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NECK SWELLINGS- MIDLINE AND LATERAL

- While shaving, a 45-year-old teacher notices a marble-sized mass beneath his left ear. The mass is eventually excised, revealing which of the following benign parotid gland lesions?
- (A) Glandular hypertrophy, secondary to vitamin A deficiency
- (B) Cystic dilation
- (C) Mikulicz's disease
- (D) Pleomorphic adenoma

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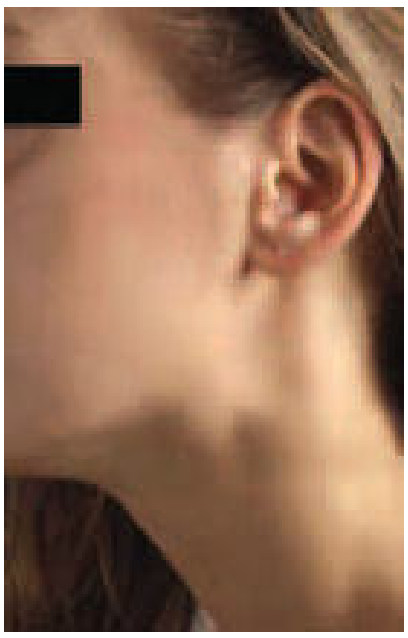
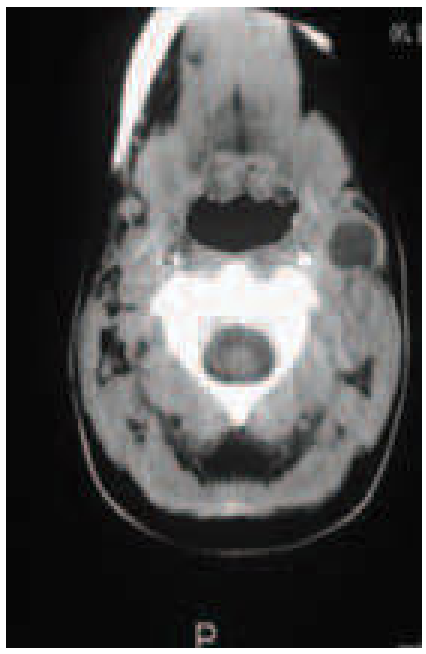
- A 43-year old man notes shortness of breath. He is a non smoker. His wife points out that his face has become slightly swollen. On examination, his blood pressure is normal. His pupils are equal and respond to light. Dilated veins are noted around the shoulders, upper chest, and face. An x-ray of the chest reveals an opacity in the superior mediastinum. What is the most likely diagnosis?
- (A) Thymoma
- (B) Neurogenic tumor
- (C) Lymphoma
- (D) Teratodermoid tumor





- This 19 year old girl had a two-week history of a painless swelling in the left jugulo digastric region. FNAC demonstrated benign squamous cells, cellular debris and cholesterol crystals. CT scan demonstrated a well circumscribed cystic mass, anterior to the sternomastoid muscle. This is a typical ?

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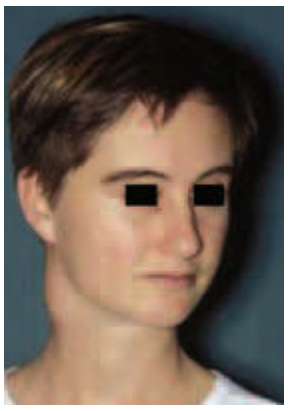
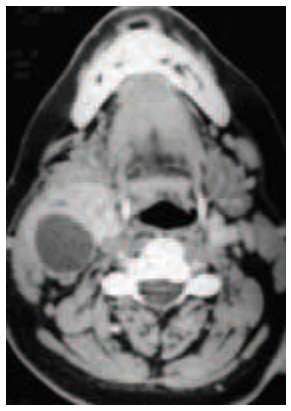
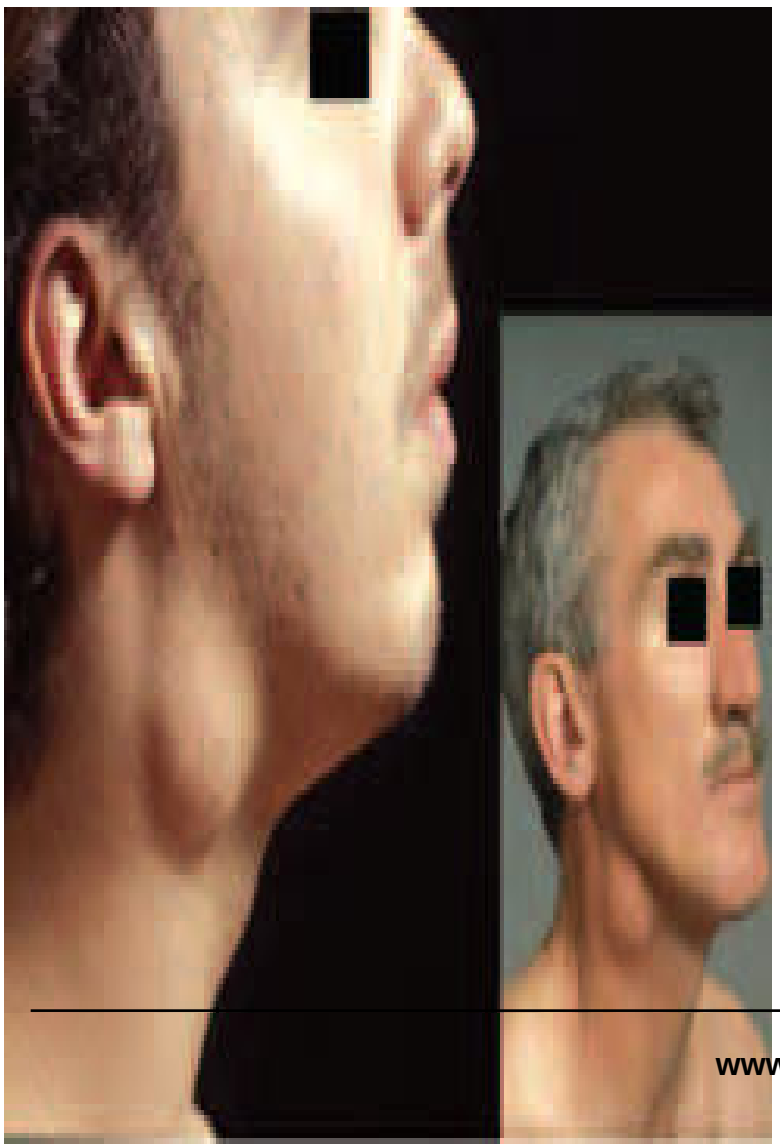




- This young woman had a one-week history of a rapidly enlarging mass in the upper right neck with localised tenderness. The CT scan again demonstrates a well circumscribed unilocular cyst, with a smooth wall



- This young man has a prominent painless lymph node in the jugulodigastric region. Fine needle aspiration biopsy indicated a diagnosis of Hodgkin's Disease. The 40 year old man (inset) has a lump in an identical position, also painless and present for months. Fine needle aspiration biopsy confirmed the diagnosis of metastatic squamous cell carcinoma from a tonsil cancer. He was a non smoker.

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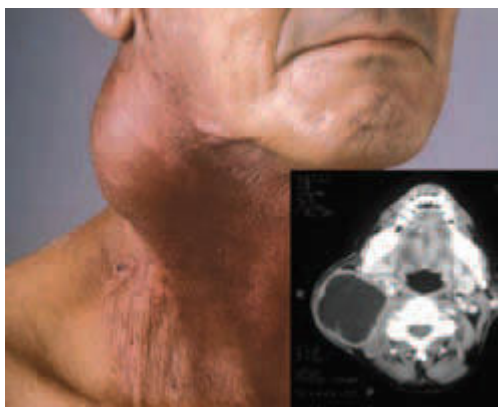
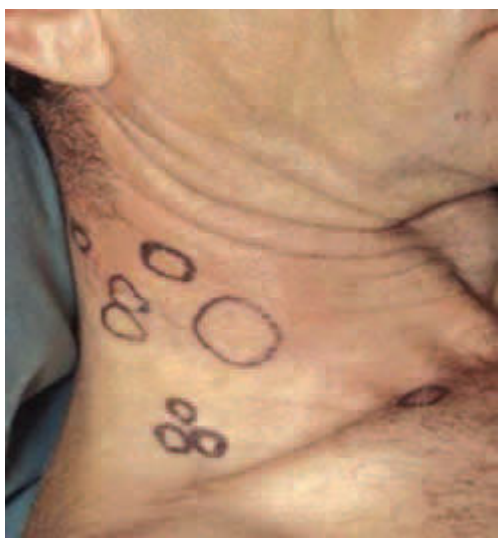


- The man is 60, a heavy smoker and presents with a hoarse voice and large mass in the right upper neck. Fine needle aspiration biopsy showed necrotic debris and the CT scan demonstrates a unilocular cystic mass. The cyst wall is irregular and this is metastatic squamous carcinoma, which has undergone cystic degeneration. The primary cancer was in the hypopharynx



- This man has nasopharyngeal carcinoma with multiple metastatic lymph nodes in the posterior triangle, bounded by the clavicle below, sternomastoid muscle anteriorly and the trapezius posteriorly..

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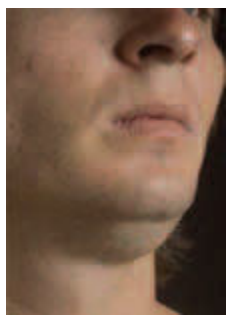
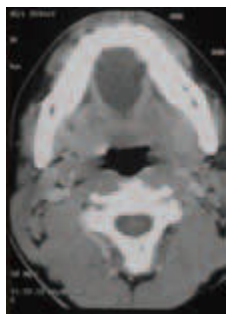
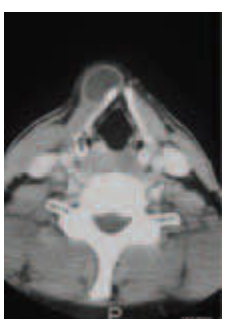




- The young man had a firm, but not hard submandibular swelling which had been present for 5 years. The CT scan on the right demonstrates a midline dermoid cyst. This is a well localised benign congenital lesion.



- This young woman, aged 25, has a well localised swelling just below the hyoid bone, which elevates on protrusion of the tongue. The CT scan on the right is from another patient but demonstrates identical pathology of a well circumscribed cystic structure lying anterior to the thyroid cartilage - thyroglossal cyst.

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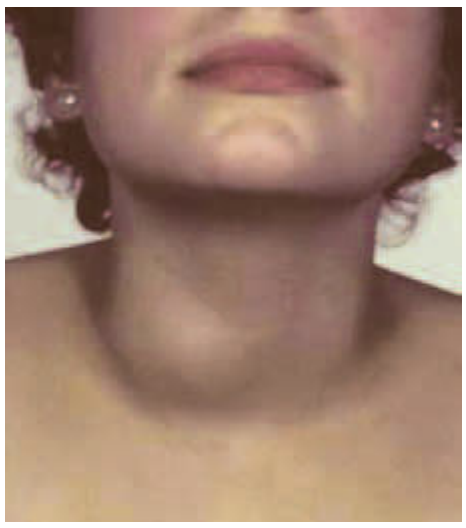
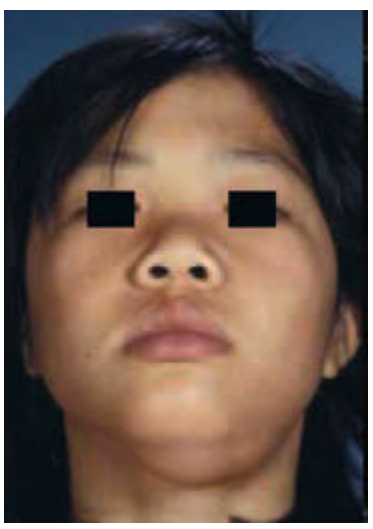
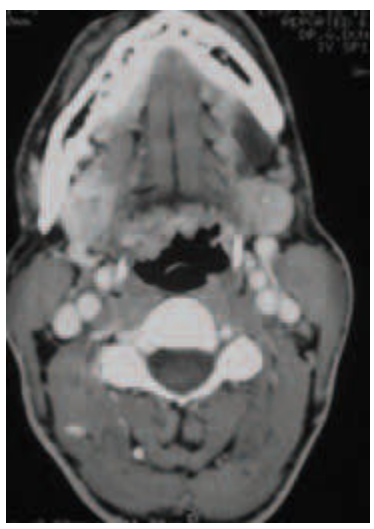


- This young woman has a prominent right thyroid nodule. The appropriate investigations are FNAB and serum TSH.





- This boy, aged 14, presented with a cystic mass in the left submandibular region. Needle biopsy demonstrated the presence of mucoid material and the CT scan shows a cystic mass lying anterior to the left submandibular salivary gland. This is a typical plunging ranula and is due to extravasation of mucoid saliva from the sublingual gland

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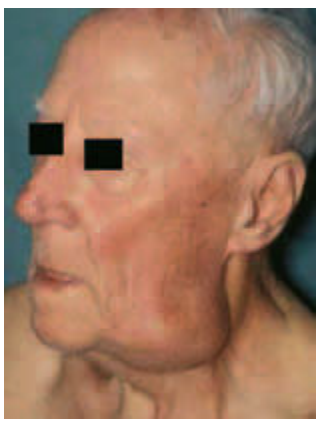
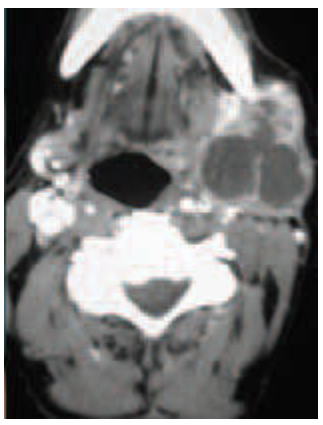
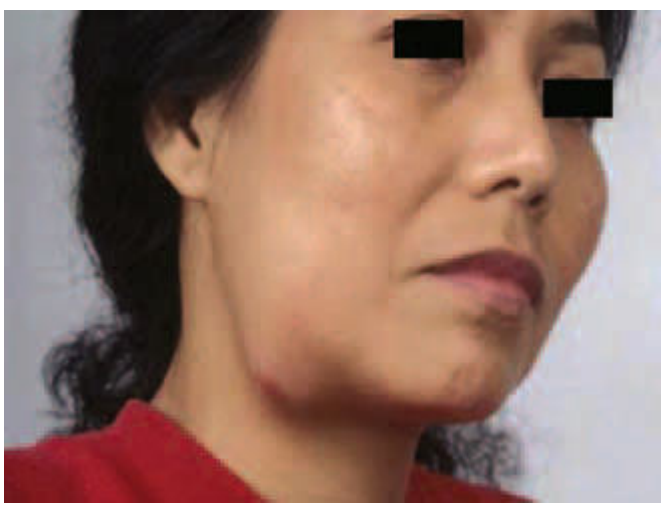




- This elderly man has a large left submandibular mass. An SCC of the cheek was removed a year earlier. FNAB showed metastatic SCC and the CT scan demonstrates a large cystic mass with a septum, consistent with metastatic cancer.



- This 45 year old Asian woman, recently migrated to Australia, presented with a supurating mass in the right submandibular region. A diagnosis of tuberculosis was made following culture of tissue from the mass

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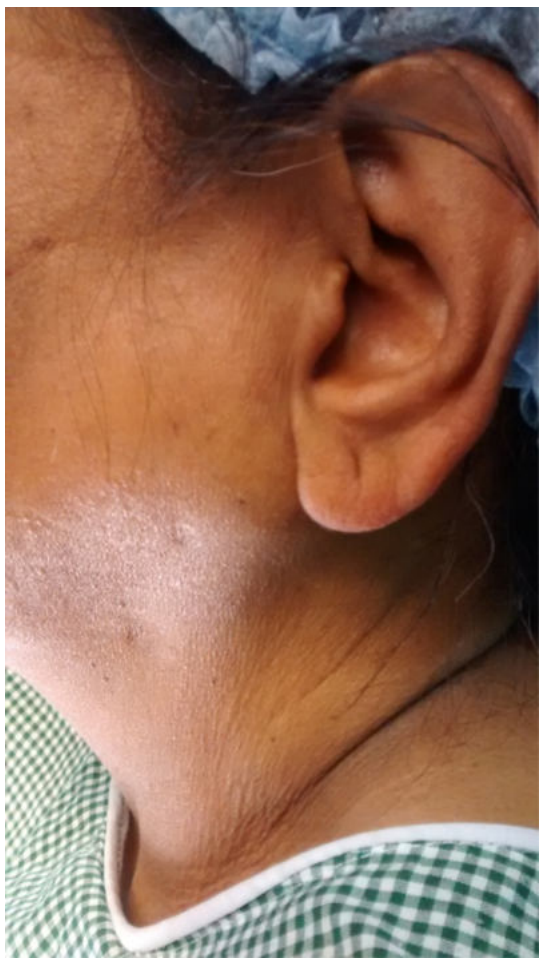
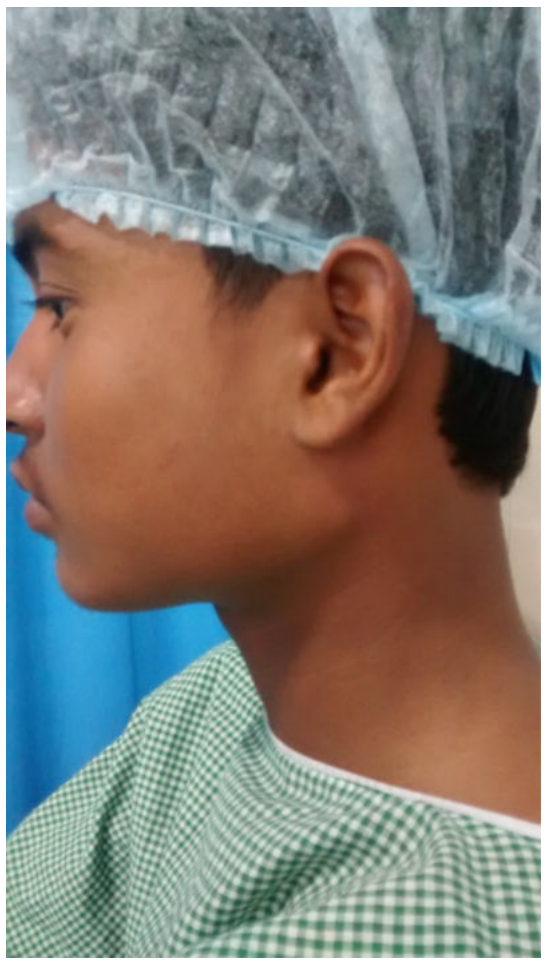
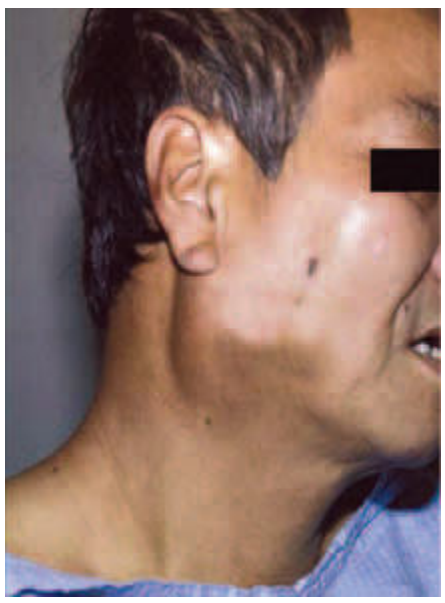
PAROTID SWELLING







- The man is aged 58 has a two-year history of a painless slowly growing mass at the angle of the jaw. Needle biopsy suggested a diagnosis of Warthins tumour.

