Ear-Nose-Throat Mini-OSCE Dossier

2023 edition

إعداد محمود بركات

بسم الله الرحمن الرحيم

ملاحظات

- شامل لأسئلة سنوات حتى نهاية 2022
- شامل لملفين دكتور أسامة الموجودات على الموقع
- شامل لبعض أجزاء دوسيه دكتور حرازنة، غير شامل للدوسيه بشكل كامل
- الملف مرتب حسب المواضيع تحت كل موضوع فيه ملاحظات الدكاترة وأسئلة السنوات
- أسئلة السنوات المكررة تم جمعها بسؤال واحد ووضع عدد مرات تكرار السؤال في هامش أعلى الصفحة من جهة اليمين
- أي كتابة بصندوق يعتبر هامش للملاحظات
- الكتابة الي باللون الأزرق هذه ملاحظات مني أو حل للسؤال مني لأسئلة ما لقيت لها إجابة
- الكلام الي بلغتكم فيه بدوسيه الأشعة قائم برضو على هذا الملف وأي الملفات ثانية اشتغلتها ويا ريت بس هبل

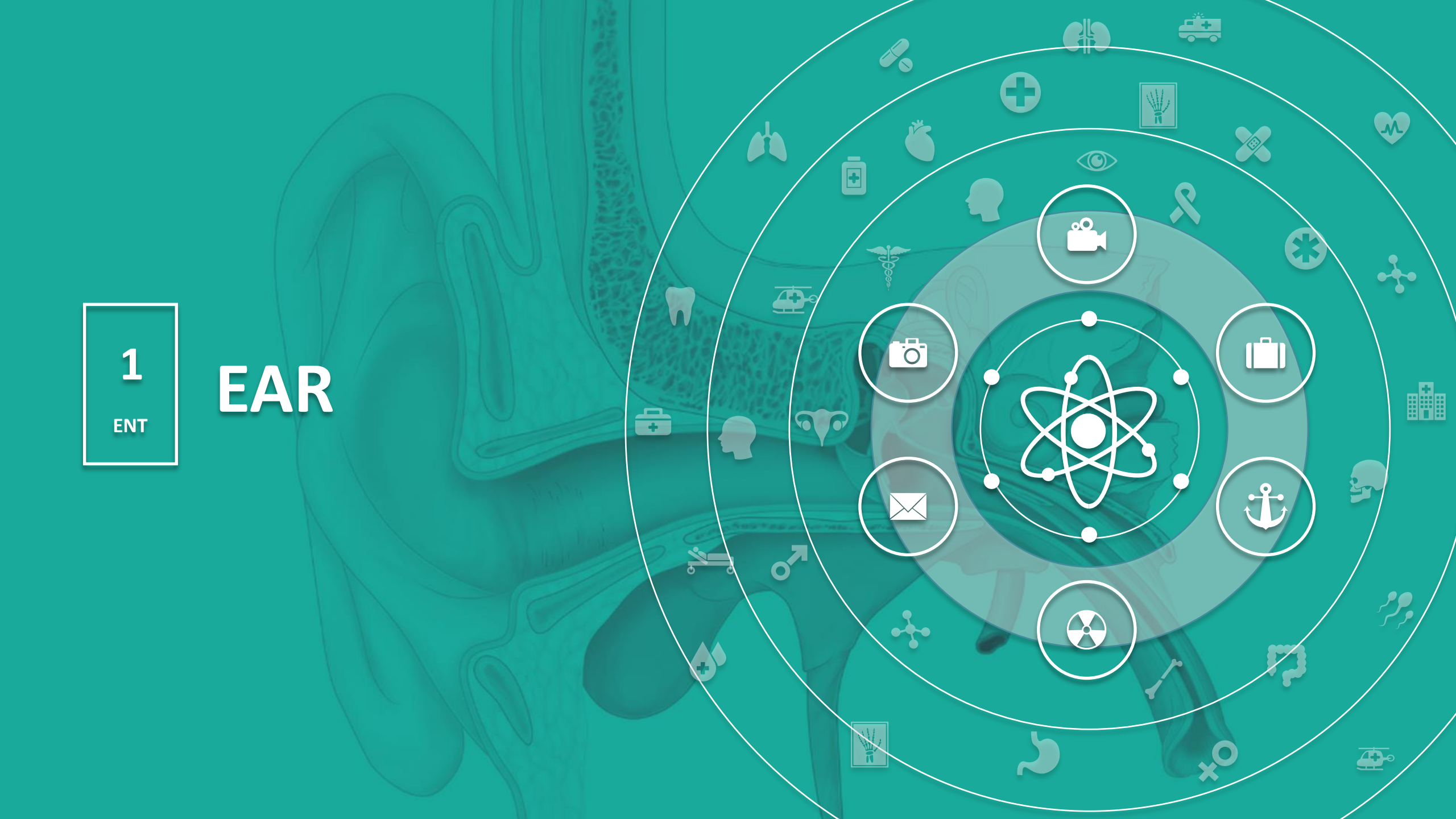
Last update: 01/2023

Table of contents

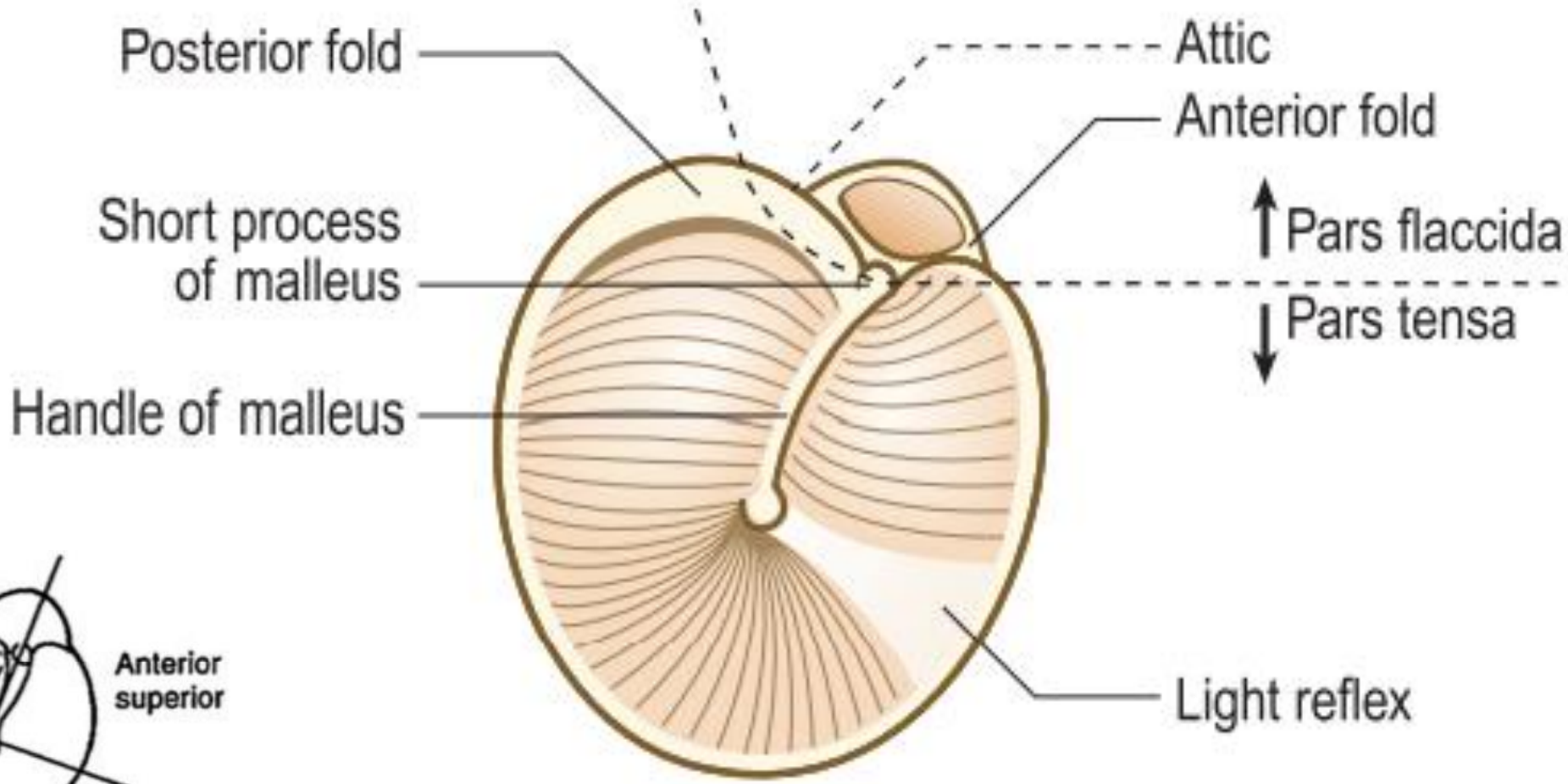
