excision of the cyst and its tract upward to the base of the tongue
  - Resection of the central portion of the hyoid bone
    - 1 cm from the midline on either side
  - In young children the hyoid bone may override the thyroid notch, potentially placing the larynx at risk


Mylohyoid muscle
Anterior digastric muscle
Stylohyoid muscle
Posterior digastric muscle
Sternohyoid muscle
Hyoid
Geniohyoid muscle
Thyroglossal duct cyst
A


Anterior digastric muscle
Mylohyoid muscle
Stylohyoid muscle
Hyoid bone
Sternohyoid muscle
B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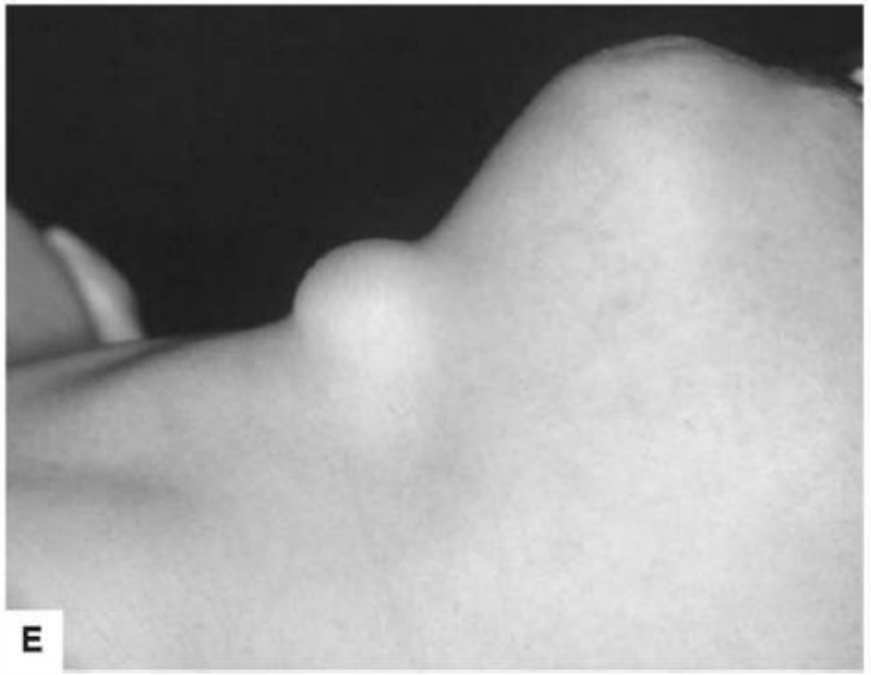

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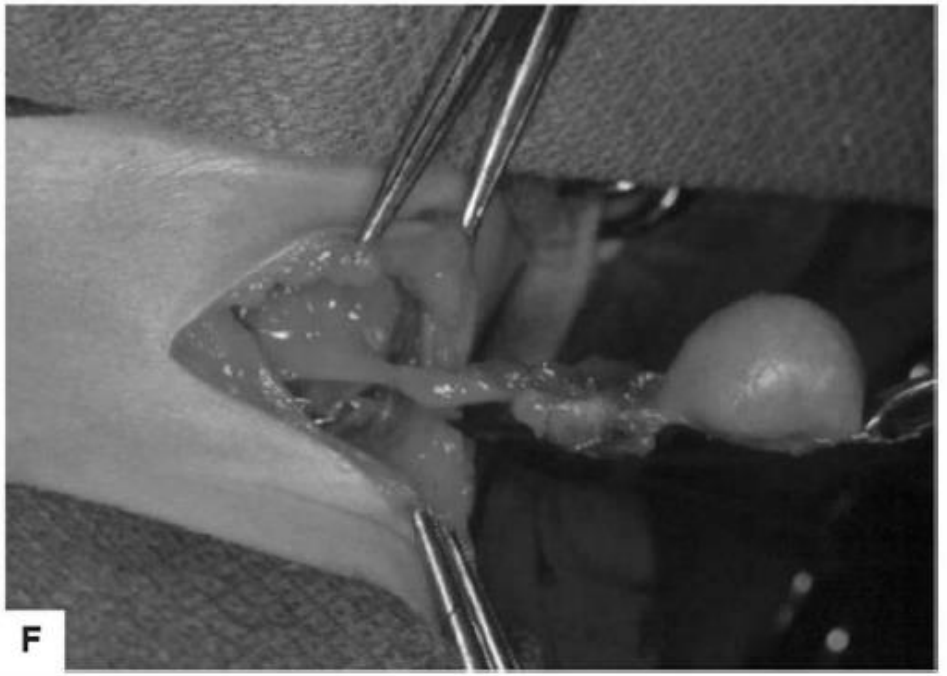

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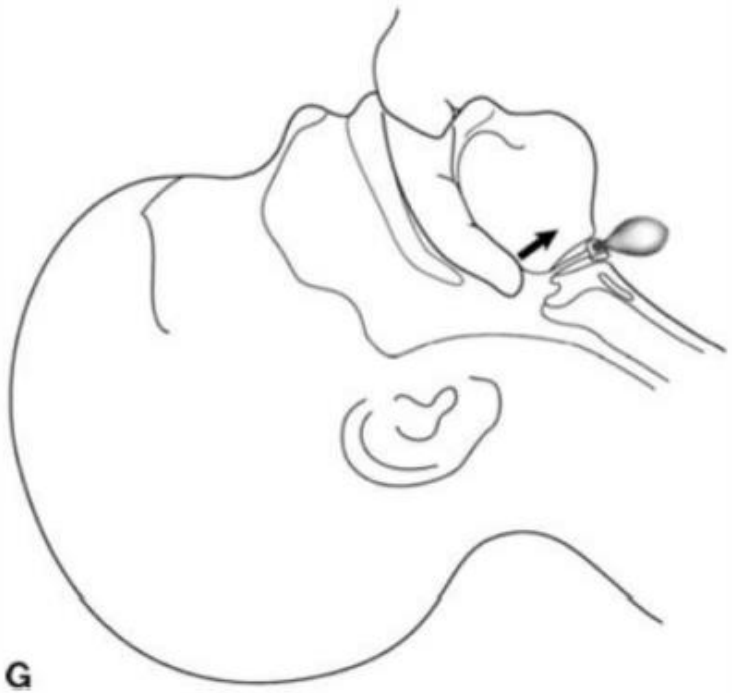

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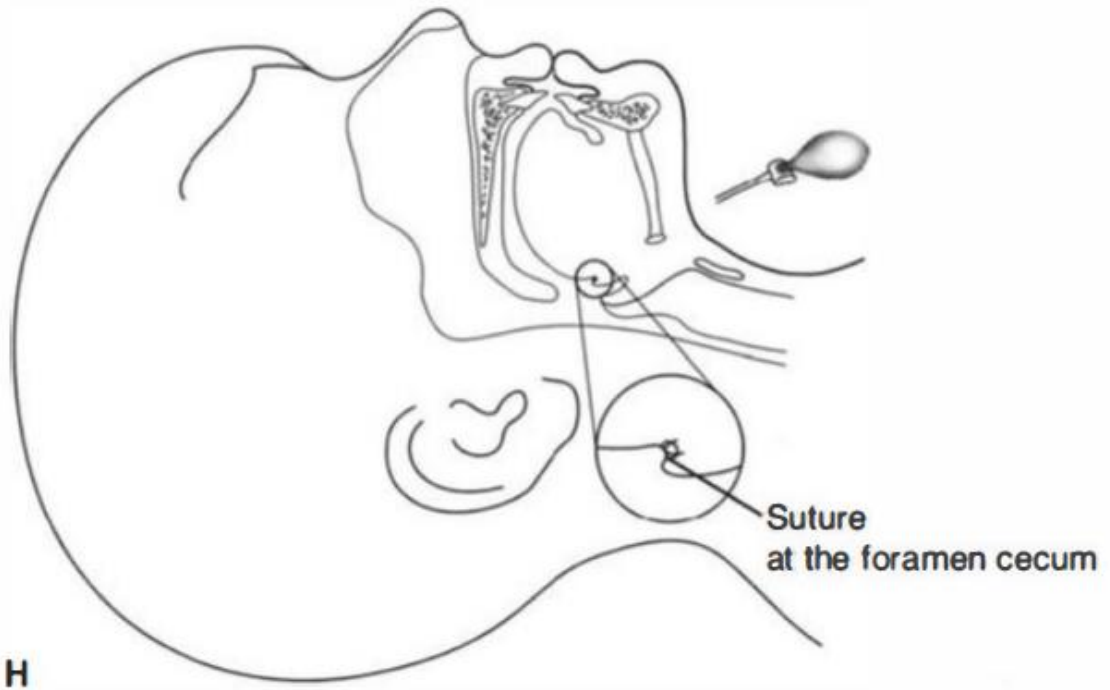

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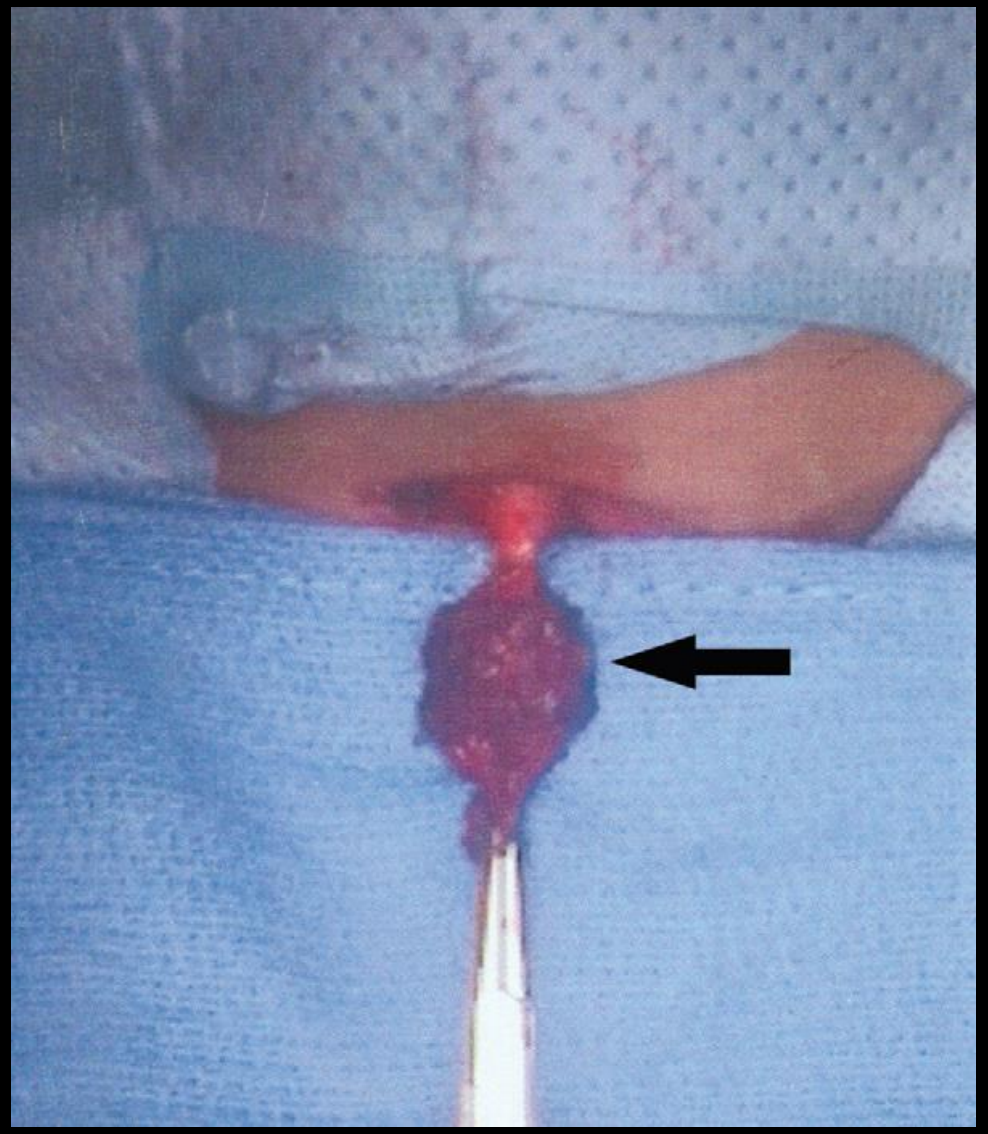