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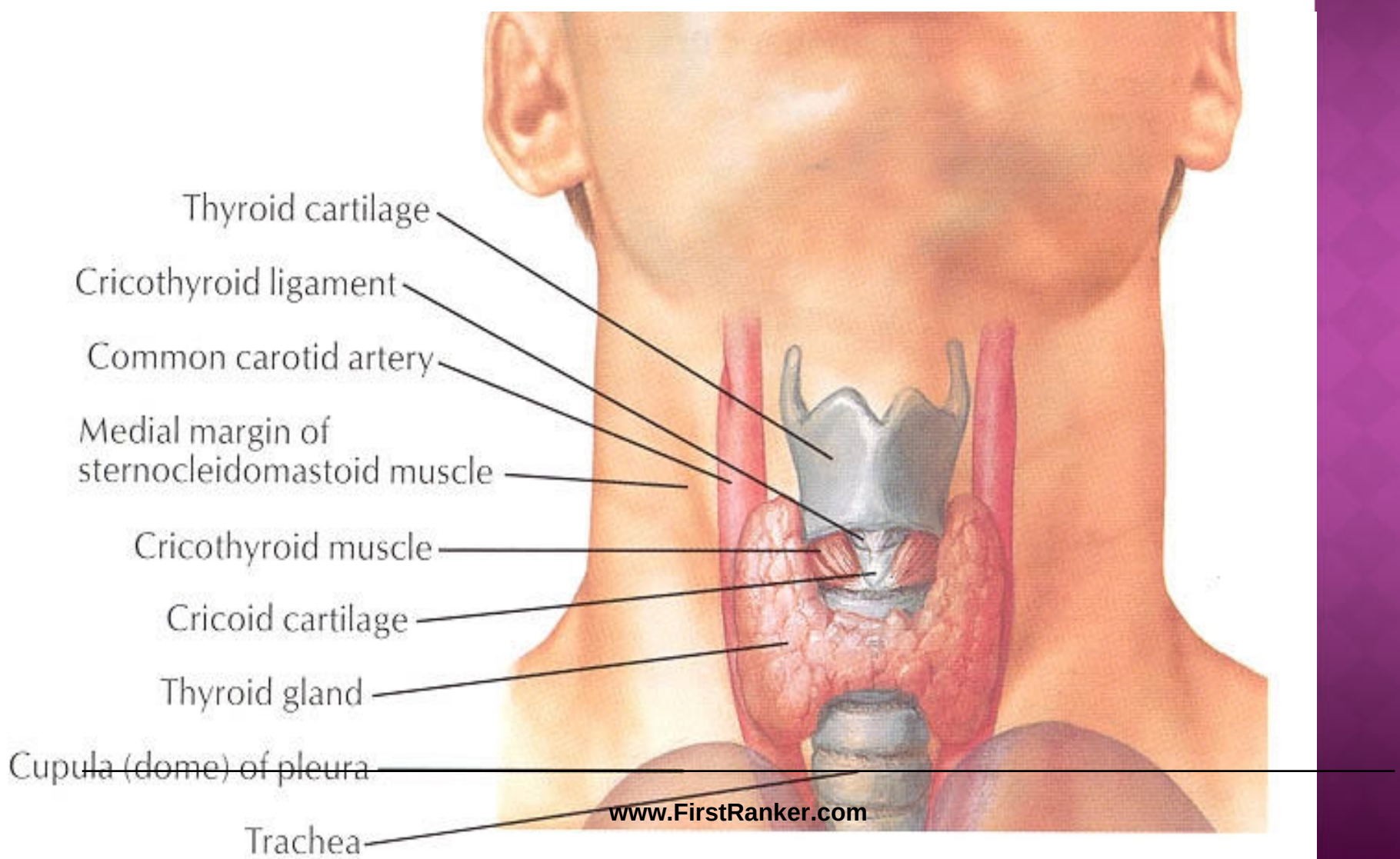
ANATOMY OF NECK

ANATOMICAL LANDMARKS



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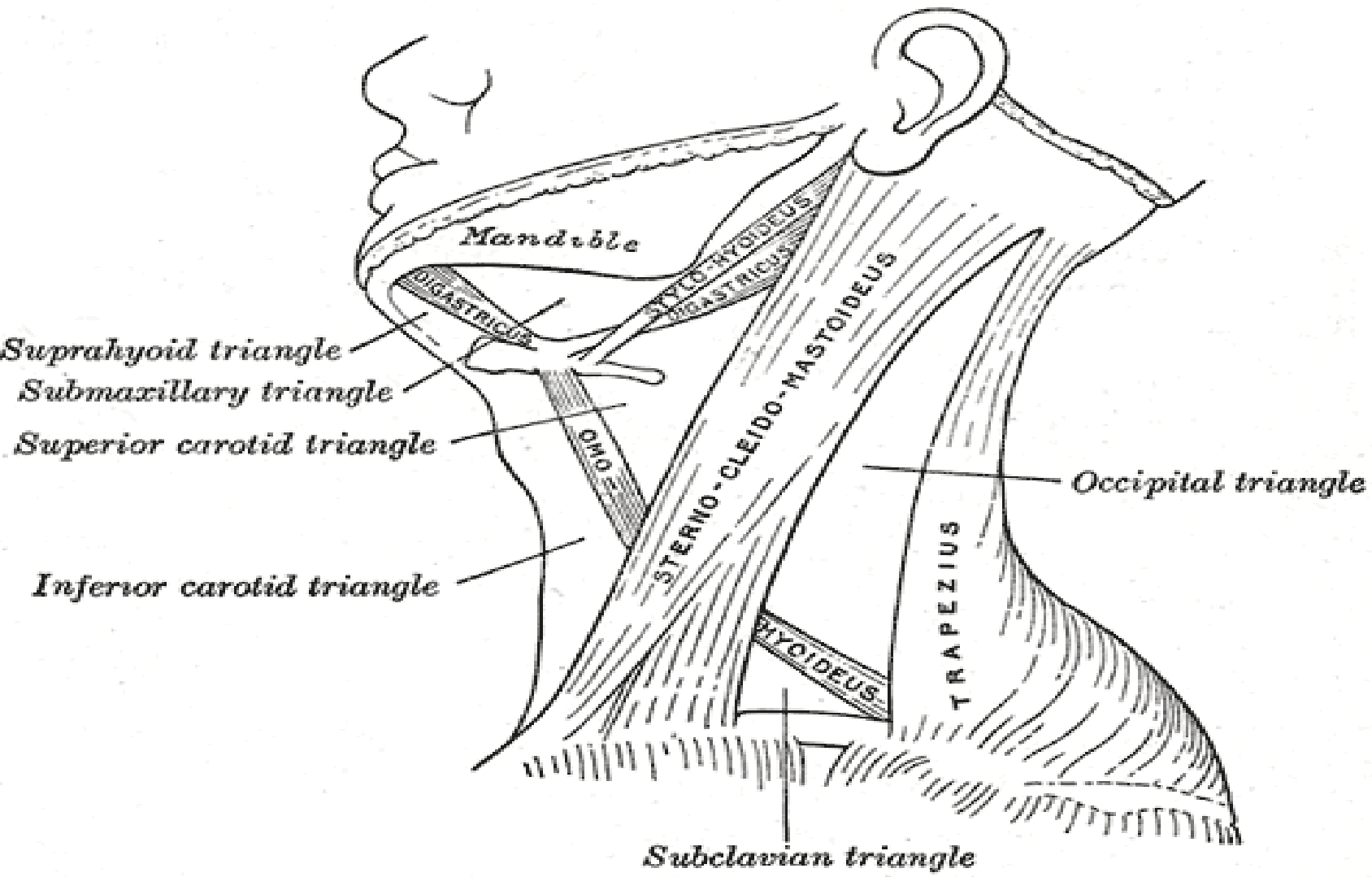
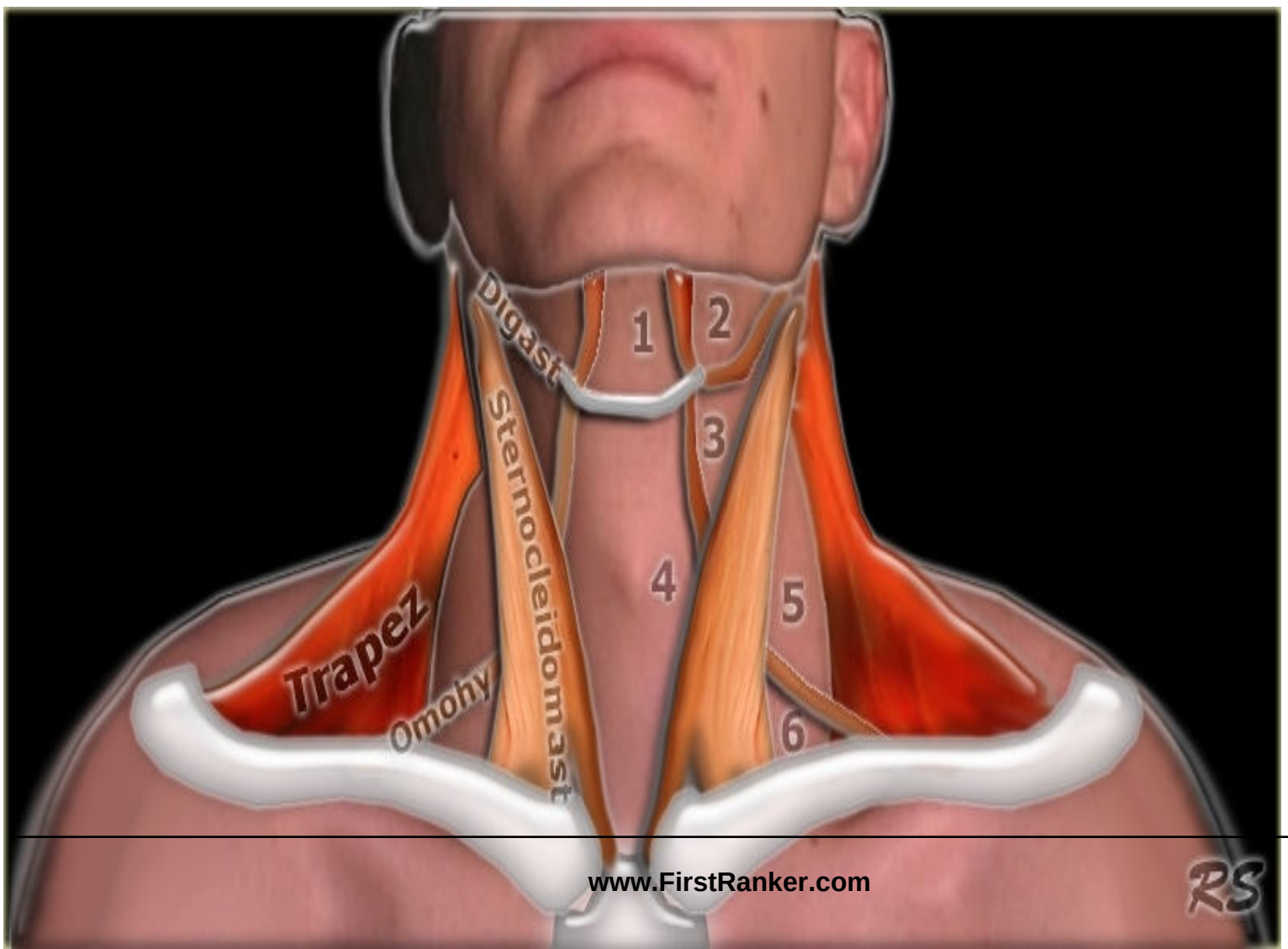
TRIANGLES OF NECK





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ANTERIOR TRIANGLE

- The boundaries of the anterior triangle are:
- ----------the midline of the neck.
- ----------the body of the mandible.
- ----------the anterior border of the sternocleidomastoid muscle.

THE ANTERIOR TRIANGLE IS FURTHER DIVIDED BY BOTH BELLIES OF THE DIGASTRIC MUSCLE AND THE SUPERIOR BELLY OF OMOHYOID MUSCLE INTO FOUR TRIANGLES :

	Submental triangle	Submandibular triangle	Carotid triangle	Muscular triangle
Boundaries	Superiorly: the chin Laterally: the two anterior bellies of the diagastric muscle Medially: the mid-line	The bellies of the diagastric muscles and the mandible	Superiorly: the posterior belly of the diagastric muscle Laterally: the anterior border of the sternocleidomastoid muscle Medially: the superior belly of the omohyoid muscle	The superior belly of the omohyoid muscle and the sternohyoid muscle
Contents	The submental lymph nodes	The submandibular salivary glands and submandibular lymph nodes	The carotid artery, the internal jugular vein, the vagus nerve and the internal and external laryngeal nerves	The deep structures including the larnyx, trachea, thyroid and the oesophagus

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POSTERIOR TRIANGLE

- The boundaries of the posterior triangle are:
- ----------the posterior border of the sternocleidomastoid muscle.
- ----------the mid third of the clavicle.
- ----------the anterior border of the trapezius muscle.

THE POSTERIOR TRIANGLE IS FURTHER DIVIDED BY THE INFERIOR BELLY OF THE OMOHYOID MUSCLE INTO TWO TRIANGLES:

	Occipital triangle	Supraclavicular triangle
Boundaries	Anteriorly: the Sternocleidomastoid muscle Posteriorly: the Trapezius muscle Inferiorly: the Omohyoid muscle	Anteriorly: the posterior border of the Sternocleidomastoid Superiorly: the inferior belly of the Omohyoid muscle Inferiorly: the clavicle
Contents	Most lumps arising from the posterior triangle are due to enlarged occipital or supraclavicular lymph nodes. Other important structures include the subclavian artery, the external jugular vein, the accessory nerve, the phrenic nerve and parts of the brachial plexus.	

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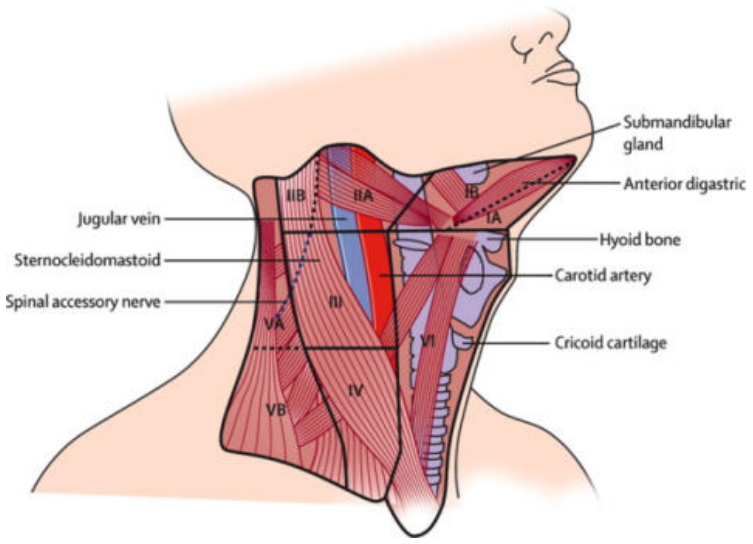
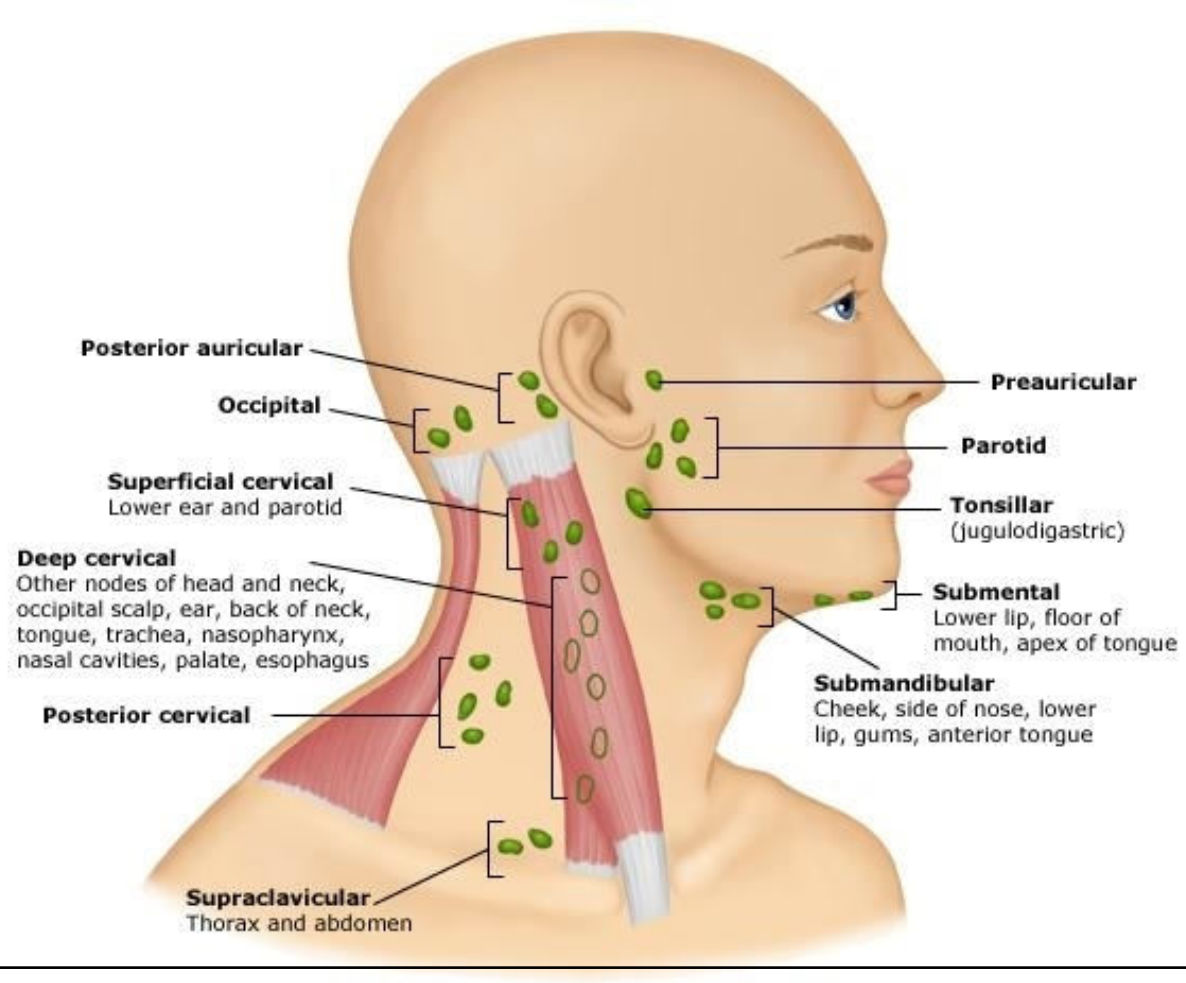
LYMPH NODE LEVELS



