BENIGN NECK DISEASES

BY

Dr. Hitesh Verma

CLASSIFICATION

- CONGENITAL : LYMPHANGIOMA, HEMANGIOMA, DERMOID CYST, BRANCHIAL CYST AND FISTULA, THYROGLOSSAL CYST, THYMIC CYST
- ACQUIRED : RANULA, LARYNGOCELE, PHARYNGO-ESOPHAGEAL DIVERTICULA
- INFECTED : BACTERIAL, VIRAL, TUBERCULAR LYMPHADENOPATHY & VARIOUS NECK SPACE INFECTION
- PARAPHARYNGEAL TUMORS
- NEUROGENIC TUMORS

LYMPHANGIOMA

- LYMPHATIC SYSTEM ARISES FROM 5 PRIMITIVE SACS
  - 2 JUGULAR SACS
  - 2 POSTERIOR SCIATIC SACS
  - 1 RETROPERITONEAL SAC

LYMPHANGIOMA

- 3 TYPES

i. SIMPLE LYMPHANGIOMA (40%)

ii. CAVERNOUS LYMPHANGIOMA (35%)

iii. CYSTIC HYGROMA (25%)

LYMPHANGIOMA

- SIMPLE LYMPHANGIOMA
  - Thin walled capillary sized lymphatic channel
  - Occur as pale fluctuant lesion where tissue planes are tight
  - Lips, tongue, cheek, FOM

LYMPHANGIOMA

- CAVERNOUS LYMPHANGIOMA
  - Dilated lymphatic spaces often with fibrous adventitia
  - Mainly occur in tongue- BOT, lateral margin
  - BOT lesions has to be differentiated from carcinoma, lingual thyroid, internal laryngocele
- CYSTIC HYGROMA
  - Earliest swelling one can see in neck
  - Occur as cysts of various size
  - Commonly in neck where tissue planes are more lax
  - May spread into cheek, FOM, tongue, parotid, ear canal

LYMPHANGIOMA

- CLINICAL PRESENTATION
  - No sex predominance
  - No side predominance
  - 35% oral, 25% cervical, 15% axillary
  - 60% by birth, 75% by first year, 90% by second year

LYMPHANGIOMA

- CLINICAL PRESENTATION
  - Usually painless neck swelling, more in posterior triangle
  - Can encroach upper airway, pharynx, esophagus, to produce stridor or dysphagia
  - May compress brachial plexus to produce pain or hyperaesthesia
  - May have pain or sudden increase in size due to infection or hemorrhage

LYMPHANGIOMA

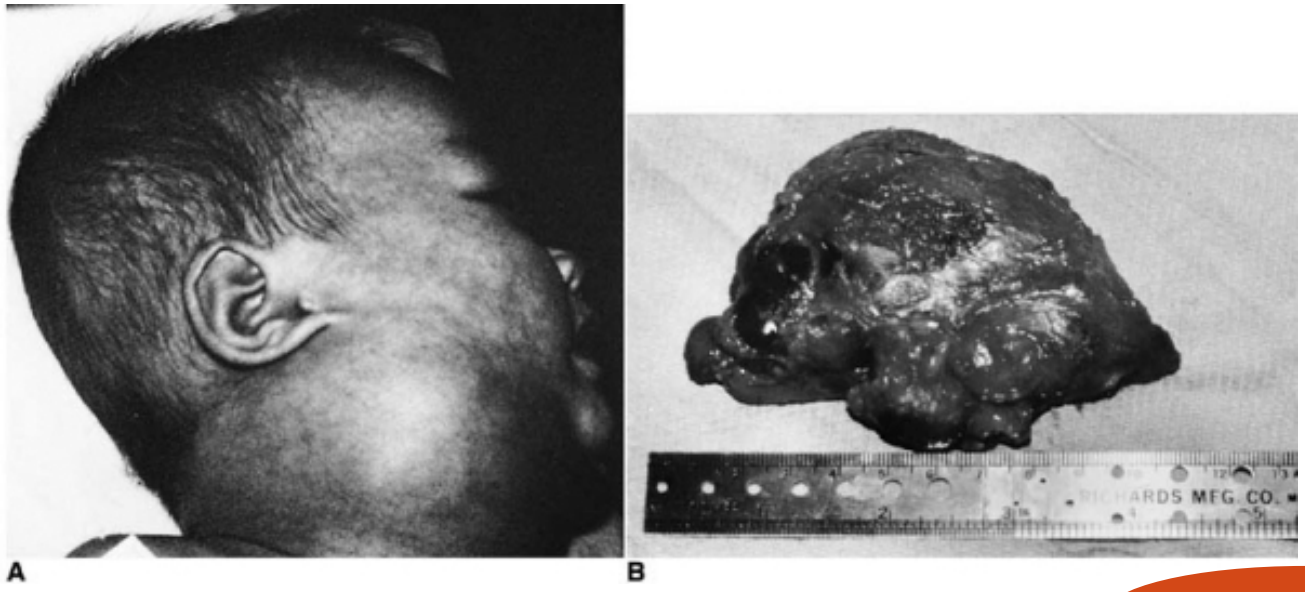
- ON EXAMINATION
  - Non-tender , ill defined, soft and spongy lesions containing clear fluid
  - Translucent (cystic hygroma brilliantly translucent)
  - Fluctuation and fluid thrill present
  - Partially compressible
  - Impulse on cough present

LYMPHANGIOMA

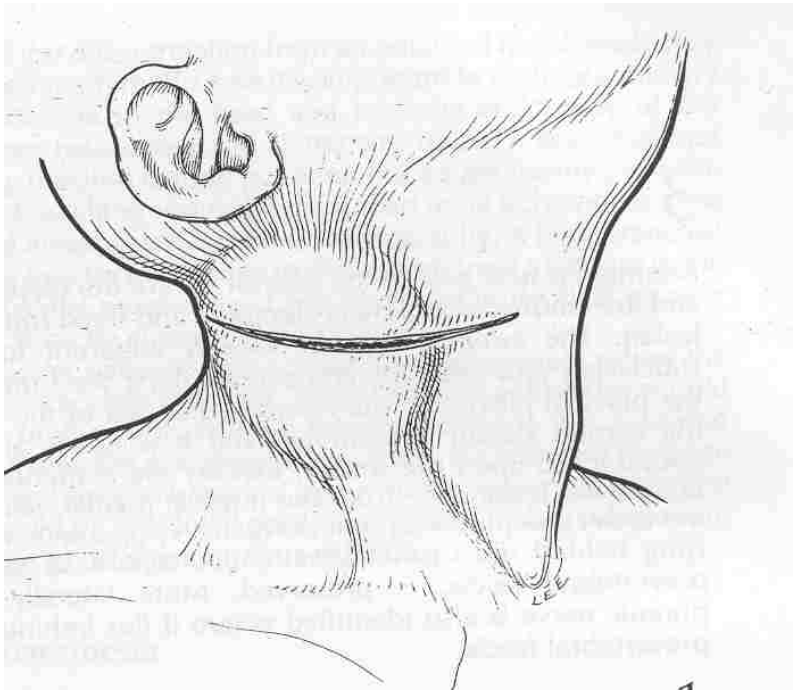
- DIAGNOSIS
  - Clinical
  - Cytology
  - Radiology
    - To know extent and size of swelling
    - A chest radiology should invariably be done in case of neck lesions before surgery to rule out chest involvement