1

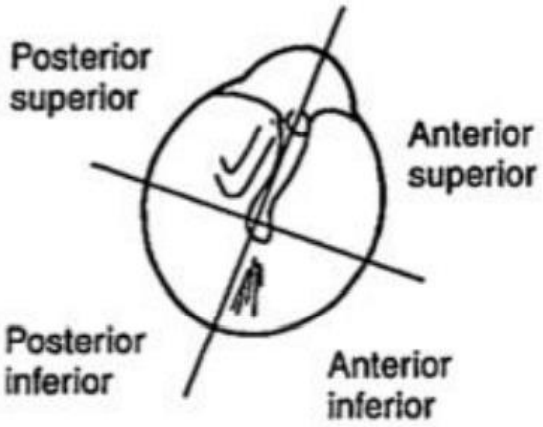
ENT

EAR



Tympanic membrane anatomy

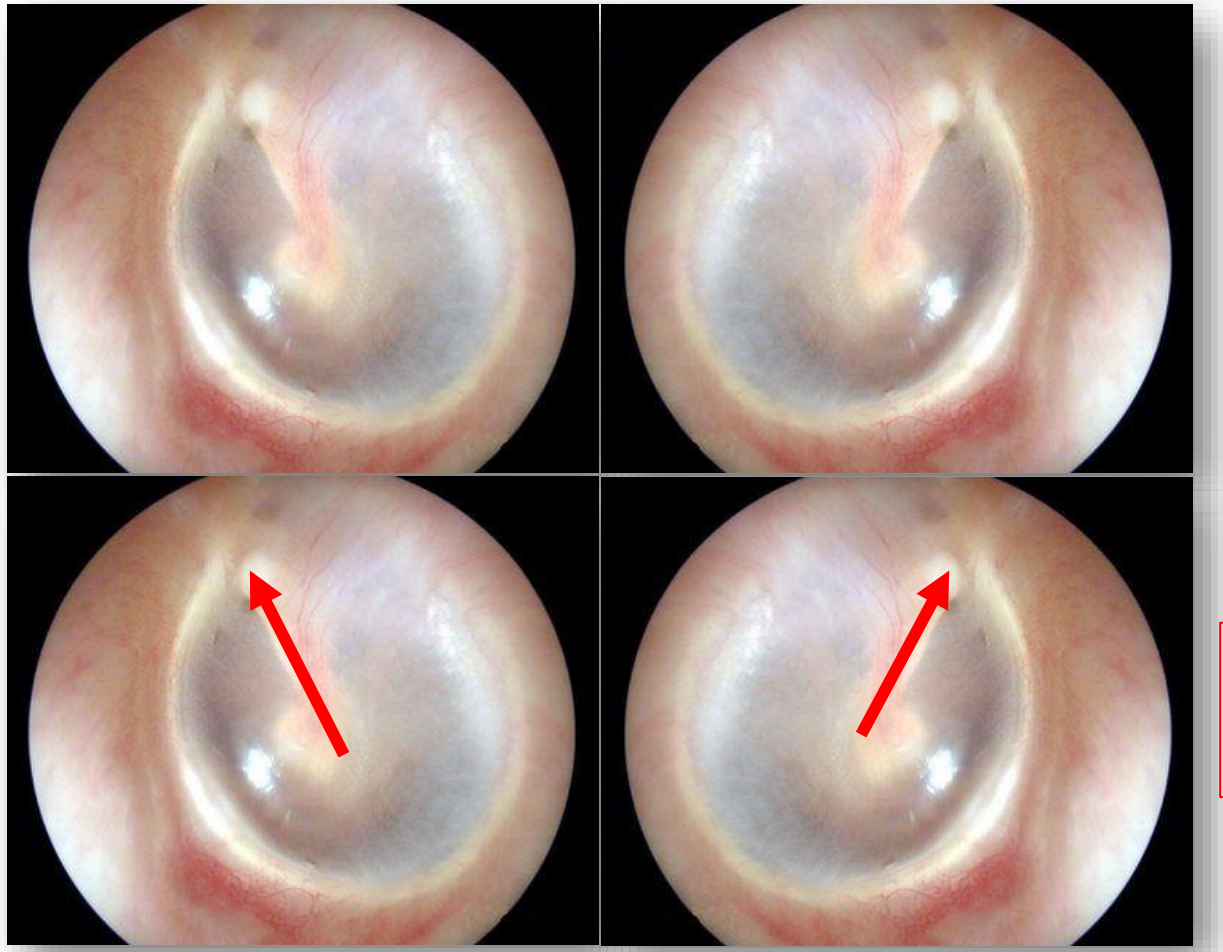




Left or Right ear

مشان تعرف هذه الأذن يمين ولا شمال بأبسط طريقة ممكنة بتطلع على قبضة المطرقة بتلاقيها بتأشر على الجهة

فإذا عمرك خربطت أبسط طريق أمشي مع خط القبضة من منتصف غشاء الطبلة وباتجاه الطرف واتجاه ميلان الخط الي طلع معك هو جهة الأذن الطريقة لقيتها فعالة خاصة لما المرض يكون ماكل الأذن أكل
If you are not sure, use the dummy line



L

بتأشر على اليسار
إذن هذه الأذن اليسار

بتأشر على يمين
إذن هذه الأذن اليمين

R

Another way

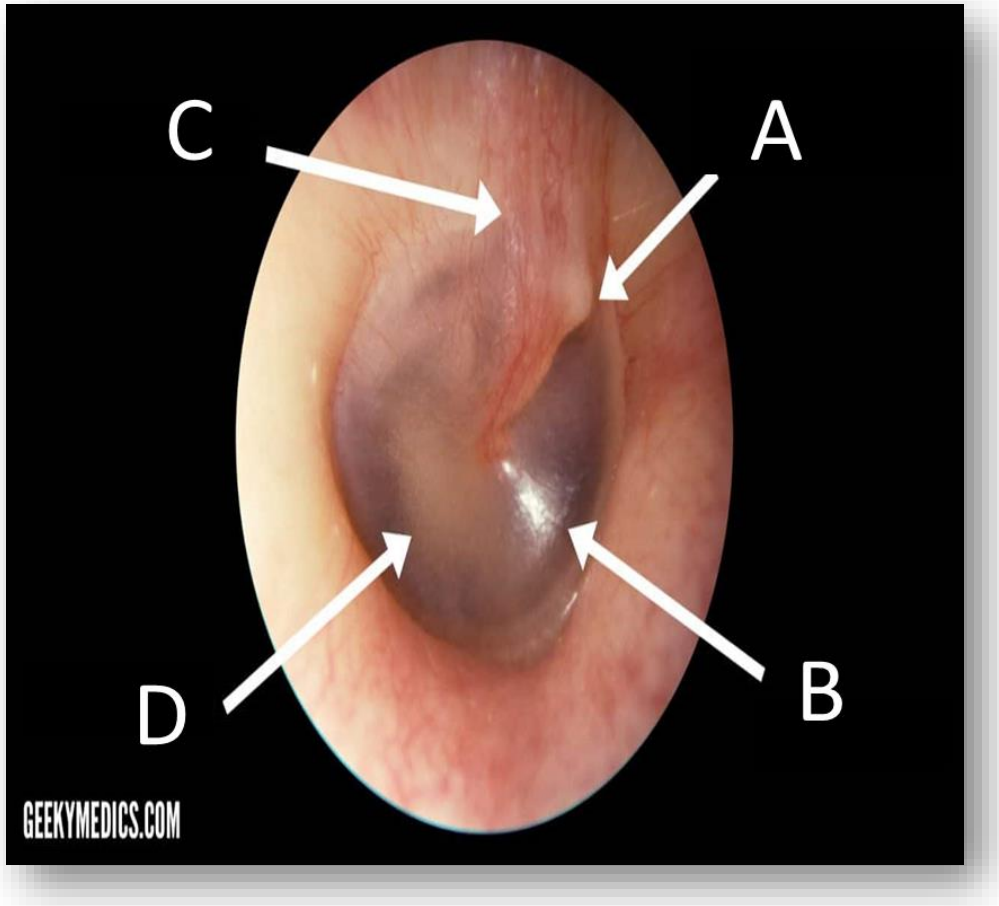
Cone of light position in left ear ⟶ 7 o`clock, in right ear ⟶ 5 o`clock

Left ear

Right ear

Q1: Normal Tympanic membrane

1. **Is this left or right ear ?**
   - Right ear
2. **Name the labeled structures**
   A. Lateral process of the malleus
   B. Cone of light
   C. Pars flaccida
   D. Pars tensa
3. **“D” represent which quadrant ?**
   - Posteroinferior quadrant
4. **Write Characteristics of normal TM**
   1) Intact
   2) Pearly gray color or semi translucent
   3) Cone of light reflex seen in the anterior inferior part



Otoscopy

إضافي ❖ **Name of this procedure**

- Otoscopy

إضافي ❖ **Name of the tool**

- Otoscope

❖ **During this procedure, the ear pinna us held in what direction**

- Posterior superior

❖ **Reflection of the examiners light on the tympanic membrane is usually visualized on which quadrant**

- Anterior inferior quadrant

➢ **Note: Cone of light position**: in right ear → 5 o`clock , in left ear → 7 o`clock