Sistrunk Operation

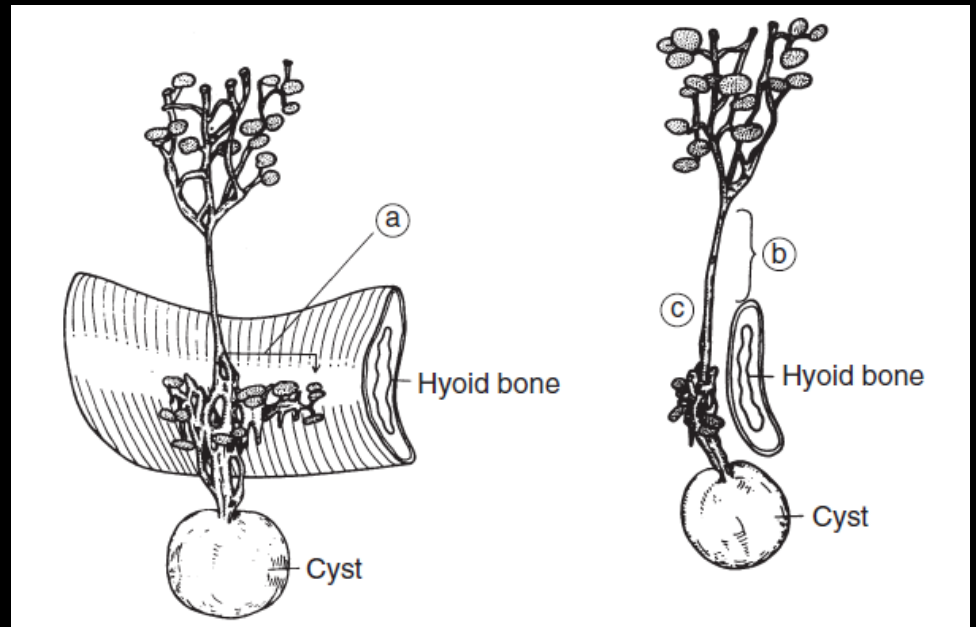


FIGURE 59-6 Diagram of the common running pattern of the thyroglossal duct based on anatomic reconstruction. *a,* Horizontal distance from midline to the most distant thyroglossal duct; *b,* length of the single duct above the hyoid bone; *c,* point where the diameter of the duct is measured. (From Horisawa M, Niinomi N, Ito T: What is the optimal depth for core-out toward the foramen cecum in a thyroglossal duct cyst operation? J Pediatr Surg 1992;27:710-713.)

Thyroglossal Duct Cyst - Complications

- **Major complications**
  - Recurrence: most common
  - Hematoma or abscess
  - Entry into the airway or tracheotomy
  - Hypoglossal nerve paralysis
  - Hypothyroidism
  - Death
- **Minor complications (29%)**
  - Seroma formation
  - Wound dehiscence
  - Local wound infection
  - Stitch abscesses

Thyroglossal Duct Cyst - Recurrence Rates

- 2-5% for complete excision
  - Including the central portion of the hyoid bone
- 0-1.67% for extensive excision
  - Infrahyoid tissue, exposure of the posterior hyoid space
- 38-70% for simple cyst excision alone

- Excision of a recurrent thyroglossal duct remnant has a 20% to 35% risk of failure

Thyroglossal Duct Cyst - Risk Factors for Recurrence

- Simple cyst excision alone
- Intraoperative cyst rupture
  - The cyst contains a characteristic glairy mucus
- Presence of a cutaneous component secondary to infection
- Postoperative wound infections

Thyroglossal Duct Cyst - Infected cysts or Sinuses

- **Common organisms**
  - *Haemophilus influenzae*
  - *Stahylococcus aureus*
  - *Staphylococcus epidermidis*
- Needle aspiration may be required
- **Avoid**
  - I&D >> increase recurrence rates
  - Excision of acutely infected cysts >> recurrence rate 25%
- Up to 3 months prior to definitive operative treatment

Thyroglossal Duct Cyst - Solid mass

- **Frozen section analysis to exclude median ectopic thyroid**
  - **Normal thyroid tissue + functional thyroid tissue in the normal location**
    - Sistrunk procedure with excision of the mass
  - **No other thyroid tissue present: controversy**
    - Leave the tissue in situ or reposition it into the strap muscles
      - Most patients still require thyroid hormone therapy for hypothyroidism or to control the size of the ectopic thyroid
      - Possible malignant degeneration
    - Completely excising the ectopic thyroid tissue

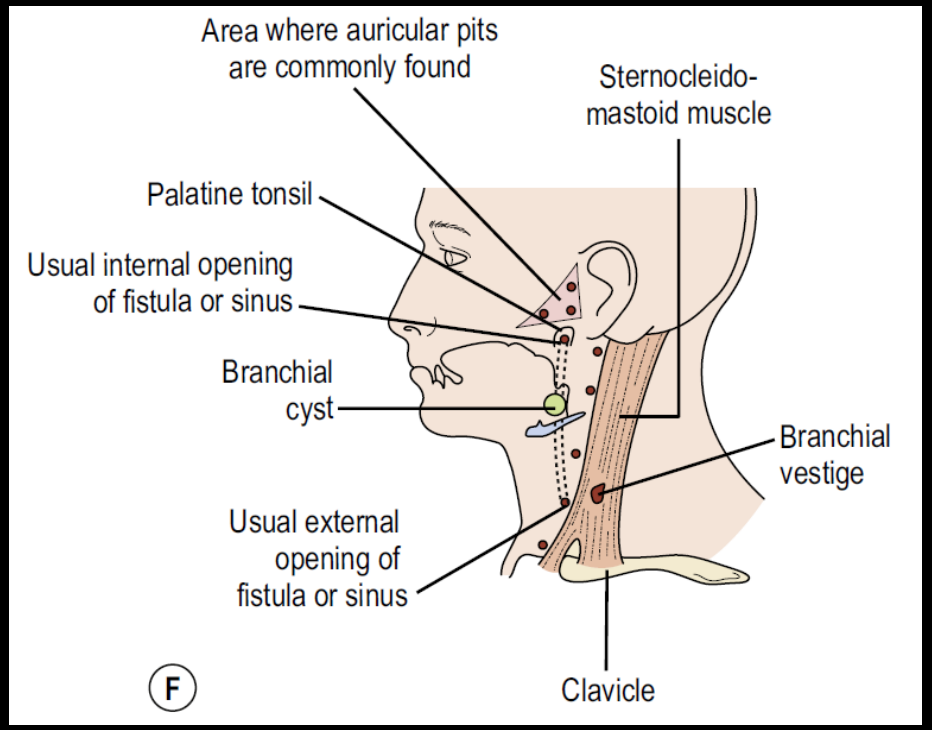
Thyroglossal Duct Cyst - Carcinoma

- **Mostly papillary carcinoma**
- **Confined to the cyst specimen**
  - Sistrunk procedure alone
- **More extensive cancers**
  - Risk stratification
  - Total thyroidectomy with consideration of adjuvant therapy
    - Radioactive iodine in some cases

Branchial Anomalies_

Branchial Anomalies

- Branchial anomalies represent approximately **30% of congenital neck masses**
  - Cysts
  - Sinuses
  - Fistulae
  - Cartilaginous remnants
- Equally common in males and females
- Present in childhood or early adulthood



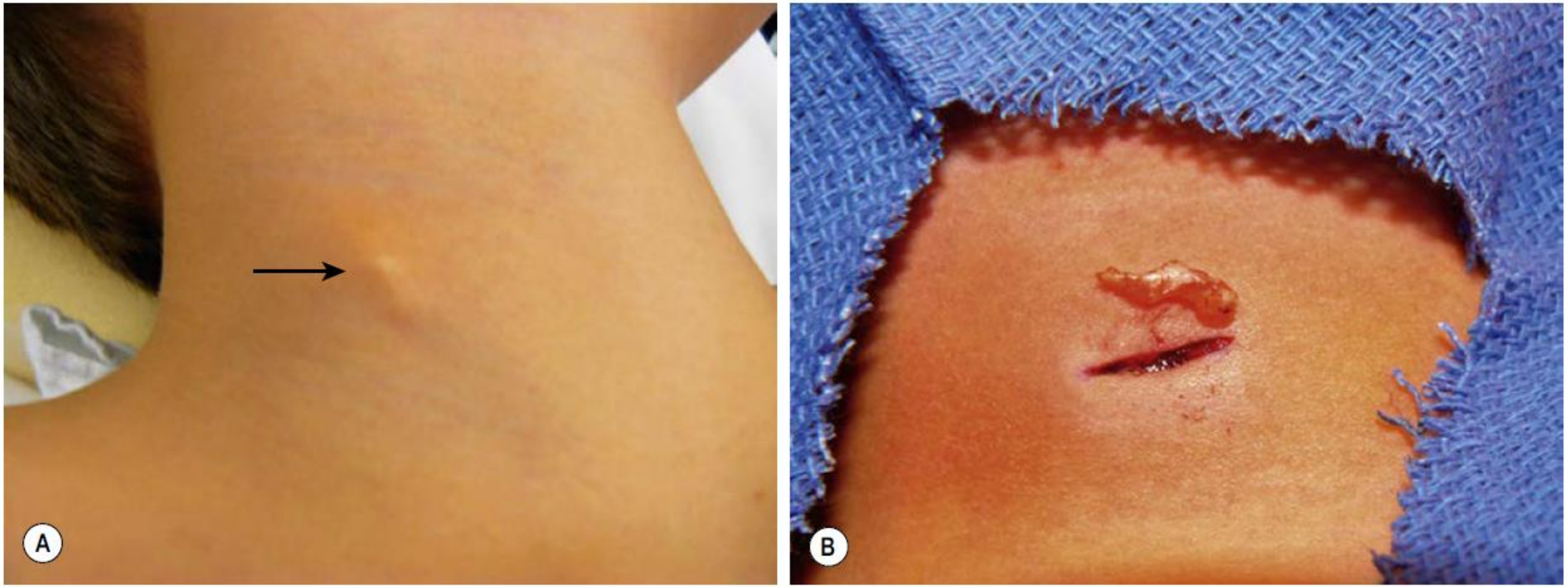


Fig. 72.3 **(A)** At birth, this child was noted to have a right second branchial cartilaginous remnant (arrow). However, the family decided not to seek consultation for removal until he was 7 years old. **(B)** On the right, the cartilaginous remnant has been excised through a small right cervical incision.

