Swellings in the Neck

Definition: A neck swelling is any congenital or acquired swelling arising in the anterior or posterior triangles of the neck between the clavicles inferiorly and the mandible and base of skull superiorly.

Triangles of the Neck:

- The majority of surgical conditions which arise in the neck present as a swelling.
- Taking the history and performing the physical examination will reveal the most probable cause of the swelling from the following differential diagnosis

Diagnosis of a lump in the neck

History: Most patients with a lump should be able to tell about the lump by answering these questions:

1-When the lump was first noticed? Many lumps may exist for months, even years before the patient notices them.

2-What made the patient notice the lump?

I felt or noticed it while washing.

I had a pain & found the lump when i felt the site of pain.

Someone else noticed it & told me about it.

3-Has the lump changed since it was first noticed?

4-Does the lump ever disappear?

5-Has the patient ever had any other lumps?

Physical Signs:

Site size shape surface
Consistency fixation: deep/ superficial Pulsatility
compressibility transillumination bruit.

Differential Diagnosis

Submental Triangle:

1-Submental lymphadenitis

2-Ludwig's angina

3-Sublingual dermoid or lipoma

4-Cold abscess

Lumps connected with hyoid bone and thyroid cartilage

1-Goiter

2-Thyroglossal cyst

3-Carcinoma of the larynx

Suprasternal Notch
1-Retrosternal Goiter
2-Thymus gland enlargement
3-Cold abscess
4-Bursa

Swelling in the Lateral aspect of the Neck: Submandibular Triangle
1-Submandibular salivary gland
2-Submandibular lymph node enlargement
3-Deep ranula or retention cyst
4- Extension of swelling of jaw

Carotid Triangle
1-Carotid artery aneurysm
2-Carotid body tumor
3-Branchial cyst
4-Sternomastoid tumor

Posterior & Supraclavicular Triangle
1-Cystic hygroma
2-Lipoma
3-Pharyngeal pouch
4-Cervical rib
5-Supraclavicular lymph node

Swellings in the Skin & Subcutaneous tissues
1-Boil
2- Sebaceous cyst
3- Lipoma
4-Dermoid

Goiter:

- Any thyroid swelling, regardless of the cause, is called goiter (generalized enlargement of the thyroid gland).
- Iodine deficiency is the most common cause of thyroid swelling.
- The daily requirement of iodine is about 0.1-0.15mg.
- Iodine deficiency Goiter divided into two types: simple (non-toxic) and toxic goiter.

Other causes of thyroid enlargement include:
1-Neoplastic:
- benign tumor e.g. Adenoma

- malignant tumor. e.g. Papillary Carcinoma

2-Inflammatory:

- Autoimmune disease e.g. Hashimoto's disease
- chronic lymphocytic thyroiditis.
- Granulomatous thyroiditis: e.g. DeQuervain's thyroiditis.
- fibrosing: e.g., Riedel's thyroiditis.
- infective:
  - ✓ acute (bacterial thyroiditis),
  - ✓ chronic (tuberculous).

Investigations:

1-Laboratory test :

- Thyroid function tests: e.g. serum TSH, and thyroid hormones estimation, T3& T4. Auto antibodies.

2-Isotope thyroid scan: the gland is either

- "hot" (overactive)
- "cold" (underactive or nonactive)

3- Ultrasonography of the neck: the swelling in the gland is either

- Cystic goiter
- sold goiter

4-Fine needle aspiration cytology (FNAC):

- to examine the microscopic features of the cells.

Hypothyroidism: (myxedema):

Hypothyroidism is a common condition where the thyroid doesn't create and release enough thyroid hormone into your bloodstream.

is characterized by:

. bradycardia,
.dry skin and hair,
.tiredness
.weight gain
. cold extremities
.periorbital puffiness
. cold intolerance
. constipation

Treatment:

oral thyroxin0.1-0.2 mg daily.

