Differential Diagnosis of Head and Neck Swellings and it's management

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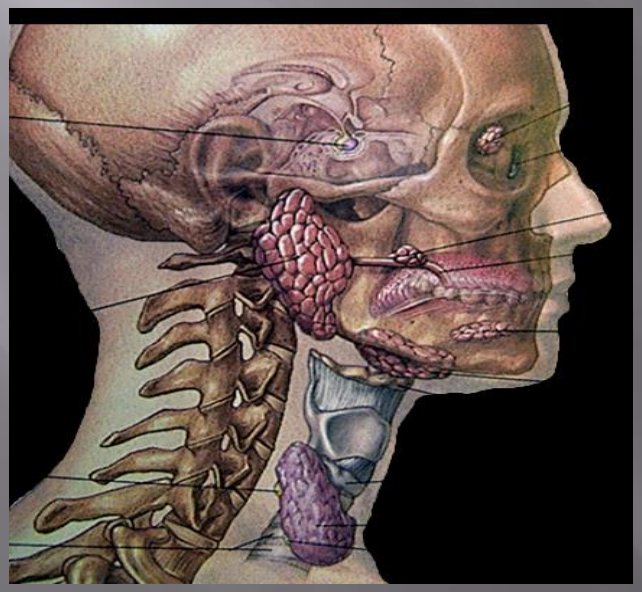
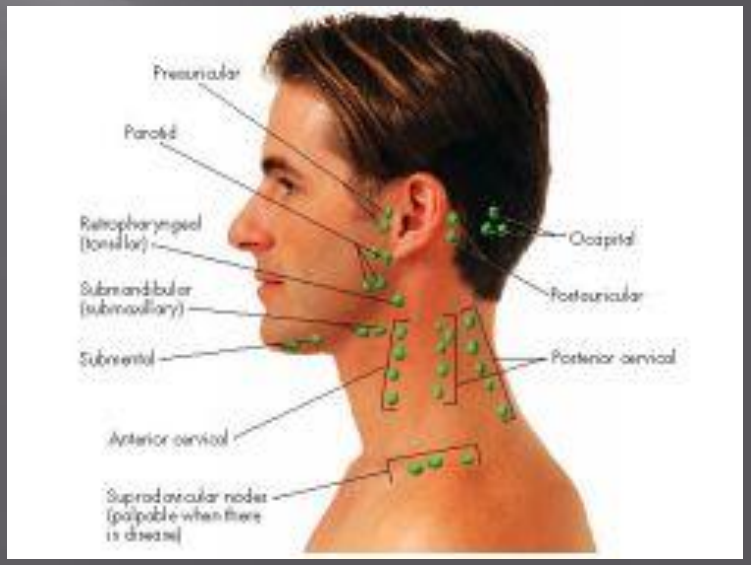
Head and Neck Swellings

- A number of masses may develop in the head and neck, and these may also be called swellings, growths, tumors, lumps, and bumps.
- While some head and neck masses are cancerous, many are not.
- However, it is important to investigate if any abnormal bump or swelling persists for more than two weeks.

Head and Neck – Complex region

- Numerous Lymph nodes are located in the Head & Neck region
- Salivary glands
- Thyroid gland, Parathyroid glands, Thymus gland etc.,





What Causes Head and Neck Swellings ?

(i) Cysts, thyroid masses, vascular masses, salivary gland masses e.t.c, can cause swellings in the head and neck.

(ii) Enlargement of lymph nodes in the head and neck can also cause a swelling.

(iii) Inflammatory / Infectious conditions can also cause lumps of the head and neck region.

(iv) Benign & Malignant masses can cause swelling of the head and neck.

Symptoms Associated with Neck Lumps

- Lump in the neck persisting for more than two weeks, especially if it is not associated with a cold, flu, or other infection.

- Cancers of the mouth, throat, voice box (larynx), thyroid, and some lymphomas can appear first as a painless, growing neck lump.