Branchial Anomalies - Clinical Presentations

- **Infancy**: sinuses, fistulas, cartilaginous remnants
- **Childhood**: complete fistula > external sinuses > cysts
- **Adults**: cysts predominate

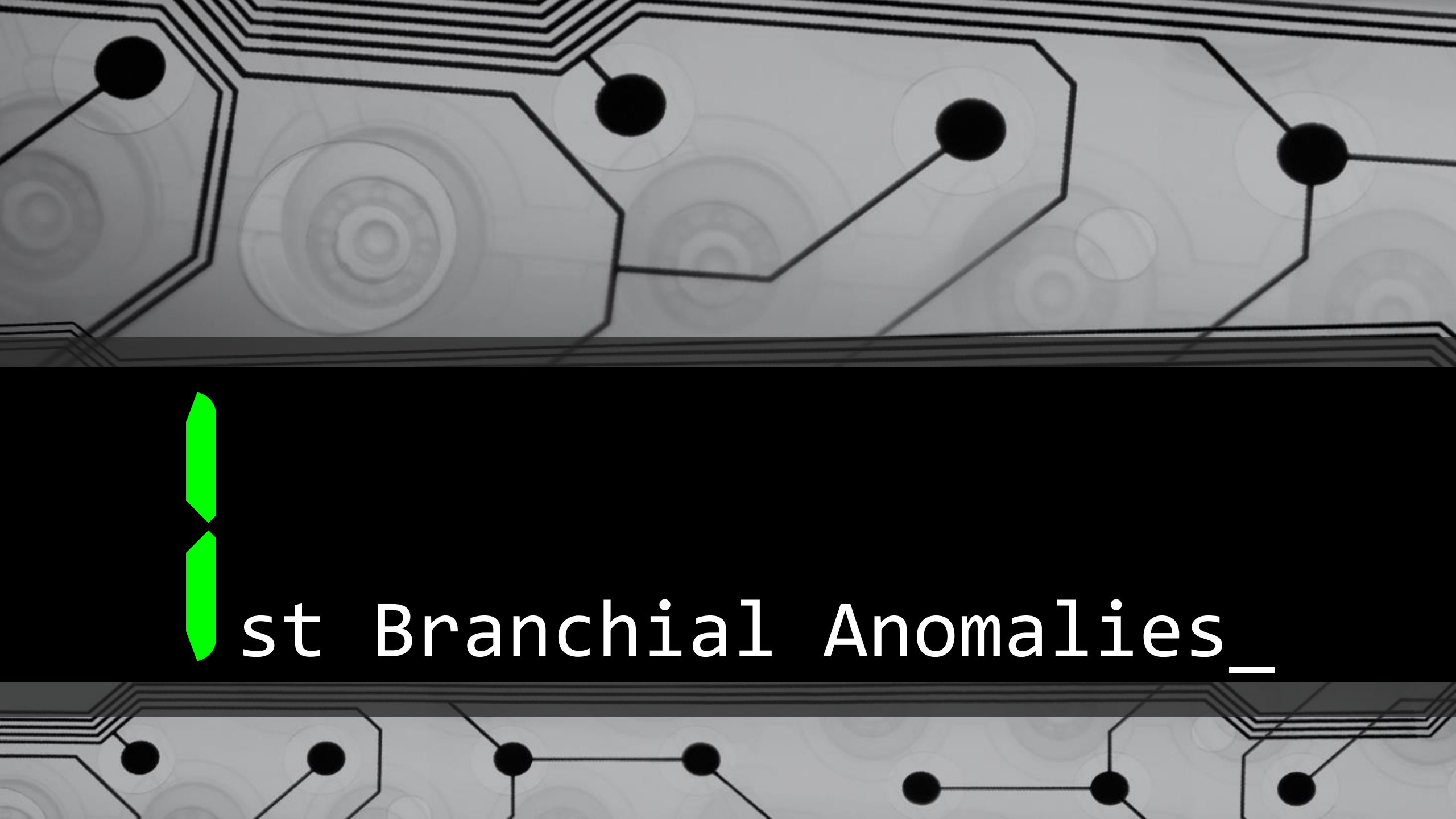
- **Infected mass**: cysts > fistula, external sinuses
- **Spontaneous mucoid drainage**

Branchial Anomalies - Evaluation

- Palpating the tract and observing the mucoid discharge
- Colored dye or radiopaque material may be injected to delineate the tract (unnecessary)
- Upper endoscopy may be helpful to locate the pharyngeal opening
  - Pyriform sinus
  - Tonsillar fossas
- US, CT, MRI
  - **CT is most often used** and can demonstrate a fistula in two-thirds of cases
- Barium esophagram
  - 50–80% sensitivity for third and fourth branchial fistulas

Branchial Anomalies
- Surgical resection

- A small transverse elliptical incision is made around the external opening and deepened beneath the cervical fascia
- The initial dissection is along the inferior border of the incision, so that the ascending tract is identified from below and not injured
- Placement of a 2-0 or 3-0 monofilament suture or probe within the tract can facilitate dissection
- A second, more cephalad, parallel “stair-step” incision or extension of the first incision may be necessary for adequate exposure
- The tract is pulled through the second incision, and the dissection is continued cephalad between the bifurcation of the carotid artery to the point where the tract dives into the pharynx
- The fistula is suture ligated with absorbable suture


ist Branchial Anomalies_

First Branchial Anomalies - Embryogenesis

- **First branchial arch** >> mandible, maxillary process of the upper jaw
  - Abnormal development
    - Facial deformities
    - Abnormal shape or contour of the external ear
    - Malformed internal ossicles
- **First branchial cleft** >> tympanic cavity, eustachian tube, middle ear cavity, and mastoid air cells
  - Abnormal development
    - Microtia
    - Aural atresia

First Branchial Anomalies - Tract

- 1% of branchial cleft malformations
- **Cysts**
  - Swellings posterior or anterior to the ear
  - Swellings inferior to the earlobe in the submandibular region
- **External openings**
  - Inferior to the mandible in a suprahyoid position
  - 1/3 open into the external auditory canal
- The tract may be intimately associated with, or course through, the parotid gland
- This association and the proximity of cranial nerve VII make resection difficult

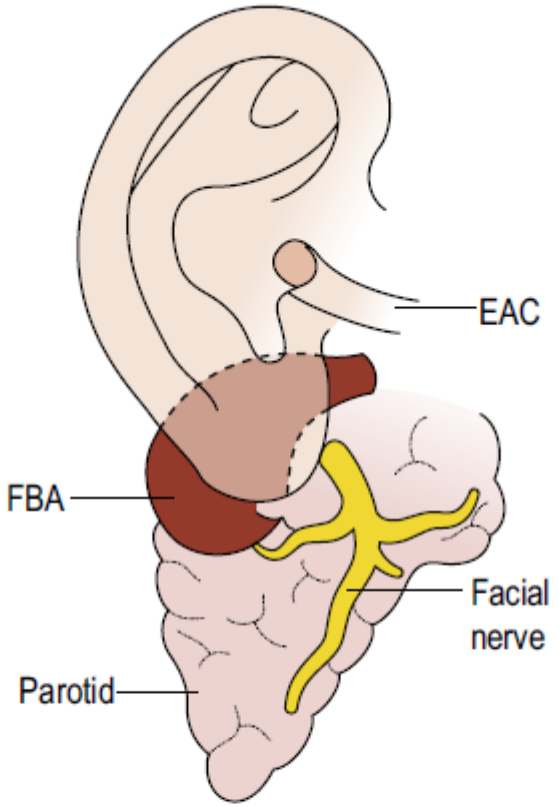


Fig. 72.6 Type I first branchial cleft anomaly (FBA). Note that the anomaly, located in the parotid gland, has no connection to the external auditory canal (EAC). (From Mukherji SK, Fatterpekar G, Castillo M, et al. Imaging of congenital anomalies of the branchial apparatus. Neuroimaging Clin North Am. 2000;10:75–93.)

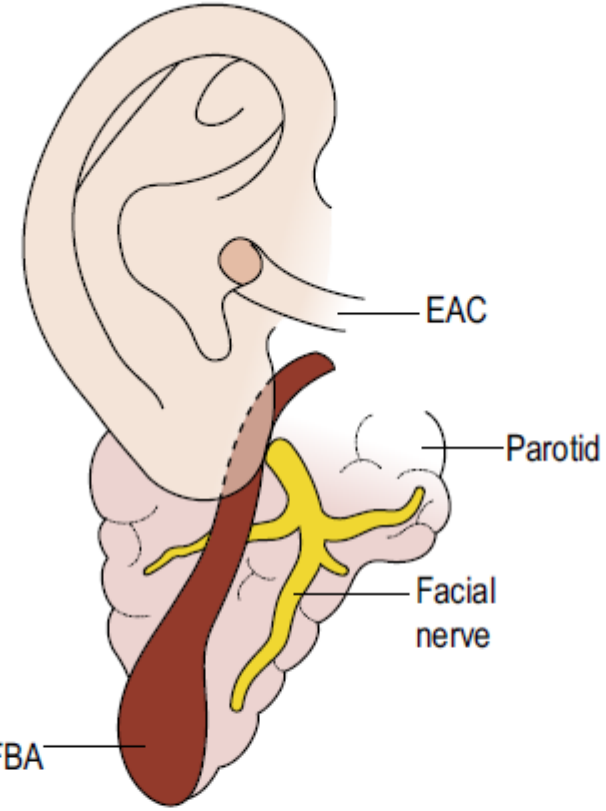


Fig. 72.7 Type II first branchial cleft anomaly (FBA). The anomaly connects with the external auditory canal (EAC) and extends deep into the parotid gland. (From Mukherji SK, Fatterpekar G, Castillo M, et al. Imaging of congenital anomalies of the branchial apparatus. Neuroimaging Clin North Am. 2000;10:75–93.)

First Branchial Anomalies - Clinical Presentations

- More common in females
- **Cervical signs** include drainage from a pit-like depression at the angle of the mandible
- **Parotid signs** result from rapid enlargement due to inflammation
- **Auricular signs** can consist of swelling or otorrhea
- DDx with preauricular pits and sinuses
  - Arise from failure of the auricular hillocks to fuse

First Branchial Anomalies - Treatment

- **Complete surgical resection**
  - Partial facial nerve dissection and superficial parotidectomy
  - Resect any involved skin or cartilage of the external auditory canal
  - If it extends medial to the tympanic membrane
    - A second procedure may be necessary to remove the medial component
  - Tracts that go to the middle ear are more likely to travel deep or split around the facial nerve
  - Superficial parotidectomy incision
    - Exposure of the main trunk of the facial nerve and its peripheral branches
  - Facial nerve monitoring >> decrease the risk of nerve injury

