Head & Neck I, II and III

Objectives:

I took these objectives from our course schedule: مب من سلايدز الدكتور

Head & Neck I:

- Neck masses (Intro, anatomy, diagnosis, differentials and examples).
- Thyroid (anatomy, nodule, cancer, surgery & complications)

Head & Neck II:

- Salivary gland (anatomy, physio, infection, autoimmune and tumors).
- Tumors of oral cavity (Intro, pre-malignant lesions, leukoplakia, malignant lesions, SCCA)

Head & Neck III:

- Tumors of pharynx (nasopharyngeal ca, oro & hypopharyngeal ca)
- Tumors of larynx (Intro, laryngeal papillomatosis, ca larynx)

Resources: **F1** Doctor's slides

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Head and Neck I & II

Part I&II are needed for your exam and real life, part 3 is needed for your exam only, unless you want to become an ENT resident.

Introduction

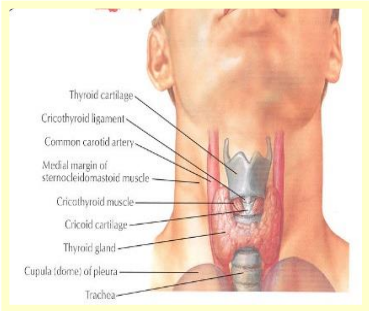
- Common clinical finding
- All age groups. The younger the age the more toward inflammatory mass, the older the more toward neoplastic.
- Very complex differential diagnosis
- Systematic approach essential. The systematic approach we do for each single patient is: physical examination and order investigations.

Anatomical Considerations

NECK:

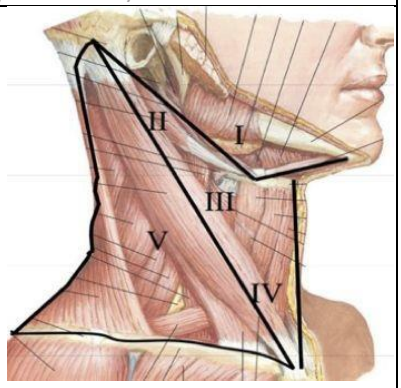
1. Prominent landmarks

- Anatomical landmarks: Angel of mandible and Clavicle and mastoid tip. The ONLY obvious landmarks in every single patient including obese. Always look for bones!
- So, make sure you locate them before starting your examination.
- In the midline of the neck, there is a cricoid. Anything above the cricoid is called upper midline (your DDx will be B/W the carotids.
- Anything below the cricoid to the Suprasternal notch, we call it lower Midline (DDX related to thyroid lobes).



2. Triangles of the neck

- Anterior Triangle **Divided into:** contains the carotid vessels, thyroid gland and lymph nodes



- **Submental triangle**: bounded by both anterior bellies of digastric and hyoid bone.
- **Submandibular triangle**: bounded by anterior and posterior bellies of digastric and inferior border of mandible.
- **Carotid triangle**: bounded by sternocleidomastoid, anterior belly of omohyoid, and posterior belly of digastric.
- **DDx in anterior tringle:**
- Congenital:

Branchial cyst, Thymic cyst, Hemangioma, Torticollis

- Acquired

Benign: Lipoma, Neurofibroma, Carotid body tumor, Salivary G lesions

- Posterior Triangle
  - It contains lymphatic level 5. Divided into:
  - Occipital triangle.
  - Subclavian triangle.

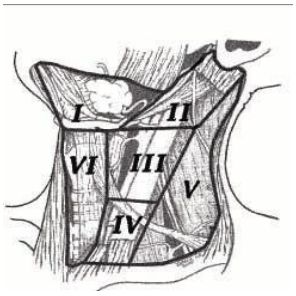
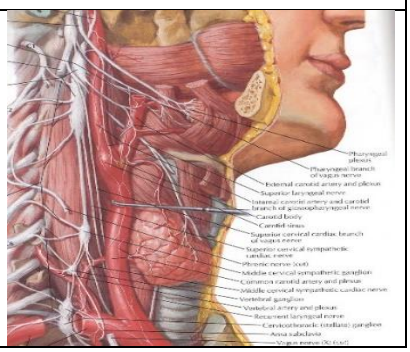
DDx in posterior tringle:

- Congenital:

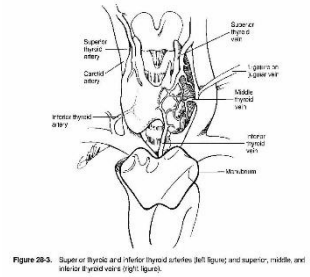
Lymphangioma (cystic hygroma)

- Acquired:

Lymphadenitis, Lymphoma, Metastatic ca.