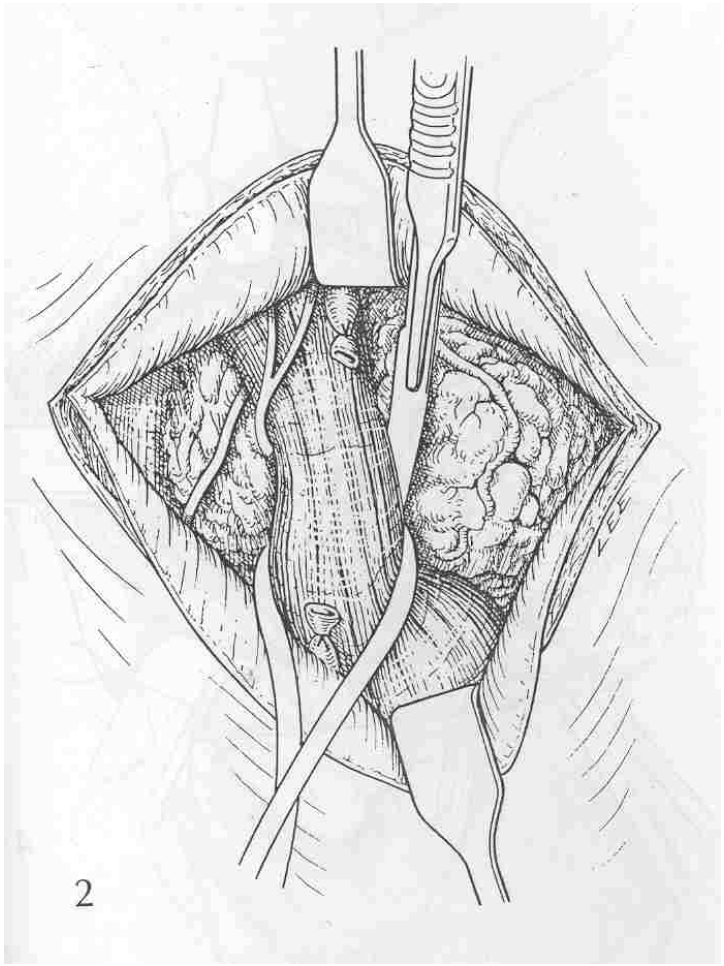
LYMPHANGIOMA

- TREATMENT
  - Sclerosant injection- recurrence is more
  - Laser excision- for intraoral submucosal lesions
  - Cryoapplicatioin- for submucosal lesions
  - Surgical excision- definitive treatment
  - Radiotherapy- in un-operable recurrences

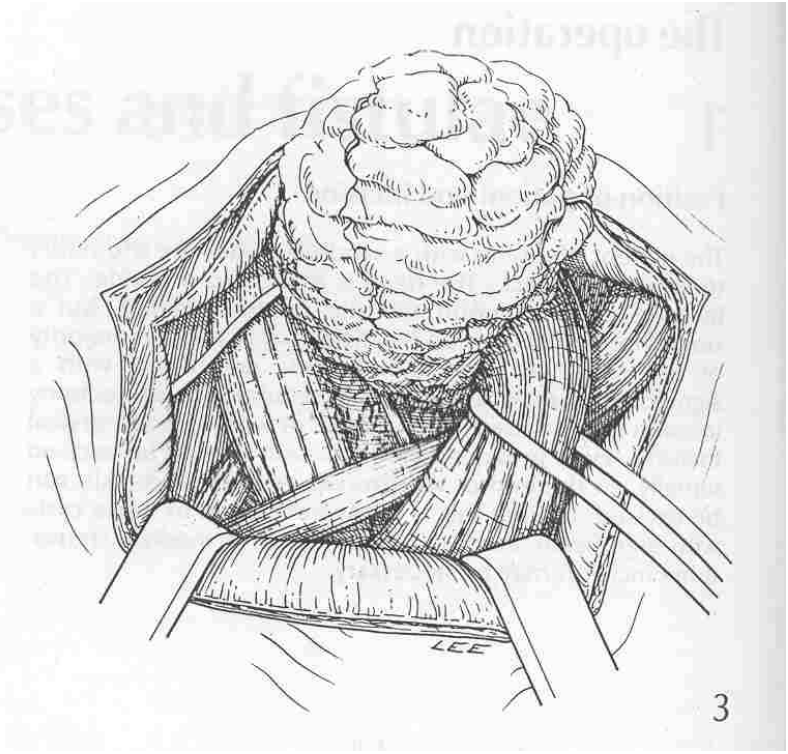


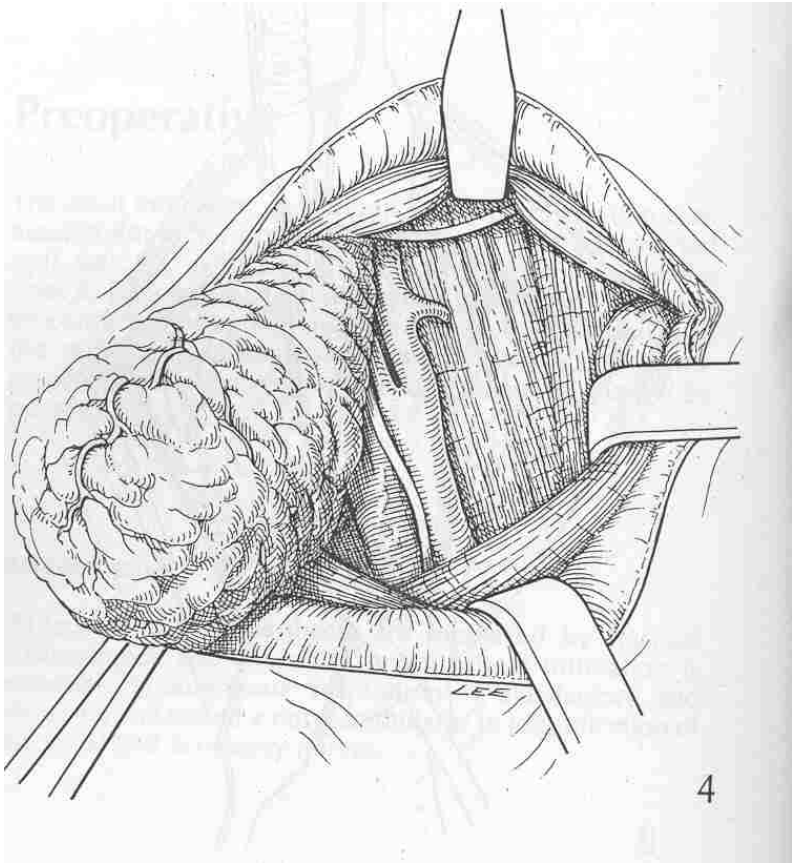
CYSTIC HYGROMA





CYSTIC HYGROMA





HEMANGIOMA

- Most common benign tumor of infancy
- 3 types : capillary, cavernous, arterial or plexiform
- 14-21% in head & neck
- Most often in trapezius or masseter
- 3 times more common in female

CAPILLARY HEMANGIOMA

- **4 types**: salmon patch, port-wine stain, straw-berry angioma, vin-rose patch
- Present at birth or immediately after birth, all disappear with age expect port-wine stain
- These present as bright red or dark colored patch or swelling
- Typically compressible
- **Treatment**
  - Wait & watch upto 8 yrs
  - Treatment if persists after 8 yrs:
    - ✓ Excision with skin grafting
    - ✓ Co2 laser application
    - ✓ Sclerosant injection
    - ✓ X-ray therapy
    - ✓ Steroid injection