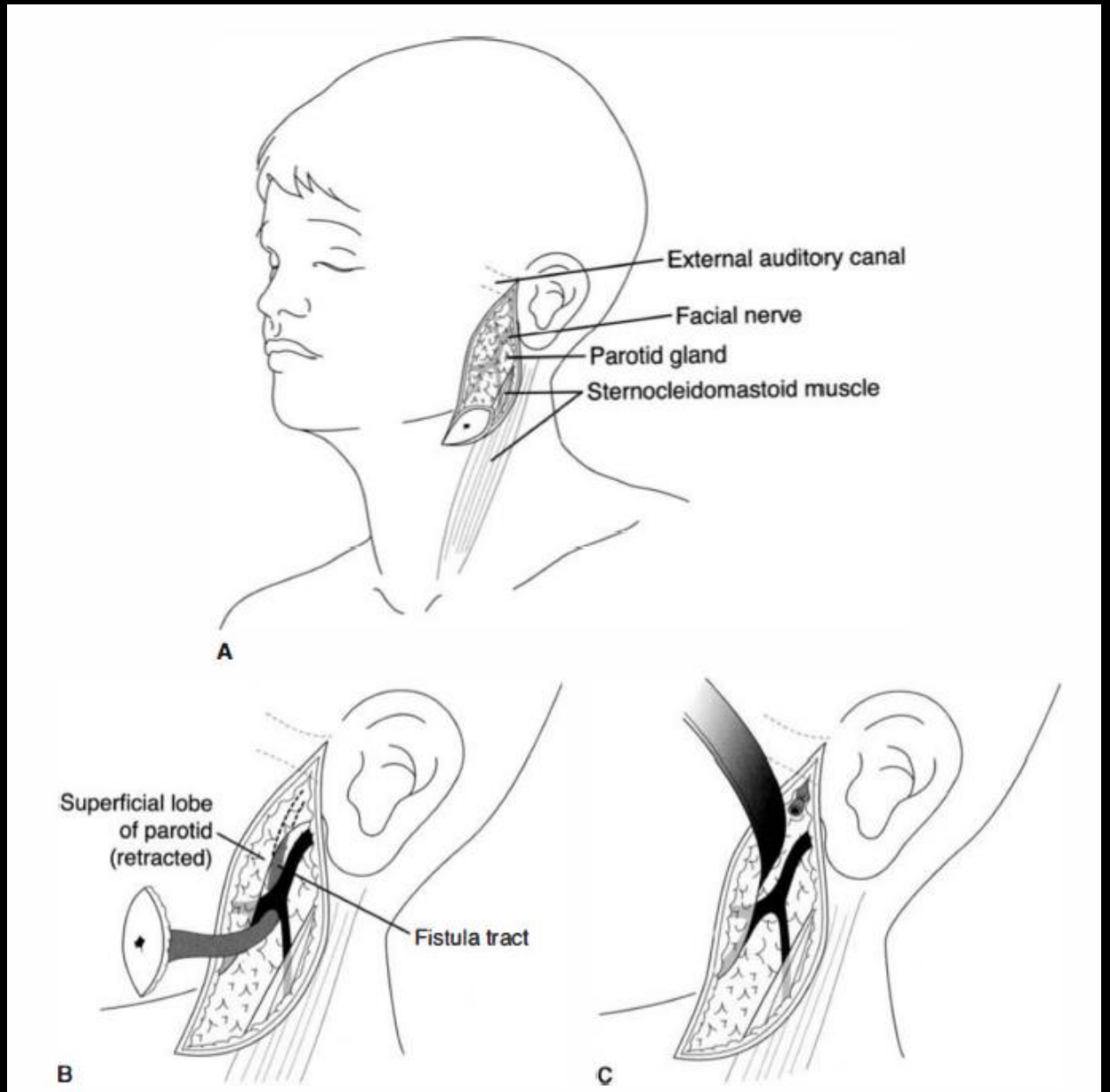
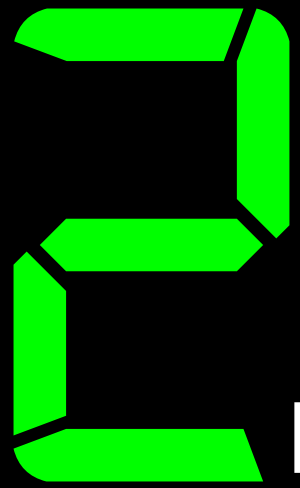


FIGURE 15-5 Exposure of a first branchial cleft fistula. **A.** The fistula has been circumscribed with an elliptical incision carried superiorly just anterior to the ear. The superficial lobe of the parotid is identified. **B.** The superficial lobe of the parotid gland is reflected medially to expose the branches of the facial nerve and the fistula tract. **C.** The fistula is ligated as it enters the cartilage of the external auditory canal.

First Branchial Anomalies - Complications

- Recurrence is common
- Averaged = 2.4 procedures for complete resection
- Each repeat operation places the facial nerve at greater risk



nd Branchial Anomalies_

Second Branchial Anomalies - Embryogenesis

- **Second arch** >> hyoid bone, cleft of the tonsillar fossa
- **Second pouch** >> tonsillar and supratonsillar fossa
- External ostium of the second branchial cleft is along the anterior border of the SCM
  - Junction of the lower and middle thirds

Second Branchial Anomalies - Tract

- The second cleft tract penetrates the platysma and cervical fascia to ascend along the carotid sheath to the level of the hyoid bone
- The residual tract turns medially between the branches of the carotid artery, behind the posterior belly of the digastric and stylohyoid muscles, and in front of the hypoglossal nerve to end in the tonsillar fossa
- Internal opening can be anywhere in the nasopharynx or oropharynx
  - **Tonsillar fossa = most common**

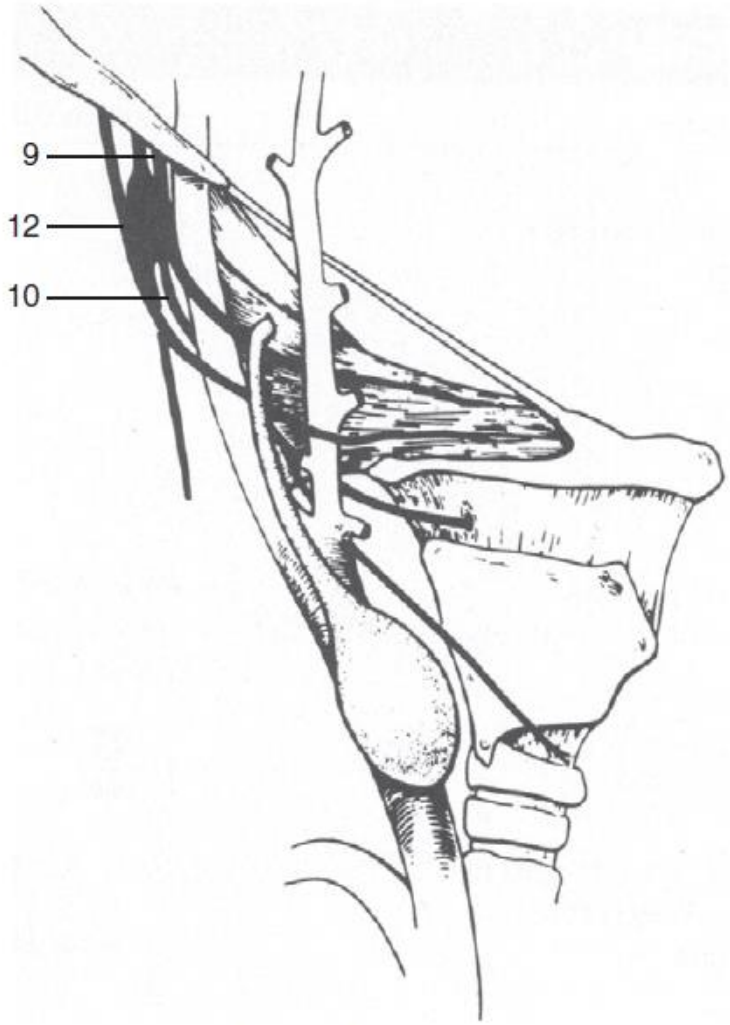


FIGURE 59-8 Second branchial cleft cyst and sinus tract. (From Donegan JO: Congenital neck masses. In Cummings CW, Fredrickson JM, Harker LA, et al [eds]: Otolaryngology—Head and Neck Surgery, ed 2. St Louis, Mosby-Year Book, 1993.)

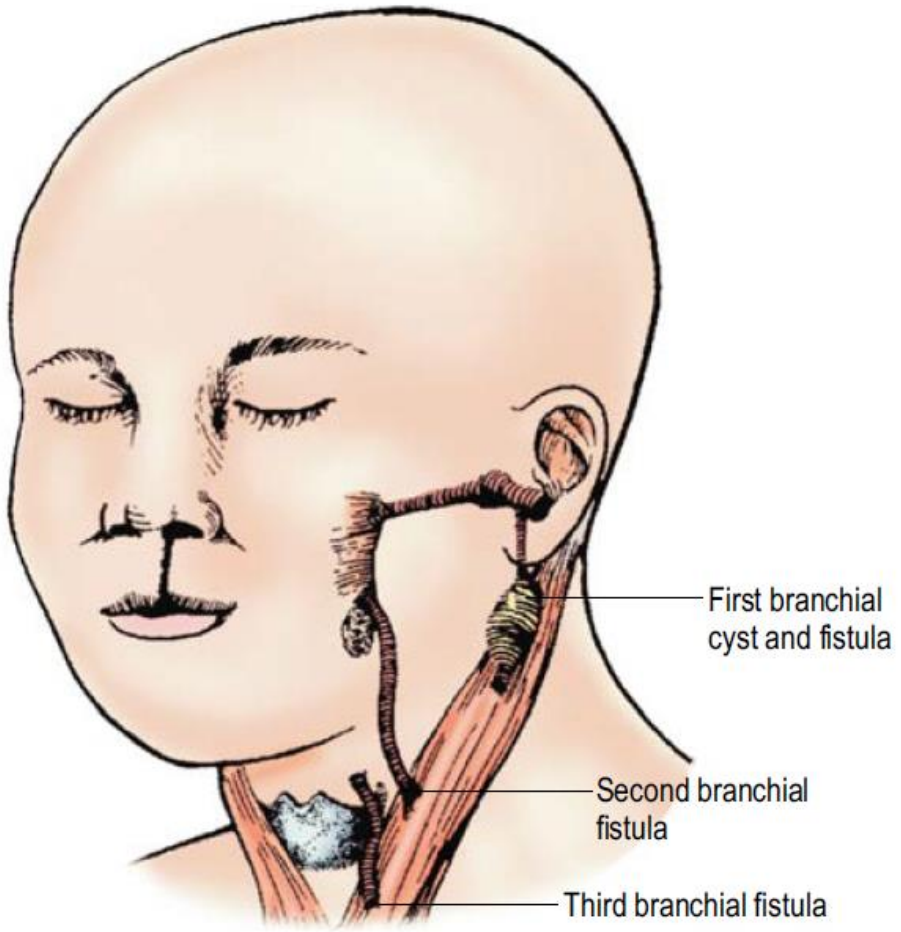


Fig. 72.8 A child with a cleft lip and remnants of the first three branchial systems. Note the important relation to the sternocleidomastoid muscle and the fistula's origin. (From Welch KJ, Randolph JG, Ravitch MM, et al. editors. Pediatric Surgery. 4th ed. Chicago: Year Book Medical; 1986. p. 543.)

