Neck

Alicja Rymaszewska
Clinical Ward of General and Oncological Surgery for Children and Adolescents
Anomalies of larynx and trachea
Lymphadenitis
Lymphangioma
Hemangioma
Dermoid cyst
Thyroglossal duct cyst
Branchial cleft cyst
Anomalies of larynx and trachea

tracheomalacia
esophageal atresia,
with tracheoesophageal fistula,
bronchial tree stenosis
congenital larynx diaphragm/Larynx atresia
Larynx cleft
Tracheomalacia is a condition characterized by flaccidity of the tracheal support cartilage which leads to tracheal collapse especially when increased airflow is demanded.
Tracheomalacia etiopathogenesis

The severity of the physiological mechanism:
- The trachea is a flexible structure, which is longer when straightening the neck and on the exhale, gets shorter when bending the neck and exhalation
Figs 110.26A and B: A. Normal trachea with cartilage to muscle ratio as 4.5:1, B. Trachea in primary tracheomalacia with cartilage to muscle ratio as 2:1.
Tracheomalacia

• Causes:
  – Primary
    • congenital laxity
    • cartilage hypoplasia
    • segmental or total lack of cartilage
  – Secondary:
    - pressure from outside the vessel,
    - esophageal atresia with fistula lower,
    - tracheostomy,
    - endotracheal tube sealing balloon
Oesophageal atresia (OA) with tracheoesophageal fistula, TEF, TOF

Esophageal atresia with tracheoesophageal fistula

In place of the fistula states tracheal cartilage hypoplasia that are not C-shaped, but is elliptical, which causes the membranous portion is too flaccid
Esophageal atresia - symptoms

- "Barking" cough,
- frequent infections and pneumonia,
- Apnea with cyanosis
- bradycardia during feeding
Esophageal atresia - diagnosis

bronchoscopy (without relaxation, dynamic test) - respiratory act, underdevelopment, ripple MRI, CT, formerly the image side of the chest (narrowing of the air-filled trachea)
Esophageal atresis - treatment

- along with the increase in child symptoms disappear (1-2y) exceptionally require surgical intervention - tracheostomy, segmental resection, aortopexy, stents, cartilage transplant
Aortopexia— aortic arch lining the rear wall of the bridge. There are constant connective connection between the aortic arch and the front wall lining trachea—causes pulling and stiffening of the front wall of the trachea, which prevents collapsing at expiration.
Bronchial tree stenosis

Figs 110.32A to C: Cantrell and Guld Classification of congenital tracheal stenosis

A. Segmental stenosis, B. Funnel-like stenosis, C. Generalized hypoplasia
Bronchial tree stenosis

• Total or almost total absence of the membranous part of the trachea

• Types of stenosis:
  – general tracheal hypoplasia
  – tracheal stenosis –funnel
  – tracheal stenosis -staple
Bronchial tree stenosis

• 1. congenital
  – defect in the construction of primary tracheal (part. cartilaginous and membranous )
  – coexisting with other defects (tracheoesophageal fistula type H , hypoplasia of the pulmonary vascular ring , bone defects , other defects of the tracheobronchial tree as duplication of the aortic arch and the departure of the bronchi middle lobe and lower right lobe of the left main bronchus , unilateral agenesis or hypoplasia of the lungs )

• 2. acquired - inflammatory , iatrogenic after tracheostomy , too long intubation
Bronchial tree stenosis

- Clinical symptoms:
  - stridor,
  - recurrent pneumonia,
  - type of obstructive respiratory failure with cyanosis and bradycardia feeding difficulties diagnosics: tracheobronchoskopia / graphy, KT-3D MRI.
Bronchial tree stenosis - treatment

• expanding balloon (newborns, premature babies, pre-treatment to the next stages, as a definitive treatment - very rarely)

• Segmental resection with subsequent fixation – cut out to 5 cartilages
– Tracheoplasticity (patch pericardium, dura mater, periosteum, synthetic cartilage of the ribs, tracheal autograft)
Other