- 1A-submental
- 1B-submandibular
- II-Skull base to carotid bifurcation
- III- carotid bifurcation to cricothyroid notch
- IV- cricothyroid notch to clavicle
- V- post triangle
- VI-hyoid to suprasternal notch

LYMPH NODES OF NECK



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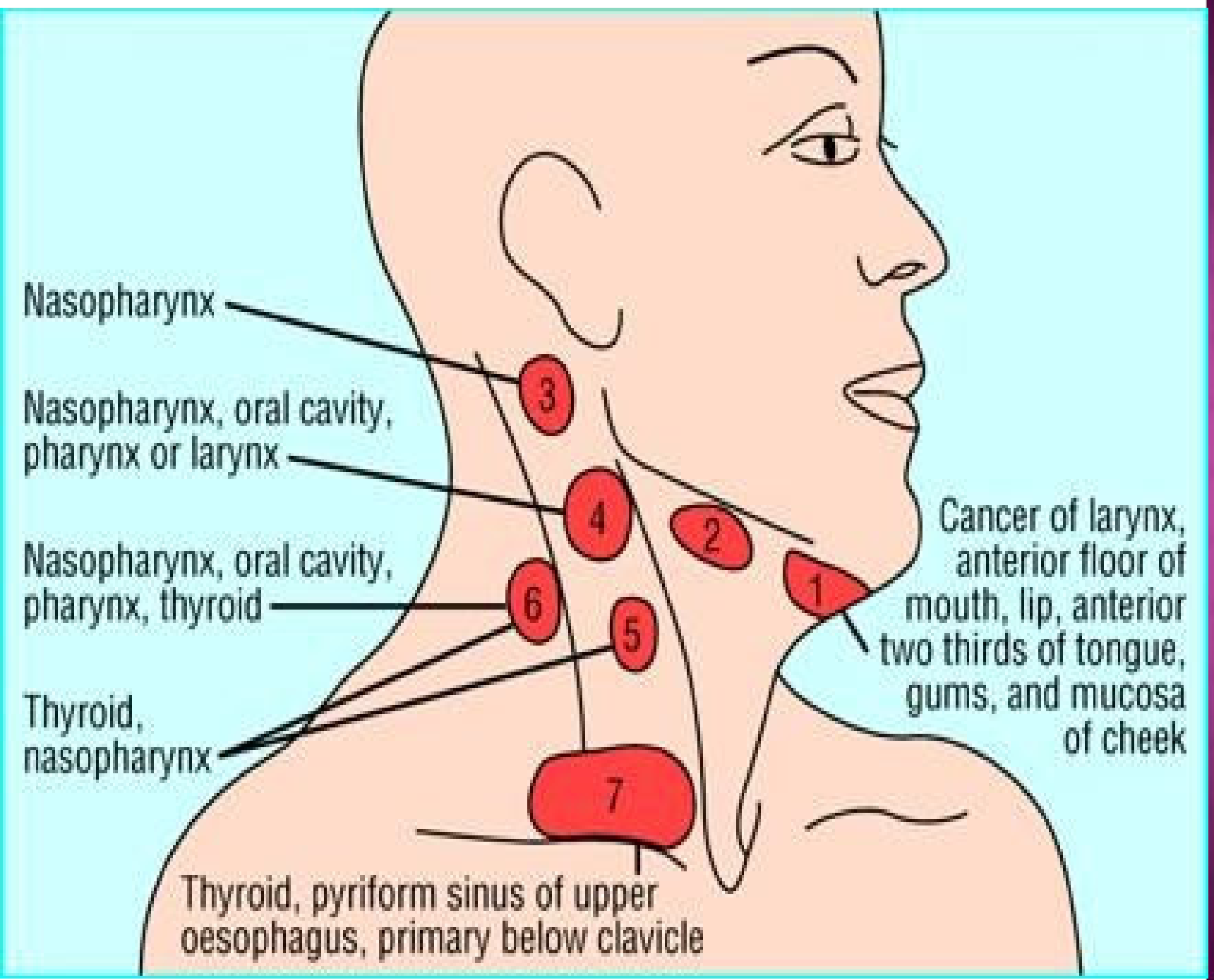

CLASSIFICATION OF NECK SWELLINGS

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- ETIOLOGY (Congenital or Acquired)
- LOCATION (Midline or Lateral)
- CONSISTENCY (Solid or Cystic)

Ubiqutous swellings	Midline Swellings	Lateral Swellings	
		Anterior Triangle	Posterior Triangle
Sebaceous cyst	Submental Lymph nodes	Submandibular gland swelling	Lymphadenopathy
Lipoma	Thyroglossal cyst	Thyroid lobe enlargement	Cold abscess
Dermoid cyst	Thyroid Swelling	Branchial cyst	Cystic Hygroma
Schwannoma	Hyoid Bursa	Pharyngeal pouch	Cervical Rib
Haemangioma	Pretracheal LNs	Parotid gland swelling	Subclavian artery aneurysm
Teratoma	Dermoid cyst	Laryngocele	
	Laryngeal swelling	Lymphadenopathy	
	Chondroma of thyroid cartilage	Cold abscess	
	Ludwig's angina	Carotid body	

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LATERAL NECK SWELLINGS

- I. SOLID SWELLINGS:
- GLANDS: -
  - **Lymph nodes (commonest).**
  - Thyroid gland nodule (2nd common).
  - Submandibular gland.
  - Tail of parotid gland.
- VESSELS: -
  - **Carotid body tumor.**
  - Glomus jugulare.
- NERVES:
  - **Schwannoma or Neurofibroma.**
- SUBCUTANEOUS: **Lipoma.**
- SCM MUSCLE: - **Organized hematoma (*infants*).**
  - Fibrosarcoma
- BONE- Cervical Rib

LATERAL NECK SWELLINGS

- II. CYSTIC SWELLINGS:
- AIR: -
  - **Laryngocele.**
  - Pneumatocele.
  - Pharyngeal diverticulum.
- FLUID: -
  - **Thyroid gland cyst.**
  - Branchial cyst.
  - Cystic hygroma (Lymphangioma).
  - Sebaceous cyst.
- ABSCESS: -
  - **Cold abscess (TB cervical lymphadenitis).**
  - Parapharyngeal abscess.
  - Parotid abscess.
- BLOOD : -
  - **Hemangioma.**
  - Aneurysm (*Carotid or Subclavian*).

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MIDLINE SWELLINGS

- I. **SOLID SWELLINGS:**
- **GLANDS: -**

  Lymph nodes

  Thyroid gland isthmus nodule.

  Median ectopic thyroid tissue.
- **SUBCUTANEOUS:**

Lipoma of Burn's space (Suprasternal notch).

MIDLINE SWELLINGS

- II. **CYSTIC SWELLINGS:**
- **FLUID: -**

  Thyroid gland cyst in isthmus.

  Thyroglossal cyst.

  Dermoid cyst (*Sublingual or Suprasternal*).

  Subhyoid bursa.

  Sebaceous cyst.
- **ABSCESS: -**

  Cold abscess.

  Pyogenic abscess.
- **BLOOD : -**

  Hemangioma.

  Aneurysm (*Innominate artery*).

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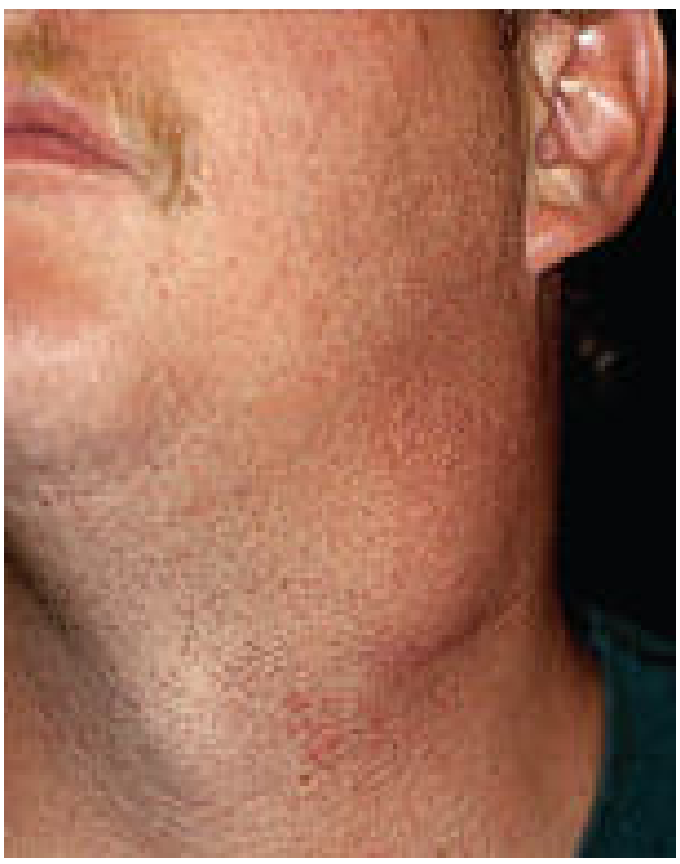
GENERAL CONSIDERATIONS

- Patient age
  - Pediatric (0 – 15 years): 90% benign
  - Young adult (16 – 40 years): similar to pediatric
  - Late adult (>40 years): “rule of 80s”
- Location
  - Congenital masses: consistent in location
  - Metastatic masses: key to primary lesion

BRANCHIAL CYST



- Congenital epithelial cysts, which arise from a failure of obliteration of the second branchial cleft.

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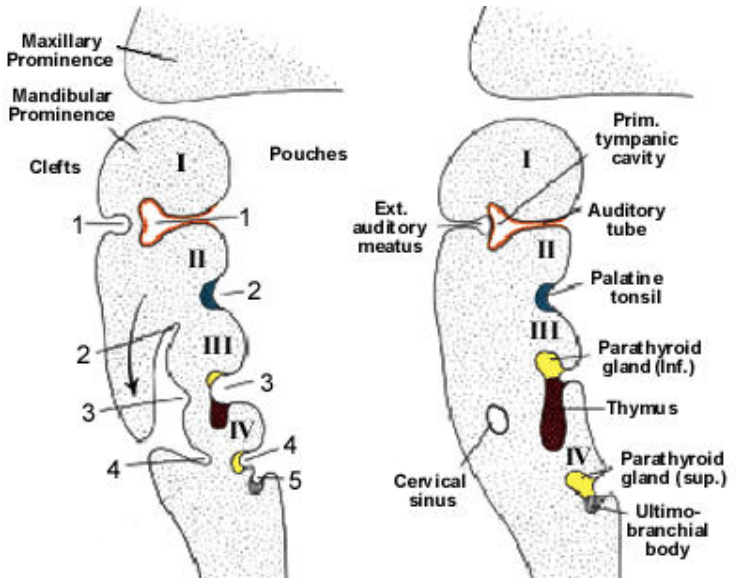
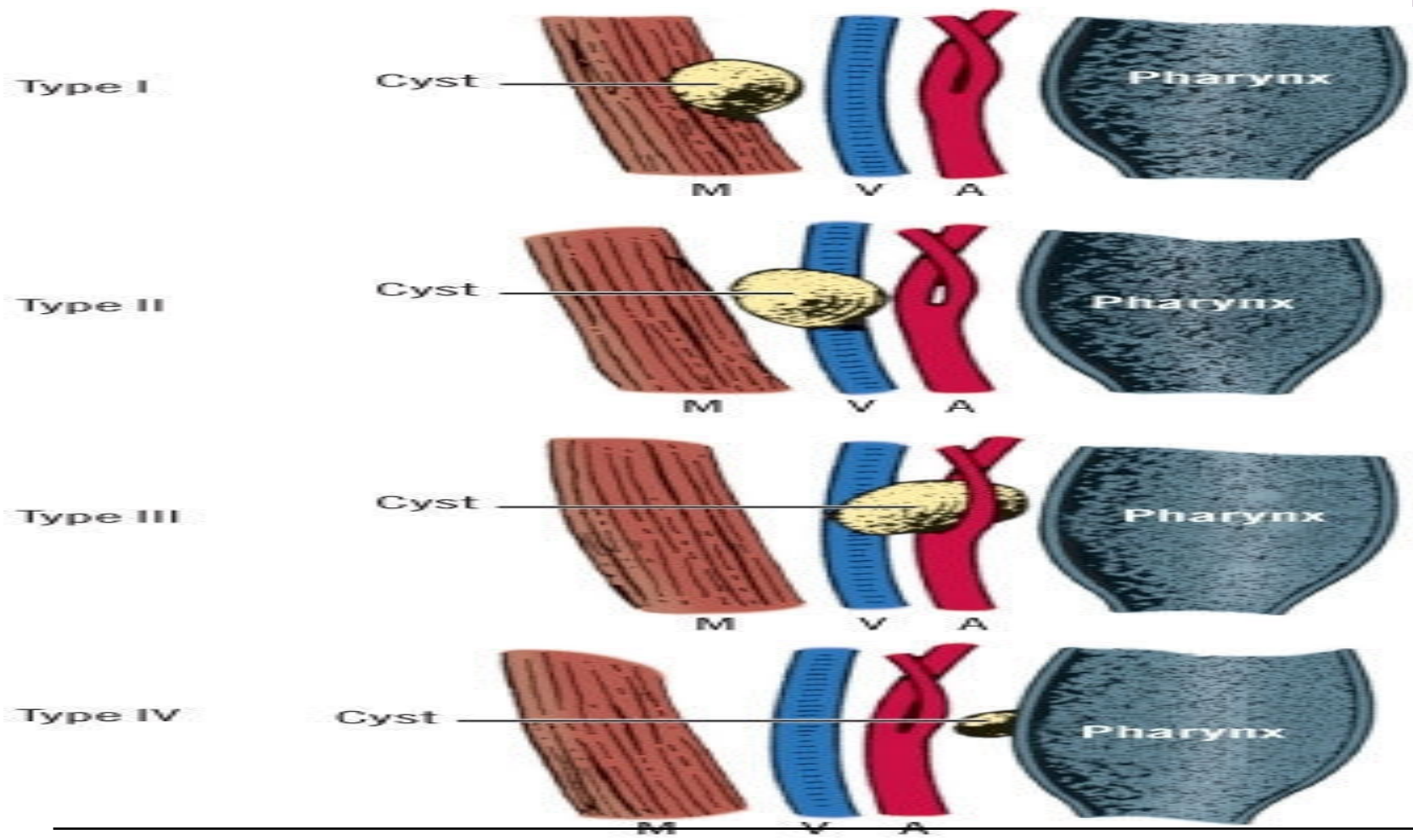
BRANCHIAL CYST

- At the fourth week of embryonic life, the development of 4 branchial clefts results in 5 ridges known as the branchial arches, which contribute to the formation of various structures of the head, the neck, and the thorax. The second arch grows caudally and, ultimately, covers the third and fourth arches. The buried clefts become ectoderm-lined cavities, which normally involute around week 7 of development. If a portion of the cleft fails to involute completely, the entrapped remnant forms an epithelium-lined cyst with or without a sinus tract to the overlying skin.



TYPES OF BRANCHIAL CYST



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HISTORY

- A solitary, painless mass in the neck of a child or a young adult.
- A history of intermittent swelling and tenderness of the lesion during upper respiratory tract infection.
- Spontaneous rupture of an infected branchial cyst may result in a purulent draining sinus to the skin or the pharynx.
- May present with locally compressive symptoms.

EXAMINATION

- Smooth, nontender, fluctuant mass, along the lower one third of the anteromedial border of the sternocleidomastoid muscle between the muscle and the overlying skin.
- May be tender if secondarily inflamed or infected.
- When associated with a sinus tract, mucoid or purulent discharge onto the skin or into the pharynx may be present.
- Rarely, branchial cleft cysts have been reported as fluctuant nodules in the thorax or the posterior mediastinum.

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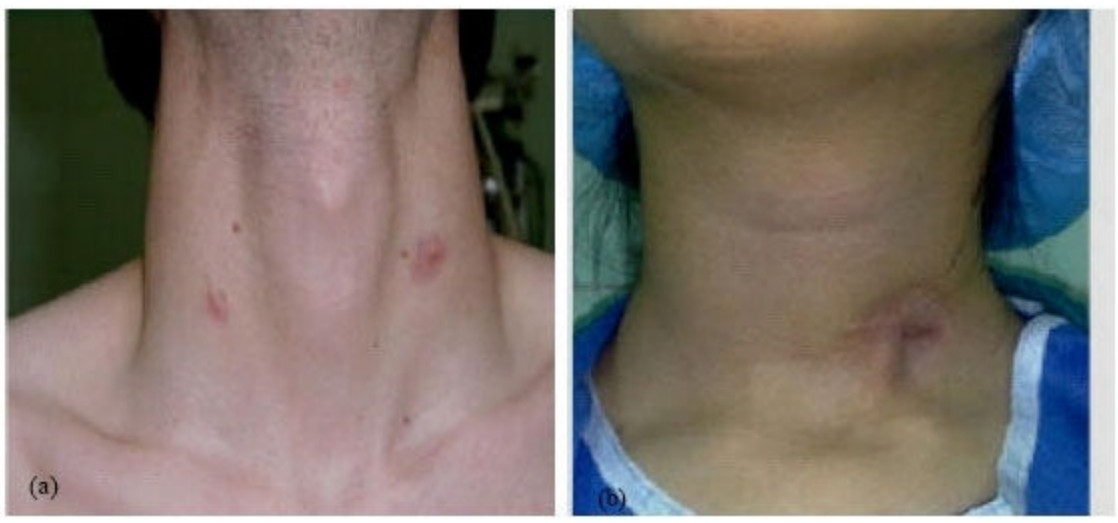

D/D

- Lymphadenopathy
- Vascular neoplasms and malformations
- Capillary hemangioma
- Carotid body tumor
- Lymphatic malformation (cystic hygroma)
- Ectopic thyroid tissue
- Ectopic salivary tissue

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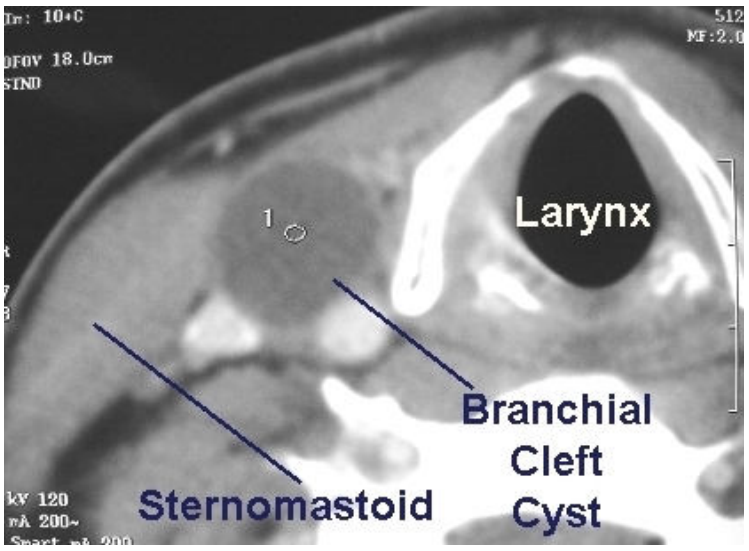
DIAGNOSIS

- Ultrasonography.
- Upper airway endoscopy.
- FNAC
- A contrast-enhanced CT scan shows a cystic and enhancing mass in the neck.