Hearing loss & Assessment of hearing

شاملة دوسيه د. حرازنة بشكل مختصر

Wax impaction

- **Describe**
  - Wax impaction
- **Mention 2 etiologies of this case**
  A. Hairy or narrow ear canal
  B. In-the-ear hearing aid
  C. Cotton swab usage
  D. Osteomata
- **Management**
  A. Water or cerumenolytic (bicarbonate solution, olive oil…)
  B. Manual debridement
  C. If ear wax is smooth ⟶ Suction or Syringing

Wax impaction

- Syringing direction ⟶ posteriorly superiorly
- Contraindication of syringing and cold caloric test
  1. Otitis external
  2. Otitis media
  3. Tympanic membrane perforation
  4. Organic foreign bodies or battery discs

Vestibular schwannoma (Acoustic neuroma)

- The most common benign tumor in the cerebellopontine angle.
- **First nerve affected**: Trigeminal nerve
- **Second nerve affected**: Sensory facial nerve
- **Investigations**:
  - Cerebellopontine angle MRI
  - **Tympanometry**: Type A (Normal)
  - **Rinne's test**: Positive
  - **Weber's test**: Lateralized to the contralateral side
  - **Hearing loss**: Sensorineural hearing loss

Vestibular schwannoma (Acoustic neuroma)

❖**Treatment**:

A. Observation (slow growing); if it need removal then
B. Radiation (Gamma knife).
C. Surgery.

❖**Complications of surgery**

A. Permanent hearing loss.
B. Facial nerve palsy.

❖**Notes**:

- Progressive Unilateral Sensorineural hearing loss for high frequencies with Tinnitus.
- 10% of vestibular schwannoma present with sudden hearing loss.
- 1% of sudden hearing loss are due to Vestibular schwannoma.
- Vestibular schwannomas presented 85% by unilateral high frequency progressive SNHL, 65% tinnitus

Assessment of hearing – Remember

1. Screening assessments
   A. Whispered voice test
      - People with normal hearing can repeat words whispered at 60 cm.
   B. Tuning fork tests
      - Weber test: Laterization
      - Rinne test: +ve, -ve, false -ve
2. Audiometry
   A. Pure Tone Testing: (Characteristic Audiograms)
   B. Speech audiometry
      - Speech-Recognition Threshold
      - Speech-Awareness Threshold
3. Impedance audiometry: (Type A,B,C)

Rinne and Weber tests possible findings

Rinne left	Rinne right	Weber	Possible finding
Positive	Positive	Normal	Normal hearing or bilateral sensorineural hearing loss
Positive	Positive	Lateralization to the left	Sensorineural hearing loss in the right ear
Positive	Positive	Lateralization to the right	Sensorineural hearing loss in the left ear
Negative	Positive	Lateralization to the left	Conductive hearing loss in the left ear
Positive	Negative	Lateralization to the right	Conductive hearing loss in the right ear
Negative False Negative	Positive	Lateralization to the right	Combination hearing loss in the left ear
			Deafness in the left ear
Negative	Negative	Normal	Bilateral, symmetrical conductive hearing loss