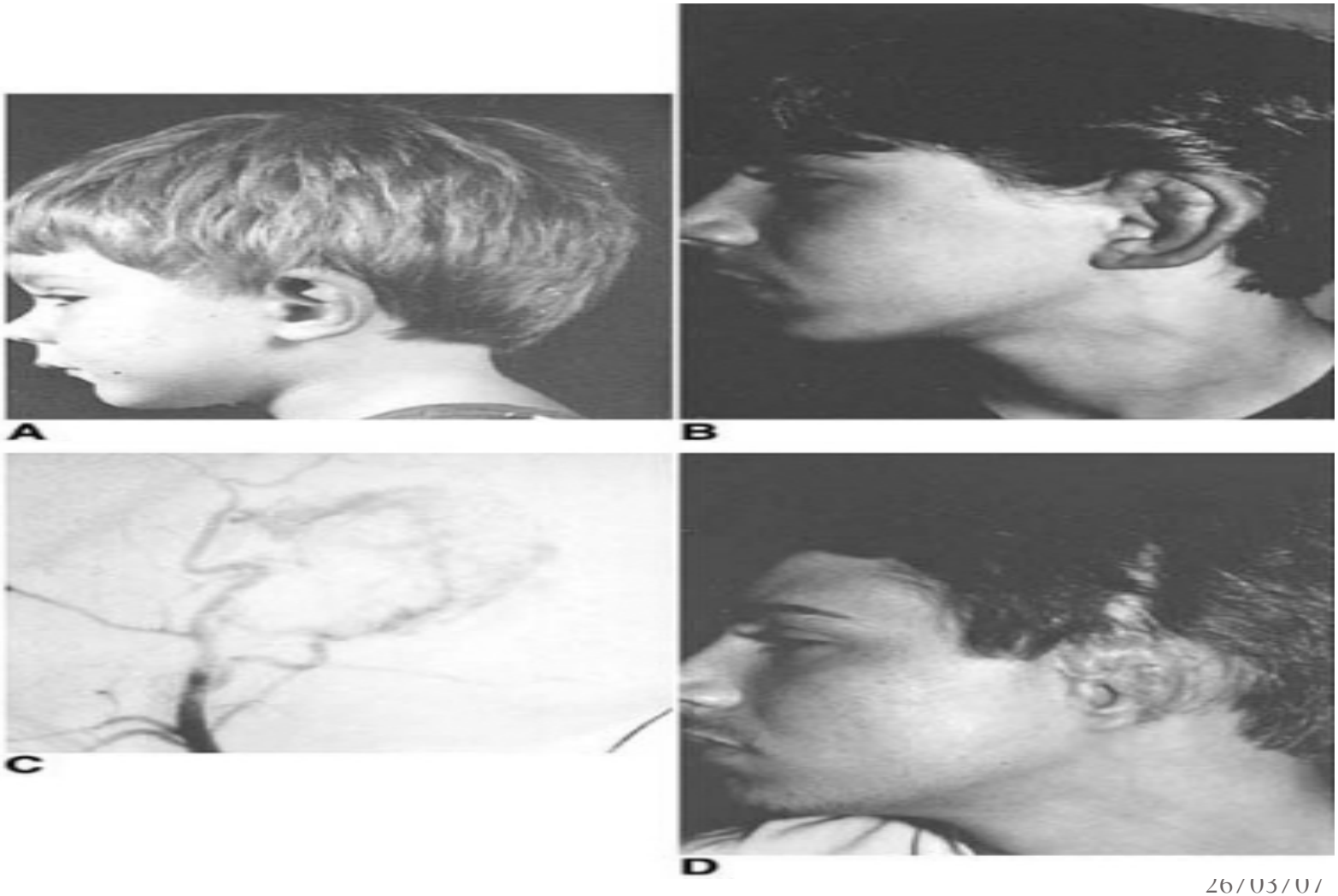
CAVERNOUS HEMANGIOMA

- Present since birth
- Doesn't in volute, rather progress
- Always present as bluish localized swelling on face, cheek, ears, lips, mouth, tongue
- Classically compressible

CAVERNOUS HEMANGIOMA

- TREATMENT
  - Sclerosant injection
  - Steroid injection
  - Cryoapplication
  - Laser excision
  - Surgical excision

AV Malformation



DERMOID CYSTS

- Only 7% in head and neck

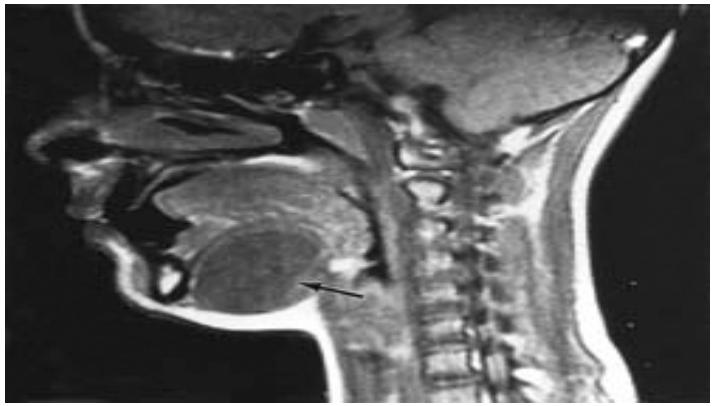
- 3 types
  - Epidermoid cysts
  - True dermoid cysts
  - Teratoid cysts

DERMOID CYSTS

- Epidermoid cysts
  - Most common
  - No adnexal structure
  - Lined by squamous epithelium
  - Contain cheesy keratinous material

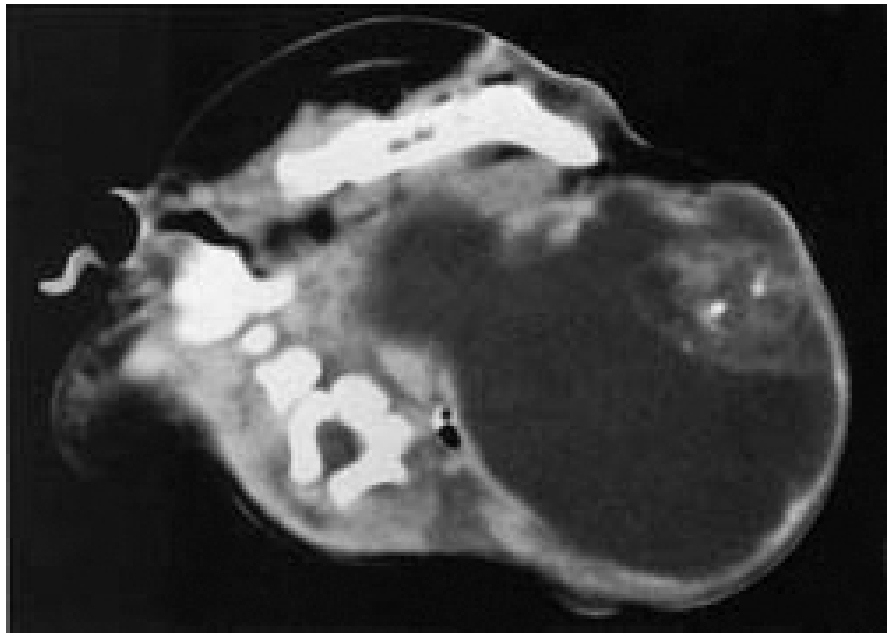
DERMOID CYSTS

- True dermoid cysts
  - Contain skin appendages like hair follicles, sebaceous & sweat glands
  - Lined by squamous epithelium
  - Typically, seen in the midline of the neck, usually submental region
  - They are attached to and move with the overlying skin and are painless unless infected.
  - Management is by complete surgical excision.