3. Lymphatic levels Demarcate which area in the neck is drain to. The higher the lymph node the higher the area, for example: nasopharynx & oropharynx will drain to level 2-3, thyroid drain to level 4-5.	• Level 1: Between the 2 bellies anterior and posterior of digastric muscle and hyoid bone (in submental and submandibular triangle). Anything in this level just considered it "High below the mandible" at the region of submandibular gland. • Level 2: anything anterior to sternocleidomastoid Deep cervical chain (from skull base to hyoid bone). Basically, is the "Jugular digastric" you will feel it immediately behind the angle of mandible, but anterior to the SCM high up. • Level 3: anything anterior to sternocleidomastoid Deep cervical chain (between hyoid bone to the omohyoid muscle). It's at the middle of anterior triangle behind the angle of mandible. • Level 4: anything anterior to sternocleidomastoid Deep cervical chain (below omohyoid muscle). Lower at the neck just above the sternal notch. • Level 5: Posterior triangle (from SCM to the trapezius muscle). Level 5 was described previously as posterior triangle just behind the sternocleidomastoid but know level 5 is anterior neck between the two-strap muscle anteriorly, anterior to the trachea and larynx. 
4. Carotid bulb	• Sometimes the carotid is prominent and appears as a pulsating mass it is just a normal vibration nothing to worry (carotid bulb) is an anatomical landmark always located at • the level of hyoid bone, so if you look for carotid body tumor it must be around this area. It's extremely rare tumor. 

THYROID:

Generally speaking	- Shield shape, may be H or U shaped. - 2 lateral lobes Connected by an isthmus - Isthmus at level of 2nd to 4th tracheal cartilages (may be absent)  **Lobes of thyroid:** • Each lobes measures approx 4cm high, 1.5cm wide, 2cm deep – Lobes have superior and inferior poles: • Superior pole: may extend as far as the oblique line of the thyroid cartilage • Inferior pole: may extend inferiorly as far as the 5th or 6th tracheal rings
Arterial Blood Supply:	• Superior thyroid artery (STA) – 1st branch of ECA – Followed by SLN until superior pole – Anastamoses with contralateral STA • Inferior thyroid artery (ITA) – From thyrocervical trunk (1st part of subclavian at 1st rib) 
Venous Drainage:	• 3 pairs of veins – Superior thyroid vein Parallels course of STA on ant surface thyroid Ascends to drain into internal jugular vein (IJV) – Middle thyroid vein Direct lateral course from thyroid to IJV Shortest of 3 veins – Inferior thyroid vein

	Ant surface thyroid (opposite of ITA) Vertical downward course to brachiocephalic v.

SALIVRY GLANDS:

Generally speaking	6 major salivary glands: 2 parotids, 2 submandibular, 2 sublinguals. '100 •s of minor salivary glands lining the upper aerodigestive tract • Main job.... Saliva!!!!

Parotids:
- Serous cells only
- On side of the face, deep to skin, subcutaneous tissue, superficial to the masseter.

Stensen's duct begins at anterior border of the gland 1.5cm below the zygoma.
- Traverses the masseter 5-6cm, pierces the buccinator.
- Opens in mouth lateral to 2 nd upper molar.
- Tail of parotid extends superficial to SCM.

Submandibular gland
- Mucous and serous cells.
- Submandibular triangle: anterior and posterior bellies of digastric and inferior margin of the mandible.
- Medial and inferior to the mandible.

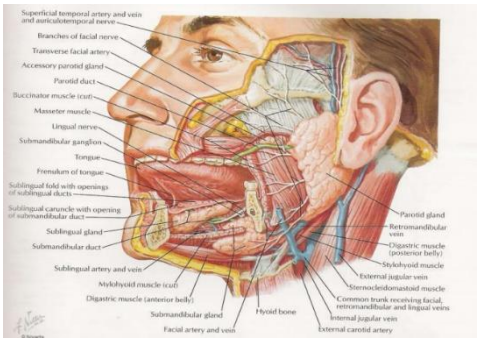
Wharton's duct
- Exits the gland from the medial surface travels b/w the hyoglossus and mylohyoid muscles enters the genioglossus muscle and opens into mouth just lateral to lingual frenulum.
- CN XII inferior to the duct and lingual nerve is superior to the duct.

Sublingual glands
- Mucous secreting.
- Just below the floor of mouth mucosa.
- Bordered by genioglossus/hyoglossus medially, mandible laterally, and mylohyoid inferiorly.
- Wharton's duct and lingual n. travel b/w SL gland and genioglossus muscle.
- No fascial capsule.

Ducts of Rivinus (~10) along the superior aspect of the gland open into the mouth along sublingual fold in the floor of mouth.
- Innervated by the PNS/SNS systems in the same way as the SM gland.

Minor salivary glands
- Either mucous serous or both
- 600-1000 /person
- Each gland has its own duct
- Found most commonly in buccal, labial, palatal, and lingual regions

Role of saliva:
- Lubricates
- Moistens, help with mastication
- Cools hot food
- Buffers chemicals
- Cleans the mouth (lavage)
- Protects mucosa
- Prevent dental caries
- Antibacterial (lysozyme, IgA, peroxidase)
- Homeostasis

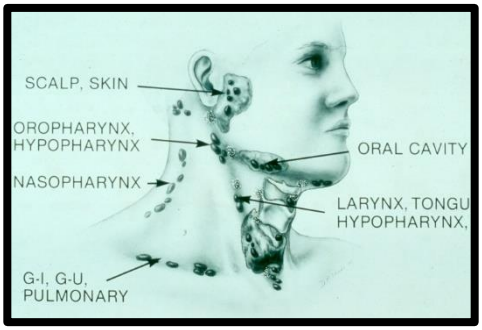


Salivary flow rates
- ~1000-1500 ml/24hrs, or 1 ml/min.
- Unstimulated 69% of flow from SM gland, 26% parotid, 5% SL.
- Stimulated parotid and SM.
- Minor glands independent of stimulation usually account for 7-8% total flow.