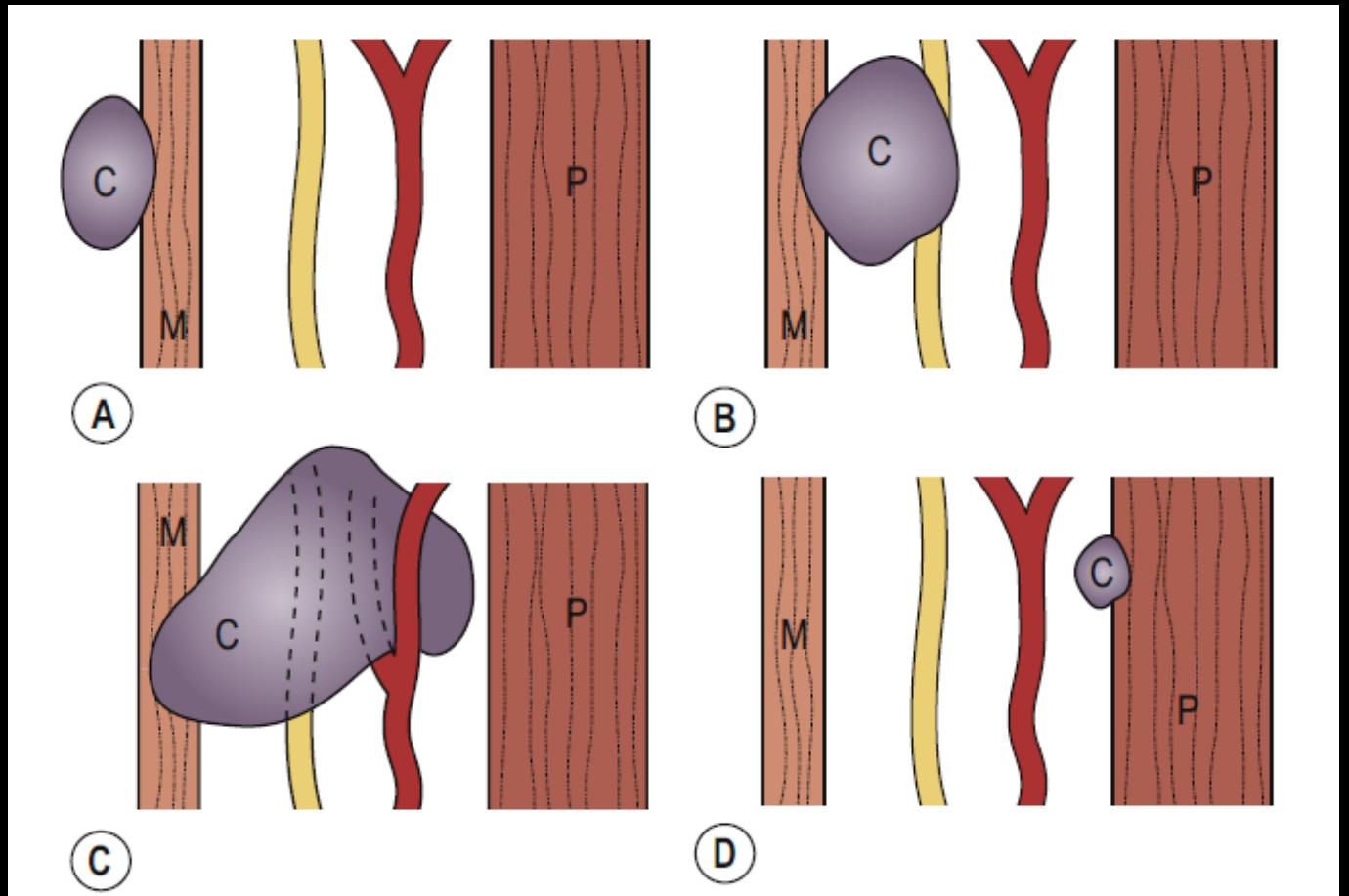
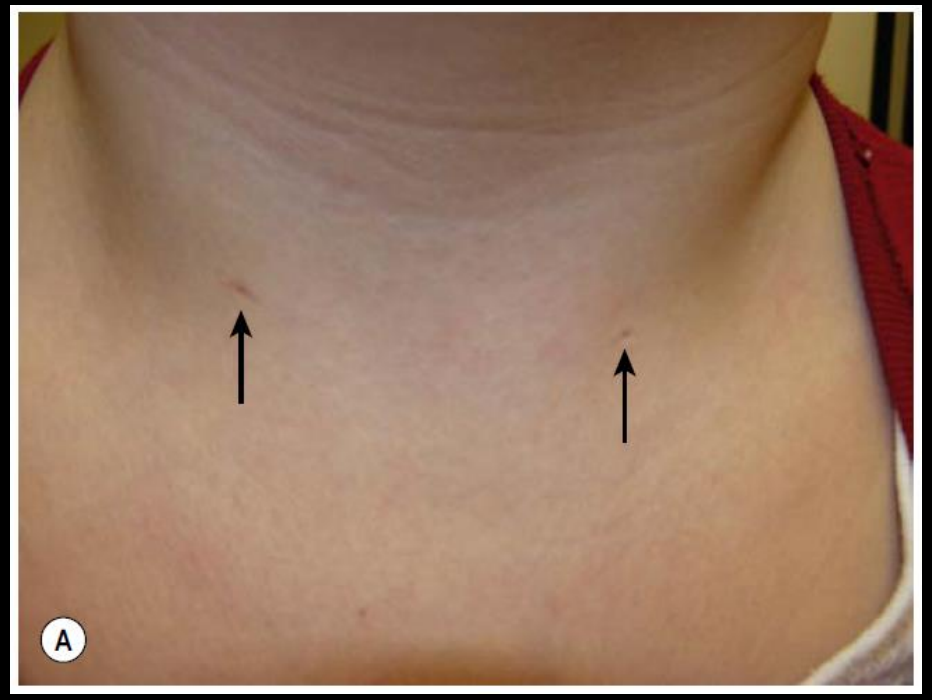


Fig. 72.9 Types I–IV second branchial cleft anomalies. **(A)** Type I: the cyst (C) is superficial to the sternocleidomastoid muscle (M). **(B)** Type II: the cyst is adjacent to the carotid sheath. **(C)** Type III: the cyst passes between the internal and external carotid arteries to the lateral wall of the pharynx (P). **(D)** Type IV: the cyst is deep to the carotid sheath abutting the pharynx. (From Mukherji SK, Fatterpekar G, Castillo M, et al. Imaging of congenital anomalies of the branchial apparatus. Neuroimaging Clin North Am. 2000;10:75–93.)

Type 2: most common

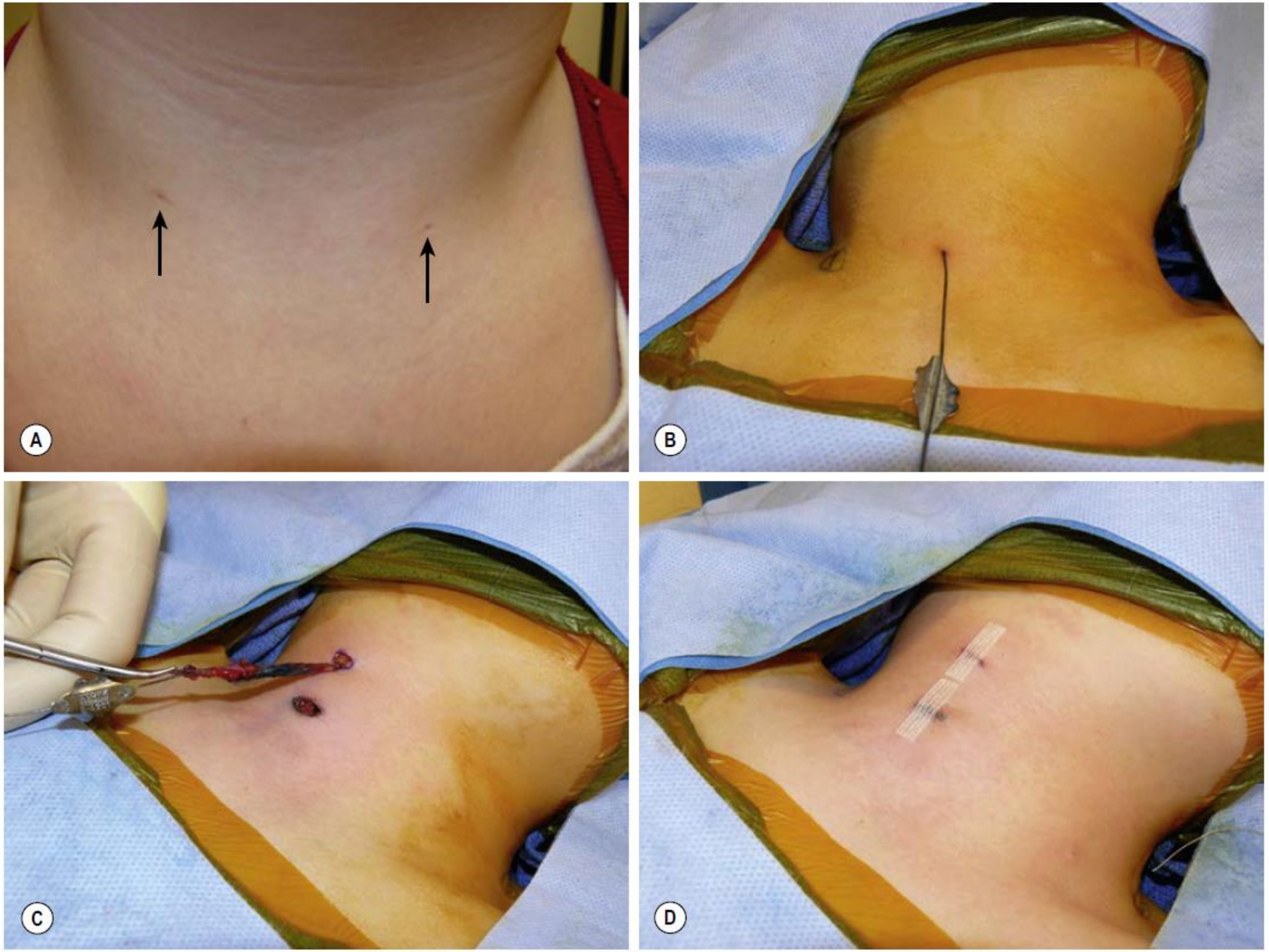
Second Branchial Anomalies - Clinical Presentation

- Second branchial cleft anomalies = **95% of all branchial cleft anomalies**
  - 10% are bilateral
- Lower, anterolateral neck
  - **Fistulas**
    - Infancy or childhood
    - Chronic drainage from an opening
  - **Cysts (more common)**
    - Third to fifth decades of life
    - Acute increase in size following an upper respiratory infection (25%)



Second Branchial Anomalies - Treatment

- **Elective excision**: risks of infection, further enlargement or malignancy
- Care taken during the resection to protect the spinal accessory, hypoglossal, and vagus nerves
- A finger or bougie in the oropharynx can help identify the opening in the tonsillar fossa
- Approached via a conventional cervical incision or a retroauricular hairline incision for improved cosmesis
- If the tract is long, exposure may be improved by a second (so-called “stepladder”) incision
- Pharyngeal cysts can be excised by an intraoral approach


A
B
C
D

3rd 4th Branchial Anomalies_

Third and fourth Branchial Anomalies - Embrogenesis

- **Third and fourth pouches** >> pharynx below the hyoid
- **Third cleft** >> inferior parathyroid glands, thymus
- **Fourth cleft** >> superior parathyroid glands
- **Fourth pouch** >> ultimobranchial body >> parafollicular cells

Third and fourth Branchial Anomalies - Third Branchial Cleft

- **Cysts and sinuses from the third branchial cleft**
  - Same area as the second cleft
  - Ascend posterior to the carotid artery
  - Fistula pierces the thyrohyoid membrane and enters the pyriform sinus
  - Enter the piriform sinus above the superior laryngeal nerve