Symptoms Associated with Head & Neck Lumps

- Change in the voice including hoarseness that persists for more than two weeks
- Growth in the mouth
- Swollen tongue

  Blood in the saliva or phlegm
- Swallowing problems

Diagnosing Head and Neck Masses

- Examination of some masses / swelling may allow a physician to determine their cause based on location, size, and consistency.

- In other cases, however, additional tests may be required.

Diagnosing Head and Neck Masses

- Changes in the skin – It is important to examine changes in the skin that could indicate basal cell carcinoma, squamous cell cancer, and malignant melanoma.

- Persistent Ear Pain or ear pain while swallowing may be a symptom of infection or a growth in the throat.

Radiographic Investigation of the Head and Neck Masses

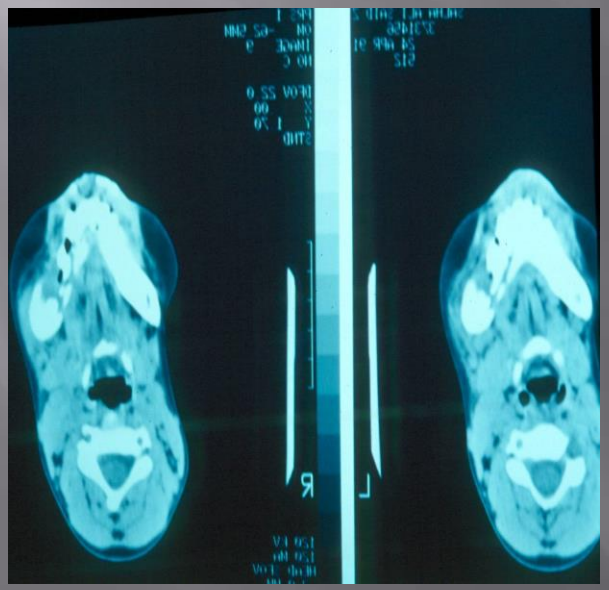
- **MRI – Magnetic Resonance Imaging** can clearly highlight soft tissue pathologies better than the C.T. Scan.

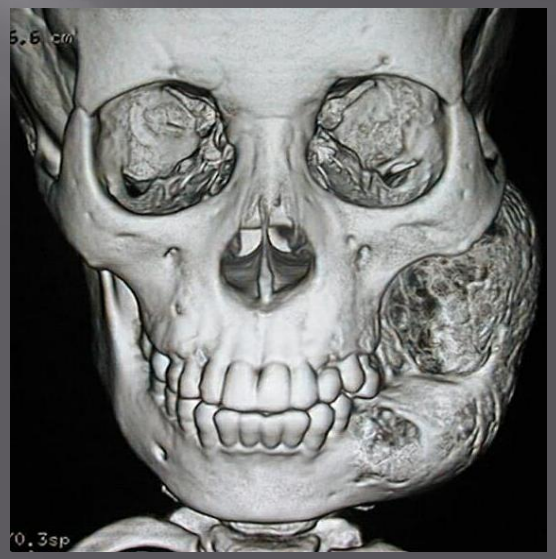
- It uses a magnetic field rather than x-rays (radiation).

Radiographic Investigation of the Head and Neck Masses

- **CT SCAN –** Computed tomography is less accurate than M.R.I for the soft tissue examination, but is very useful to locate bony tumors and their dimensions and extensions.

- C.T with contrast is used to enhance the visibility of abnormal tissue during examination.