General Considerations

1. **Patient age**
   - Pediatrics (0 – 15 years): mostly benign.

- Young adults (16 – 40 years): similar to pediatric
- old adults (>40 years): High risk of malignancy



2. **Location**
    - Congenital masses: consistent "specific" in location. FOR EXAMPLE: branchial cyst is in the upper left.
    - Metastatic masses: key to primary lesion.
3. Metastasis Location according to Various Primary Lesions (See pic on your right): The parotid area will drain the skin of temporal and the scalp, upper part of neck drain oropharynx and hypopharynx, level1 drain the oral cavity, if you have a pt with supraclavicular lymphnode or node of Virchow's it drains anything below the clavicle (prostate of ovaries).
    - Submental lymph nodes (level I): examine the oral cavity, anterior nasal cavity, mouth floor, buccal area, and gums.
    - Level II: oral cavity, nasal cavity, naso/oro/hypopharynx, larynx, and parotid gland.
    - Level III: Naso/oro/hypopharynx, larynx, and oral cavity.
    - Level IV: Hypopharynx, larynx, and thyroid.
    - Posterior triangle (Level V): think of Naso/oropharynx, cutaneous structures of the posterior scalp and neck.
    - Level VI: think of thyroid.

Diagnostic Steps

1. **History**
    - Developmental time course (Onset)
    - Associated symptoms (dysphagia, otalgia, voice). If a pt has a neck mass, otalgia, dysphagia and voice change what does that mean? Compression. If you have a malignancy on the nasopharynx, it will present with ear pain, epistaxis and neck mass. If you have a malignancy of the larynx, pt will have voice change, sometimes dysphagia and neck mass. So it correlates with the primary site or pathology.
    - Personal habits (tobacco, alcohol)
    - Previous irradiation or surgery.
2. **Physical Examination**
    - Complete head and neck exam (visualize & palpate).
    - Emphasis on location, size, tenderness "if tender it means inflammatory mass", solitary or multiple, mobility and consistency the harder the mass the more toward malignancy.

Empirical Antibiotics

Scenario: A patient came with few days history of a painful right upper neck mass, fever, recent dental infection. Examination showed tender mass, in level 2, firm, multiple lymph nodes. This means infection and at this stage I don't need further investigations because you need to use your brain to help you to reach a diagnosis.

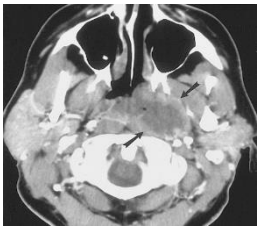
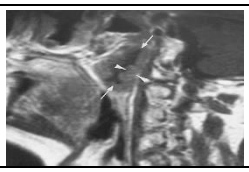
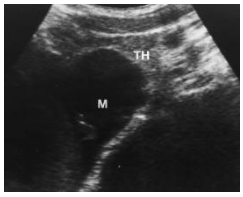
1. Inflammatory mass suspected
2. Two weeks trial of antibiotics

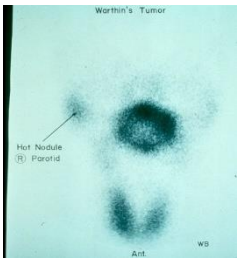
3. Follow-up for further investigation. If you gave the pt an antibiotic you need to bring him/her back, to make sure it's not their 1st presentation of malignancy. If the patient is improving that proves you're right and no need for further investigations, but if the pt wasn't improving you need further investigations.

Diagnostic Tests

We always order blood test: CBC, Coagulation prof, KFT. Why KFT in a pt with neck mass? Bec if you're planning to do imaging studies with contrast you need to check that kidneys are well. We order cytology only if we suspected malignancy.

1. **Fine needle aspiration biopsy (FNAB)**	• Standard of diagnosis. Either done with US or blindly.
	• Indications:
	  • Any neck mass that is not an obvious abscess "inflammatory", going back to the scenario written above, if the patient came back to you with no improvement what would you do? FNAB!!!!
	  • Persistence after a 2 week course of antibiotics
	  • Small gauge needle 22-24 gauge
	  • Reduces bleeding
	  • Seeding of tumor – not a concern
	  • No contraindications (Unless vascular like aneurysm, you do CT with contrast and make sure it's not vascular otherwise hematoma will happen, but if you press it, it will be fine)
	  • Proper collection required take multiple samples
	  • Minimum of 4 separate passes
	  • Skilled cytopathologist essential
	  • On-site review best
	  • Takes about 2-5 days to show the results.
	 