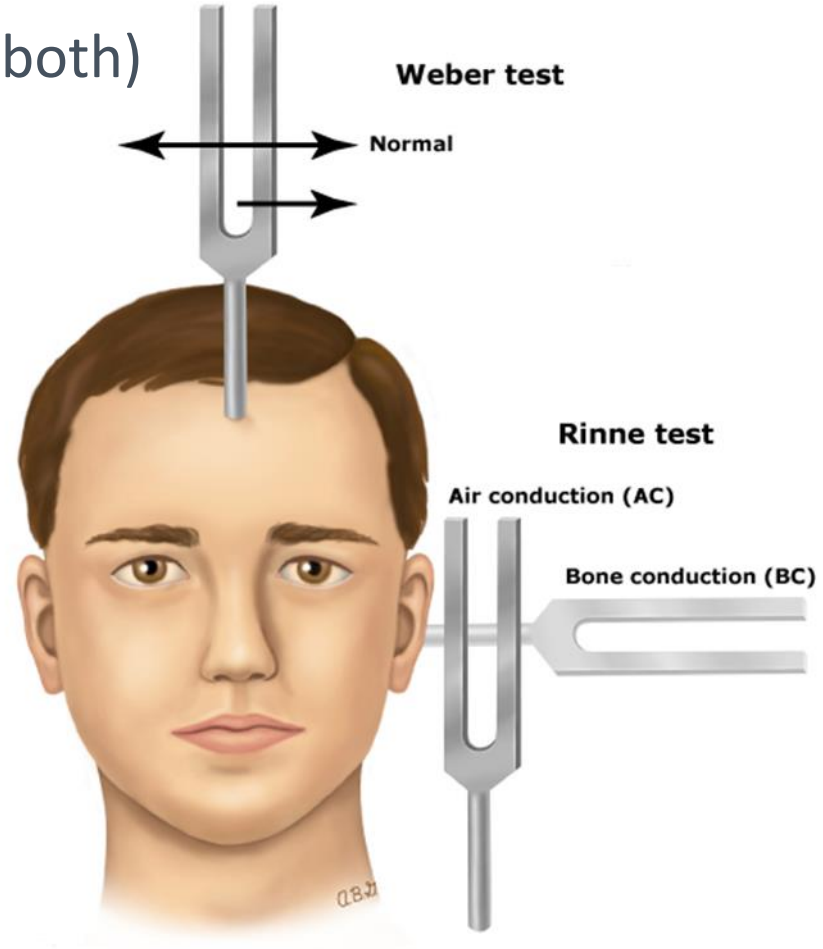
Rinne and Weber tests

1.Normal findings

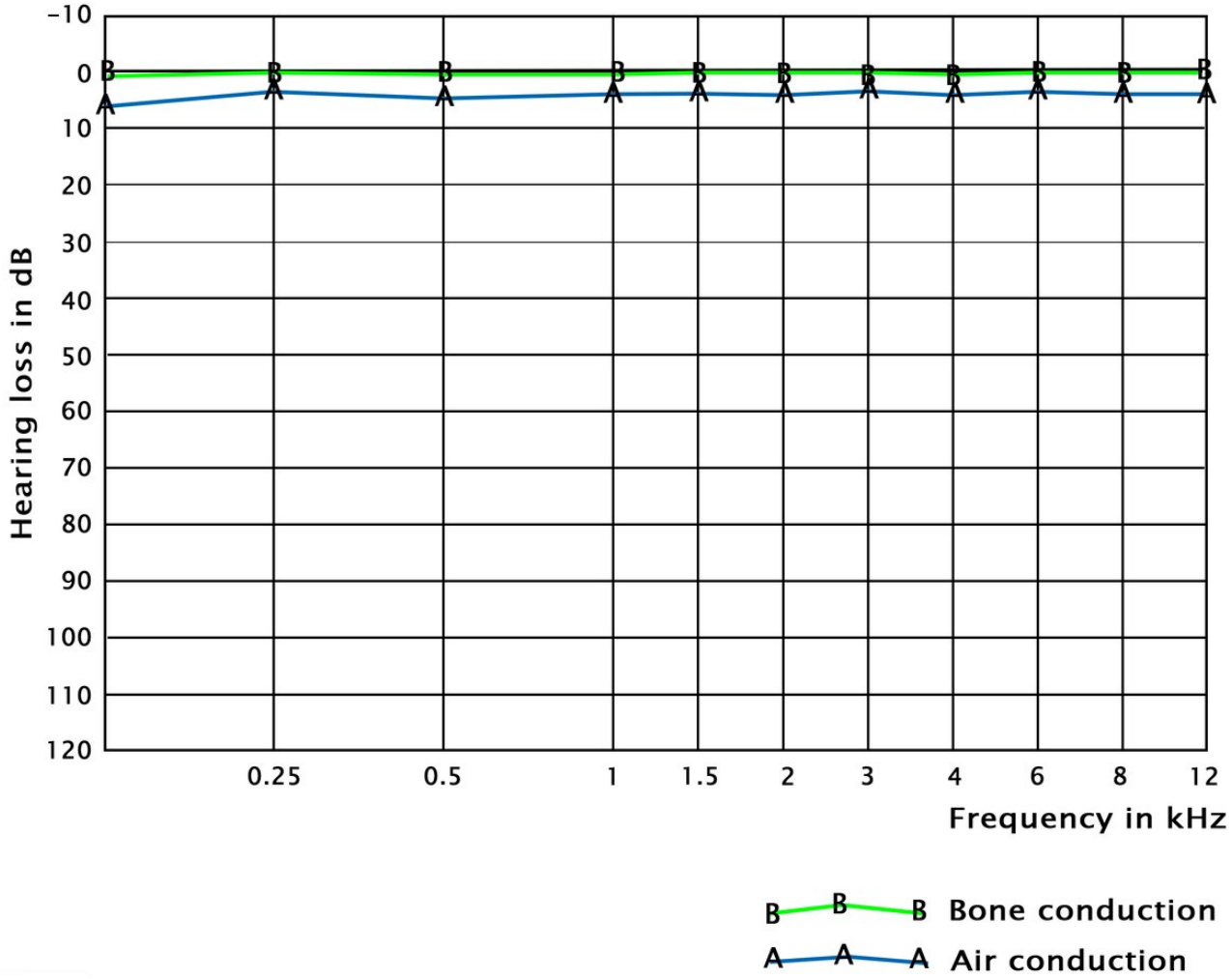
- Weber: No laterization or Centralization (write both)
- Rinne: Air cond. Better than Bone cond.

2.Cause of false negative in right ear

- profound sensorineural hearing loss in the right ear



Normal audiogram



Hearing loss

Conductive hearing loss

- Normal bone conductions
- Air conductions are poorer than normal by at least 10 dB

Sensorineural hearing loss

- Both air and bone conductions are higher than 25 dB and within 10 dB of each other

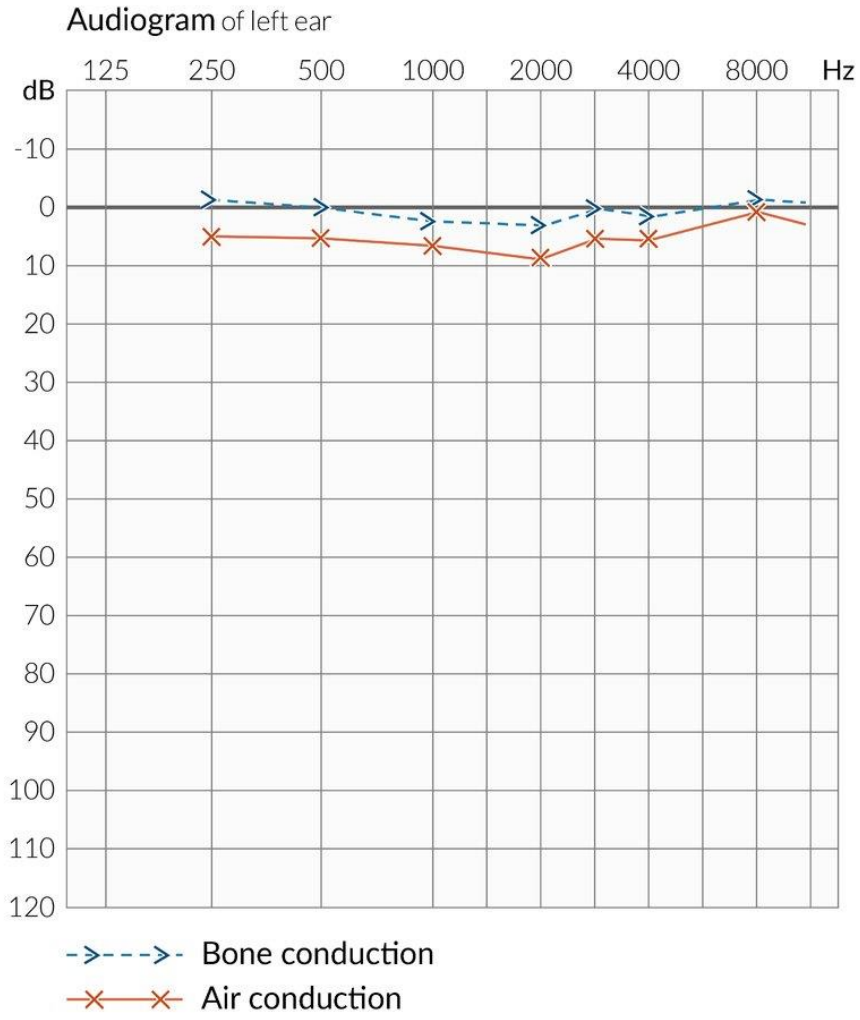
Mixed hearing loss

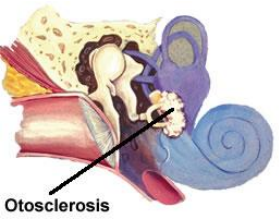
- Bone conductions are higher than 25 dB
- Air conductions are poorer than bone by at least 10 dB

Otosclerosis (Conductive) audiogram

Air conduction is reduced in the affected ear by approx. 35dB.