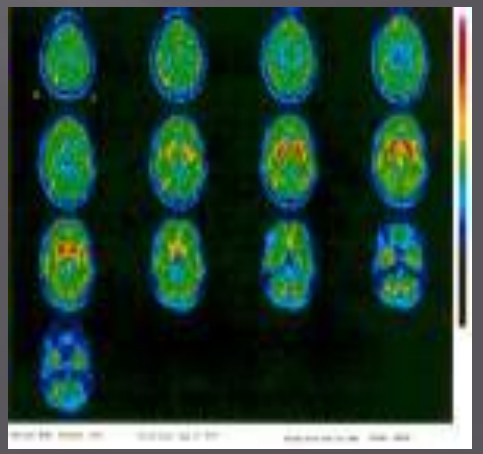




Radiographic Investigation of the Head and Neck Masses

PET (Positron Emission Tomography) and SPECT (Single Photon Emission Tomography) are useful after diagnosis to help determine the grade of a tumor or to distinguish between cancerous and dead or scar tissue.

They involve injection with a radioactive tracer.



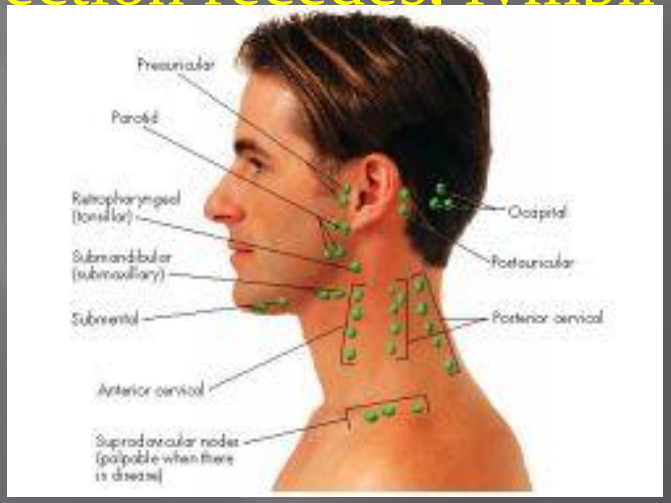
Diagnosing Head and Neck Masses

- **F.N.A.C – Fine Needle Aspiration Biopsy** is
- Safe
- Rapid
- Inexpensive
- Presurgical planning
- Avoids open biopsy

Head and Neck Swellings

(i) Enlargement of lymph nodes

- This is the most common cause of new neck swellings.
- Lymph nodes, which are part of the immune system, can enlarge when the body rallies to fight an infection.
- When the infection recedes, lymph swelling subsides as well.



(ii) Benign Swellings of the Head and Neck

- Benign Swellings / masses do not spread (metastasize) to surrounding tissue and are not cancerous.

- Nevertheless, benign masses can be serious if they impact nerves or exert pressure in the head and neck, and are therefore often removed surgically.

- These include cysts, thyroid masses, vascular masses, salivary gland masses, and others.

(ii) Benign Swellings of the Head and Neck

- **Congenital/ Developmental Cysts**

(i) Thyroglossal cyst

(ii) Branchial cyst

(iii) Sebaceous cyst

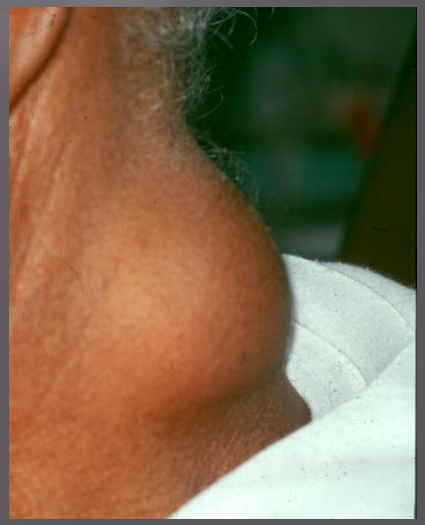
(iv) Dermoid cyst

Developmental Cyst - ThyroglossalCyst

- Most common congenital neck mass
- Arrested migration of thyroid
- 50% present before age 20
- Midline (75%) or near midline (25%)
- Elevates on swallowing/protrusion of tongue
- Surgery is the only treatment.