2. **Computed tomography (CT)**	Take it like this: for thyroid we always start with US. **MCQs:** WHAT is the imaging of choice for any mass?? IF NOT IN THE THYROID, WE DO CT SCAN WITH CONTRAST. • Distinguish cystic from solid • Extent of lesion • Vascularity (with contrast) • Detection of unknown primary (metastatic) • Pathologic node (lucent, >1.5cm, loss of shape) • Avoid contrast in thyroid lesions • Pic shows a mass in the nasopharynx, how do we confirm it's a nasopharyngeal carcinoma? **TAKE a POIPSY.** 
3. **Magnetic resonance imaging (MRI)**	• Similar information as CT • Better for upper neck and skull base • Vascular delineation with infusion 
4. **Ultrasonography**	• Used in thyroid, pregnant lady and children. • Less important now with FNAB • Describes the nature of a mass Solid versus cystic masses • Congenital cysts from solid nodes/tumors • Noninvasive (pediatric) 

5. **Radionucleotide scanning** Not done anymore	• Salivary and thyroid masses • Location – glandular versus extra-glandular • Functional information • FNAB now preferred for for thyroid nodules • Solitary nodules • Multinodular goiter with new increasing nodule • Hashimoto's with new nodule 

Nodal Mass Workup in the Adult:

If you have a neck mass and the CT scan confirms it's multiple lymph node 3-4 cm, what's the next step to confirm the diagnosis? Do FNAB to determine the etiology -> FNA showed SCC, what would you do after? You need to know the source so -> do proper examination to the oral cavity, nasopharynx and hypopharynx -> CT chest & abdomen (most of the times you find the primary In the head and neck area so either you do specific imaging for the head and neck area or you examine the pt under GA in the OR (Panendoscopy) to look for the source of the dis.

- Any solid asymmetric mass MUST be considered a metastatic neoplastic lesion until proven otherwise
- Asymptomatic cervical mass – 12% of cancer
- ~ 80% of these are SCCa
- There are symptoms which tell you that you're dealing with neoplasm like: Ipsilateral otalgia with normal otoscopy – direct attention to tonsil, tongue base, supraglottis and hypopharynx
- Unilateral serous otitis – direct examination of nasopharynx

1. Panendoscopy with Directed Biopsy	Let's say FNA showed SCC -> do CT -> then do panendoscopoy which means: take pt to OR and do inspection under GA for the naso/oro/hypopharynx and esophagus -> if u see suspicious area take biopsy to look for the primary cause. • FNAB positive with no primary on repeat exam. FNAB equivocal/negative in high risk patient • All suspicious mucosal lesions • Areas of concern on CT/MRI • None observed – nasopharynx, tonsil (ipsilateral tonsillectomy for jugulodigastric nodes), base of tongue and piriforms • Synchronous primaries (10 to 20%) • Unknown primary • University of Florida (August, 2001) • Detected primary in 40% • Without suggestive findings on CT or panendoscopy yield dropped to 20% • Tonsillar fossa in 80% If you have a lymph node with FNA (+) FOR SCC -> you checked the tonsils and found it's SCC what does that indicate? **Tumor in the tonsil with metastatic lymph node.**

2. Open excisional biopsy	• Only if complete workup negative. CT (-), FNA (-), panendo (-) -> Go for open biopsy + If PNAB shows Lymphoma.
	• Occurs in ~5% of patients
	• Be prepared for a complete neck dissection
	• Frozen section results (complete node excision):
	  - Inflammatory or granulomatous (ex: TB) – culture
	  - Lymphoma or adenocarcinoma – close wound.

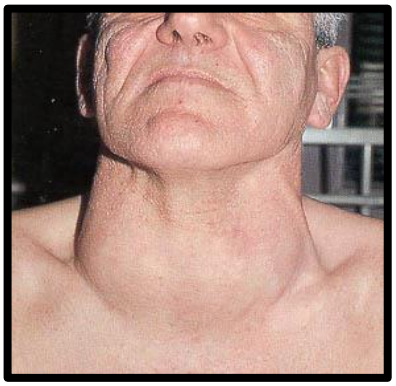
Differential Diagnosis ->

Table 1. Common Neck Masses

Neoplastic	Congential/Developmental	Inflammatory
Metastatic Unknown primary epidermoid carcinoma	Sebaceous cysts	Lymphadenopathy
Primary head and neck epidermoid carcinoma or melanoma	Branchial cleft cysts	Bacterial
Adenocarcinoma	Thyroglossal duct cysts	Viral
Thyroid	Lymphangioma/hemangioma	Granulomatous
Lymphoma	Dermoid cysts	Tuberculous
Salivary	Ectopic thyroid tissue	Catscratch
Lipoma	Laryngocele	Sarcoidosis
Angioma	Pharyngeal diverticulum	Fungal
Carotid body tumor	Thymic cysts	Stialadenitis
Rhabdomyosarcoma		Parotid
		Submaxillary
		Congenital cysts
		Throtrast granulomas