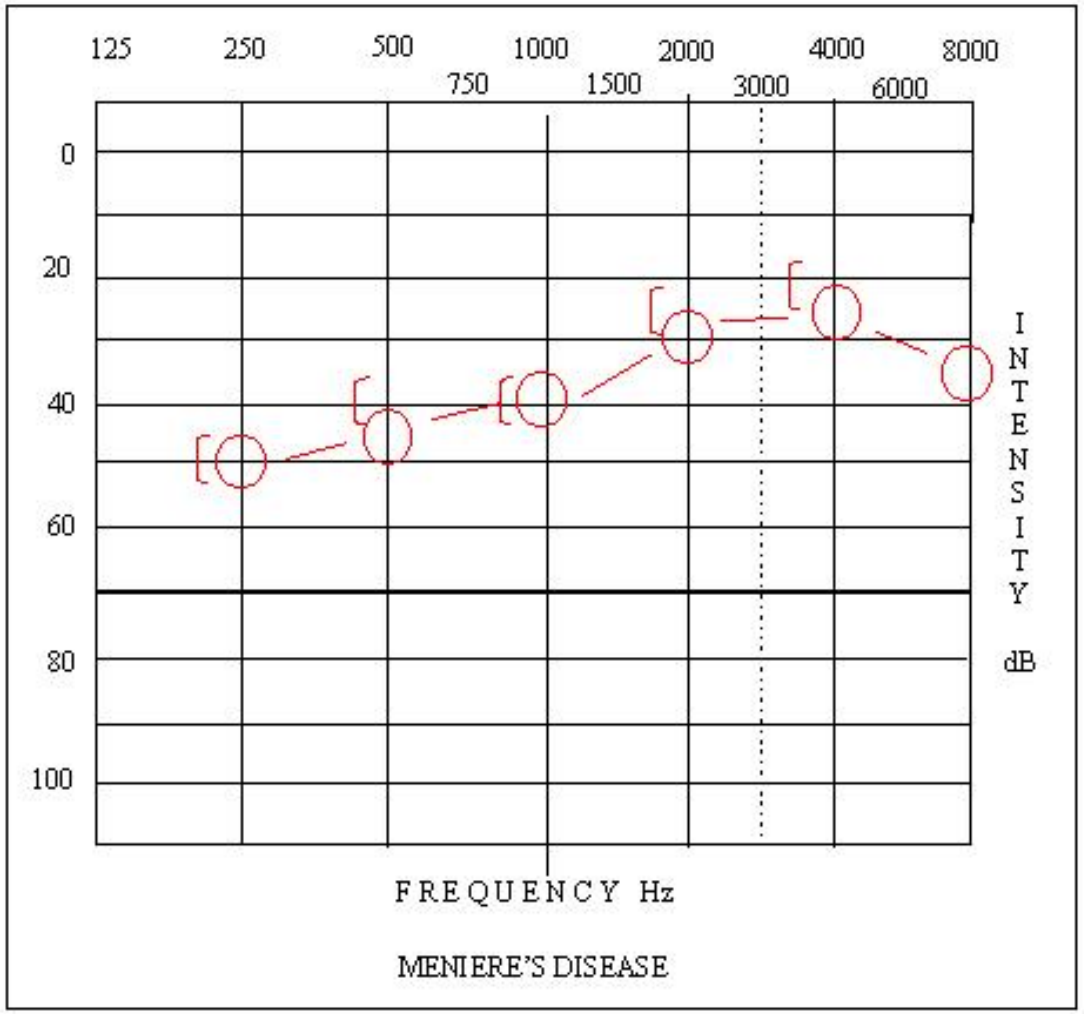
Bone conduction shows a characteristic notched hearing loss at 2000Hz (Carhart notch).