• congenital larynx diaphragm/Larynx atresia
• Larynx cleft
• The lack of the trachea (bronchi connection with the larynx or esophagus)
  Tracheobronchial gap - oesophageal fistula - oesophageal Hemangioma, Lymphangioma
  (supraglottic, oppressive from outside)
Fig. 110.24: Classification of four types of cleft larynx (Benjamin and Inglis)
Lymphadenitis

- Lymphadenopathy or lymphadenitis
  - lymph nodes which are abnormal in size, number or consistency - swollen or enlarged lymph nodes.
  - Common causes of lymphadenopathy are infection, autoimmune disease, or malignancy
- Inflammation as a cause of lymph node enlargement is known as lymphadenitis. In practice, the distinction between lymphadenopathy and lymphadenitis is rarely made.
- Inflammation of the lymphatic vessels is also known as lymphangitis
Lymphadenitis

- Enlarged cervical lymph nodes greater than 1 cm
- Anamnesis: fever, weakness, night sweats, lethargy, tenderness of lymph nodes Nero's neck
Lymphadenitis

• Causes: - United Inflammatory bacterial (teeth, tonsils, sinuses, skin) - United Inflammatory virus (mononucleosis, EBV, CMV) - United Inflammatory and parasitic protozoal - toxoplasmosis systemic -(HD, NHL, AML, ALL, NBL, histiocytosis X) – Meta Neoplastic thyroid cancer, CNS tumors, mediastinal
Lymphadenitis
Lymphadenitis

• behavior
  – Antibiotic therapy for 2 weeks, oral or intravenous
  – Ultrasound of the neck and lymph nodes (cervical, axillary, inguinal, over and subclavian)
  – In the absence of therapeutic or other distressing symptoms (hepatosplenomegaly, fever)
    qualification for lymph node biopsy operational
  – In a next step diagnostics broadening
Lymphadenitis

• All enlarged lymph nodes above and subclavian qualify for biopsy immediately operational
Lymphadenitis
Lymphadenitis

• diagnostics
  – Laboratory (morphology, CRP, ESR, LDH, ferritin
  – imaging (ultrasound of the neck at the nodes - assessment of their character, bay, blood flow)
  – Surgical - WHOLE charge to assess lymph node histopathological
Lymphadenitis
Lymphadenitis

• Virchow's node
  – lymph node located near the lower part of the internal jugular vein on the left side. Topographically by Virchow node considered to be magnified in the bottom supraclavicular node or node lying between the muscles and felt inclined to supraclavival
  – Virchow's node importance stems from the extensive network of connections mainly axilla lymph nodes and thoracic lymph nodes. In the localized node metastasis of malignant tumors of the head and neck.
  – Virchow's node biopsy is sometimes referred to as a Daniel’s biopsy.
Lymphangioma

- malformations of the lymphatic system characterized by lesions that are thin-walled cysts;
- these cysts can be macroscopic, as in a cystic hygroma, or microscopic
- These malformations can occur at any age and may involve any part of the body, but 90% occur in children less than 2 years of age and involve the head and neck.
- These malformations are either congenital or acquired.
- Congenital lymphangiomas are often associated with chromosomal abnormalities such as Turner syndrome, although they can also exist in isolation.
- Lymphangiomas are commonly diagnosed before birth using fetal ultrasonography
- Acquired lymphangiomas may result from trauma, inflammation, or lymphatic obstruction.
Hemangioma

- benign and usually self-involuting tumor (swelling or growth) of the endothelial cells that line blood vessels
- characterised by increased number of normal or abnormal vessels filled with blood
- usually appears in the first weeks of life and grows most rapidly over the first six months.
- Usually, growth is complete and involution has commenced by twelve months.
- Half of all infantile hemangiomas have completed involution by age five, 70% by age seven, and most of the remainder by age twelve. In more severe cases hemangiomas may leave residual tissue damage. In infancy, it is the most common tumor
Dermoid cyst