Primary Tumors

1. Thyroid mass



- **Leading cause of anterior neck masses**
  - **Children**
    - Most common neoplastic condition
    - Male predominance
    - Higher incidence of malignancy
  - **Adults**
    - Female predominance
    - Mostly benign
- **Lymph node metastasis**
  - Initial symptom in 15% of papillary carcinomas
  - 40% with malignant nodules
  - Histologically (microscopic) in >90%
- **FNAB has replaced US and radionucleotide scanning**
  - Decreases # of patients with surgery
  - Increased # of malignant tumors found at surgery
  - Doubled the # of cases followed up
  - Unsatisfactory aspirate – repeat in 1 month

Start with 1. **history** to know if you're dealing with goiter (long standing painless) or neoplasm (swelling with pain, progressive dysphagia, voice change and multiple neck masses) **-> 2. examine (site, size, consis) -> 3. TFT -> 4. US " showed 3cm suspicions mass in right thyroid lobe" -> 5. FNA "showed carcinoma" (NO biopsy) -> 6. surgery directly (total/hemi-thyroidectomy) if FNA was benign we only follow up for surgery.** امشوا على هذي الخطوات في الثايرويد

2. Lymphoma

- More common in children and young adults
- Up to 80% of children with Hodgkin's have a neck mass
- **Signs and symptoms**
  - Lateral neck mass only (discrete, rubbery, nontender), not impro w antibiotics
  - Fever
  - Hepatosplenomegaly
  - Diffuse adenopathy
- **Investigations:**
- 1. **CT** head and neck with contrast "showed multiple lymph node, 3—4 cm, homogeneous, WHAT'S next? FNAB. **DON'T FORGET THAT!!!** MCQs
- 2. **FNAB** – first line diagnostic test يعني انها بتوريك اذا هي سسبشس للفوما او لا، اذا طلعت سسبشت للمفوما وش بتسوي؟ اوبن بيوبسي
- 3. If suggestive of lymphoma – **open biopsy. ONLY DONE If: we don't know the diagnosis or FNAB showed lymphoma.**
- Full workup – CT scans of chest, abdomen, head and neck; bone marrow biopsy

3. Salivary tumors

- Enlarging mass anterior/inferior to ear or at the mandible angle is suspect

  Benign
  - Asymptomatic except for mass

  Malignant
  - Rapid growth, skin fixation, cranial nerve palsies, pain
- Diagnostic tests
  - Open excisional biopsy (submandibulectomy or parotidectomy) preferred
  - FNAB: Shown to reduce surgery by 1/3 in some studies.
    Delineates intra-glandular lymph node, localized sialadenitis or benign lymphoepithelial cysts
    May facilitate surgical planning and patient counseling
    Accuracy >90% (sensitivity: ~90%; specificity: ~80%)
  - CT/MRI – deep lobe tumors, intra vs. extra-parotid
- Be prepared for total parotidectomy with possible facial nerve sacrifice

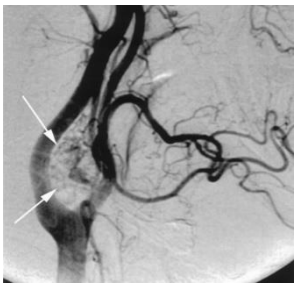
If you have a pt with parotid mass what to do? Same as above: history -> examination -> CT w/contrast -> FNAB (here it shows pleomorphic adenoma) -> surgery (parotidectomy) no open biopsy here.

Let's say we have a pt with a parotid mass + multiple lymph nodes (metastasis) + facial nerve paralyzed (**due to malignant invasion from the parotid gland tumor**). WHAT to do here? Again, radiology -> FNAB showing malignant parotid tumor-> Surgery تعبت وأنا أعيد وأزيد في الخطوات، احفظوها كويّس

4. Lipoma:

- Soft, ill-defined mass
- Pic shows: soft mass, midline and no aggressive features.
- Usually >35 years of age
- Asymptomatic
- Clinical diagnosis – confirmed by excision
- Treatment: observation or surgery.

5. Carotid body and glomus tumors:



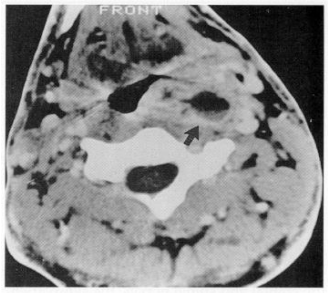
- Rare in children
- Pulsatile, compressible mass
- Mobile medial/lateral not superior/inferior
- Clinical diagnosis, confirmed by angiogram or CT
- Treatment
  - Irradiation or close observation in the elderly
  - Surgical resection for small tumors in young patients
  - Hypotensive anesthesia
  - Preoperative measurement of catecholamines

6. Neurogenic tumors

- Arise from neural crest derivatives
- Include **schwannoma, neurofibroma**, and malignant peripheral nerve sheath tumor
- Increased incidence in NF syndromes
- Schwannoma most common in head & neck