TREATMENT

- Surgical excision
- Stairstep or stepladder incision
- Surgery done when the patient is at least age 3 months old.
- Surgery should not be attempted during an episode of acute infection or if an abscess is present.
- Sclerotherapy with OK-432 (picibanil) has been reported to be an effective alternative.

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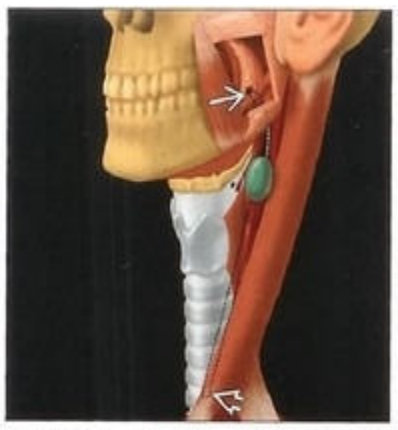
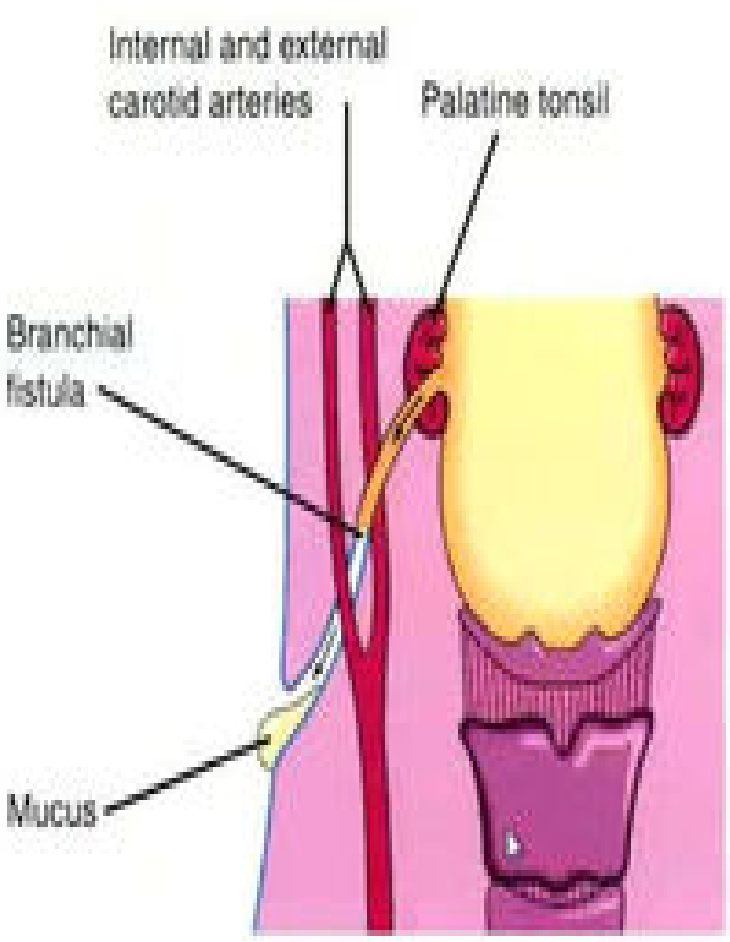
BRANCHIAL FISTULA

- Present mostly in infancy as chronic discharge along anterior border of SCM in lower 1/3.



Sagittal oblique graphic shows 2nd BCC anterior to sternomastoid muscle & lateral to carotid space. 2nd branchial cleft tract extends from faucial tonsil (arrow) to low neck (open arrow).



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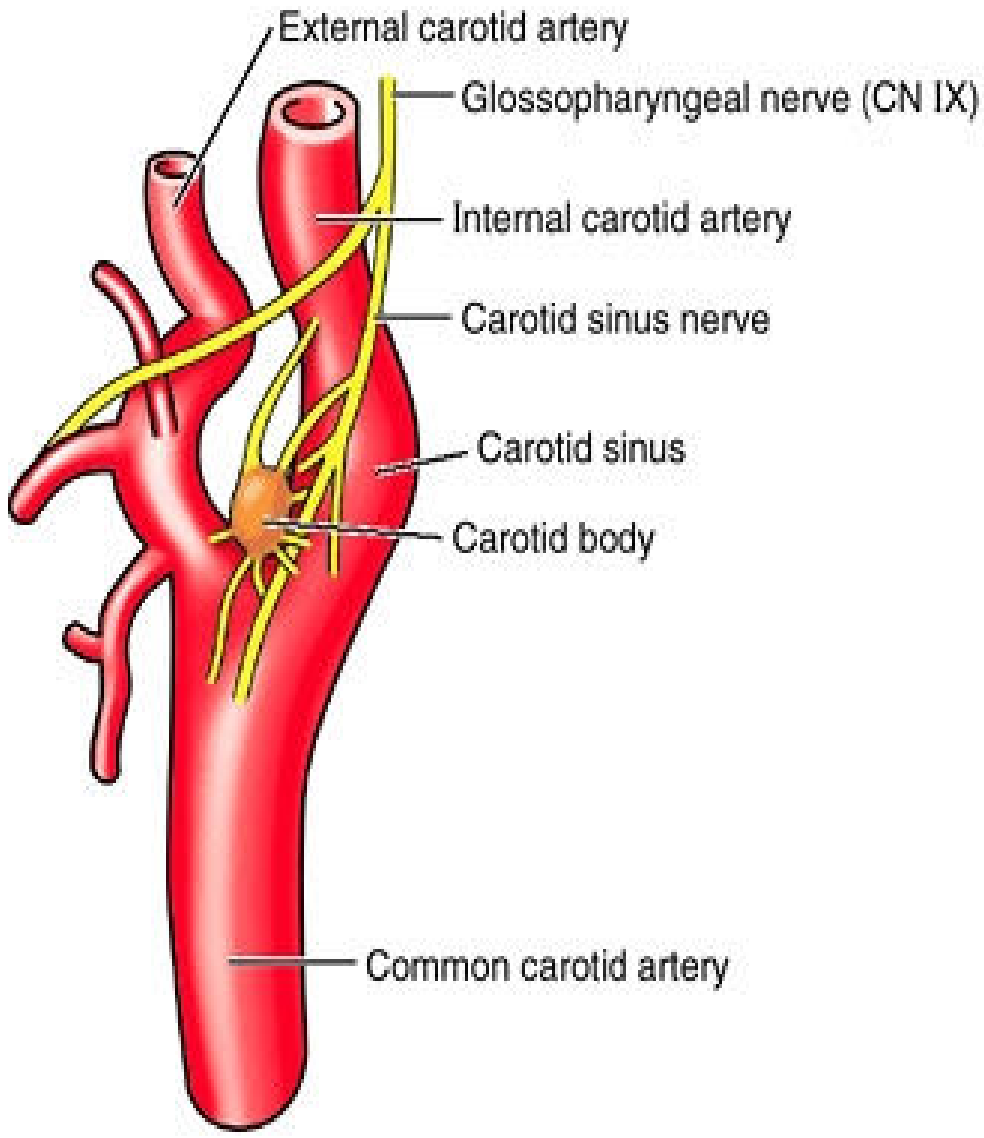
- CAROTID BODY



CAROTID BODY

- Small, reddish-brown, oval structure, located in the posteromedial aspect of the carotid artery bifurcation.
- The gland is highly vascular and receives its blood supply from feeder vessels from the external carotid artery, typically the ascending pharyngeal artery.
- It is innervated by the Hering nerve, originating from the glossopharyngeal nerve.
- Helps in the body's acute adaptation to fluctuating concentrations of oxygen, carbon dioxide, and pH.
- How? By increasing the ventilatory rate.

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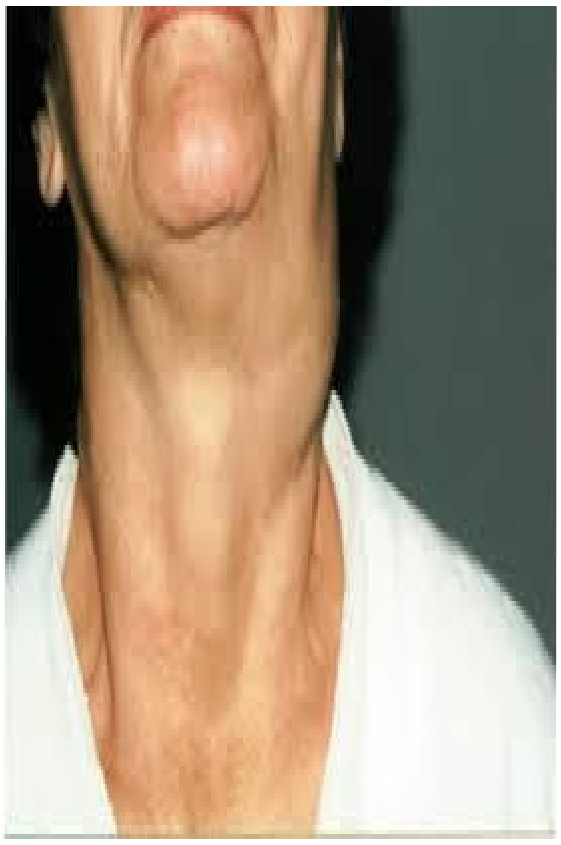
CAROTID BODY TUMOR

- Rare neoplasms,
- Represent about 65% of head and neck paragangliomas.
- Develop within the adventitia of the medial aspect of the carotid bifurcation.



CAROTID BODY TUMOR-TYPES

- 3 different types:
- Familial
- Sporadic
- Hyperplastic
- The sporadic form is the most common type, representing approximately 85% of carotid body tumors (CBTs).
- The familial type (10-50%) is more common in younger patients.
- The hyperplastic form is very common in patients with chronic hypoxia, patients living at a high altitude, COPD or cyanotic heart disease.

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CAROTID BODY TUMOR-EPIDEMIOLOGY

- The mean age of onset is 45 years.
- Age of onset in the familial group is younger, in the second to fourth decade.
- About 5% of carotid body tumors (CBTs) are bilateral and 5-10% are malignant.
- Risk factors are chronic hypoxic stimulation and the genetic predisposition.

CAROTID BODY TUMOR-PATHOPHYSIOLOGY

- Defective succinate dehydrogenase has been postulated to cause an increase in the intracellular concentration of molecular hypoxia mediators and the vascular endothelial growth factor (VEGF) thus resulting in hyperplasia, angiogenesis, and neoplasia in Familial type.
- Chronic hypoxic conditions overburden the carotid bodies and subsequently lead to hypertrophy, hyperplasia, and neoplasia of the chief cells. This condition is seen in the hyperplastic type of carotid body tumors (CBTs).
- CBTs can be occasionally coupled with syndromes, including MEN type II, von Hippel-Lindau syndrome, and neurofibromatosis type 1.

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CAROTID BODY TUMOR-PATHOLOGY

- composed of 2 cell types that are arranged in a pseudoalveolar pattern characteristic of paragangliomas known as "cell balls" (zellballen):
- **Type I cells,** which are the chief cells that predominate in carotid body tumors (CBTs) and contain catecholamine-bound granules
- **Type II cells,** which are the sustentacular cells located at the periphery, are devoid of granules

CAROTID BODY TUMOR-PRESENTATION

- Asymptomatic palpable neck mass in the anterior triangle of the neck. They are slow-growing tumors.
- Typically vertically fixed because of its attachment to the bifurcation of the common carotid **(Fontaine sign).**
- Bruit
- Approximately 10% of the cases present with cranial nerve palsy with paralysis of the hypoglossal, glossopharyngeal, recurrent laryngeal, or spinal accessory nerve, or involvement of the sympathetic chain· May be associated with pain, hoarseness, dysphagia, Horner syndrome, or shoulder drop.
- Cause of fever of unknown origin.
- In cases of functional CBTs, symptoms similar to those of pheochromocytoma, such as paroxysmal hypertension, palpitations, and diaphoresis, are seen.

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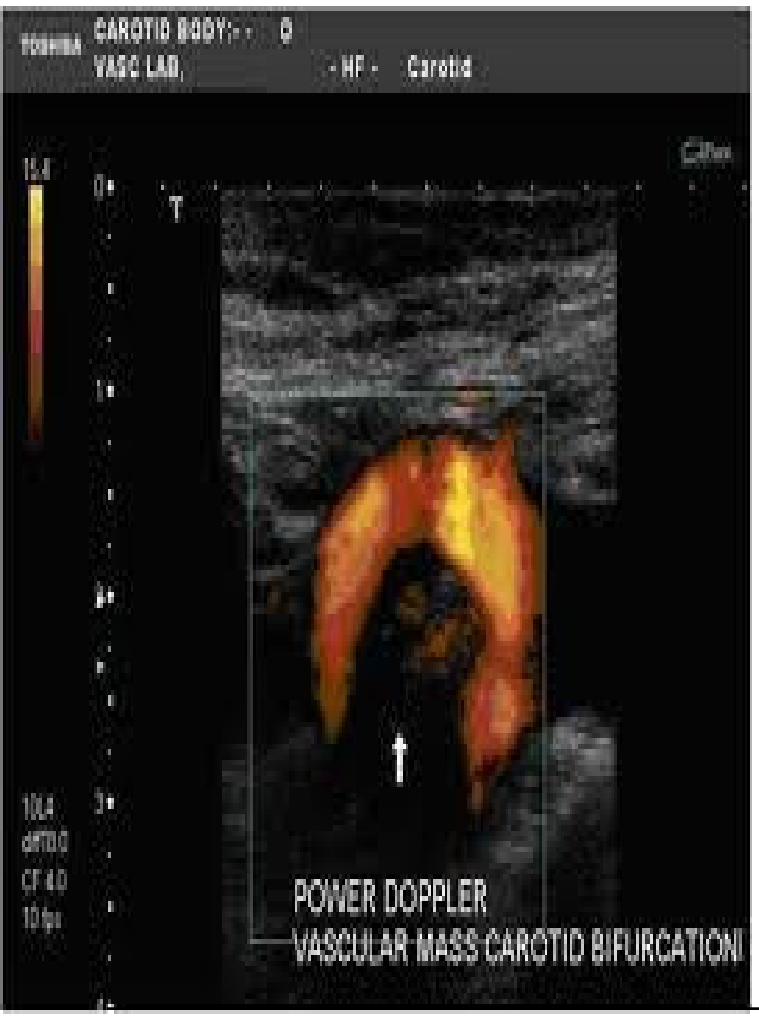
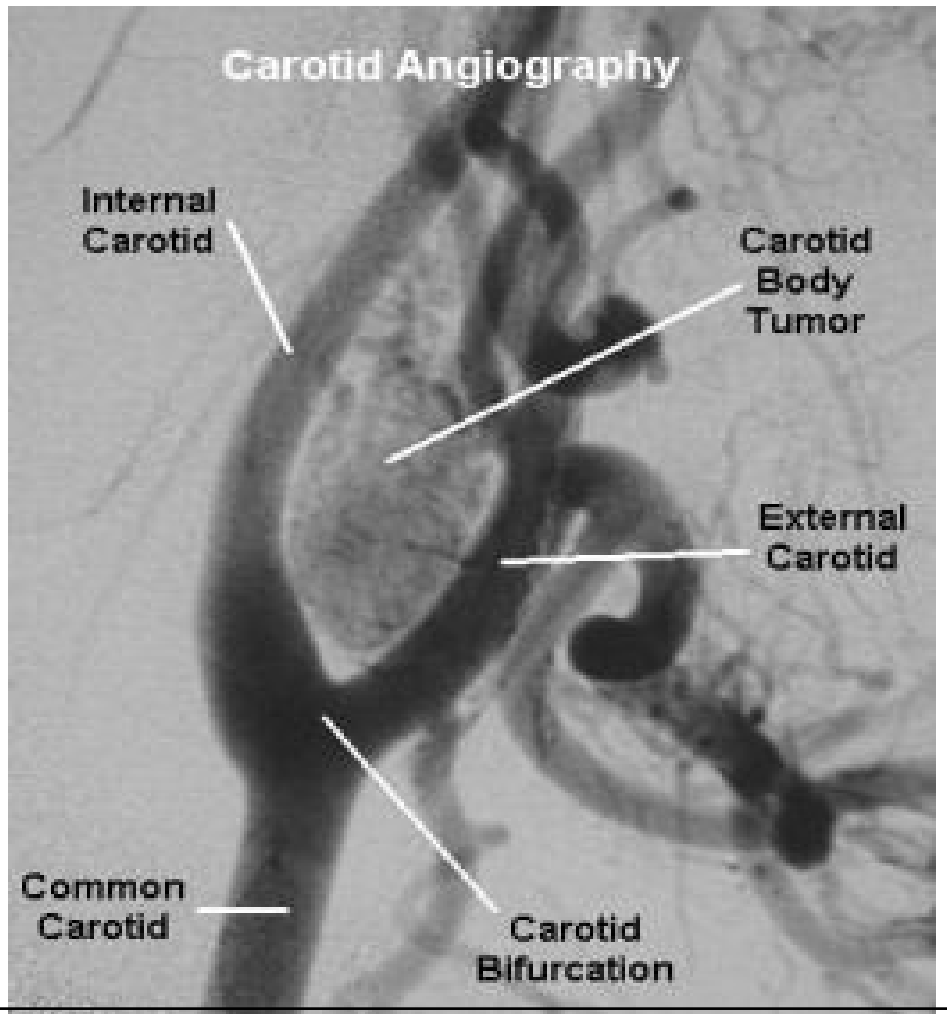
CAROTID BODY TUMOR- INVESTIGATIONS

- Check urinary catecholamines in patients who have any symptoms of a functional carotid body tumor.
- Color Doppler USG, which can assess the vascularity of the neck mass.
- CT scanning typically reveals a hypervascular tumor located between the external and internal carotid arteries.
- MRI imaging is IOC and the tumor has a characteristic **salt and pepper** appearance on T1-weighted image.
- MRA provides better insight into the vascularity of the tumor and its feeder vessels.
- Angiography shows the typical **lyre sign**. also helpful for better visualization of the feeder vessels.
- MIBG scans,in patients who have functional tumors