DERMOID CYSTS

- Teratoid cysts
  - Rarest variety
  - Contain elements from endoderm, ectoderm, mesoderm
  - Lined by squamous or respiratory epithelium
  - A history of maternal polyhydramnios in up to 18% of neonates who have a cervical teratoma
  - Management is by surgical excision; failure of complete excision may result in recurrence

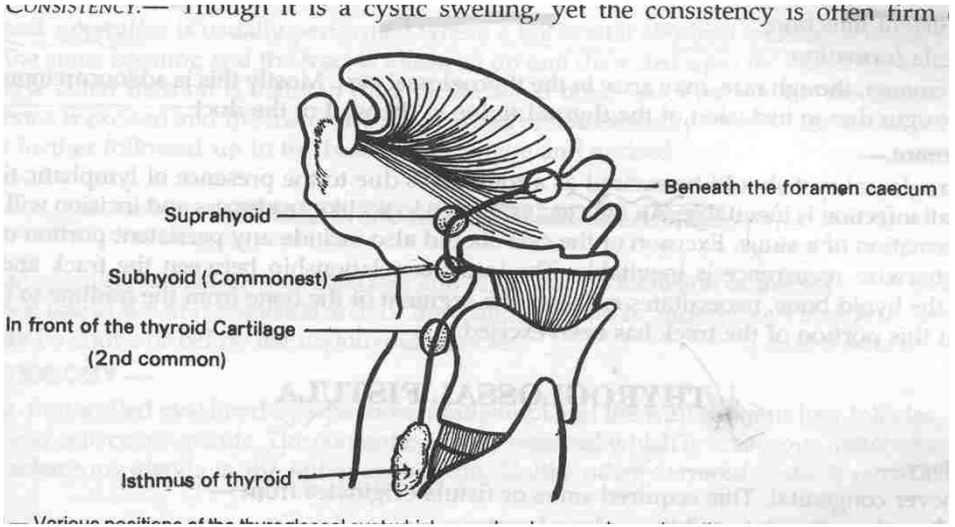


THYROGLOSSAL CYST

- Commonest non-neoplastic neck swelling
- Most common midline neck cyst
  - Enlarges caudally as a bilobed diverticulum, which forms lobes of thyroid

THYROGLOSSAL CYST

- Clinical presentation
  - Male:female 1:1
  - Mean age 5yrs
  - 90% midline
  - 10% lateral (95% lt & 5% rt)
  - 2.1% intralingual
    24.1% suprahyoid
    60.9% thyrohyoid
    12.9% supra sternal

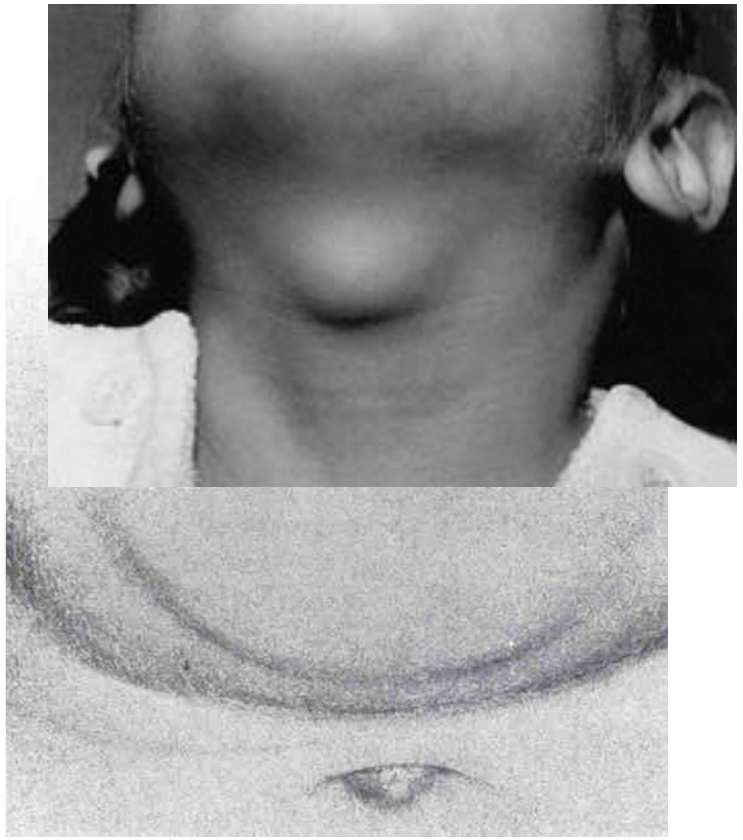


THYROGLOSSAL CYST

- Clinical presentation
  - Suprahyoid cysts may be a lingual cyst
  - May be associated with lingual thyroid, when normal thyroid is often absent
  - Infrahyoid cysts often confused with thyroid adenomas
  - A cyst may form on both sides of hyoid producing a dumb-bell cyst, the missing part often accounts for recurrence

THYROGLOSSAL CYST

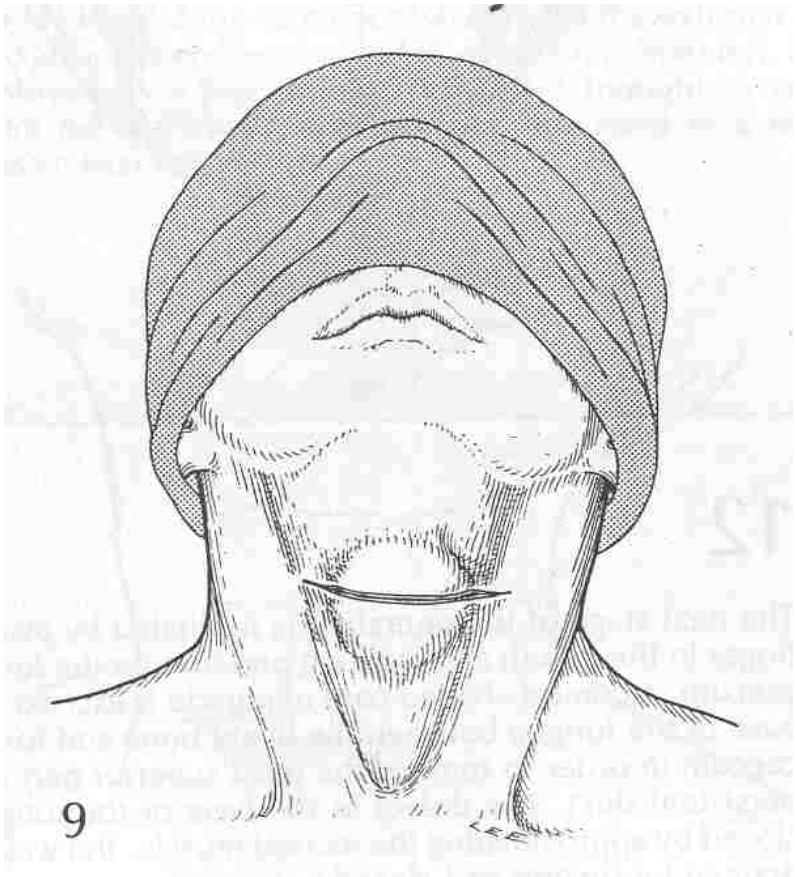
- On examination
  - Well defined, smooth surface
  - Spherical, Non tender
  - Cystic with fluctuation +
  - Transillumination +
  - Moves sideways, but not vertically
  - Moves with deglutition and protrusion of tongue

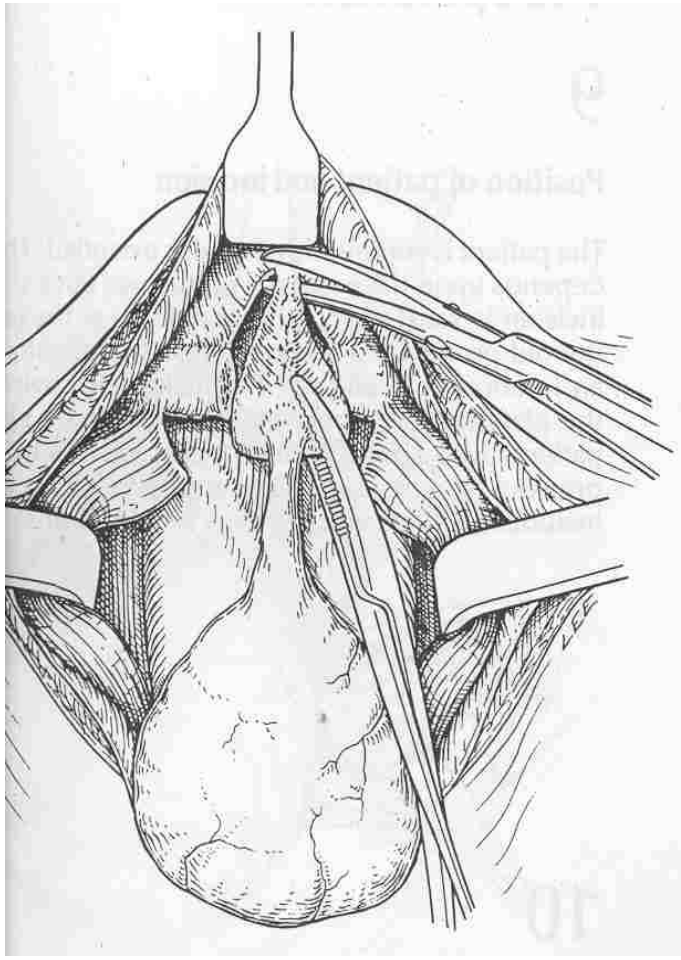


THYROGLOSSAL CYST

- Diagnosis
  - Aspiration cytology
  - I^{131} scan in all suprahyoid to r\o lingual thyroid
  - CT\MRI indicated when there is doubt of lingual thyroid
  - Treatment: sistrunk operation.
  - Recurrence rate:
  - Simple excision – 85%
  - Sistrunk operation – 2-8%