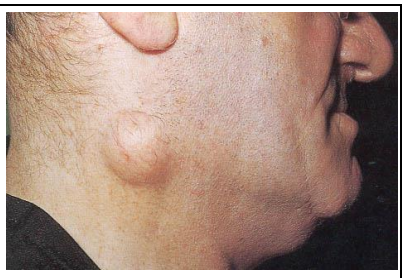
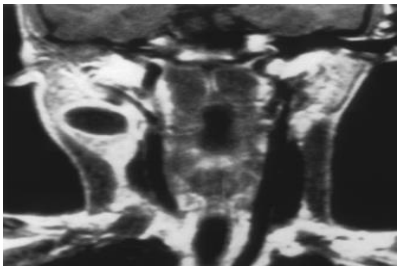
6A. Schwannoma

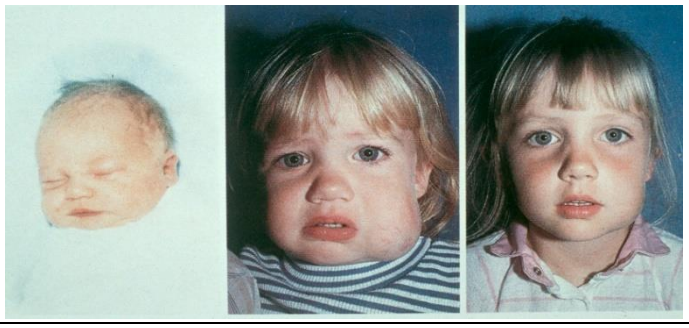
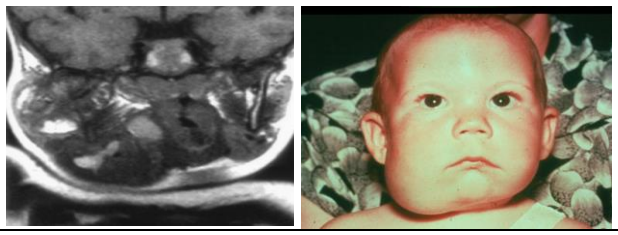
Doc skipped this part



- Sporadic cases mostly
- 25 to 45% in neck when extracranial
- Most commonly between 20 and 50 years
- Usually mid-neck in poststyloid compartment
- **Signs and symptoms**
  - Medial tonsillar displacement
  - Hoarseness (vagus nerve)
  - Horner's syndrome (sympathetic chain)

Congenital and Developmental Mass

1. **Epidermal and sebaceous cysts**	• Most common congenital/developmental mass • Older age groups • Clinical diagnosis • Elevation and movement of overlying skin • Skin dimple or drainage pore. **Adjacent to the skin "once you touch the skin you find it there**, usually soft non-tender unless inflamed. • Excisional biopsy confirms • By history you can't tell, so you need to do examination to limit your differentials. 
2. **Branchial cleft cysts** Typical MCQ/SAQ case!!!!	Pt with upper neck mass since birth, exacerbated by URTI, on examination you find a soft mass on level2 **upper lateral!!!**, CT/MRI show cystic mass (this is typical for **Branchial cleft cysts).** • Branchial cleft anomalies • 2nd cleft most common (95%) – tract medial to XII nerve between internal and external carotids • 1st cleft less common – close association with facial nerve possible • 3rd and 4th clefts rarely reported • Present in older children or young adults often following URI • Most common as smooth, fluctuant mass underlying the SCM • Skin erythema and tenderness if infected • Treatment - Initial control of infection - Surgical excision, including tract - May necessitate a total parotidectomy (1st cleft)  
3. **Thyroglossal duct cyst** Typical MCQ/SAQ case!!!!	• Most common congenital neck mass (70%) any age after URTI • 50% present before age 20 • **Midline!!!** (75%) or near midline (25%) • Usually just inferior to hyoid bone (65%) • Elevates on swallowing/protrusion of tongue • Treatment is surgical removal (Sis trunk) after resolution of any infection • Pic shows: midline red (indicating inflammation) mass • Before you go for surgery, do US to have a good description of the mass. US will show cystic mass below the hyoid bone w/signs of inflammation -> CT w/contrast -> FNAB showed cyst -> **surgery (sis trunk) remove the track with mid portion of hyoid bone.** • If you only did excision, pt will come after 1 year with recurrence.  
4. Vascular tumors - Lymphangiomas and hemangiomas - Usually within 1st year of life - CT/MRI may help define extent of disease	

4A. Hemangiomas	• Often resolve spontaneously • Surgical excision reserved for those with rapid growth involving vital structures or associated thrombocytopenia that fails medical therapy (steroids, interferon). 
4B. Lymphangiomas	• Remain unchanged • Surgical excision for easily accessible or lesions affecting vital functions; recurrence is common. 