Hyperthyroidism (thyrotoxicosis):

three clinical types are present:

1. Diffuse toxic goiter (Grave's disease), (primary thyrotoxicosis)
2. Toxic nodular goiter, (secondary thyrotoxicosis)
3. Solitary toxic nodule. (autonomous nodule)

Clinical features:

. heat intolerance
.excessive appetite
. emotional lability
.exophthalmos,
.agitation
.weight loss,
.palpitation,
.tachycardia
. lid lag/lid retraction,
.bruit (felt by palpation).

Treatment:

- Medical treatment: by antithyroid drugs. e.g. carbimazol (neomercazol)
- Surgical operation: total thyroidectomy or near-total thyroidectomy.
- Radioactive iodine. Radioactive substance to ablate the active gland.

Cervical Lymphadenopathy

Enlargement of the cervical lymph nodes is the most common cause of a swelling in the neck.

Causes:

- Infection: either acute infection as: tonsillitis, glandular fever, toxoplasmosis, or chronic infection as: tuberculosis.
- Primary reticulosis: e.g. Hodgkin's lymphoma or non-Hodgkin's lymphoma.
- Metastatic tumor: from the head, neck, chest and abdomen
- Sarcoidosis: is an inflammatory disease that affects multiple organs in the body, but mostly the lungs and lymph glands.

Tuberculous cervical lymphadenopathy

- Either bovine or human tubercle bacilli can enter the body through the tonsils, and from there move to the cervical lymph nodes.
- The upper deep cervical nodes are most often affected.
- The patient complains of gradual enlargement of the neck swelling with slight pain, sometime slow-grade fever,
- The glands are described as matted together.
- When an infected lymph node caseates(liquefies) it turns into an abscess.
- A tuberculous abscess has two compartments, one on each side of the deep fascia, connected by a small central track. This is called a Collar-stud abscess.
- The skin temperature over the abscess is normal because the process of caseation & pus formation is slow and does not stimulate excessive hyperemia—so it is called Cold abscess.

Neoplasm of the Lymph Nodes

Primary neoplasm:

The most common primary tumor of lymphoid tissue is the malignant lymphoma, which is divided into Hodgkin's and non-Hodgkin's lymphoma.

The common presenting sign is painless lump in the neck, which grows slowly.

Symptoms:

- ✓ malaise
- ✓ weight loss
- ✓ pallor
- ✓ fever
- ✓ rigor.

On examination:

the glands are not tender, they are ovoid, smooth and discrete. They are rubbery in consistency.

Secondary neoplasm:

- metastatic deposits of cancer cells in the cervical lymph glands are the commonest cause of cervical lymphadenopathy in adults.
- The primary cancer is in the buccal cavity (tongue, lips and mucous membrane) and larynx.
- The lump grows slowly and new lumps may appear.

On examination:

- the lymph node is not tender, and is smooth, discrete and a variety of sizes.

Thyroglossal Cyst:

- The thyroglossal duct begins at the foramen caecum at the base of the tongue and passes down to the isthmus of the thyroid gland.
- If a portion of this duct remains patent, it can form a thyroglossal cyst.

symptoms:

1- Painless lump in the midline of the neck anteriorly

2-pain, tenderness and increase in size occur only if the cyst becomes infected.

Test:
ask the patient to protrude the tongue repeatedly while you grasp the cyst between the thumb and the index, you will feel it Tugged upwards, as the tongue goes out.

Treatment :
- for a thyroglossal duct cyst is surgical removal.
- There is no known medical therapy with the exception of infected thyroglossal duct cysts, which require immediate antibiotic treatment.

Ludwig's Angina:
- This is a condition characterized by a brawny swelling of the submandibular region combined with inflammatory edema of the mouth.
- The infection is caused by a virulent streptococcal infection associated with anaerobic organisms and sometimes with other lesions of the floor of the mouth such as carcinoma.