SISTRUNK'S PROCEDURE



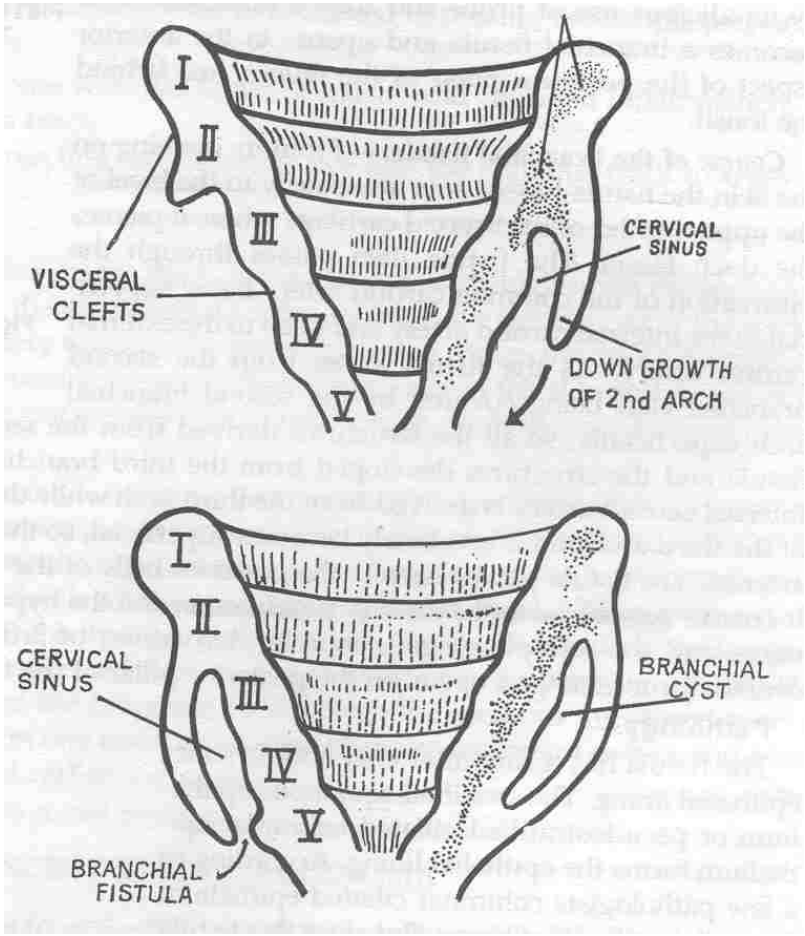


BRANCHIAL CYST, SINUS, FISTULA

- Cysts present in lateral part of neck deep to SCM at junction of upper 1\3rd and lower 2\3rd
- Sinus may have an external opening along line joining tragus and sternoclavicular joint or an internal opening depending on the origin
- Fistula has both external and internal openings

BRANCHIAL CYST

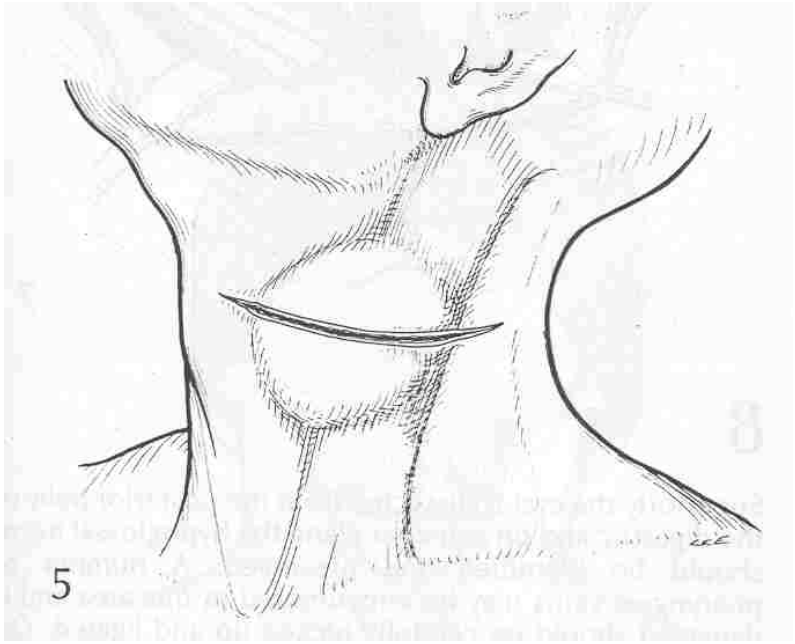
- Development
  - A 2week embryo has 6 branchial arches with 5 branchial pouches and 5 branchial clefts
  - 5^{th} and 6^{th} arches are vestigeal
  - 2^{nd} arch grows over 3^{rd} and 4^{th} arch to meet 5^{th} arch element, thus forming cervical sinus of his