Inflammatory Disorders

1. **Lymphadenitis**	• **Very common, especially within 1st decade** • **Tender node with signs of systemic infection** • **Directed antibiotic therapy with follow-up so** we don't go for imaging because history is obvious. • **FNAB indications (pediatric)** - Actively infectious condition with no response - Progressively enlarging - Solitary and asymmetric nodal mass - Supraclavicular mass (60% malignancy) - Persistent nodal mass without active infection - **Equivocal or suspicious** lymphoma **FNAB in the pediatric nodal mass requires open excisional biopsy to rule out malignant or granulomatous disease** - **Equivocal or suspicious FNAB in the pediatric nodal mass requires open excisional biopsy to rule out malignant or granulomatous disease**
2. **Granulomatous lymphadenitis**	• **Infection develops over weeks to months** • Minimal systemic complaints or findings • **Common etiologies** • TB, atypical TB, cat-scratch fever, actinomycosis, sarcoidosis. • **Firm, relatively fixed node with injection of skin.** It mimics malignancy • **Typical *M. tuberculosis*** - more common in adults - Posterior triangle nodes - Usually responds to anti-TB medications - May require excisional biopsy for further workup • **Atypical *M. tuberculosis*** - Pediatric age groups - Anterior triangle nodes, won't present with multiple lymph nodes in level 5, only present with submandibular mass. - Brawny skin, induration and pain - Usually responds to complete surgical excision or curettage • **Cat-scratch fever (*Bartonella*)** - Pediatric group - Preauricular and submandibular nodes - Spontaneous resolution with or without antibiotics 

	You examined the patient and find a neck mass oral cavity showed no signs of primary -> CT w/contrast (Multiple lymph node, cystic and inflamed) you still can't R/O malignancy -> FNAB (shows granulomatous dis) -> open biopsy (shows TB) -> treat TB

Summary

- Extensive differential diagnosis
- Age of patient is important
- Accurate history and complete exam essential
- FNAB – invaluable diagnostic tool
- Possibility for malignancy in any age group
- Close follow-up and aggressive approach are best for favorable outcomes

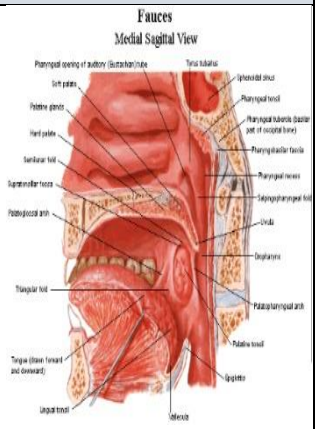
Head and Neck III

Pharyngeal & Laryngeal Tumors

A. Nasopharyngeal malignancy

General info

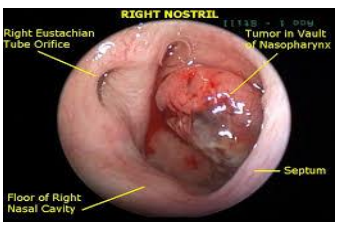
- Age: 6-7 decades
- Most common mucosal head and neck neoplasm in Saudi arabia
- Pathology:
  - Epithelial lining: squamous cell carcinoma (most common)
  - Lymphoid tissue: lymphoma
- Risk factor:
  - Genetic
  - Viral; EBV
  - Diet

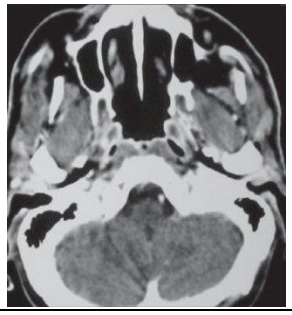
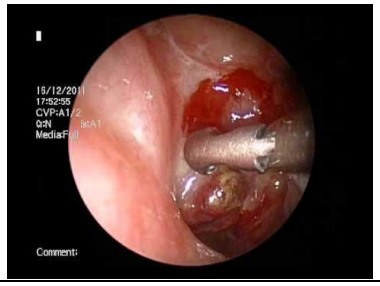
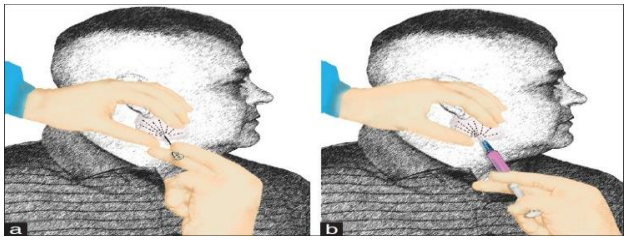
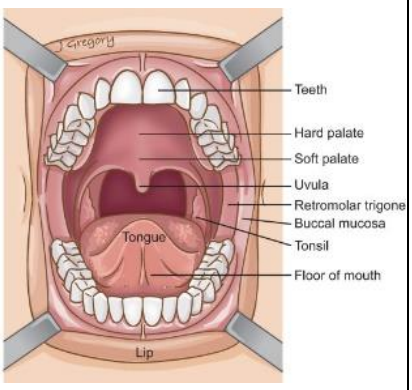
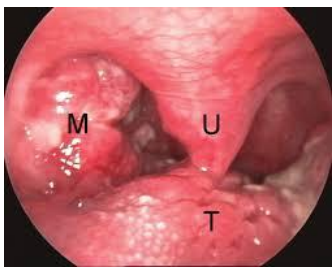
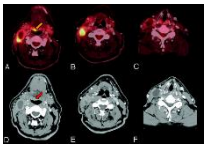