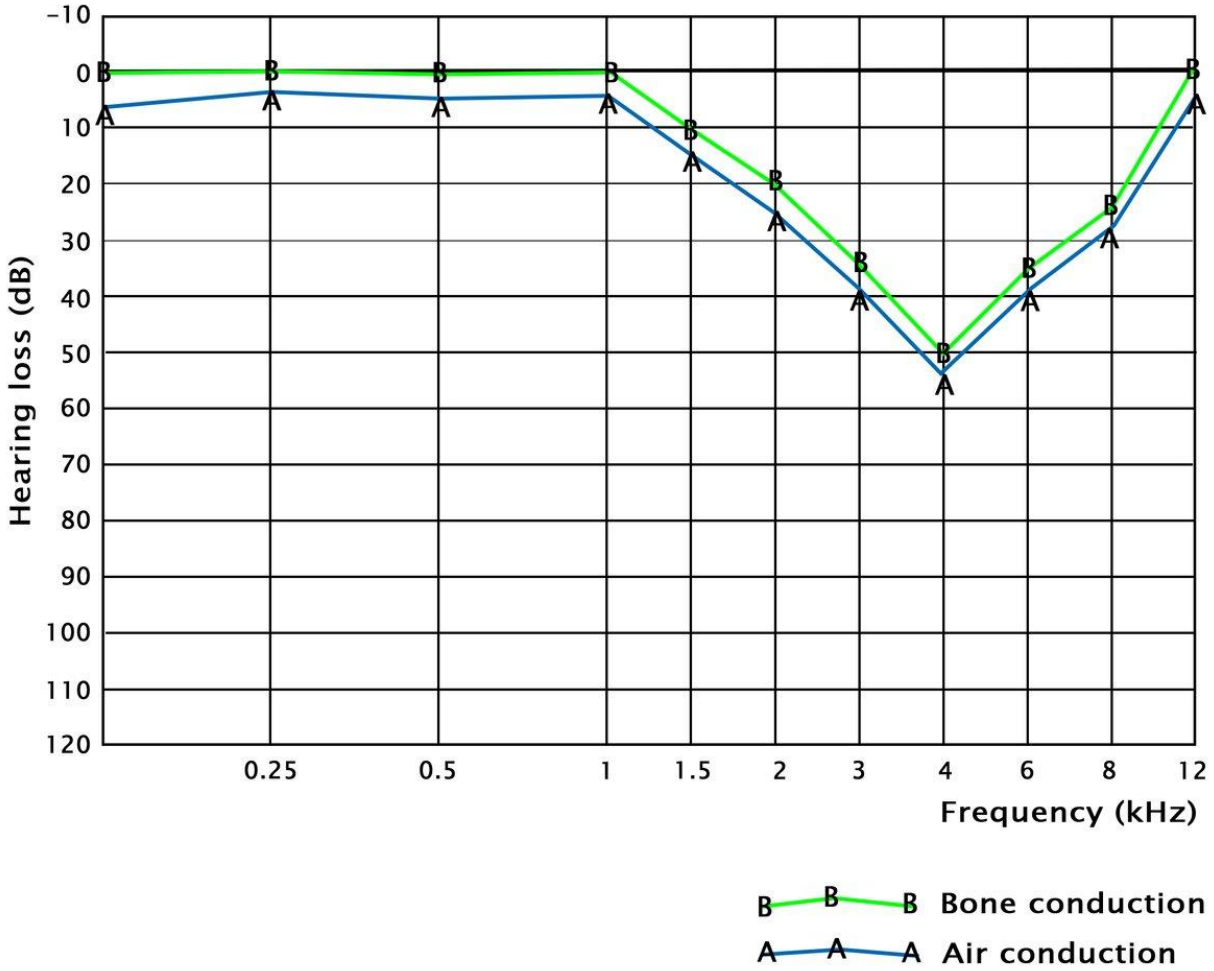
Ménière disease (Sensorineural)

Mild rising sensorineural hearing loss. Typically, however, the **lower frequencies** are affected more severely. This is due to preferential sensitivity of the apex to the hydrops.



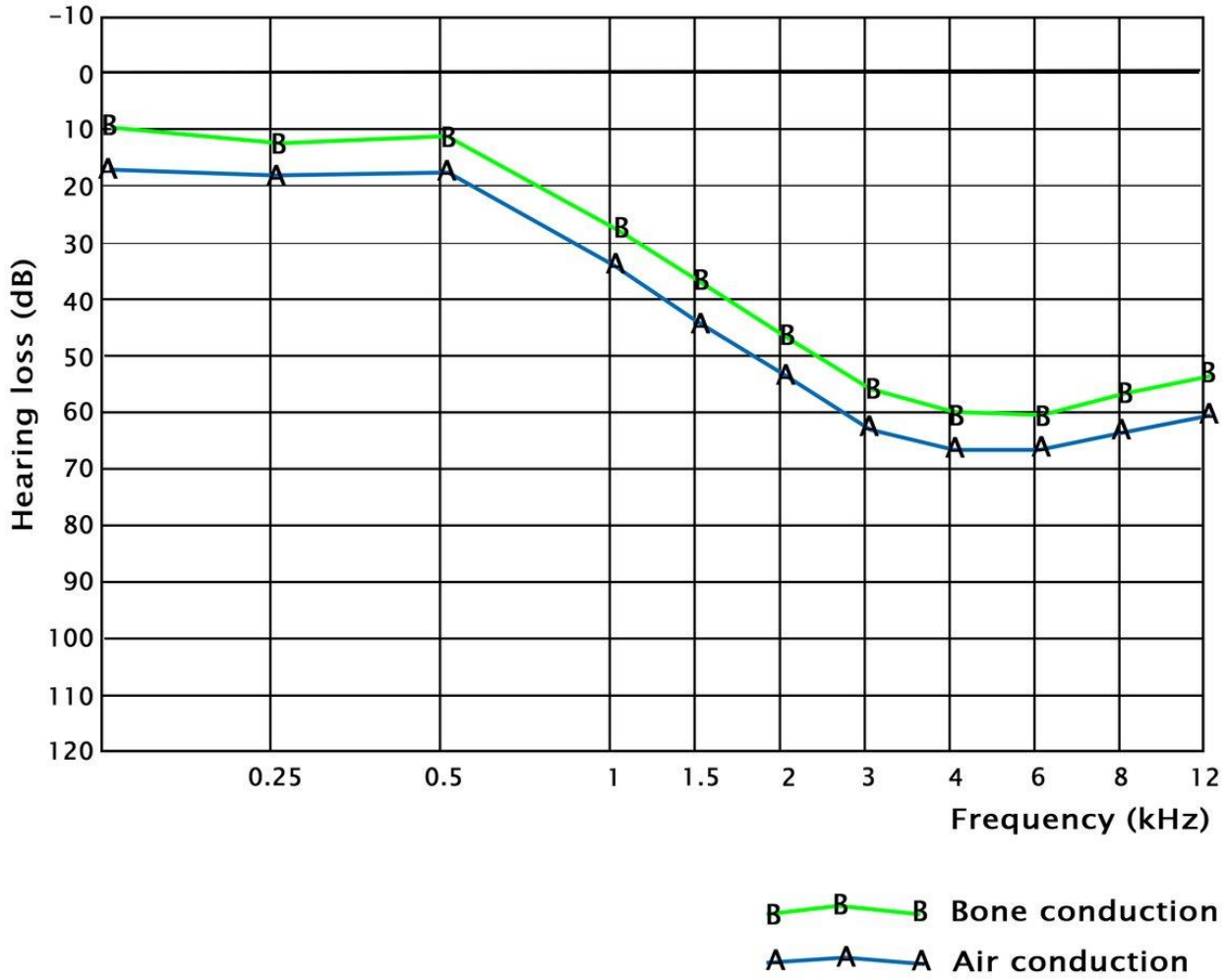
Noise-induced hearing loss (Sensorineural)

In noise-induced hearing loss, hearing is most impaired at frequencies of **4000 Hz** in both bone and air conduction.