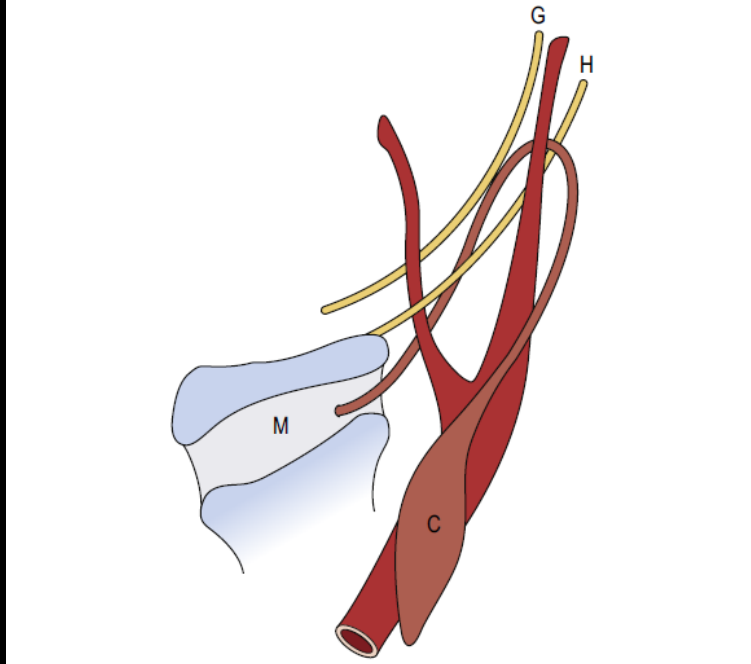


Fig. 72.10 Third branchial cleft anomaly. The cyst (C) is posterior to the sternocleidomastoid muscle, and the tract ascends posterior to the internal carotid artery. It then passes medially between the hypoglossal (H) and glossopharyngeal (G) nerves. It pierces the thyroid membrane (M) to enter the pyriform sinus. (From Mukherji SK, Fatterpekar G, Castillo M, et al. Imaging of congenital anomalies of the branchial apparatus. Neuroimaging Clin North Am. 2000;10:75–93.)

Third and fourth Branchial Anomalies - Fourth Branchial Cleft

- **Cysts and sinuses from the fourth branchial cleft**
  - Highly unusual
  - Must be differentiated from laryngoceles
  - Tracts originate at the apex of the pyriform sinus, descend beneath the aortic arch, and then ascend anterior to the carotid artery to end in the vestigial cervical sinus of His
  - Enter the piriform sinus below the superior laryngeal nerve

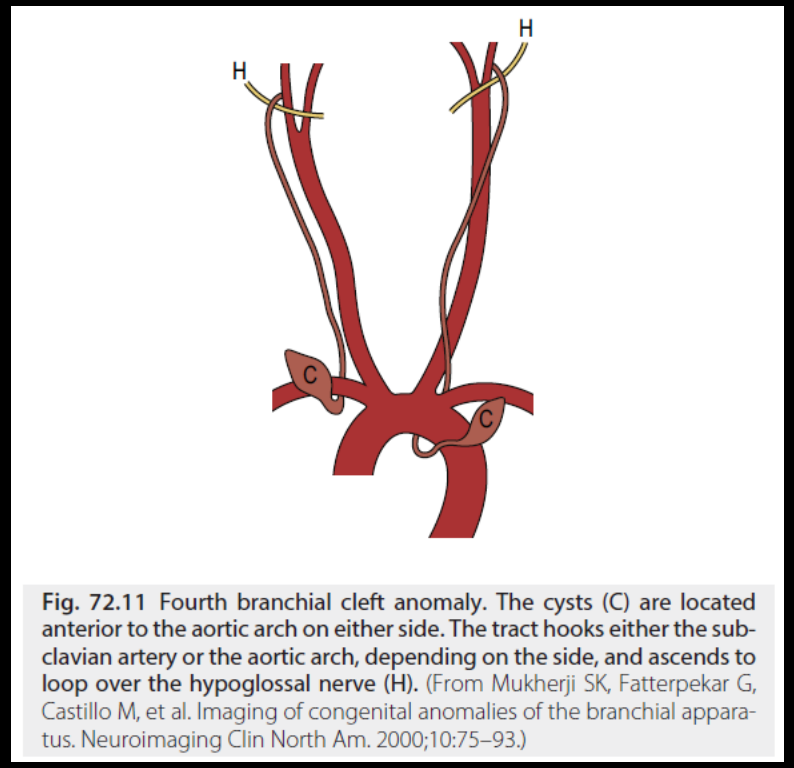


Fig. 72.11 Fourth branchial cleft anomaly. The cysts (C) are located anterior to the aortic arch on either side. The tract hooks either the subclavian artery or the aortic arch, depending on the side, and ascends to loop over the hypoglossal nerve (H). (From Mukherji SK, Fatterpekar G, Castillo M, et al. Imaging of congenital anomalies of the branchial apparatus. Neuroimaging Clin North Am. 2000;10:75–93.)

Third and fourth Branchial Anomalies - Differential Diagnosis

- **Thymic cysts**
  - Incomplete degeneration of the thymal pharyngeal duct
  - Progressive cystic degeneration of epithelial remnants of Hassall corpuscles
  - Most are found on the left side of the neck

- **Parathyroid cysts**
  - Anywhere around the thyroid gland or in the mediastinum
  - Usually not associated with biochemical abnormalities

Third and fourth Branchial Anomalies - Clinical Presentations

- **Neonate**
  - Tracheal compression
  - Airway compromise
- **Outside the neonatal period**
  - **Infectious complications (most common):** repeated upper respiratory tract infections, sore throats, hoarseness or pain, suppurative thyroiditis, thyroid abscess
- Noncommunicating or noninfected communicating cysts may present as cold thyroid nodules

Third and fourth Branchial Anomalies - Imagings

- Contrast esophagogram after resolution of the acute infection
  - May demonstrate the tract from the piriform sinus
- Combinations of ultrasonography, CT, MRI, and thyroid scan

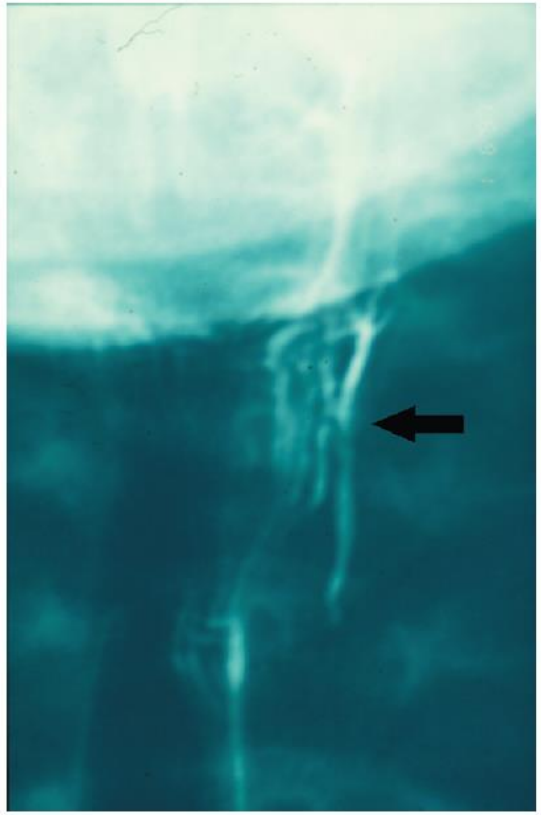


FIGURE 59-13 Contrast esophagogram demonstrating contrast within piriform sinus tract *(arrow)*. *(See Expert Consult site for color version.)*

Third and fourth Branchial Anomalies - Treatment

- The operative approach for third and fourth arch anomalies is **similar to the second arch**, with a few notable exceptions
  - Direct laryngoscopy or rigid pharyngoscopy is recommended
  - Endoscopy should be used to find the pyriform sinus entry point
  - Fourth arch anomaly resections require ipsilateral hemithyroidectomy for complete excision, and partial resection of the thyroid cartilage may be necessary to expose the pyriform sinus

- **Children older than 8 years**: excision of the fistula tract
- **Children younger than 8 years**: endoscopic cauterization of the internal fistula opening

Preauricular Pits, Sinuses, and Cysts_

Preauricular Pits, Sinuses, and Cysts

- Ectodermal inclusions
- The sinuses are often short and end blindly
- Preauricular cysts are located in the subcutaneous layer superficial to the parotid fascia
  - May seem deeper if they become infected
- Incidence
  - 0.1–0.9% in the United States
  - 4–10% in Africa
- Commonly noted at birth, more commonly on the right side
- The parent may remark about the familial and bilateral nature of these lesions

Preauricular Pits, Sinuses, and Cysts

- The presence of **preauricular pits** in patients **with branchial anomalies** should raise the suspicion for
  - **Branchio-oto-renal (BOR) syndrome**
    - Autosomal dominant
    - Hearing loss
    - Ear malformations
    - Renal anomalies
  - **Branchio-oculo-facial (BOF) syndrome**
    - Autosomal dominant
    - Eye anomalies: microphthalmia, obstructed lacrimal ducts
    - Facial anomalies: cleft or pseudocleft lip/palate

Preauricular Pits, Sinuses, and Cysts

- **Excision of these preauricular sinuses is not needed unless there is a history of drainage**
- Sinuses that drain are often connected to subcutaneous cysts that have an increased likelihood of staphylococcal infection

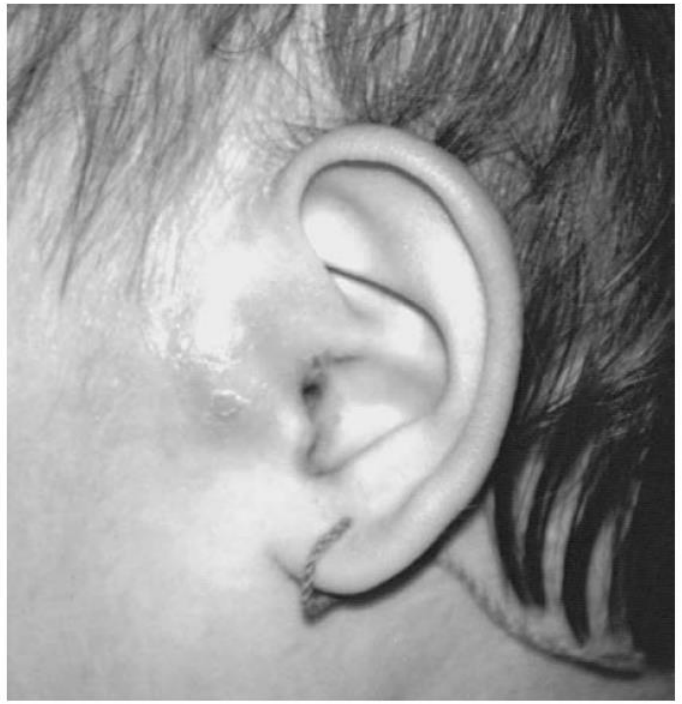


Fig. 72.12 An infected preauricular cyst. The pit anterior to the helix is difficult to see. Note the swelling and skin changes anterior to the tragus. Preauricular sinuses that drain sebaceous material should be excised electively. Warm compresses and antibiotics allowed the inflammation to diminish. The cyst and sinus were then completely excised.