Clinical presentation

If there is a blockage in the nasopharynx what will happen? Hyponasal voice, ET obstruction leading to serositis "Secretory" OM. If you have an adult with ear pain and you examine the ear and found fluids, or you examine the pharynx with the scope you see a neck mass. How to approach this pt? History (since 6 months, growing, painless, another mass, I feel fatigued and tiered, horsiness) -> examination (mass at level 5 "right pic" oral exam was normal, endoscopy shows a mass (pic left). By now you know it's nasopharyngeal carcinoma even w/o investigation -> CT w/contrast (multiple lymph nodes & aggressive looking nasopharyngeal mass) -> FNAB from lymph node (shows suspicious carcinoma) -> biopsy from nasopharynx (Confirmed) -> do metastatic workoup CT chest abdomen pelvic -> Radiation / chemo

- Neck mass
- Nasal blockage
- Hearing loss, ear pain in one side
- Epistaxis
- Carinal nerve involvement:
  - Diplopia
  - Facial numbness



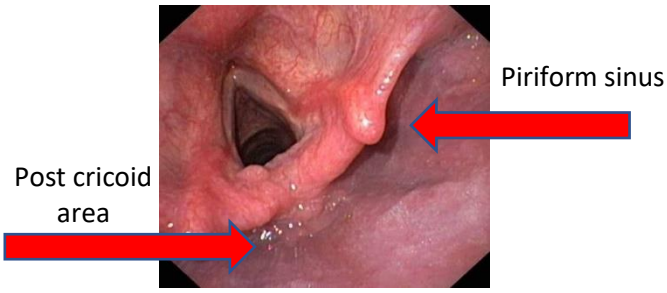
Radiology	• CT neck with contrast • MRI neck with contrast • CT chest, abdomen and pelvis: - Extension of tumour - Lymph node& distant metastasis  
Diagnosis	• Fine needle aspiration cytology from neck mass • Nasopharyngeal biopsy  
Management	• Early stage : - Radiation therapy • Advanced stage: - Radiation and chemotherapy
B. Oropharyngeal malignancy	
General info	Oropharyngeal neoplasm **anatomy** - Tonsil - Soft palate - Base of tongue - Posterior pharyngeal wall - Anterior and posterior tonsillar pillar 1.Squamous cell carcinoma is most common one **1.** Smoking **2.** Alcohol **3.** Viral : HPV 2.Lymphoma - Most common in tonsil 3.Salivary gland tumor 4.Sarcoma 
Clinical presentation (late)	• Neck mass (most common) • **Sore throat** • **Dysphagia** • **Weight loss** • Decrease appetite • Oral bleeding • Otalgia • Trismus Pic shows mass on the tonsil, pt has large lymph nodes WHAT TO Do: CT w/contrast -> FNA from the lymph node -> Biopsy from the tonsil 
Radiology	• CT neck with contrast • MRI neck with contrast • CT chest, abdomen and pelvis 
Diagnosis	• Panendoscopy if you can't see it in the clinic • Assessment of tumour extension • examine hypopharynx , larynx , oesophagus and trachea • Obtain biopsy from the mass 

Management	• Surgery • Radiation • Radio & chemotherapy

B. Hypopharyngeal & Laryngeal malignancy

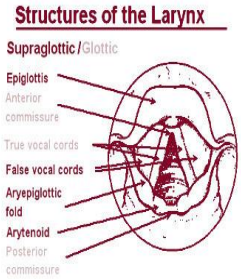
Hypopharyngeal Anatomy

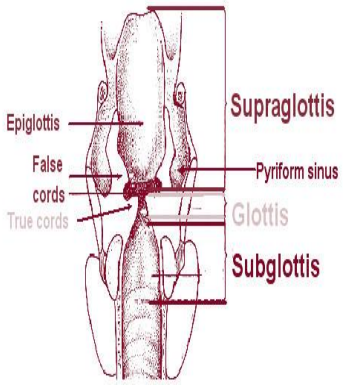
- Pyriform sinus (most common)
- Post cricoid area
- Posterior pharyngeal wall



Laryngeal Anatomy

- Supraglottic
- Glottis (most common site)
- Subglottic





Clinical presentation	• hoarseness for 3-4 weeks (voice change) Most common • Neck mass • Globus sensation • Haemoptysis • Dysphagia • Weight loss • The don't present with lymph node enlargement because they don't have the drainage that much in the area.
Diagnosis	• CT w/contrast -> Panendoscopy -> biopsy ▪ Assessment of tumour extension ▪ examine hypopharynx , larynx , oesophagus and trachea ▪ Obtain biopsy from the mass • CT neck with contrast • MRI neck with contrast • CT chest, abdomen and pelvis ▪ Extension of tumour ▪ Lymph node& distant metastasis
Management	• Early stage: ▪ Surgery or ▪ Radiation therapy • Advanced stage: ▪ Surgery and postoperative radiation ▪ Chemo radiotherapy