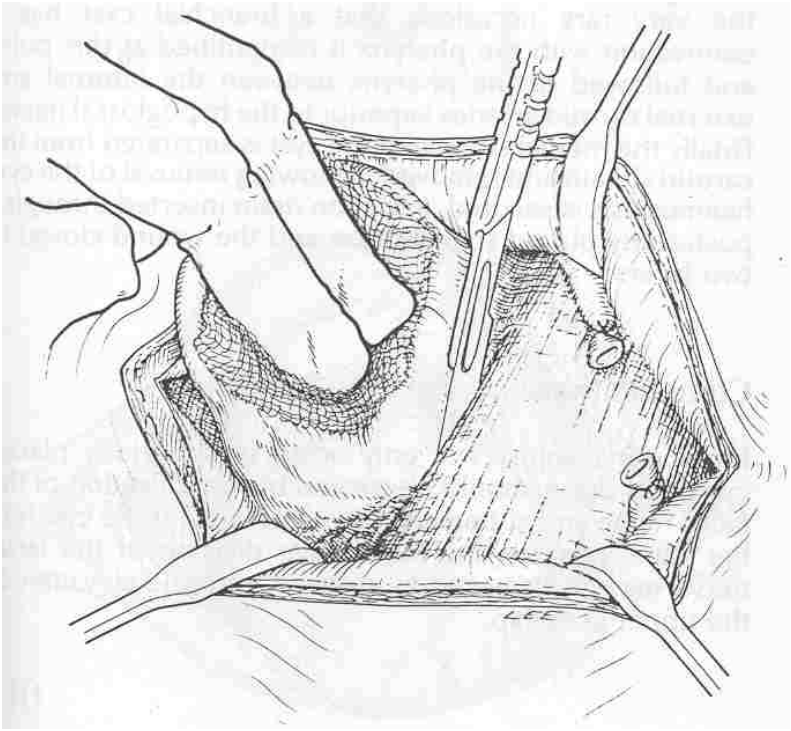


BRANCHIAL CYST

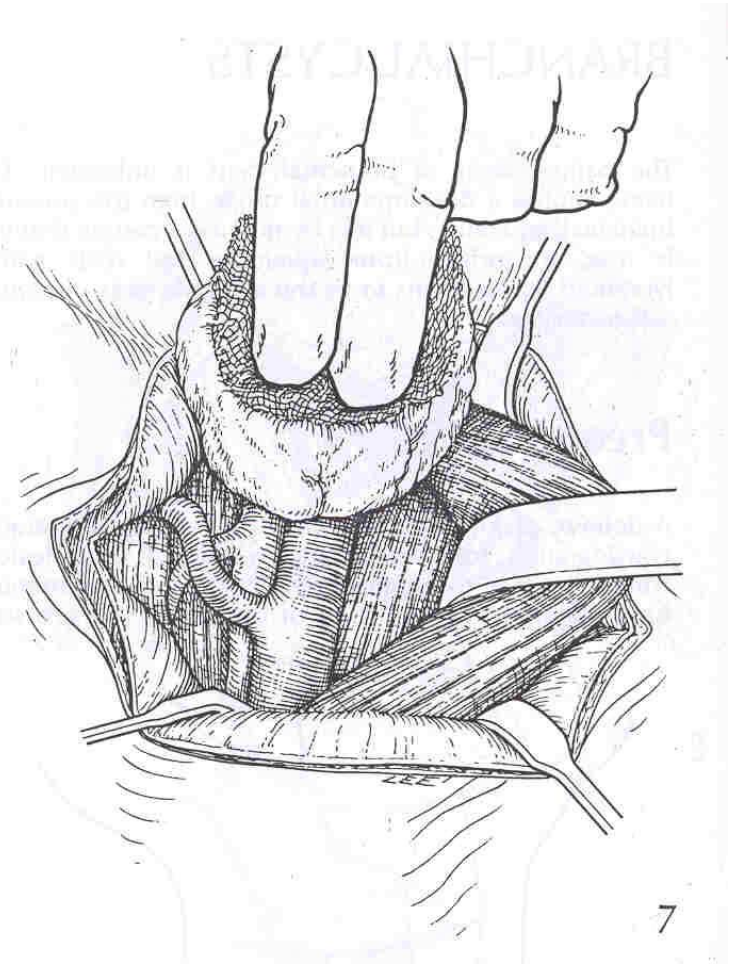
- Theories of origin
  1. Branchial apparatus theory
  2. Cervical sinus theory
  3. Thymopharyngeal theory
  4. Inclusion theory
- Pathology
  - Lined by stratified squamous or non-cilliated columnar epithelium
  - 80% have lymphoid tissue in the wall
- Clinical presentation
  - Peak age 3rd decade
  - 2\3rd left side and 1\3rd right side; 2% bilateral

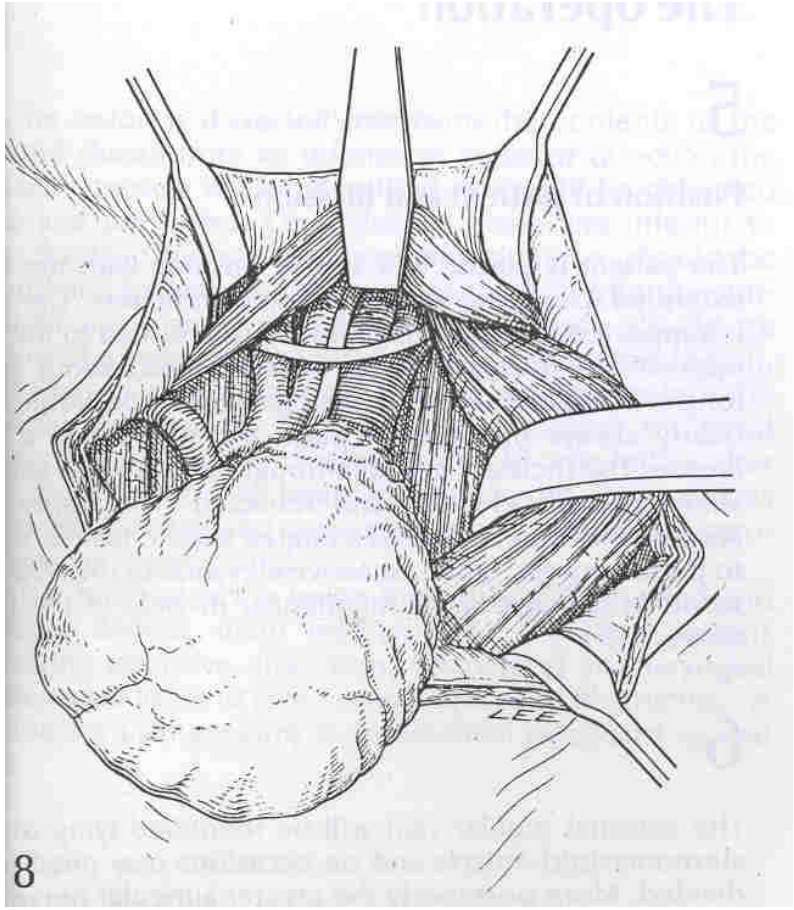
BRANCHIAL CYST





BRANCHIAL CYST





BRANCHIAL SINUS\FISTULA

- Congenital: most commonly from 2nd arch

  2ND ARCH--- 40-90%

  1ST ARCH --- 5-25%

  3RD & 4TH --- 2- 8%

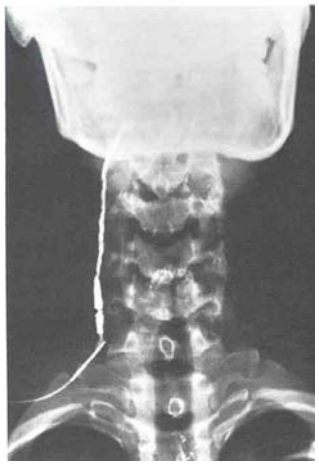
- ACQUIRED:

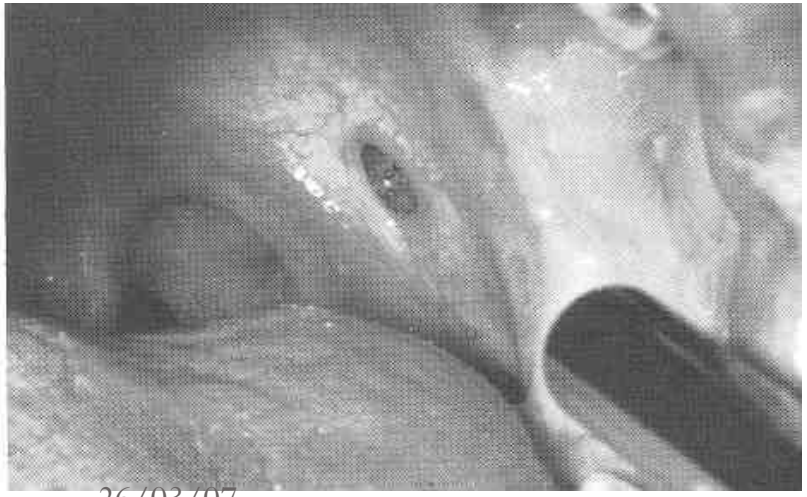
  Infection---- burst

  Inadvertent incision

BRANCHIAL SINUS\FISTULA
2nd Arch Fistula

- 2nd arch fistula
  - Tract travells between the derivatives of 2nd arch (superficially) and 3rd arch (deep)
- Inferior-middle 2/3 junction of SCM, deep to platysma, lateral to IX, X, XII, between the internal and external carotid and terminate in the tonsillar fossa
- Surgical treatment may include tonsillectomy