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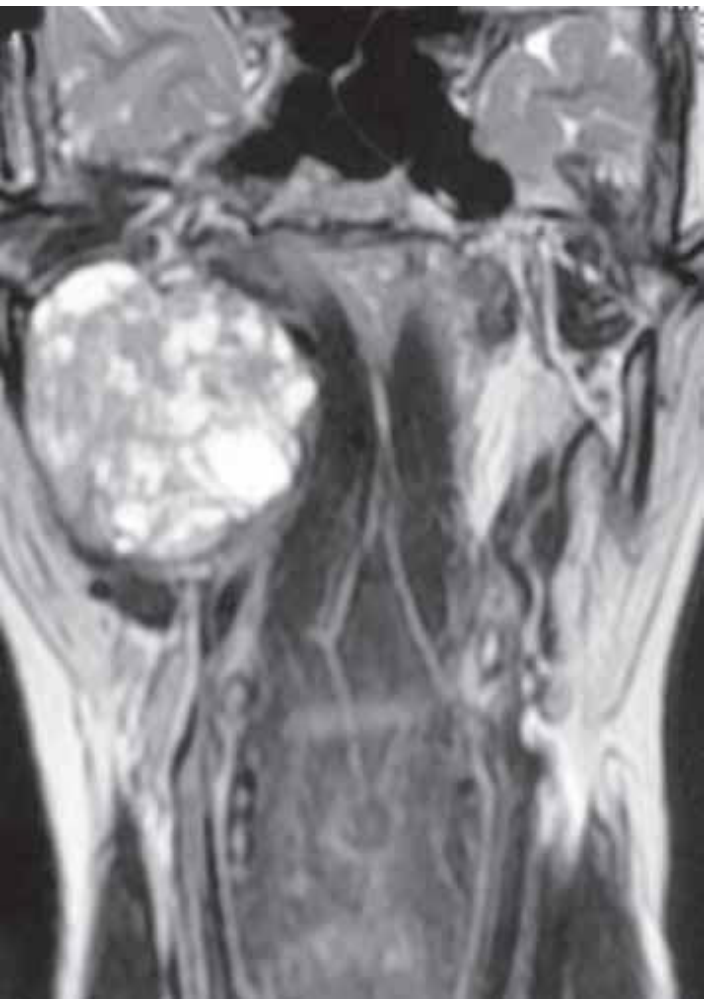

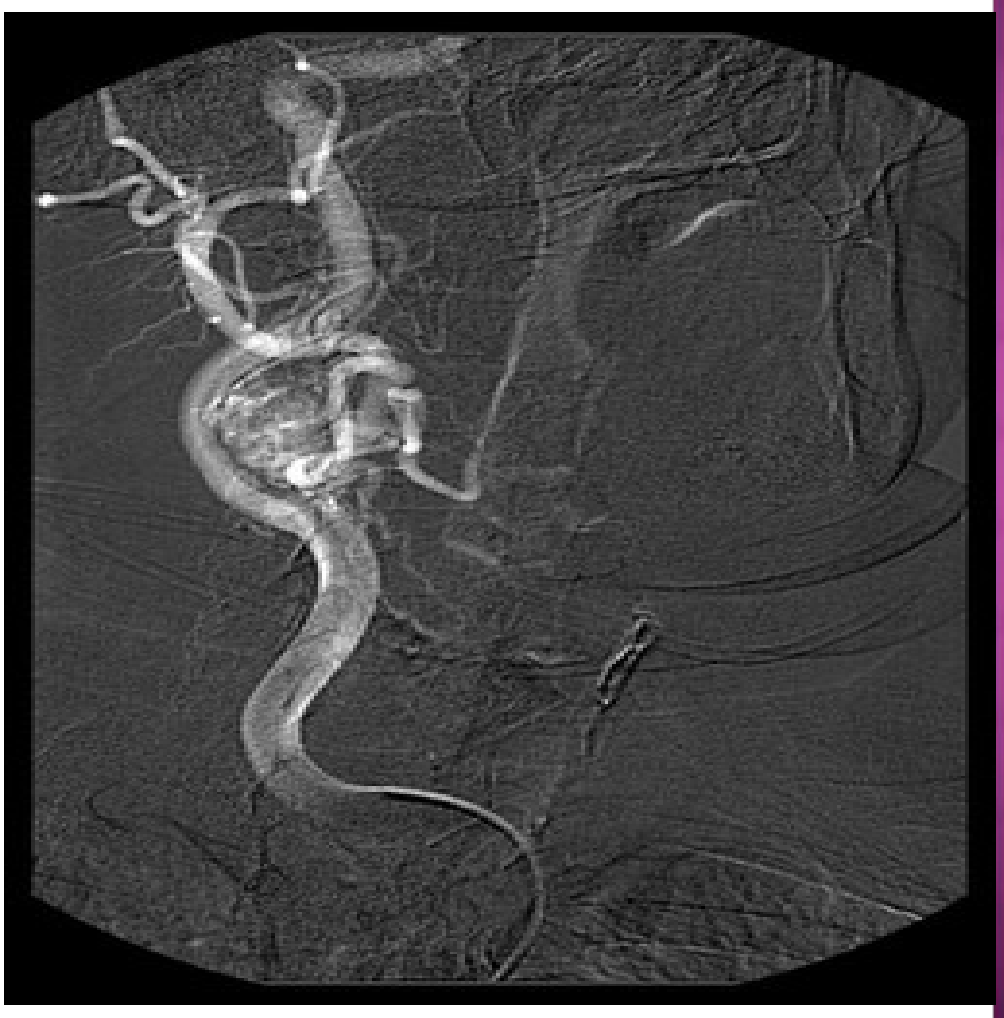

CAROTID BODY TUMOR-STAGING

- Shamblin describes 3 different types or stages of carotid body tumors.
- Type I consists of a small tumor that is easily dissected from the adjacent vessels in a periadventitial plane.
- Type II tumors are larger and more adherent and partially surround the vessel.
- Type III tumors are large and completely surround the carotid bifurcation.

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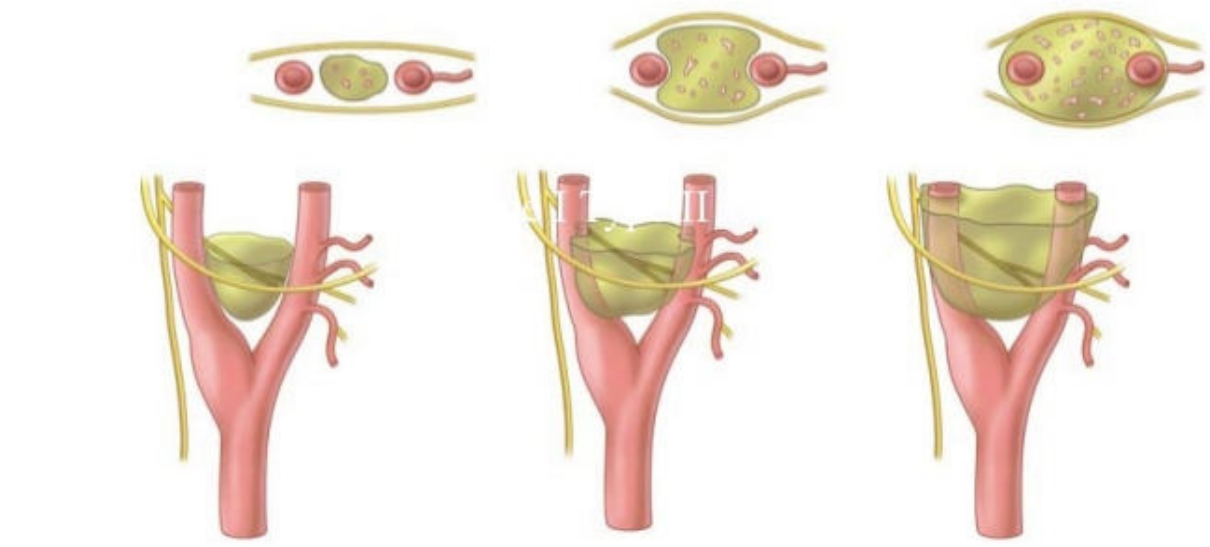

CAROTID BODY TUMOR-TREATMENT

- Surgery or radiotherapy.
- Choice of treatment, depends on: presence of other paragangliomas, bilateral carotid body tumors, the age and the health of the patient, and the patient's preference.
- Preoperative embolization.
- Surgery is the treatment of choice for younger, healthier patients and radiotherapy is reserved for the elderly, patients who are poor surgical candidates, individuals with multiple paragangliomas in whom resection may be highly morbid.

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CYSTIC HYGROMA

CYSTIC HYGROMA

- CH usually affects the head and neck (approximately 75%), with a left-sided predilection.
- The posterior triangle tends to be most frequently affected.
- Other sites are the axilla; mediastinum, groin, and retroperitoneum.

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CYSTIC HYGROMA- PATHOPHYSIOLOGY

- Failure of lymphatics to connect to the venous system, abnormal budding of lymphatic tissue, and sequestered lymphatic rests that retain their growth potential.
- They can arise from trauma (including surgery), inflammation, or obstruction of a lymphatic.

ETIOLOGY

- More common with Turner syndrome, Down syndrome, Klinefelter syndrome and trisomy 18 and 13.
- Noonan syndrome, Fryns syndrome, multiple pterygium syndrome, and achondroplasia
- Intrauterine alcohol exposure has been associated with the development of lymphangiomas.

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CYSTIC HYGROMA-PRESENTATION

- Are evident at birth, with 80-90% of CHs presenting by age 2 years.
- CH can be visualized using abdominal ultrasonography by 10 weeks' gestation.
- Elevated alpha fetoprotein levels in amniocentesis fluid
- Can involve both the anterior and posterior triangles of the neck.
- The cysts are typically large and thick walled. The overlying skin can take on a bluish hue or may appear normal.
- Often present with a sudden increase in size secondary to infection or intralesional bleeding.
- Rarely, children with CH display symptoms of newly onset obstructive sleep apnea syndrome (OSAS).
- Potentially life-threatening airway compromise that manifests as noisy breathing (stridor) and cyanosis.
- Feeding difficulties, as well as failure to thrive___when the lesion affects structures of the upper aerodigestive tract.

CYSTIC HYGROMA-PRESENTATION

- CHs are typically soft, painless, compressible (doughy) masses.
- A CH typically transilluminates.
- In children who present with CH of the neck, closely evaluate for tracheal deviation or other evidence of impending airway obstruction.
- Closely inspect the tongue, oral cavity, hypopharynx, and larynx because any involvement may lead to airway obstruction.

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CYSTIC HYGROMA-D/D

- Branchial cleft cyst
- Thyroglossal duct cyst
- Ranula
- Goiter
- Soft tissue tumors
- Neck abscess

CYSTIC HYGROMA-DIAGNOSIS

- MRI is the study of choice. Contrast can be used to differentiate hemangiomas from lymphangiomas.
- CT scanning not very good.
- Ultrasonography: It is very useful in demonstrating the relationship of CH to the surrounding structures.

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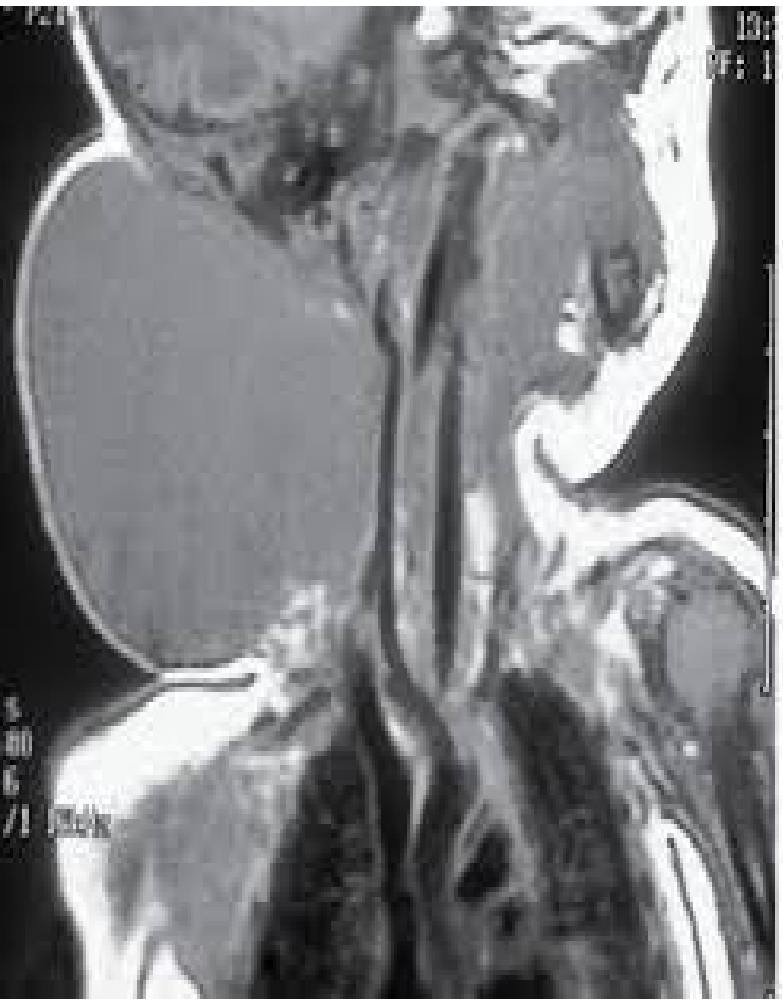

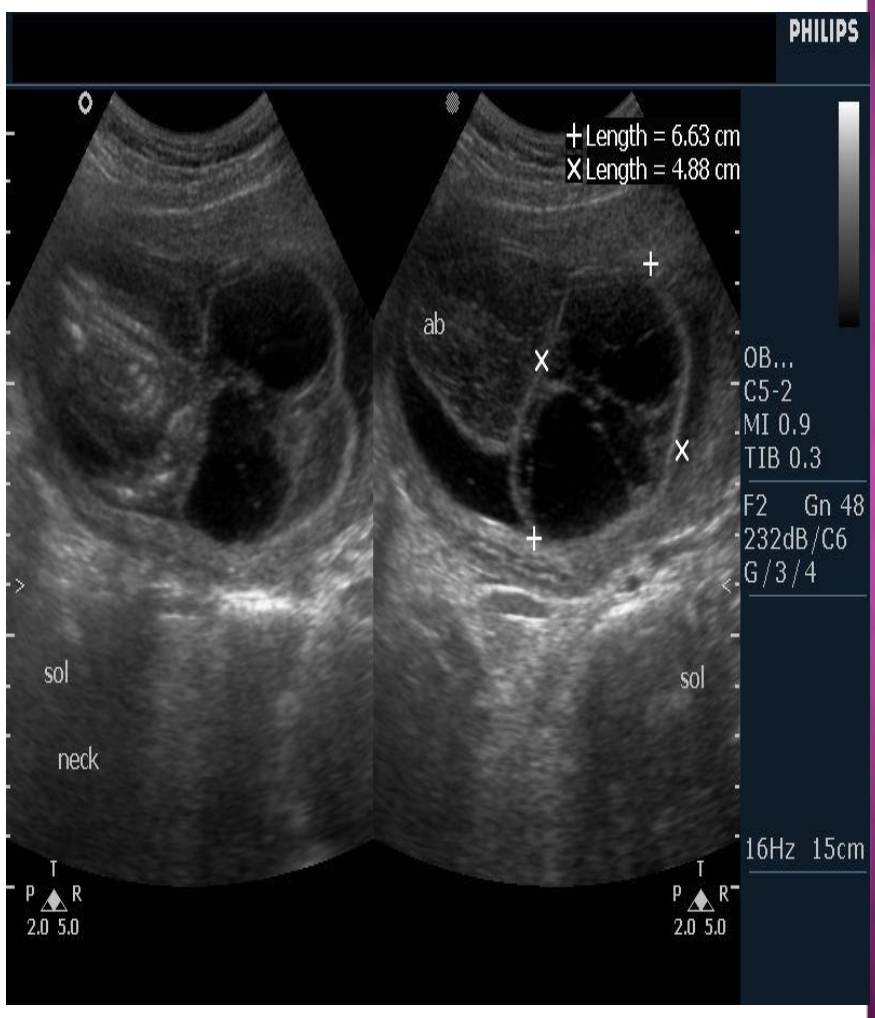

CYSTIC HYGROMA-CLASSIFICATION

- GIGUERE et al have proposed categorization of lymphangiomas based on the size of the cystic component, as follows:
- Macrocystic - Cystic spaces at least 2 cm
- Microcystic - Spaces less than 2 cm
- Mixed lesions
- DE SERRES et al have proposed the following system for staging of CH of the head and neck:
- Stage I - Unilateral infrahyoid (17% complication rate)
- Stage II - Unilateral suprahyoid (41% complication rate)
- Stage III - Unilateral and both infrahyoid and suprahyoid (67% complication rate)
- Stage IV - Bilateral suprahyoid (80% complication rate)
- Stage V - Bilateral infrahyoid and suprahyoid (100% complication rate)

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CYSTIC HYGROMA-MEDICAL T T

- Watchful waiting should be considered only in patients who are asymptomatic.
- Administration of sclerosing agents like OK-432 (an inactive strain of group A *Streptococcus pyogenes*), bleomycin, pure ethanol, sodium tetradecyl sulfate, and doxycycline.
- An infected CH should be treated with intravenous antibiotics, and definitive surgery should be performed once the infection has resolved

CYSTIC HYGROMA-SURGICAL TT

- The mainstay of treatment is surgical excision.
- Radiofrequency ablation for intraoral lymphatic malformations, especially microcystic lesions.
- Magnetic resonance–controlled laser-induced interstitial thermotherapy.
- The ex utero intrapartum treatment (EXIT) procedure.

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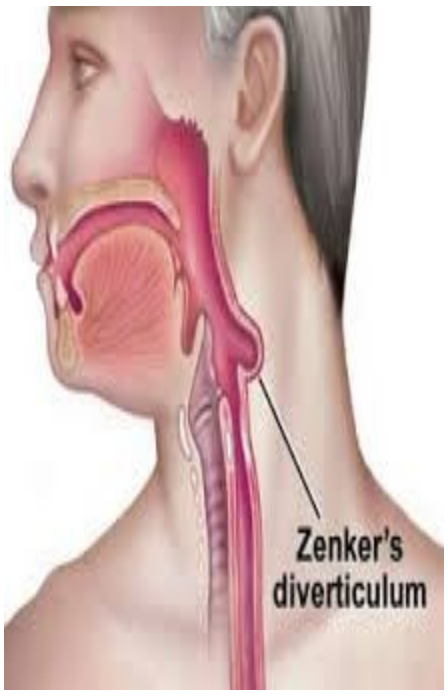
PHARYNGEAL POUCH



PHARYNGEAL POUCH-ETIOLOGY

- Zenker diverticula occur in a muscular dehiscence that is present most commonly between the oblique muscle fibers of the inferior constrictor muscle and the transverse fibers of the CP muscle. This area is known as the Killian triangle.