Preauricular Pits, Sinuses, and Cysts

- Complete surgical excision of the sinus tract and subcutaneous cyst to the level of the temporalis fascia is the treatment of choice in the uninfected draining sinus
- The incidence of recurrence is as high as 42% owing to these multiple branches, and some surgeons have advocated an extended preauricular incision to enhance exposure
- Alternatively, extension of the elliptical excision superiorly allows removal of the subcutaneous tissue between the temporalis fascia and the helix perichondrium, which is the plane in which the sinus tracts exist

Dermoid and Epidermoid Cysts_

Dermoid and Epidermoid cysts

- Ectodermal elements trapped beneath the skin along median or paramedian embryonic lines of fusion
- Dermoid cysts are differentiated from epidermoid cysts histologically by the accessory glandular structures
- Most are diagnosed before the patient is 3 years of age
- The **most common** location for dermoid cysts in children is along the **supraorbital palpebral ridge**
  - Characteristic swelling in the corner of the eyebrow
  - Most commonly first noticed at birth or within the first 1–3 months of life
- Dermoid cysts may occur along the midline or in atypical locations such as the medial orbital wall, nose, floor of the mouth, anterior chest wall, or submental and submaxillary areas

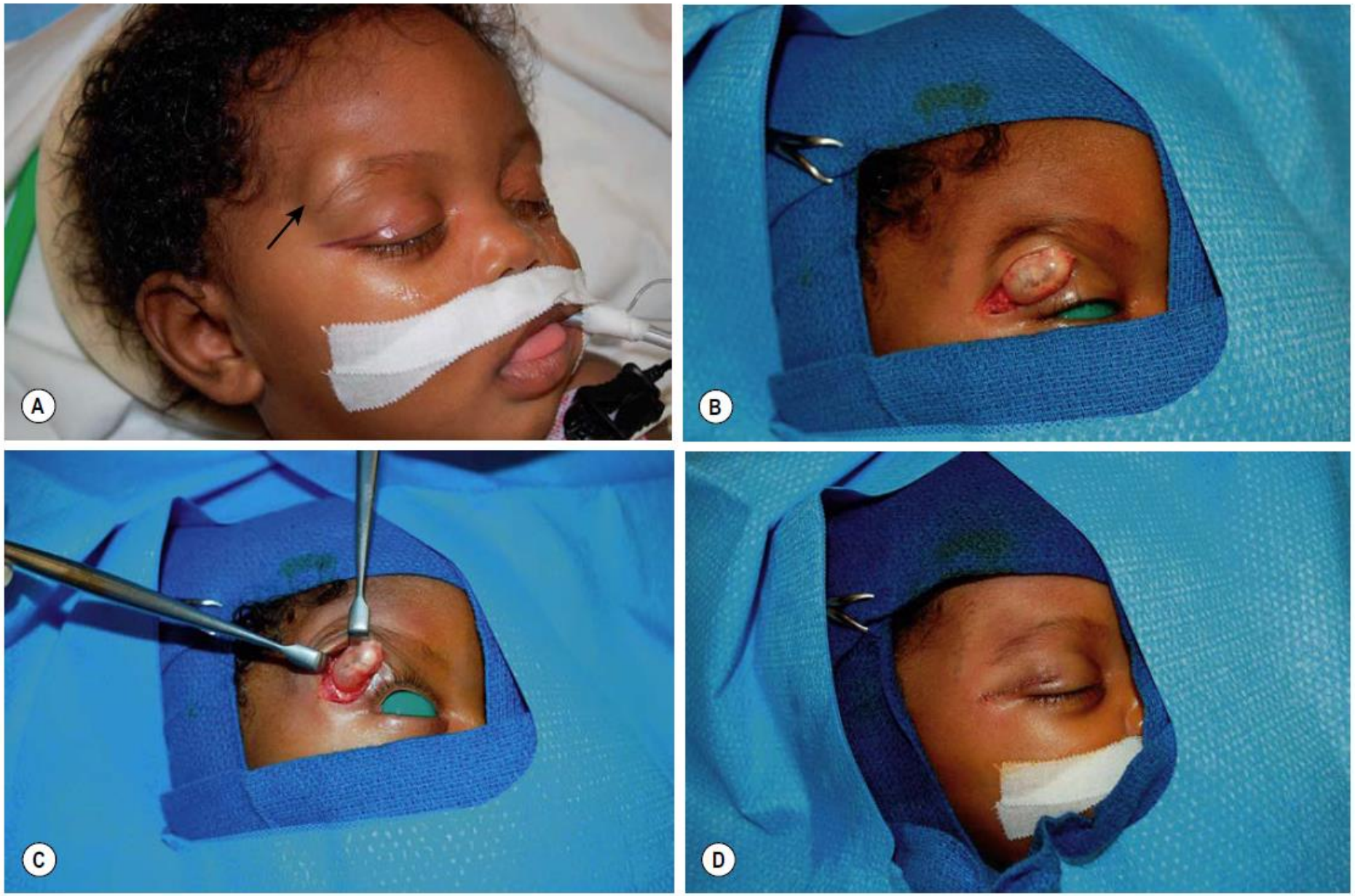


Fig. 72.13 In the upper left of this photograph (**A**), the patient's right supraorbital dermoid cyst is indicated by the arrow. In (**B**), the anterior aspect of the cyst has been dissected free from the surrounding tissues. In (**C**), the cyst is lying in its bony crater along the palpebral ridge. In (**D**), the cyst has been completely excised and the incision closed. Note the eye has been protected with a green eye shield.

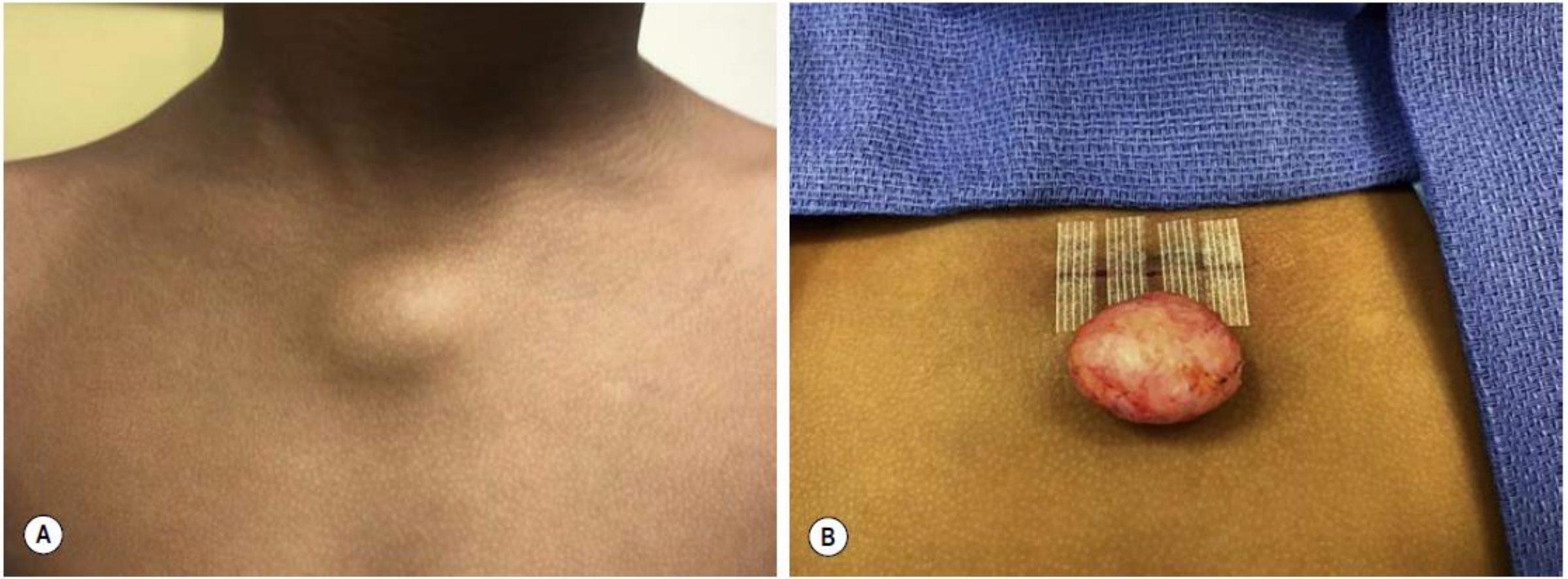


Fig. 72.14 In this teenager, the large upper midline anterior chest wall mass had been present for many years (**A**). The mass was completely excised and was a dermoid cyst (**B**).