Developmental Cyst - Branchial Cyst

- Remnants of incompletely obliterated branchial clefts/pouches
- Located anterior & deep to sternomastoid muscle.
- Painless swelling
- Young adults
- M = F ratio
- Unilateral, 75%of cases on left side.



Developmental Cyst - Branchial Cyst

- Cystic mass anterior to SCM, below mandible
- May get infected
- Persistence of 2nd branchial cleft
- May have small sinus tract into tonsillar fossa
- Contains cholesterol crystals

Surgical Management of the Branchial Cyst

Developmental Cyst Sebaceous cyst

- A sebaceous cyst is a a benign, harmless growth that occurs under the skin and tends to be smooth to the touch.
- Ranging in size, sebaceous cysts are usually found on the scalp, face, neck and ears.
- They are formed when the release of sebum, a medium-thick fluid produced by sebaceous glands in the skin, is blocked.

Developmental Cyst Sebaceous cyst

- Unless they become infected and painful or large, sebaceous cysts do not require medical attention or treatment, and they usually go away on their own.

- If they become infected, the physician may drain the fluid and cells that make up the cyst wall. Or, if the cyst causes irritation or cosmetic problems, it may be removed through a simple excision procedure.

Dermoid cyst

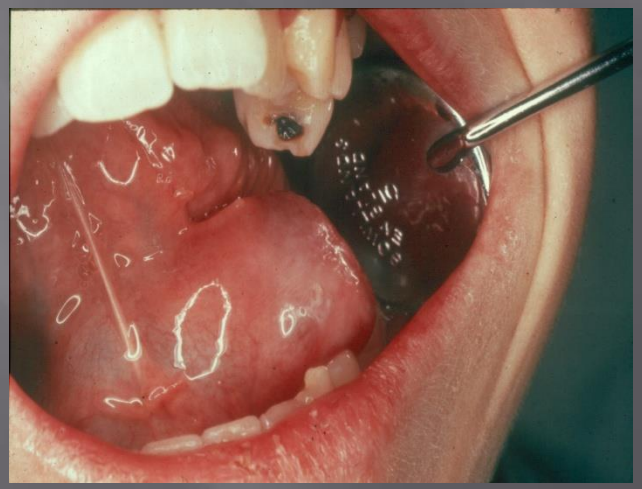
A dermoid cyst is a congenital defect (present from birth) that occurs during embryonic development when the skin layers do not properly grow together.

A dermoid cyst is lined with epithelium, which contains tissues and cells normally present in skin layers, including hair follicles, sebaceous (skin oil), and sweat glands.

These glands and tissues secrete their normal substances which collect inside the cyst, causing it to grow and enlarge.

Ranula

- Ranula presents as a Cystic swelling in the floor of mouth.
- It occurs as a mucous extravasation from sublingual salivary gland.•
- May extend through the mylohyoid muscles into the neck- **“Plunging Ranula”**
- Surgical treatment is by removal of the Sublingual gland associated with the swelling.



(iii) Inflammatory Lumps of the Head and Neck

- Cervical Adenitis secondary to acute URTI-tonsillitis, EBV etc- are common and is detected from history.

Inflammatory Lumps of the Head and Neck

- Chronic inflammatory disease like Tuberculosis, Sarcoidosis, Cat Scratch disease.

- These disease processes have to be treated medically. For example, Patients with tuberculous lymphadenitis should undergo anti-tuberculosis drug therapy.

Surgical Management of Infections in the Head and Neck Region

Submandibular Abscesses, Ludwig's Angina occur secondary to odontogenic infections and Parotid or submandibular gland abscesses etc, need to undergo incision and drainage under G.A, along antibiotic treatment.

(iv) Neoplastic Masses of the Head and Neck

- Neoplastic Masses can be classified into two types (i.e) benign and malignant masses.