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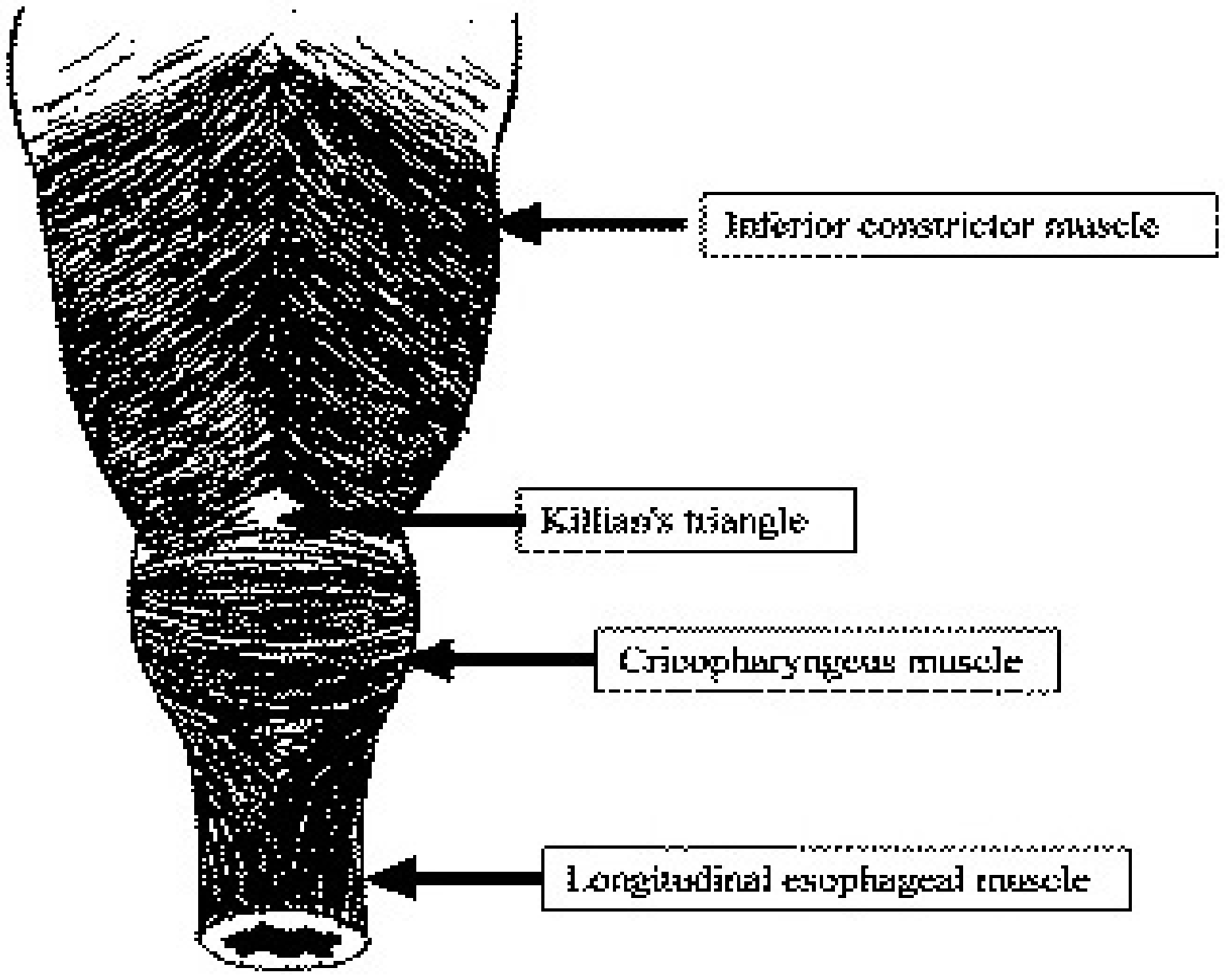

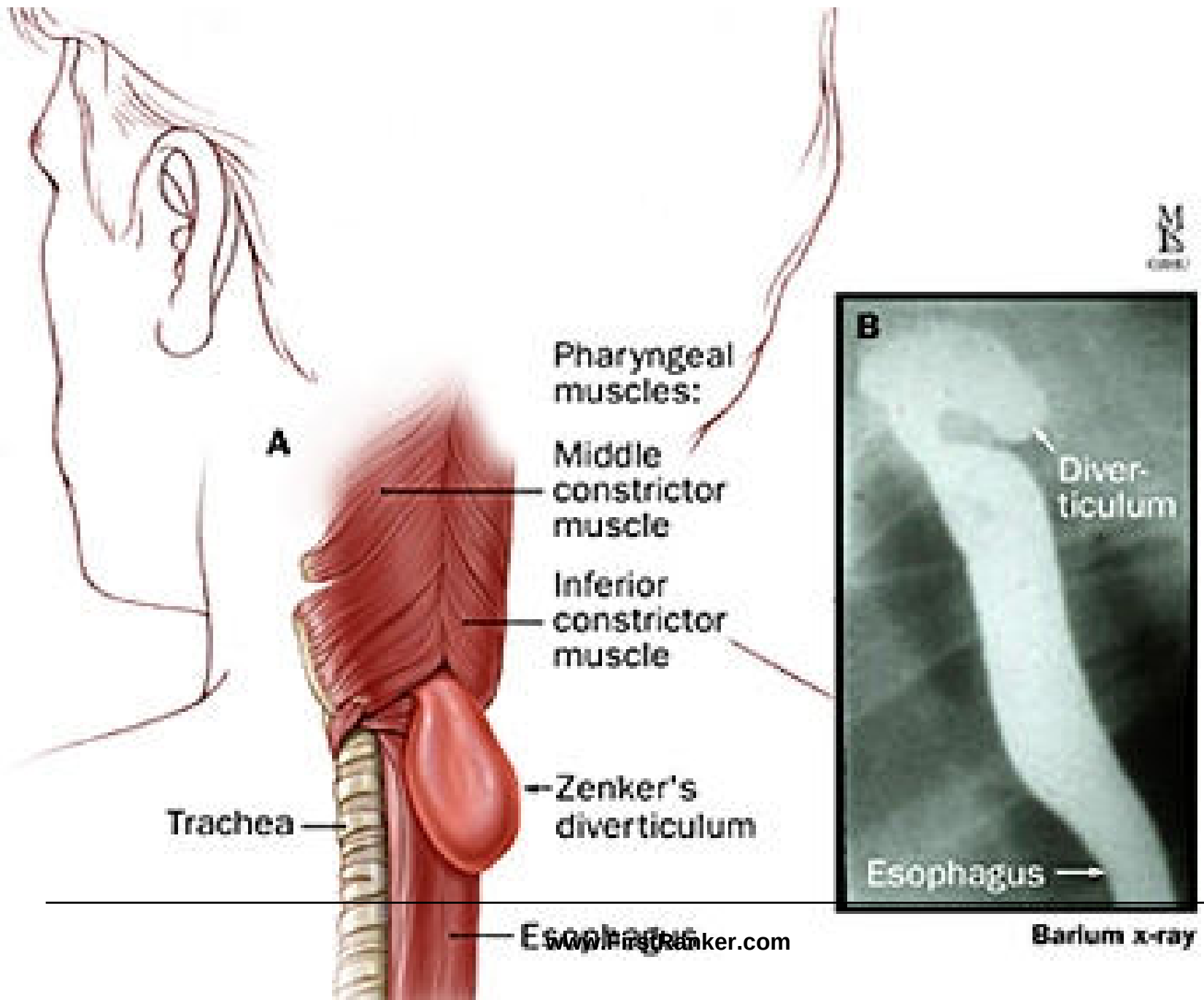

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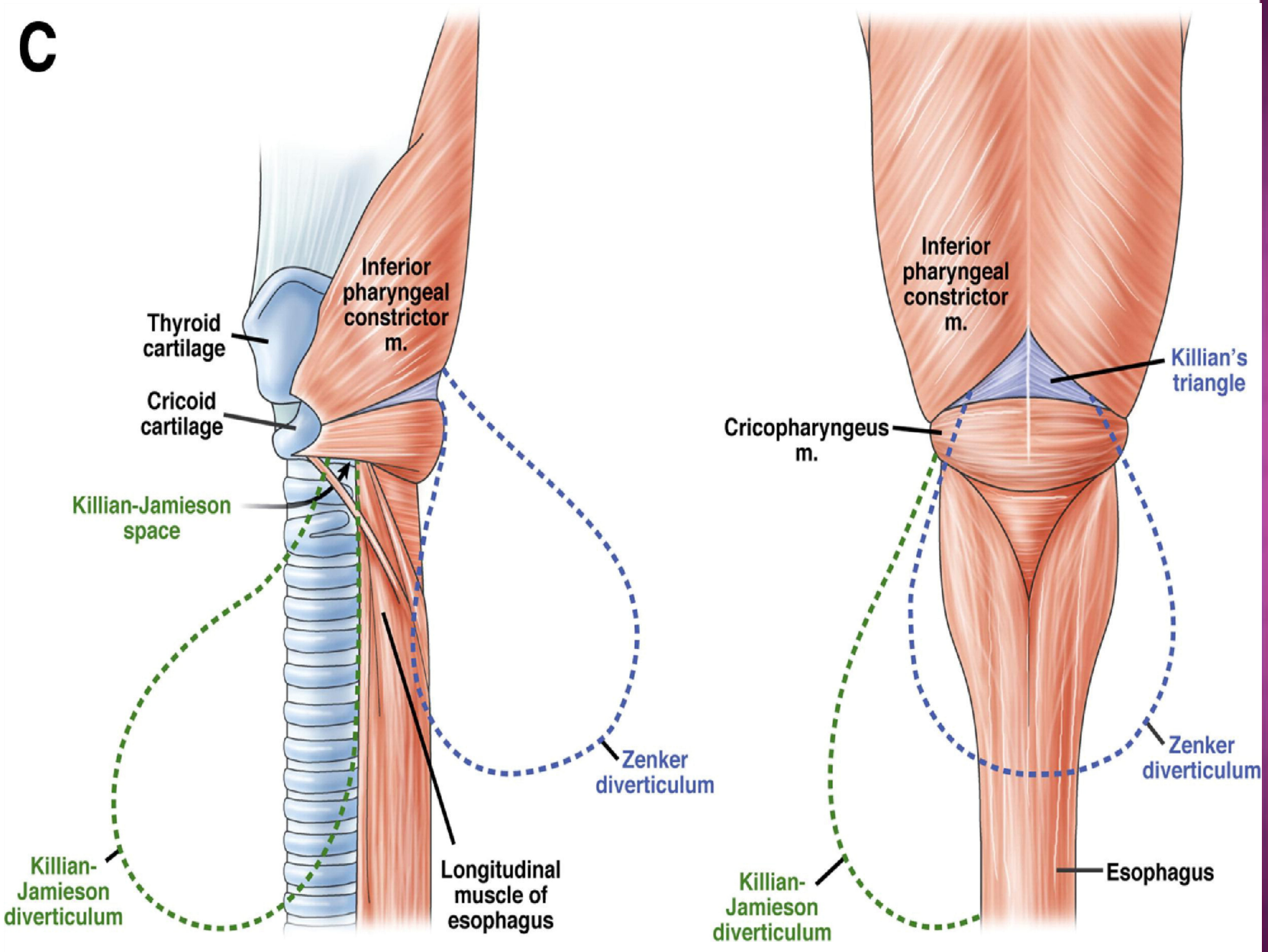

PHARYNGEAL POUCH-PATHOPHYSIOLOGY

- Herniation of the esophageal mucosa posteriorly between the cricopharyngeus (CP) muscle and the thyropharyngus part of inferior pharyngeal constrictor muscles.
- Hypothetical abnormalities include the following:
- Abnormal timing of deglutition resulting in closure of the CP muscle when ideally it should be opening
- Incomplete CP muscle relaxation
- Elevated resting tone of the entire upper esophageal sphincter (UES)
- Loss of CP muscle elasticity
- CP muscle myopathy or denervation atrophy
- Central nervous system (CNS) injury with a focal spastic CP muscle
- CP muscle spasm in response to gastroesophageal reflux disease (GERD)

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PHARYNGEAL POUCH-STAGING

- **Lahey system**
- Criteria of the Lahey staging system are as follows:
- Stage I - A small mucosal protrusion is present
- Stage II - A definite sac is present, but the hypopharynx and esophagus are in line
- Stage III - The hypopharynx is in line with diverticulum, and the esophagus is indented and pushed anteriorly.

PHARYNGEAL POUCH-STAGING

- **Morton system**
- Criteria of the Morton staging system are as follows:
- Small sacs are less than 2 cm in length
- Intermediate sacs are 2-4 cm in length
- Large sacs are greater than 4 cm in length

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PHARYNGEAL POUCH

- **Van Overbeek system**
- Criteria of the van Overbeek system are as follows:
- Small sacs are less than 1 vertebral body in length
- Intermediate sacs are 1-3 vertebral bodies in length
- Large sacs are greater than 3 vertebral bodies in length

PHARYNGEAL POUCH- PRESENTATION

- Dysphagia - Most patients (98%) present with some degree of dysphagia
- Regurgitation of undigested food hours after eating
- Sensation of food sticking in the throat
- Special maneuvers to dislodge food
- Coughing after eating
- Aspiration of organic material
- Unexplained weight loss
- Fetor ex ore (halitosis)
- Borborygmi in the neck

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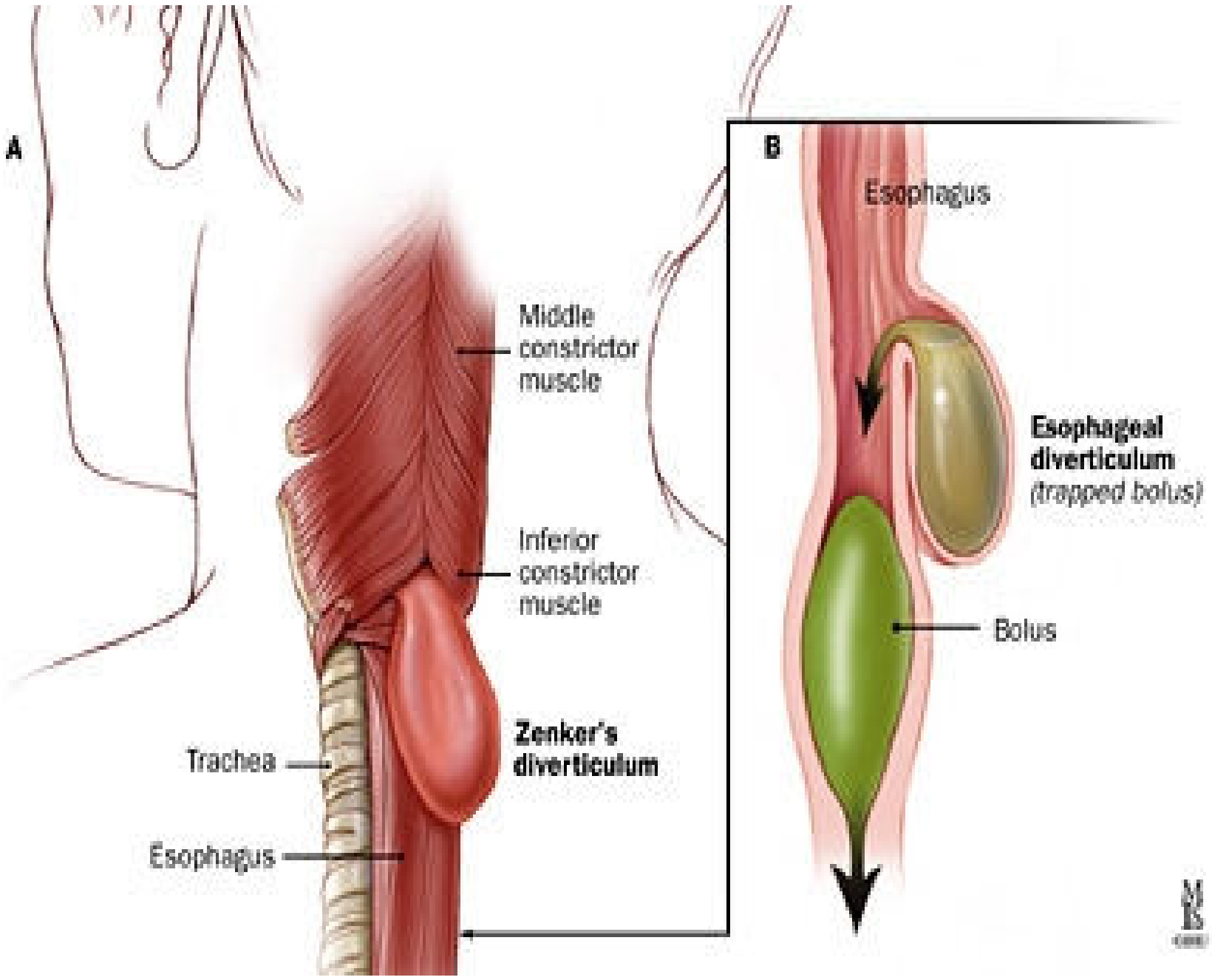

PHARYNGEAL POUCH-COMPLICATIONS

- The most common life-threatening complication in patients with a Zenker diverticulum is aspiration.
- Other complications include massive bleeding from the mucosa or from fistulization into a major vessel, esophageal obstruction, and fistulization into the trachea. Coexistent hiatal hernia, esophageal spasm, achalasia, and esophagogastroduodenal ulceration are common.
- Squamous cell carcinoma (SCC) within a Zenker diverticulum is extremely rare, occurring in 0.3% of Zenker diverticula worldwide.