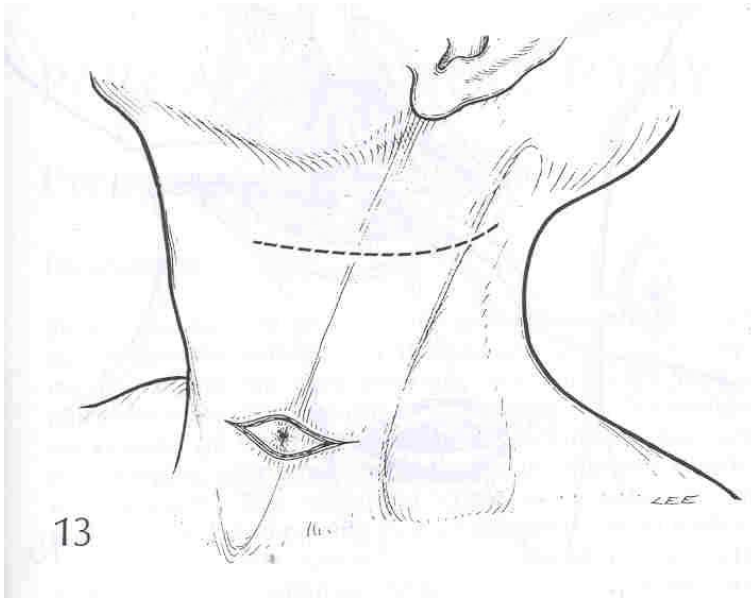


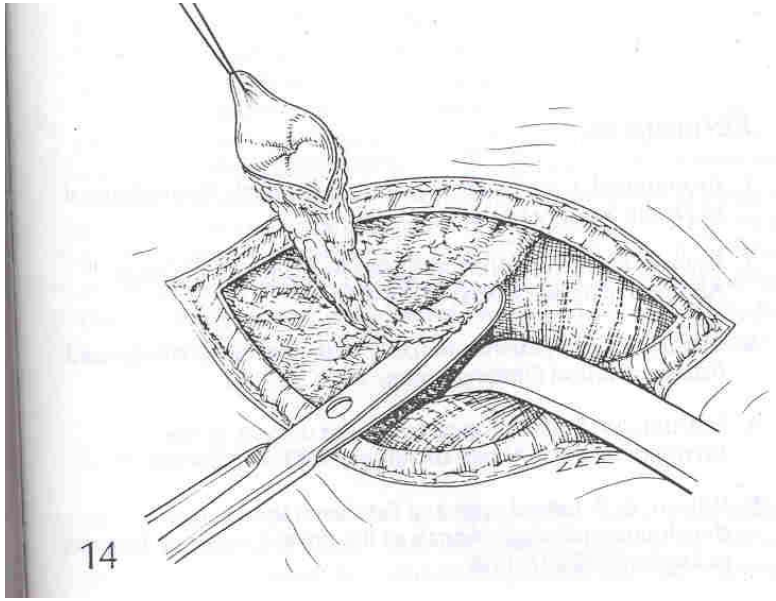


BRANCHIAL SINUS\FISTULA

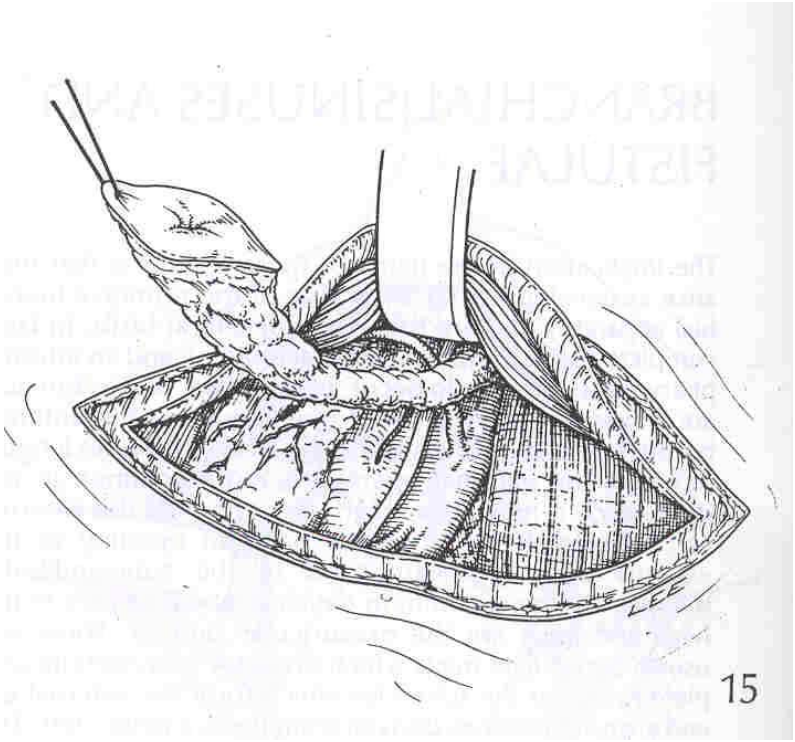
- 1ST ARCH FISTULA
  - INTERNAL OPENNING IN EAC AT BONY-CARTILAGINOUS JUNCTION
  - PRESENT AS DISCHARGING EAR
- 3RD ARCH FISTULA
  - INTERNAL OPENNING AT LATERAL WALL OF PFS
- 4TH ARCH FISTULA
  - INTERNAL OPENNING AT APEX OF PFS
  - ALMOST ALWAYS LEFT SIDED
  - PRESENT AS SUPPURATIVE THYROIDITIS

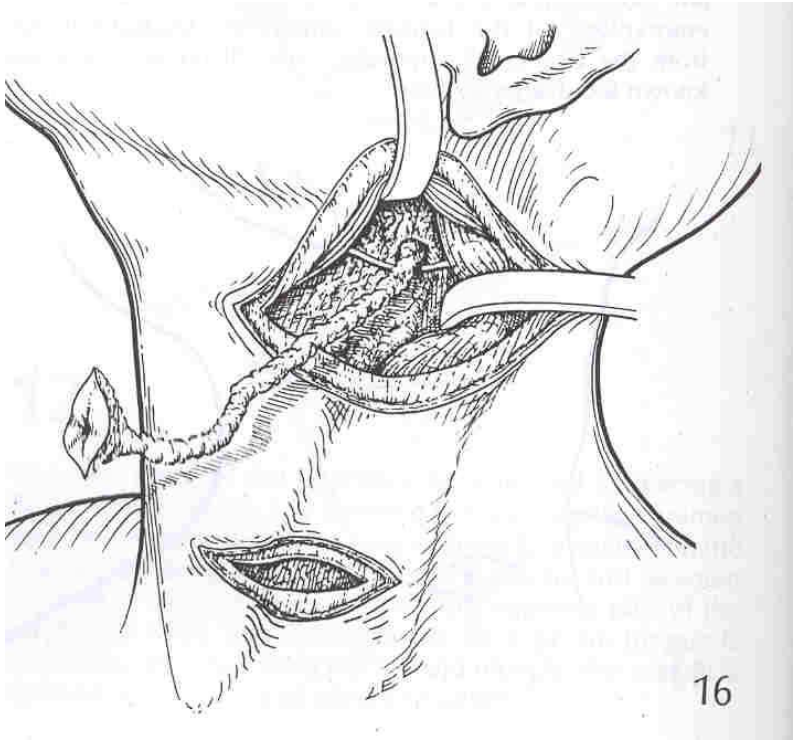
BRANCHIAL SINUS\FISTULA





BRANCHIAL SINUS\FISTULA



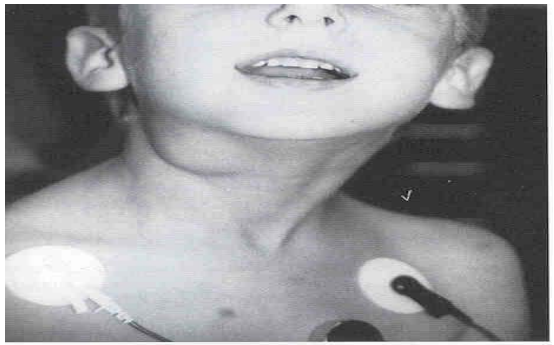


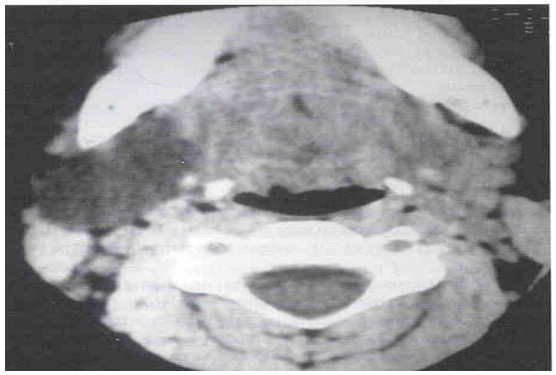
RANULA

- Cystic mass in the FOM\tongue\neck
- Arise due to obstruction of ducts of minor salivary glands or sublingual gland
- Caused by trauma or ductal anomaly
- Newer studies quote that increased intraoral pressure may be a cause