Neoplastic Masses of the Head and Neck

Benign Head and Neck Masses

- •Any structure of the head and neck may be involved.
- Skin, SC Tissue, fat, nerve muscle, blood vessel can be affected.
- For example, Lipoma (Fat), Fibroma (Fibrous tissue), Hemangioma(Blood vessel), Neuroma (Nerve).

Benign Head and Neck Masses

- Benign tumors of the Salivary gland like Pleomorphic adenoma, Warthins tumour etc., can present with a significant head and neck swelling.

- Multinodular goitre, cyst, adenoma can affect the Thyroid glands.

Malignant Masses of the Head and Neck

Malignant Masses of the Head and Neck

- Malignant masses can occur anywhere in the upper aero-digestive tract.

- May also arise from skin and soft and hard tissues of head and neck-SCC, melanoma

- It can occur from the salivary glands, thyroid gland, parathyroid gland.

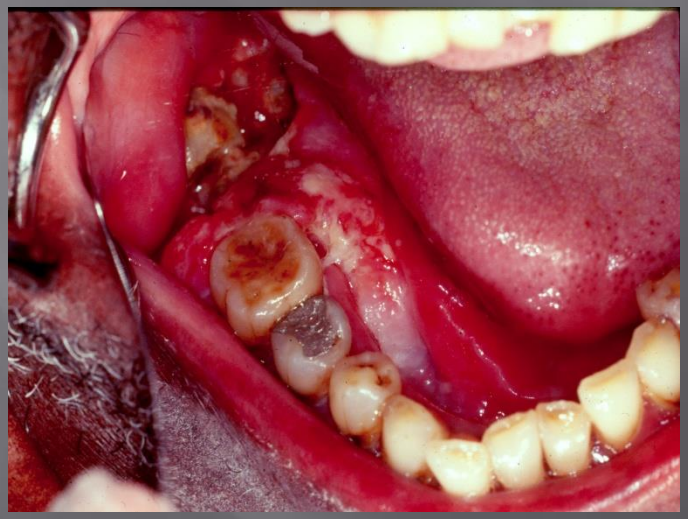
Malignant Swellings of the Head and Neck

- Head and neck masses are malignant, if they spread to surrounding tissue. In the head and neck, tumors may be either *primary* or *secondary*.

What are primary tumors?

- Primary tumors originate in the head or neck itself, including the thyroid, throat, larynx, salivary gland, brain, or other locations.

- Primary tumors of the head and neck typically spread to the lymph nodes in the neck.



What are secondary tumors ?

- Secondary cancers are tumors that have spread from primary tumors in other parts of the body to the head or neck.
- Most often, secondary tumors of the neck originate in the lung, breast, kidney, or from melanomas in the skin.
- Cancers in the nasal and sinus passages may spread to the brain through nerves in the skull.

Head and Neck Cancer- Squamous Cell.Carcinoma

- 6th most common cancer worldwide
- HNSCC ~ 5% all cancers
- S.C.C most common upper aero digestive tract malignancy
- Smoking
- 50% HNSCC occur in oral cavity
- Management presents considerable functional and aesthetic problems
- Multidisciplinary approach imperative

Treatment of Head and Neck - Squamous Cell Carcinoma

- Removal of Primary tumor + cervical nodes
- Surgery / Radiation / Chemotherapy
- Sometimes palliation
- Cervical neck disease reduces survival by 50%

Lymphomas

- Lymphomas are malignant cell infiltrations of the lymphatic system.

- Once a malignancy begins in one part of the lymph system, it often spreads throughout the rest of the system before it is detected.

Lymphomas

- Lymphomas share similar symptoms such as painless swelling of the lymph nodes, fever and fatigue.

- Broadly, they are classified as either **non-Hodgkin's** and **Hodgkin's.**

Summary

- Head and Neck lumps are not that uncommon
- Usually benign in kids
- Don’t ignore adult neck lump especially when cause not apparent.
- History and Examination, radiology, FNA
- Surgical, Medical, Chemotherapy and radiation treatment options are available for malignant masses.