- Cystic teratoma that contains an array of developmentally mature, solid tissues.
- It frequently consists of skin, complete with hair follicles, and sweat glands (clumps of long hair, pockets of sebum, blood, fat, bone, nails, teeth, eyes, cartilage, and thyroid tissue).
- Because it grows slowly and contains mature tissue, a dermoid cyst is almost always benign.
- The rare malignant dermoid cyst usually develops squamous cell carcinoma in adults; in infants and children it usually develops an endodermal sinus tumor.
Dermoid cyst

- 25% of the variation in the midline of the neck
- Lined with epithelium, may contain various skin appendages
- Symptoms: painless, superficial, subcutaneous nodules
- A short distance from the hyoid bone
- The change does not move when swallowing or sticking the tongue
  - They can grow - accumulation of sebum
- Diagnosis: Ultrasound
- Treatment: complete excision
Fistulas and cysts of the neck

• The origin of the congenital result of the incomplete closure during embryogenesis grooves and pharyngeal pouches
• Require surgery
• There are:
  – Remains of the ductus a disk - linguistic
  – Defects caused by abnormal development of the pockets, arches and gill slits
  – Epidermal and dermal cysts
  – Hemangiomas and vascular malformations
  – Integral gastrointestinal and cysts bronchogenenne
Fistulas and cysts of the neck

• DEFINITIONS
  – **Fistula** = an abnormal connection between two hollow spaces - cysts on the skin of the neck (external) or inside the mouth or ear canal (internal)
  – **Cyst** = spherical space surrounded with the contents of the fluid bag
  – **Sinus**
  – **Remains of chondral**
  – There are :
    • Cysts of the middle of the neck (= cord thyroglossal cyst)
    • Lateral neck cysts
Thyroglossal duct cyst

- **A thyroglossal cyst** is a fibrous cyst that forms from a persistent thyroglossal duct.
Thyroglossal duct cyst

- It usually presents as a midline neck lump (in the region of the hyoid bone) that is usually painless, smooth and cystic, though if infected, pain can occur. There may be difficulties in breathing, dysphagia (difficulty in swallowing), or dyspepsia (discomfort in the upper abdomen), especially if the lump becomes large.

- The most common location for a thyroglossal cyst is midline or slightly off midline, between the isthmus of the thyroid and the hyoid bone or just above the hyoid bone. A thyroglossal cyst can develop anywhere along a thyroglossal duct, though cysts within the tongue or in the floor of the mouth are rare.

- A thyroglossal cyst will move upwards with protrusion of the tongue.

- Thyroglossal cysts are associated with an increased incidence of ectopic thyroid tissue. Occasionally, a lingual thyroid can be seen as a flattened strawberry-like lump at the base of the tongue.
Thyroglossal duct

• Thyroglossal duct is a remnant of the embryological development of the thyroid gland.
• It combines the tongue of the blind hole pyramidal lobe of the thyroid, passes through the hyoid bone.
• Is lined with glandular epithelium.
Thyroglossal duct

• The most common malformation of the neck 75 %, 3x more often than cysts side)
• Clinical: elastic spherical creature in the midline of the neck during swallowing floating May be active thyroid parenchyma
• May become infected
Thyroglossal duct

• Treatment: removal along the central part of hyoid bone - Sistrunk operation method
Branchial cleft cyst

• A branchial cleft cyst is a congenital epithelial cyst that arises on the lateral part of the neck due to failure of obliteration of the second branchial cleft (or failure of fusion of the second and third branchial arches) in embryonic development.
Branchial cleft cyst

• developmental disorders – fissures (1%) is cysts around the mandibular angle of a line connecting the external auditory canal near the parotid gland, branches n. VII
• The residues II (95%) have a pinpoint mouth forwardly from muscle sternocleidomastoidoideus ½ the length of the bottom third of the muscle. The fistula from palatal tonsil or side wall of the pharynx to glosso-pharyngeal nervous and buccal.

• There are less than middle

• Are recognized in older children
• Residues III and IV fissura- very rarely, to recess pear
• symptoms: - Lumpy change nodule cyst, abscess fistula
• diagnostics: - USG, CT
• treatment- of operational always radical resection with removal of the entire cyst and fistula channel; in the case of infection - initial antibiotic therapy - (visualization of fistula- seam, methylene blue
Thank you