RANULA

- On examination
  - Bluish cystic swelling in the FOM or submental region
  - Nontender
  - Spherical in shape
  - Smooth surface with ill defined margins
  - Fluctuation +
  - Brilliantly translucent
  - Mucosa easily mobile over swelling





RANULA

- Treatment
  - Marsupialisation
  - Excision of the lesion alone
  - Excision of cyst along with sublingual gland
  - Simple ranula excised by transoral approach including sublingual gland of origin
  - Plunging ranula and recurrent cases are to be operated by transcervical approach

LARYNGOCELE

- Arises from enlargement of saccule of ventricle
- 3 types
  - External (30%)
  - Internal (20%)
  - Combined (50%)

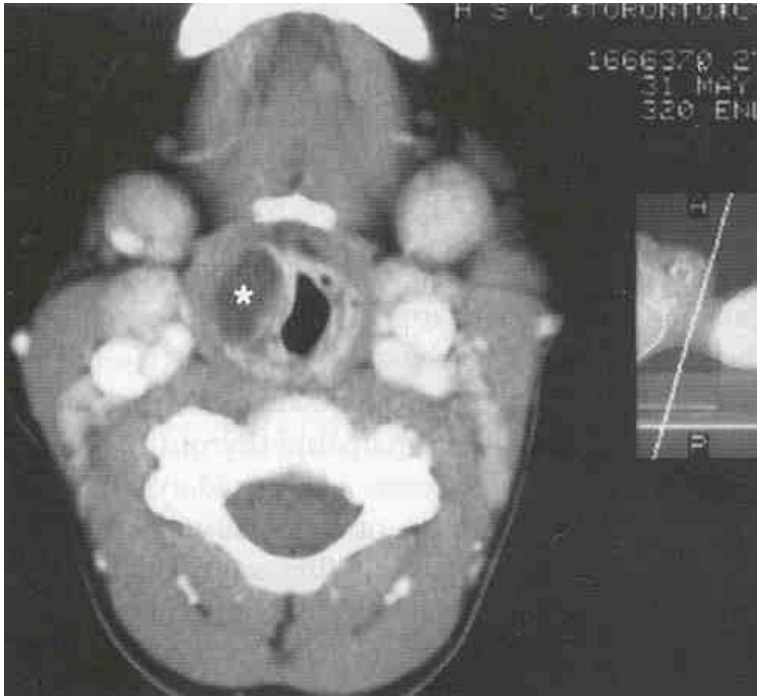
LARYNGOCELE

- Investigation

- Plain radiograph : stn (ap view)
  - ✓ Air filled sac
  - ✓ Upper boarder of thyroid cartilage is boarder line between a laryngocele and an enlarged sac
  - ✓ Mucocele : air fluid level (d\d laryngeal cyst)
  - ✓ Infected sac (d\d gas gangrene)

- CT scan : to know the extent and confirm diagnosis

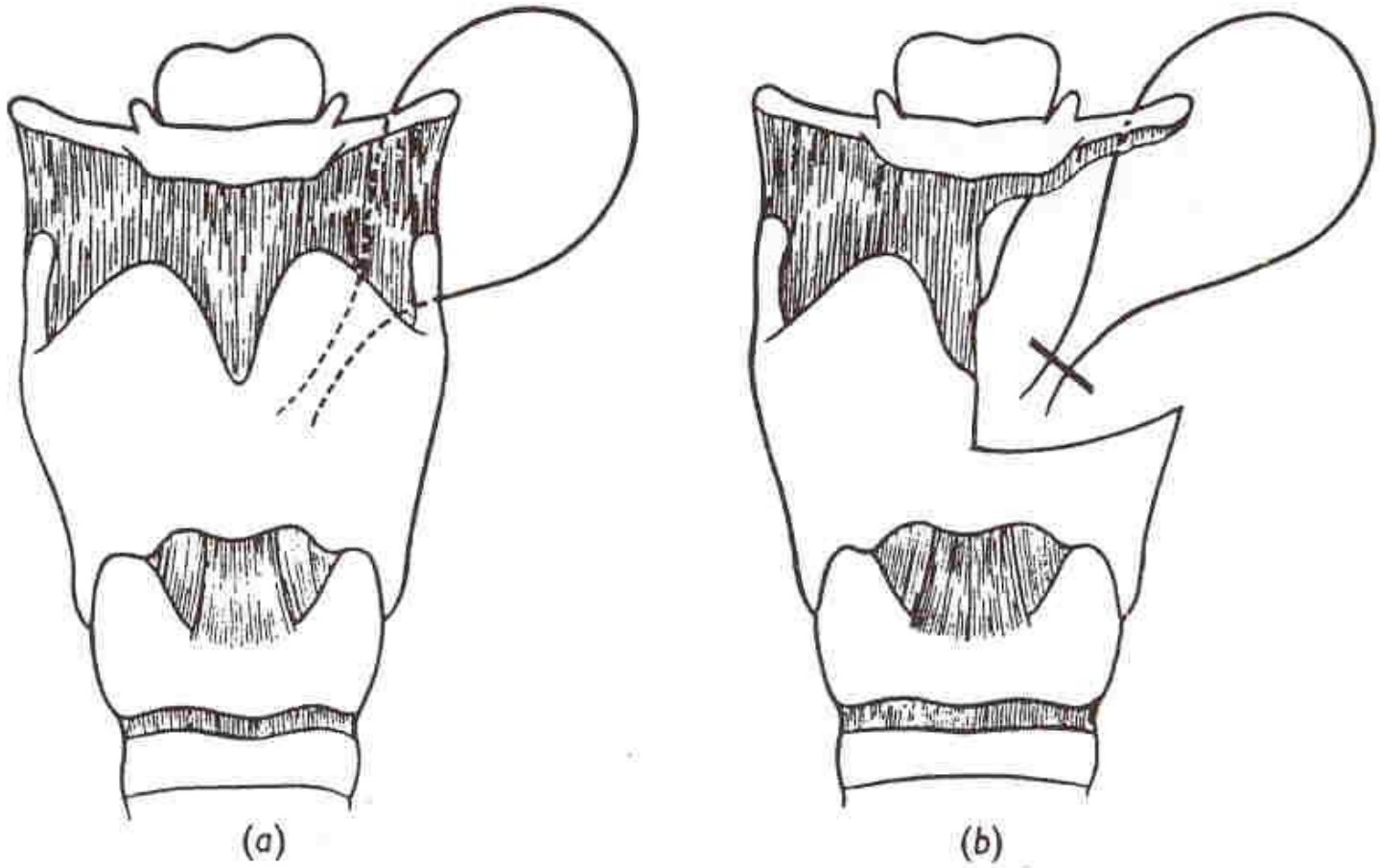
- D\L scopy : especially in u\l cases to r\o malignancy



LARYNGOCELE

- Asymptomatic : no treatment
- Internal : endoscopic marsupialisation – if recurrence – excision
- External : transcervical excision
- Pyocele : antibiotics --- excision

LARYNGOCELE



- Thank you