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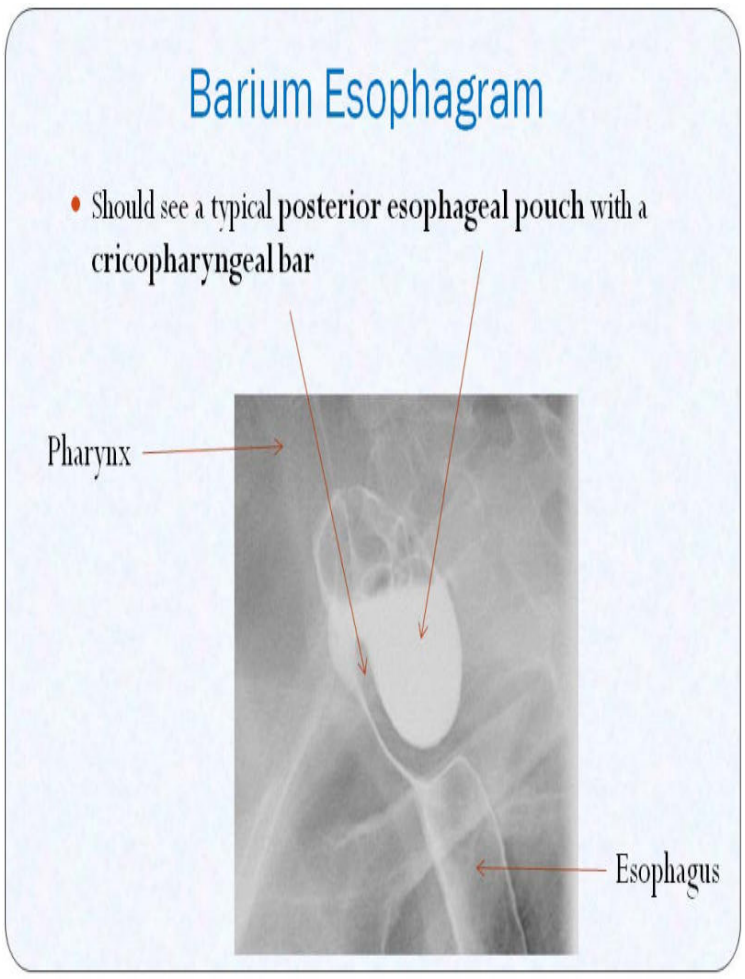
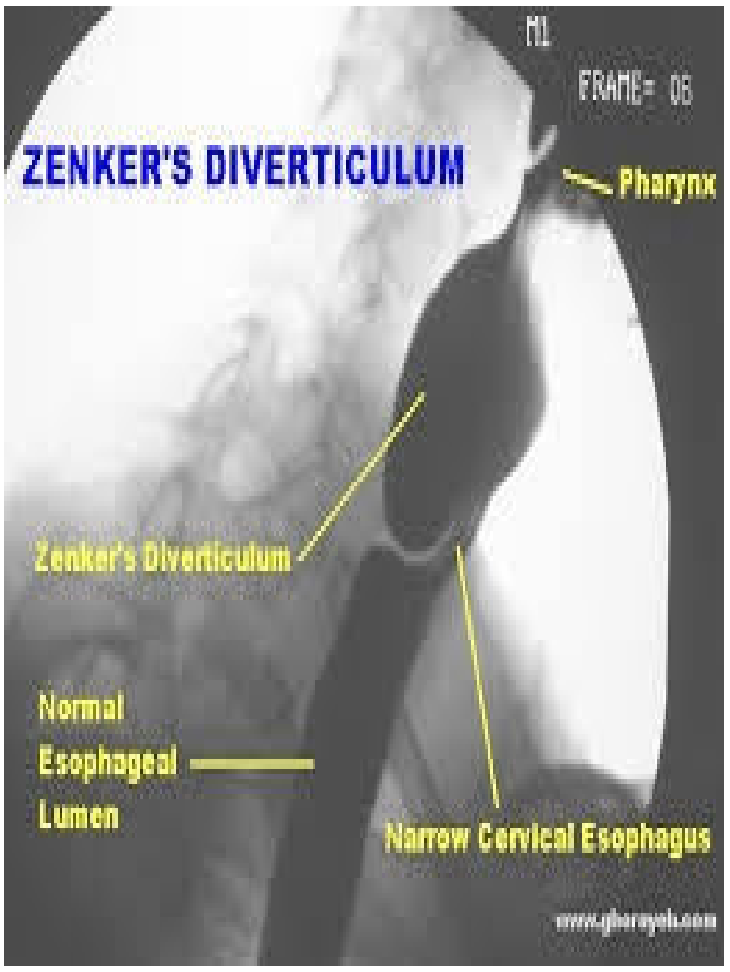
PHARYNGEAL POUCH-DIAGNOSIS

- Barium swallow with videofluoroscopy. This study provides information about the size, location, and character of the mucosal lining of the Zenker diverticulum.
- Esophageal manometry
- Rigid or flexible esophagoscopy is essential before surgical management to assess the nature of the mucosa of the Zenker diverticulum and to exclude the presence of SCC or carcinoma in situ.





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PHARYNGEAL POUCH-NOP TT

- Patients with diverticula of under 1 cm or in patients with medical comorbidities precluding surgery.
- Botulinum toxin may be used to provide temporary relief of dysphagia symptoms.

PHARYNGEAL POUCH-SURGICAL TT

- Zenker diverticula require intervention only if they produce symptoms.
- Small lesions(<2cm) are satisfactorily treated with a cricopharyngeus (CP) myotomy with or without an invagination procedure.
- Intermediate and large diverticula (ie, 2-6 cm) are best managed with open diverticulectomy with CP myotomy or by endoscopic diverticulotomy.
- Very large diverticula (ie, >6 cm) are best managed with excision with CP myotomy or a diverticulopexy with CP myotomy, depending on the health of the patient.

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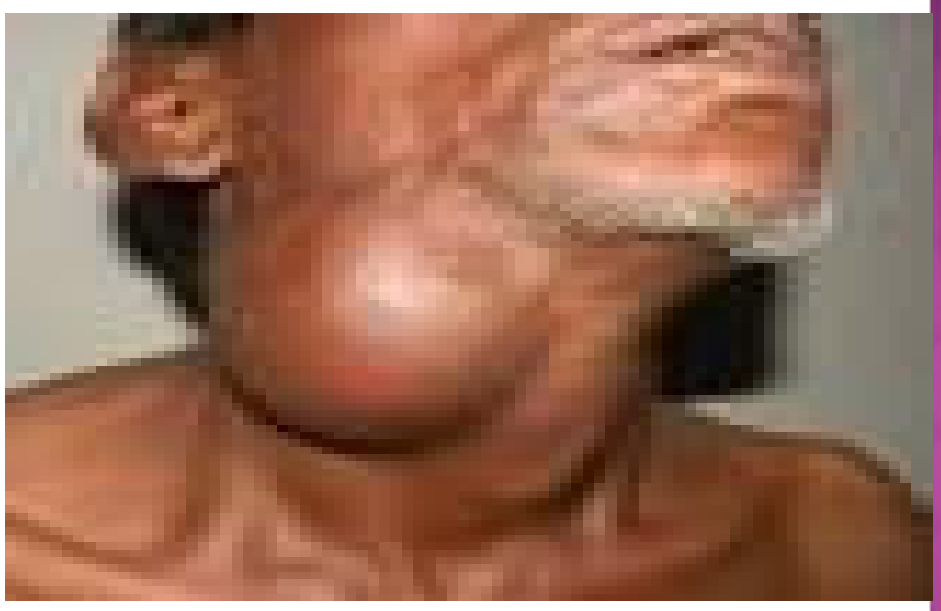
PHARYNGEAL POUCH-SURGICAL TT COMPLICATIONS

- Recurrent laryngeal nerve (RLN) paralysis
- Esophageal stenosis
- Mediastinitis
- Pharyngocutaneous fistula
- Hematoma
- Esophageal perforation

- LARYNGOCELE



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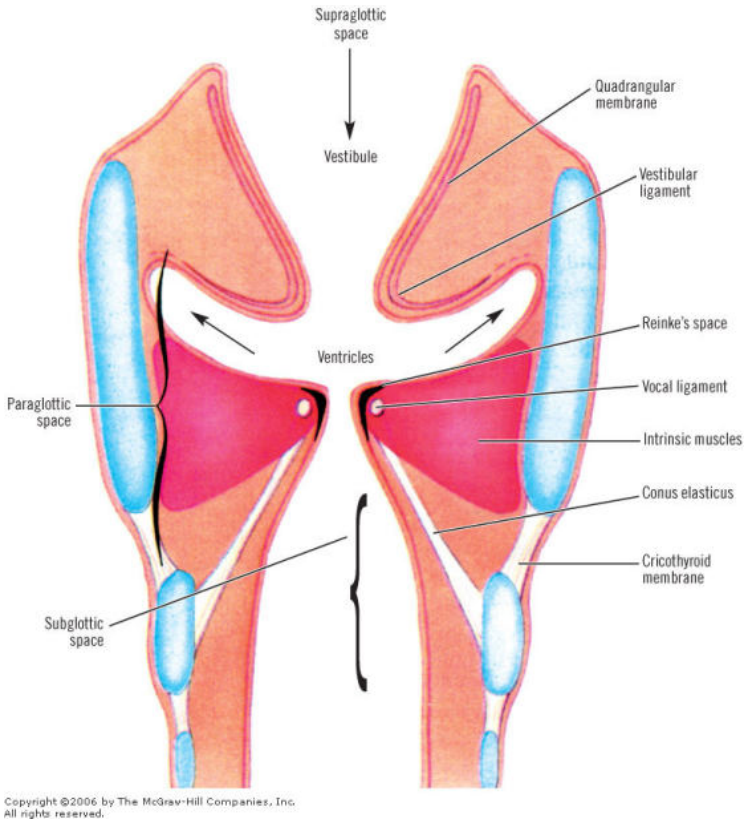
LARYNGOCELE

- Anomalies of the supraglottic larynx.
- Result of air or fluid filled dilation of the laryngeal ventricle, which communicate with the laryngeal lumen.
- Classified as "internal" or "external".
- Internal laryngoceles, are comprised of a collection of air or serous fluid and mucous in the anterior portion of the laryngeal ventricle. Their sac remains within the confines of the thyroid cartilage.
- In contrast, as external laryngoceles enlarge, their sac may protrude through the thyrohyoid membrane and present as a anterior neck mass.
- Laryngoceles may be congenital and may also be acquired. They are often seen in glassblowers due to continual forced expiration producing increased pressures in the larynx which leads to dilatation of the laryngeal ventricle. It is also seen in people with chronic obstructive airway disease.



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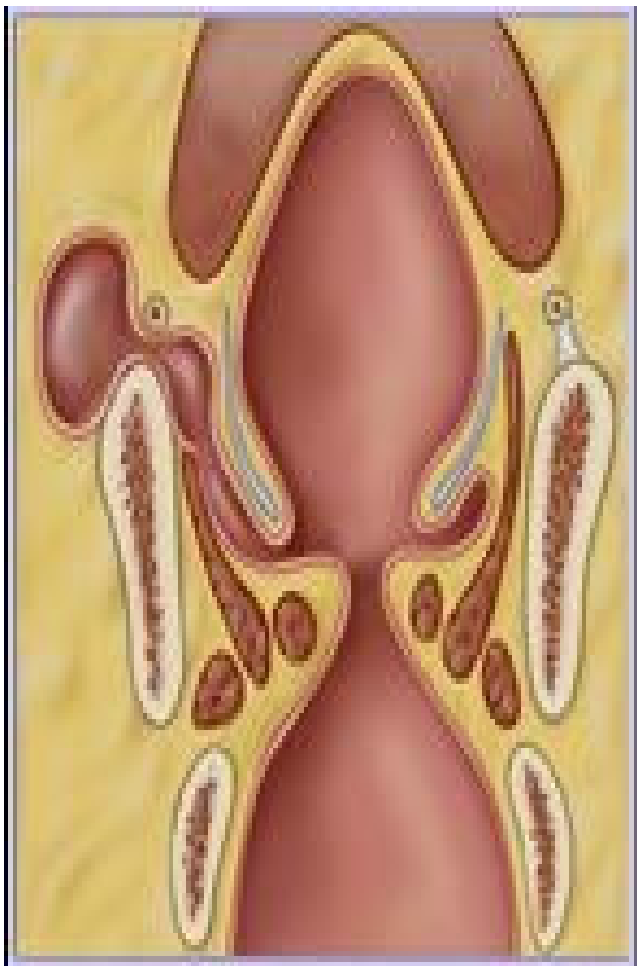

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LARYNGOCELE-PRESENTATION

- Lateral Compressible Neck Mass that increases in size with increase in intralaryngeal pressure, Cough, Hoarseness and possible airway compromise. Laryngoceles may also become infected, in which case they are called Laryngopyoceles.
- If infected present with fever, pain, leukocytosis etc.

LARYNGOCELE-DIAGNOSIS

- Indirect mirror exam.
- Flexible fiberoptic laryngoscopy.
- CT of the neck with IV contrast.

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LARYNGOCELE-TREATMENT

- Internal laryngoceles are managed endoscopically.
- External laryngoceles and combined internal and external laryngoceles are managed through an open approach.
- All procedures, both open and endoscopic, typically begin with upper airway endoscopy to evaluate the lesion completely.

RANULA

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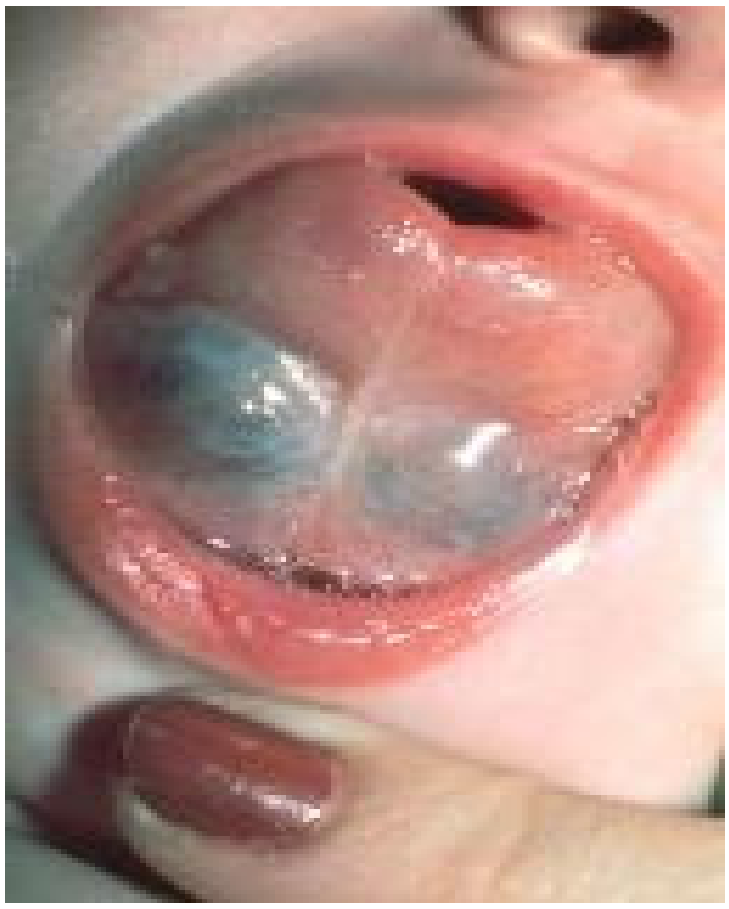
RANULA

- The term ranula is derived from the Latin word *rana*, meaning frog, and describes a blue translucent swelling in the floor of the mouth reminiscent of the underbelly of a frog.
- Hippocrates described ranulas and thought that they were secondary to inflammation. Paré thought that ranulas may represent descent of brain or pituitary matter.



RANULA

- Congenital ranulas can arise secondary to an imperforate salivary duct or ostial adhesion.
- Posttraumatic ranulas arise from trauma to the sublingual gland, leading to mucus extravasation and formation of a pseudocyst.
- **Plunging ranulas**
- Also called deep, diving, cervical, or deep plunging ranula and oral ranula with cervical extension.
- Plunging ranulas generally appear in conjunction with an oral ranula. Patients present first with an oral swelling in up to 45% of cases, with associated oral swelling in 34%, and without any oral involvement in 21% of cases.

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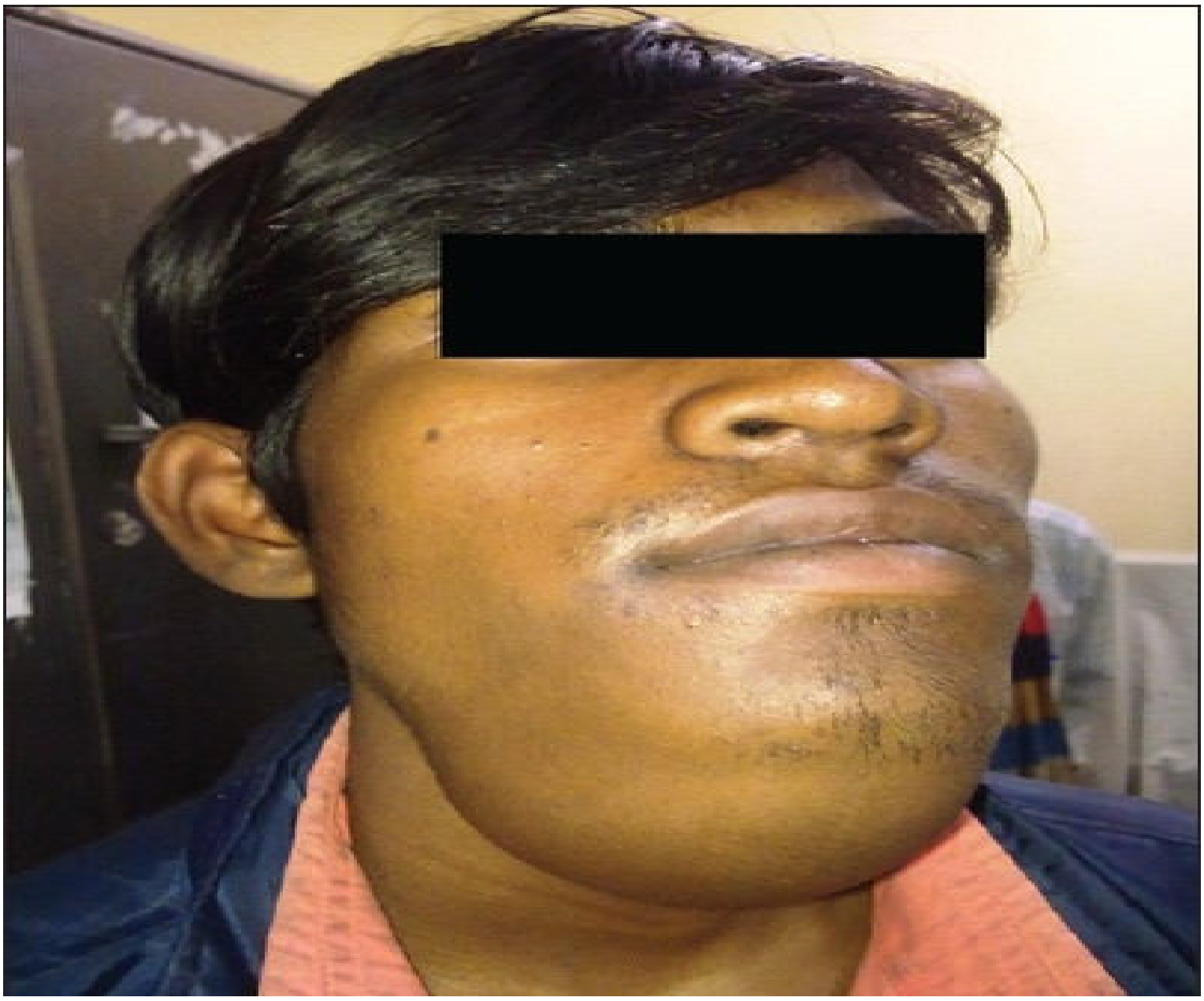

RANULA-PATHOPHYSIOLOGY

- Experimentally, partial severance or ligation of the sublingual duct leads to ranula formation, whereas ligation of the submandibular duct does not. The ligation of the parotid duct ultimately leads to atrophy.
- The difference lies in the fact that the sublingual gland secretes continuously in the interdigestive period, whereas the other two major salivary glands only secrete in response to stimuli, such as eating. Therefore, with trauma, if a duct is obstructed, secretory backpressure builds and acini rupture, leading to mucus extravasation.