Symptoms
- It leads to dysphagia and painful obstruction of the airway.
- If untreated cellulitis may extend beneath the deep fascial layers of the neck to involve the larynx, causing glottis edema and airway obstruction.

Treatment:
- antibiotics should be started using intravenous broad-spectrum antibiotic. Sometimes a surgical intervention needed by a curved submental incision.

Cystic Hygroma:
- This is a cystic swelling usually occur in the neck and may involve the parotid, submandibular, tongue and floor of the mouth.
- It presents in the neonate or in early infancy, occasionally may present at birth and be so large as to obstruct labor.
- The cysts are filled with clear lymph and lined by a single layer of epithelium. The characteristic feature of this lesion is that it is brilliantly translucent. Sometimes the cyst expands rapidly requiring immediate aspiration and even tracheostomy.

Treatment:
- complete excision of the cyst.
- Injection of sclerosing agent may reduce the size of the cyst.

Submandibular Salivary Gland:

Are paired salivary glands that lie below the mandible on either side.

The causes of gland swelling are:

1. Infection leading to sialadenitis, which is either acute or chronic.
2. Stone formation within the gland or its duct (sialolithiasis).
3. Tumors of the gland: are uncommon and usually present as a slow-growing painless swelling within the submandibular triangle. Only 50% of its tumors are benign.

Treatment:

- according to cause of the swelling, usually excision is needed in most conditions.

Parotid Disorders:

Mumps:

- Is the most common cause of acute painful parotid swellings and predominantly in children.
- The disease starts with a prodromal stage of 1-2 days, during which the patient experiences fever, nausea and headache. This followed by painful swelling of the parotid gland.
- A single episode of infection confers lifelong immunity.

Treatment of mumps is symptomatic.

Complications :

1. Orchitis
2. Oophoritis
3. Pancreatitis are usually rare, but are more likely to occur in adult.

Tumors of the Parotid:

- The parotid is the most common site for salivary tumors.
- Most tumors arise in the superficial lobe and present as slow-growing painless swellings in front of the ear or in the upper aspect of the neck.
- Some 80-90% of parotid gland tumors are benign, the most common benign are pleomorphic adenoma.

Diagnosis:

CT and MRI are the most useful imaging techniques

Treatment:
if the tumor is in the superficial lobe, superficial parotidectomy is preferable
if the tumor is in the deep lobe, radical parotidectomy is done.

Frey's syndrome (gustatory sweating):

- it results from damage to the autonomic innervations of the salivary gland with inappropriate regeneration of parasympathetic nerve fibers (the auriculotemporal nerve) that stimulate the sweat glands of the overlying skin.

Clinical features :include sweating and erythema over the region of the parotid gland by the smell or taste of the food.

Treatment:
Injection of botulinum toxin A has been reported as a safe and effective treatment option for patients with Frey's syndrome.

Sjogren's syndrome:

- Sjogren's (SHOW-grins) syndrome is a disorder of your immune system identified by its two most common symptoms — dry eyes and a dry mouth. The condition often accompanies other immune system disorders, such as rheumatoid arthritis and lupus.
- is an autoimmune condition causing progressive destruction of salivary and lacrimal glands.
- It is two types, primary and secondary,
- Primary type:
  1-more severe xerostomia, and keratoconjunctivitis sicca,
  2- wide spread exocrine gland dysfunction
  3-no connective tissue disorder
- Secondary type:
  1-male: female 1:10, middle age,
  2-underlying connective tissue disorder.

Treatment :is symptomatic

Branchial Cyst:

- A remnant of a branchial cleft, usually the second cleft. So, it is lined with squamous epithelium.
- The common presenting complaint is painless swelling in the upper lateral part of the neck.

- A severe throbbing pain, exacerbated by moving the neck and opening the mouth, develops if the contents of the cyst become infected and purulent. If this cyst opened a fistula will develop.

Treatment: by surgical excision