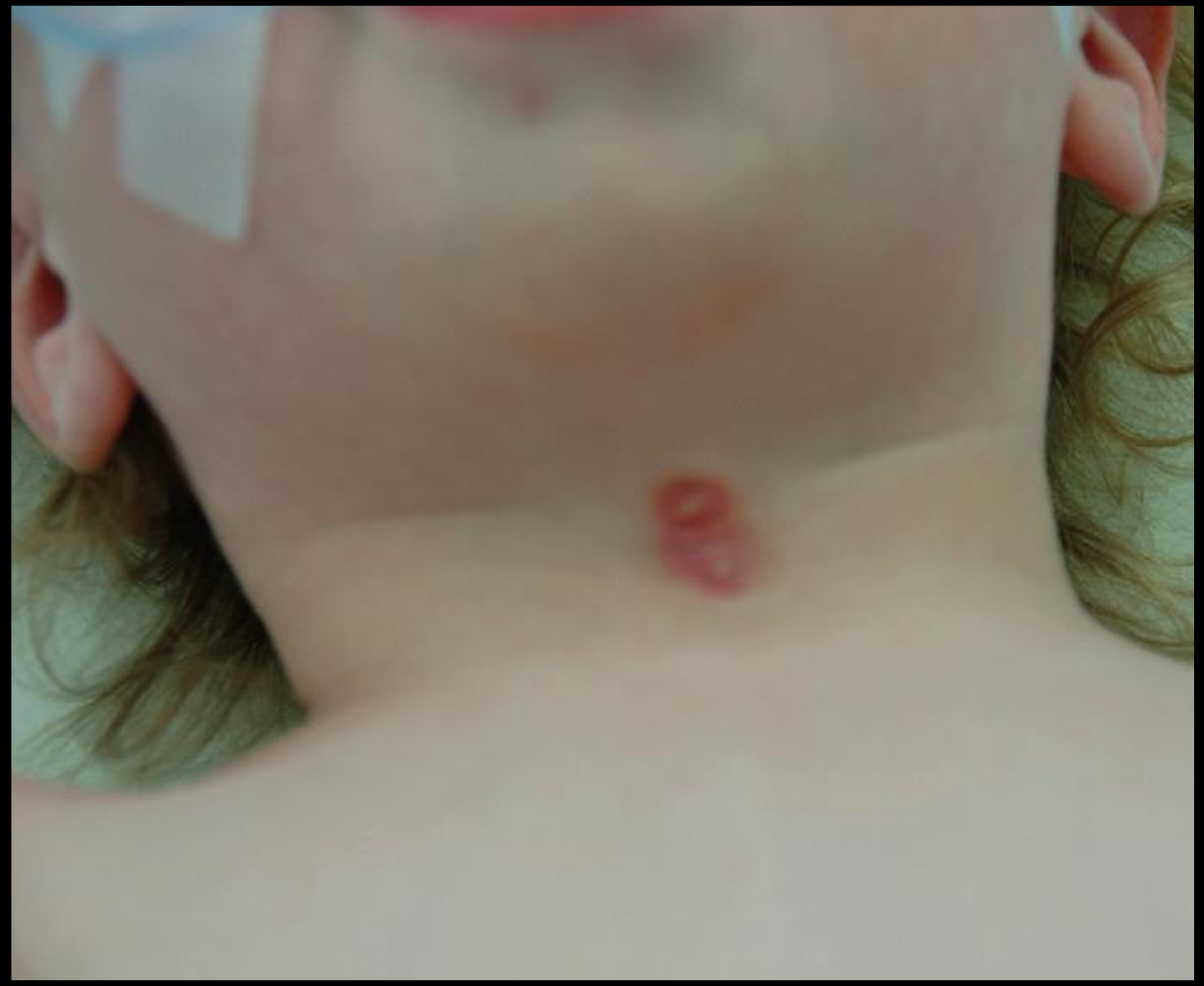
Dermoid and Epidermoid cysts

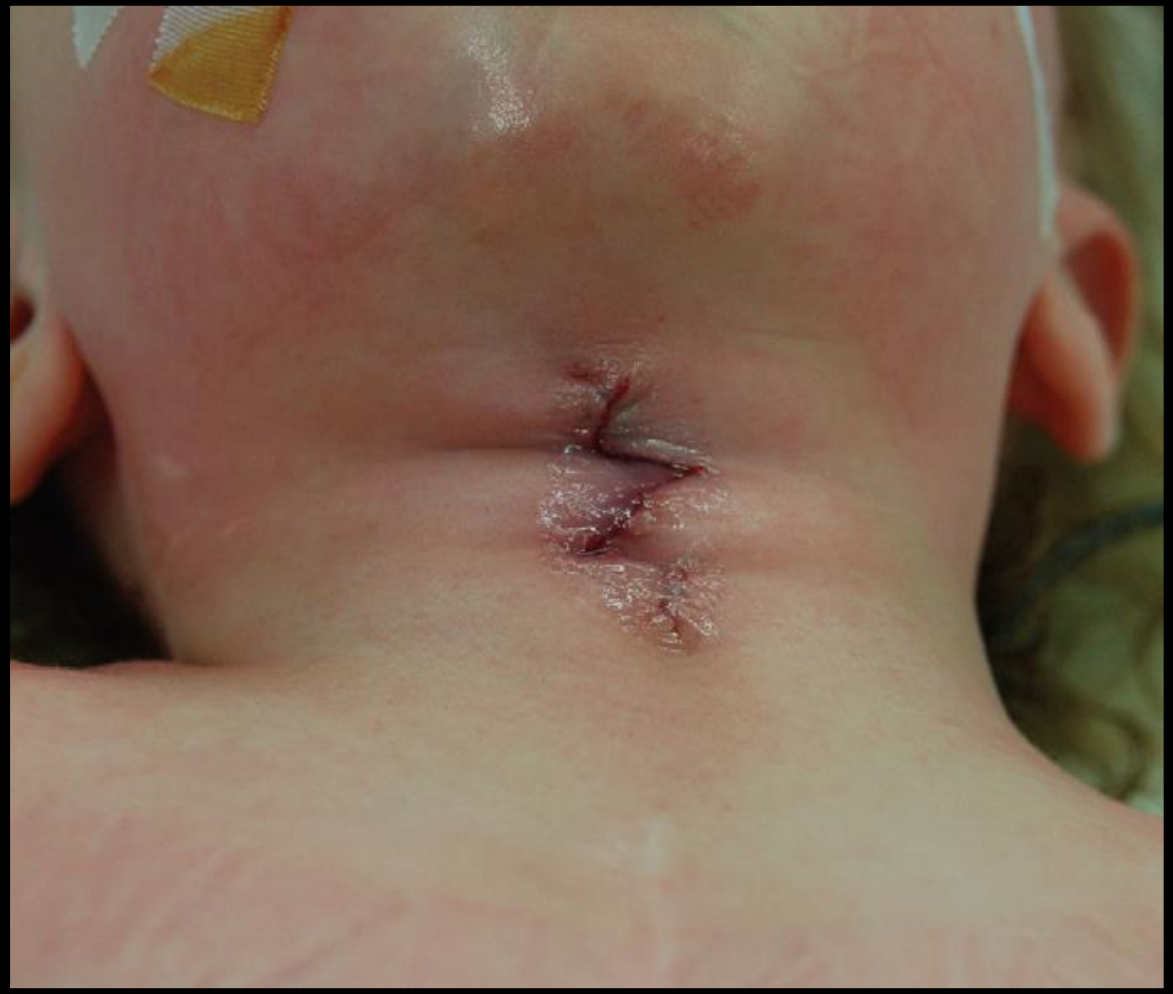
- **Preoperative radiographic evaluation**
  - Any midline scalp lesion suspected of being a dermoid cyst: exclude intracranial extension
  - Nasal dermoid cysts: 12-45% extend to the cribriform plate
  - Orbital dermoids with palpably indistinct margins: may require deep orbital dissection
- The best way to evaluate for deep extension: controversial
  - CT or MRI
- Infection is rare, but the cysts can rupture resulting in granulomatous inflammation
- Fine-needle aspirate may also be helpful in distinguishing an infected thyroglossal duct from a ruptured dermoid

Congenital Midline Cervical Clefts_

Congenital Midline Cervical Clefts

- Very rare anomalies
- Arise from failure of anterior fusion of the first two branchial arches
- Longitudinal area of thinned or atrophic skin along the anterior midline of the neck
  - Skin tags at the upper end
  - Small sinus tracts at the inferior aspect
- Secretions may be noted from accessory salivary glands draining into the cleft
- **Early complete excision** is recommended
- Wound closure is accomplished using a series of Z-plasties,
  to avoid a contracting linear scar



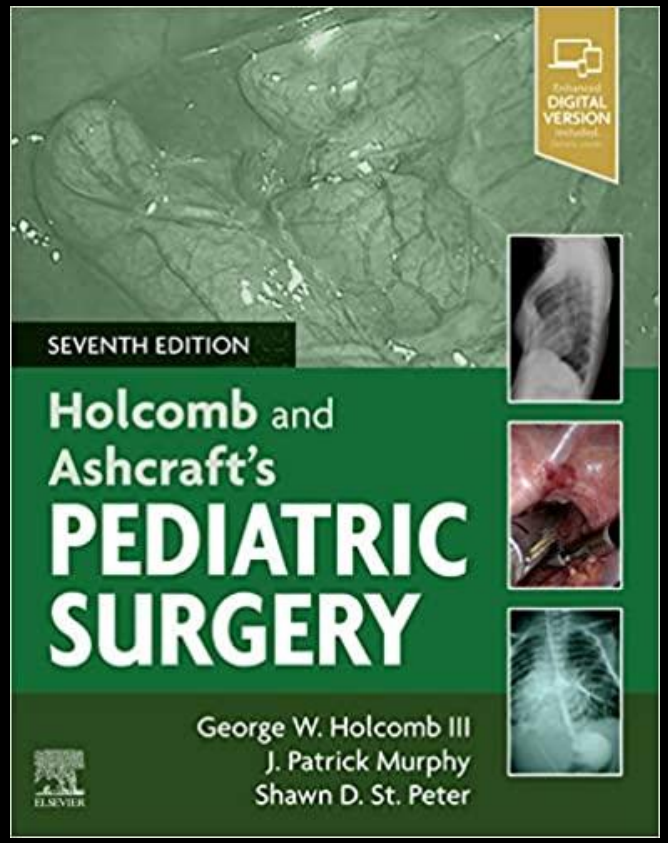


Cervical Thymic Cysts_

Cervical Thymic Cysts

- Usually seen within the chest and mediastinum
- Typically present in the anterior triangle, more commonly on the left
- More frequently in males, with peak onset at age 5 to 7 years
- Extension into the mediastinum is common
  - Physical finding of enlargement with a Valsalva maneuver
- The precise diagnosis is usually made postoperatively when elements of thymus are identified within the cyst wall
- The fluid within these cysts is typically brownish in color
- **Almost always benign**

References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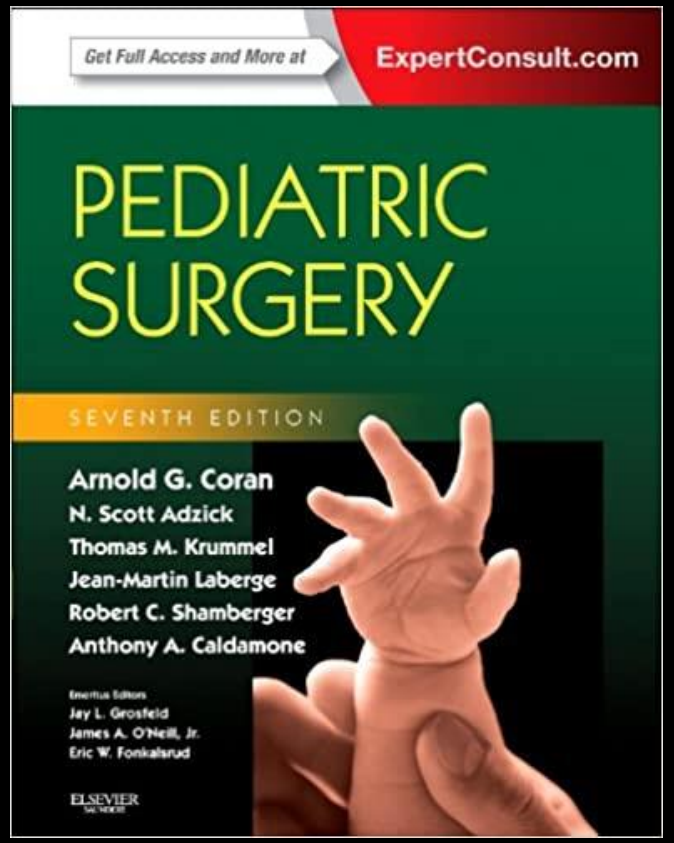
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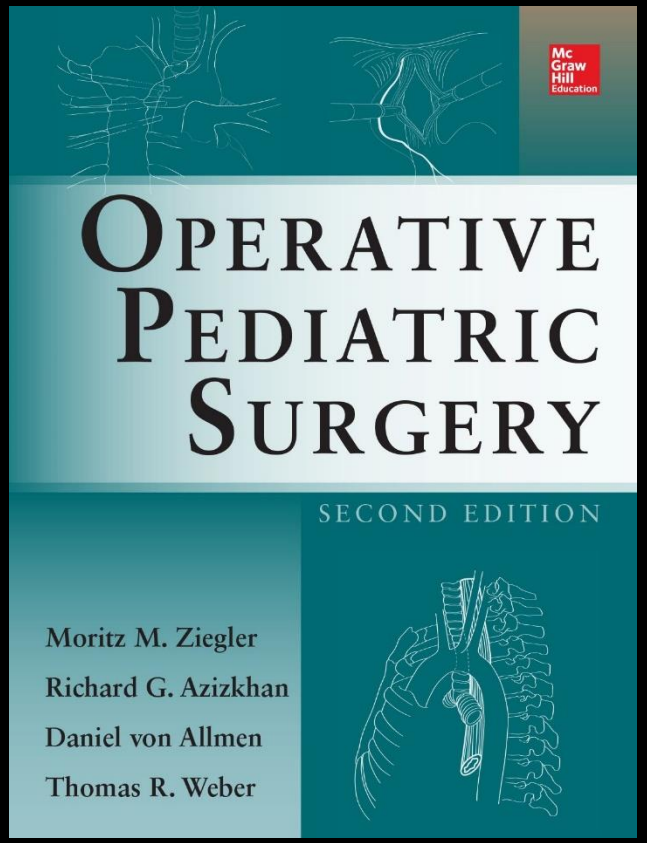
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