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RANULA-PATHOPHYSIOLOGY

- Plunging ranulas arise in the neck by 3 mechanisms:
- The sublingual gland may project through the mylohyoid, or an ectopic sublingual gland may exist on the cervical side of the mylohyoid..
- The cyst may penetrate through the mylohyoid
- A duct from the sublingual gland may join the submandibular gland, allowing ranulas to form in continuity with the submandibular gland.

RANULA-PRESENTATION

- Bluish cyst located below the tongue
- May fill the mouth and raise the tongue.
- These are painless masses that do not change in size in response to chewing, eating, or swallowing.
- **Plunging ranulas**
- Plunging ranulas can manifest as neck swelling in conjunction with or withuot a floor-of-mouth cyst.
- Usually found in the submandibular space.
- They have been reported to extend into the submental region, the contralateral neck, the nasopharynx up to the skull base, the retropharynx, and even into the upper mediastinum

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RANULA-DIAGNOSIS

- CT scanning
- MRI
- Ultrasonography

RANULA-D\D

- Lymphadenopathy
- Cystic hygroma
- Pleomorphic adenoma
- Abscess
- Thyroglossal duct cyst
- Dermoid or epidermoid cyst
- Laryngocele
- Lipoma
- Hemangioma
- Cervical thymic cyst
- Cysts of the parathyroid or thyroid gland

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RANULA

- *Marsupialization*
- *Placement of suture or Seton*
- *Sclerosing agents*
- *Carbon dioxide laser*
- *Radiation therapy*
- *Sublingual gland excision*

RANULA

- paraesthesia of the lingual nerve
- injury to the Wharton duct
- obstructive sialadenitis
- salivary leakage
- recurrence of the ranula

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SUBLINGUAL DERMOID CYST

- Congenital sequestration dermoid.
- Formd by inclusion of ectoderm at fusion line of first arch.
- Thin walled cyst lined by squamous epi.
- Lateral and median variety.
- Can be supra and inframylohyoid.
- Usually seen b\w 10-25 years of age.
- C\o of a painless swelling under the tongue or below the chin.
- Pain may be asso with infection.
- Tranillumintion is –ve.
- Tt is excision.

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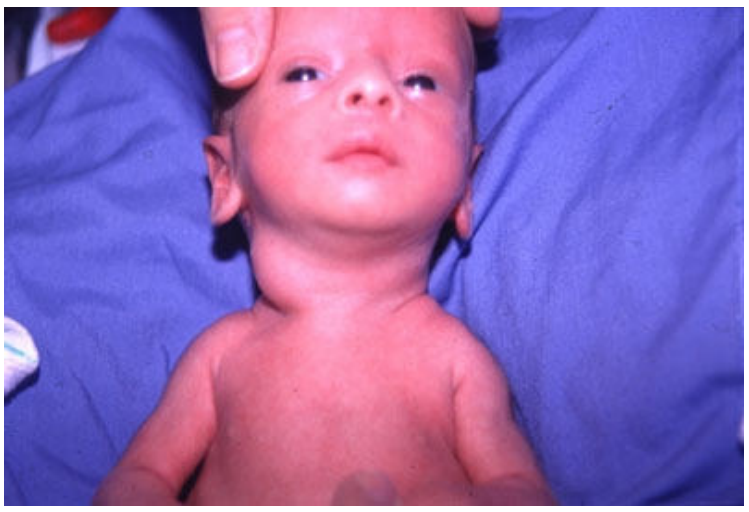
STERNOMASTOID TUMOR



- The sternomastoid "tumor" of infancy is a firm, fibrous mass, appearing at two to three weeks of age, within the substance of the Sternomastoid muscle and appears as a knot.
- It may or may not be associated with torticollis.
- Generally, the "tumor" initially grows, then stabilizes, and in about half the cases recedes spontaneously after a few months. It may leave a residual torticollis or may be associated with a facial or cranial asymmetry of a delayed torticollis.
- The etiology is unknown, a direct cause and effect relationship to birth trauma has been largely disproved although approximately half these children are products of breech deliveries.
- The treatment is controversial.
- Approximately half of these "tumors" will resolve spontaneously without sequelae.
- Progressive torticollis or development of facial asymmetry are considered indications for surgery.

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CAUSES OF LYMPHADENOPATHY

- Infection
  - Acute
    - Pyogenic infections
    - Infectious mononucleosis
    - Toxoplasmosis
    - Infected eczema
    - CMV
  - Chronic
    - TB
    - Sarcoidosis
    - Syphilis
    - HIV

CAUSES OF LYMPHADENOPATHY

- Malignancy
  - Primary
    - Hodgkins lymphoma
    - Non-Hodgkins lymphoma
    - CLL
    - ALL
  - Secondary
    - Nasopharngeal
    - Thyroid
    - Lung
    - Breast
    - Stomach (“Troisier’s sign”)

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TUBERCULAR LYMPHADENOPATHY

GENERAL

- Enlargement of lymph nodes, typically to greater than 1.5 cm with change in its consistency, is known as Lymphadenopathy.
- Tuberculosis is a chronic granulomatous infection caused by Mycobacterium tuberculosis, which is an acid-fast bacillus.
- It commonly presents as pulmonary tuberculosis.
- A common extra pulmonary manifestation of tuberculosis is lymphadenopathy.

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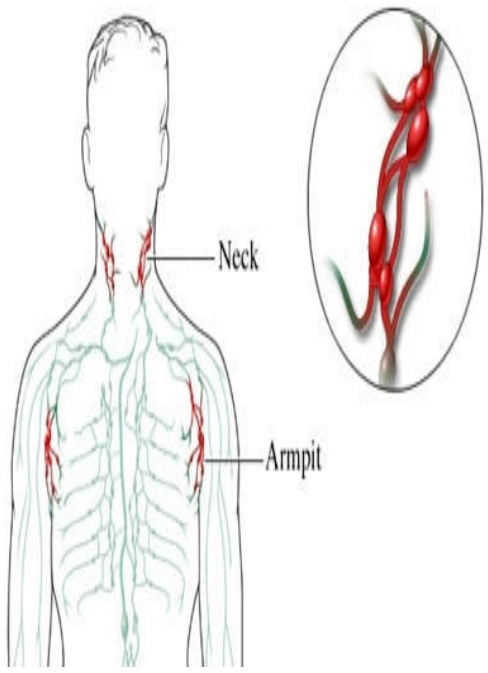
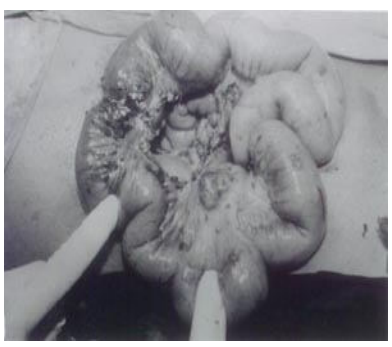
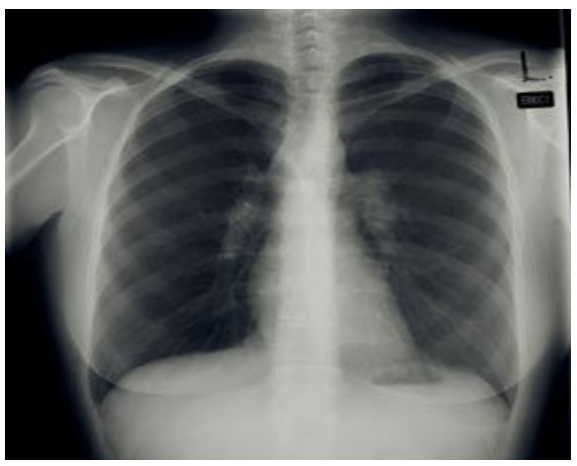
SITES

- Cervical LN(most common)
- Inguinal LN,
- Axillary LN,
- Mesenteric LN,
- Mediastinal & Hilar LN, and
- Intramammary LN.







MODE OF INFECTION

1. ***Inhalation*** of organism in fresh cough droplet or in dried sputum.
2. ***Ingestion*** of organisms (due to self swallowing of infected sputum or ingestion of bovine tubercule bacilli from infected milk.
3. ***Innoculation***
4. ***Trans-placental route*** (rare)

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PATHOLOGICAL STAGES

By Jones & Campbell

- Stage 1- Reactive lymphadenitis : Enlarged, Firm mobile discrete nodes showing non specific reactive hyperplasia.
- Stage 2- Periadenitis : Larger rubbery nodes fixed to surrounding tissue (mating takes place)
- Stage 3- Cold abscess : Central softening due to abscess formation.

  Caseating necrosis in lymph nodes takes place.

- Stage 4- Collar stud abscess : Abscess is in deep fascia, it ruptures & comes in superficial fascia but remains inside the skin.
- Stage 5- Sinus : Blind tract lined by granulation tissue.

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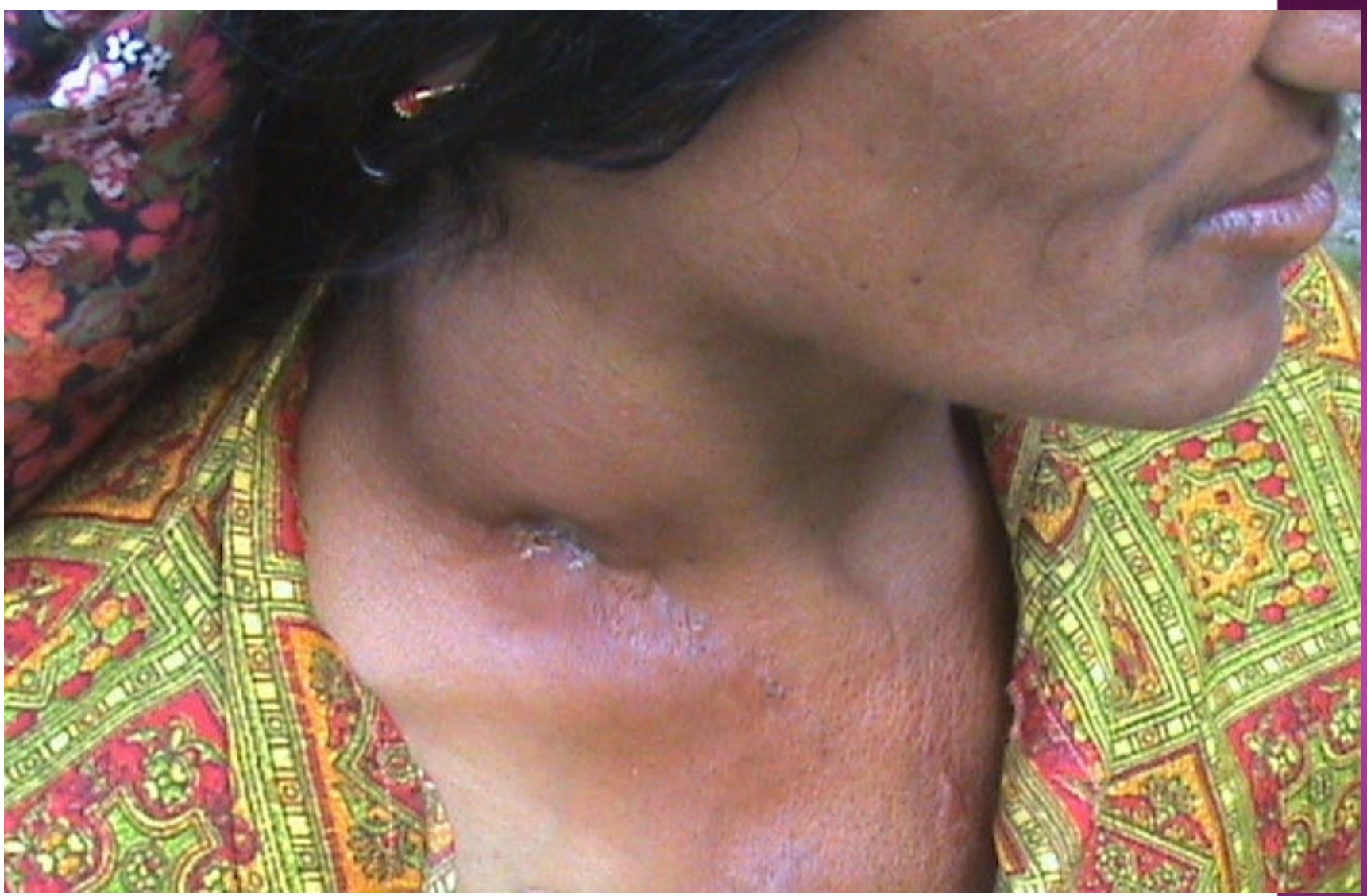

Sinus formation

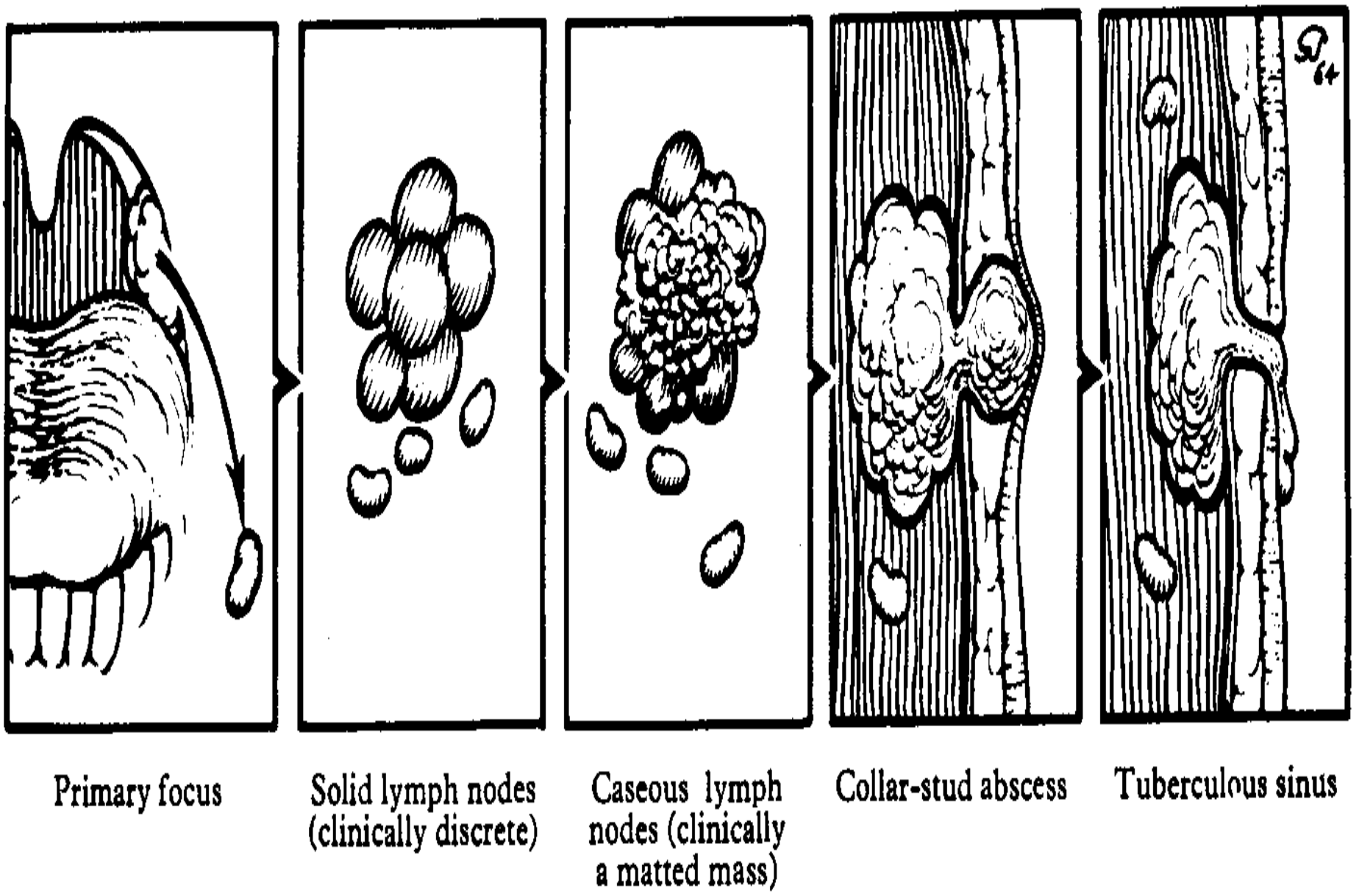

FIG. 186.—A summary of the natural history of tuberculous lymphadenitis.

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CLINICOPATHOLOGICAL CO-RELATIONS

- **Reactive lymphadenitis** – LN becomes

a) Inflammed
b) Enlarge
c) Palpable
d) Tender

- **Periadenitis –**

a) Mated LN mass
b) Slight tender

- **Cold abscess**

a) No rise in temperature
b) No pain
c) No tenderness
d) No redness

- **Collar stud abscess**

a) Signs of inflammation on skin
b) Fluctuation
c) Swelling

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- **Sinus**

a) Opening in the neck or ulcer (undermined edge)

b) Bluish discolouration of skin

c) Pus discharge; Caseating material comes out.

PYOGENIC ABSCESS	COLD ABSCESS
•Commonest variety of abscess. •All cardinal signs of inflammation present. •Produce hot & painful abscess. •Brawny oedema with induration present when pus is deep seated. •A result of primary disease.	•Not so common. •Cardinal signs of inflammation are absent. •Does not produce hot & painful abscess. •Brawny induration, oedema & tenderness are absent. •Almost always a sequel of tubercular infection.

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TREATMENT:

1. Suitable antibiotic started.
2. Pus is drained by giving incision on most prominent part.

TREATMENT:

1. Full antitubercular regime started.
2. Pus is drained by giving an oblique incision

- A 43-year-old man presents to his GP with a 6-month history of a painless pulsatile mass at the angle of the jaw.
- **A 23-year-old girl complains of intermittent numbness and paraesthesiae in her** right hand for the past 2 months. On examination there is a fixed, hard, 1cm2 cm swelling in the right supraclavicular fossa.
- **A 3-year-old boy is seen by his GP with a enlarging midline swelling that has been** present for the past year. It is smooth and rounded, located just below the hyoid bone, measuring 2 cm2 cm, and rises on protrusion of the tongue.

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- A 32-year-old woman presents to her GP with a neck lump enlarging for the last 3 years. It measures 1 cm1.5 cm and is located behind the junction of the upper and middle thirds of the left sternocleidomastoid muscle. In the past this lump has become infected, resolving with oral antibiotics.
- **A 23-year-old man presents to his GP with a 2 cm3 cm painless lump at the** angle of the jaw; it has been there for 2 months. He also complains of weight loss, night sweats and fever, over the same period. Hepatosplenomegaly is detected on examination of the abdomen.

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