Presbyacusis (Age-related – Sensorineural)

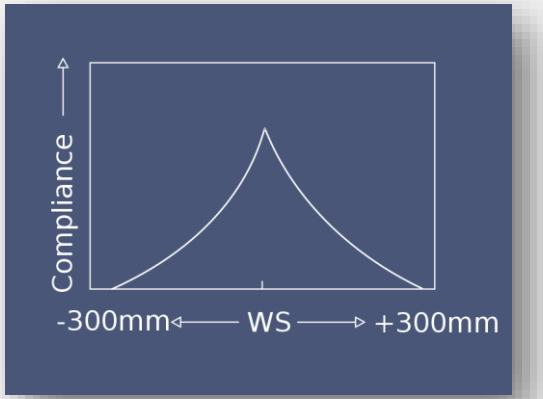
In presbycusis, patients struggle to hear the higher frequencies in both air and bone conduction.



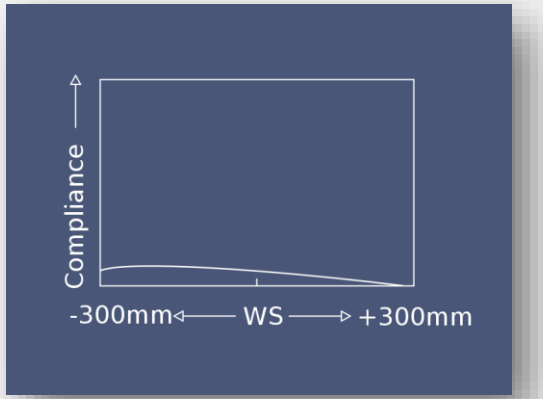
Tympanogram

- Measures the Impedance of tympanic membrane and middle ear.
- Normal compliance = 0.3–1.5 / Normal pressure = -100–100

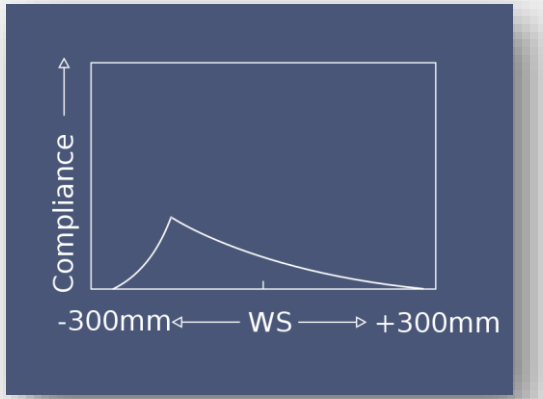
Tympanograms are categorized according to the shape of the plot



Type A response



Type B response

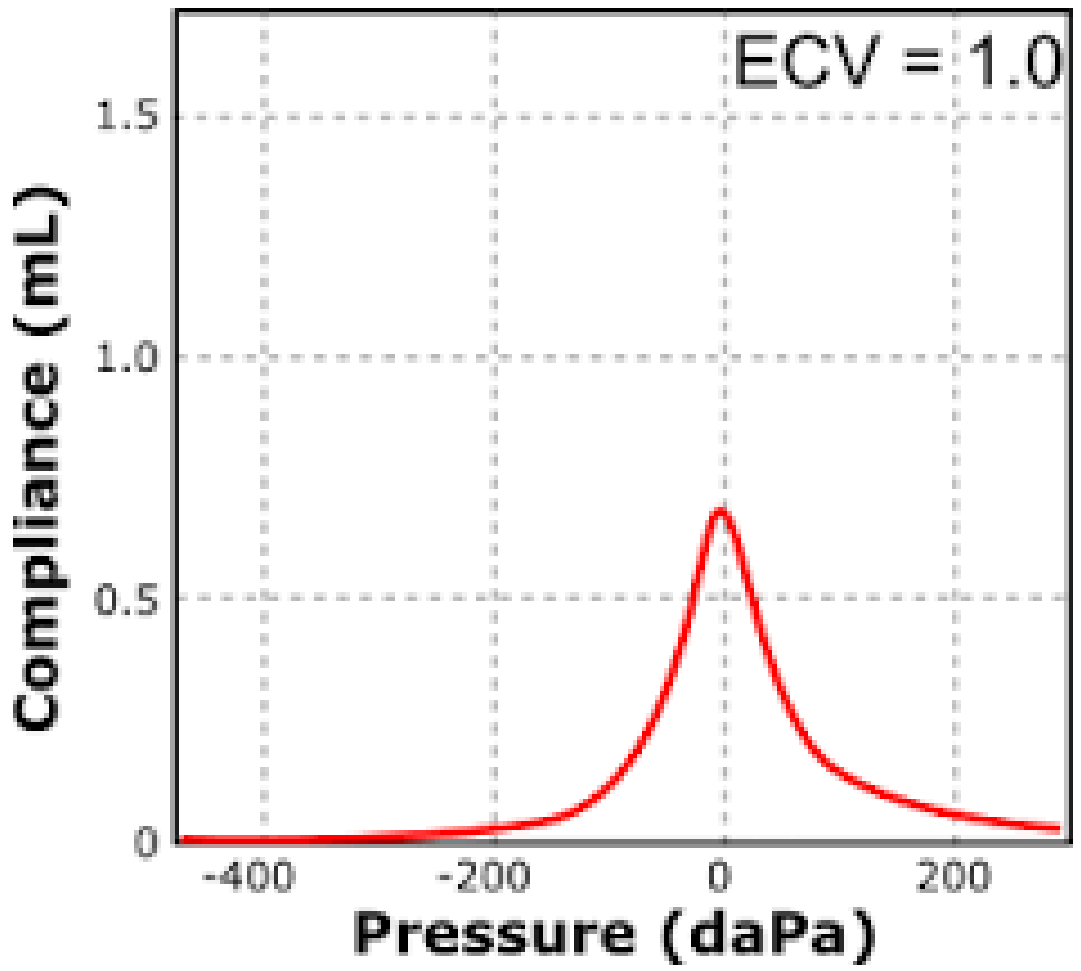


Type C response

Tympanogram – Type A

Type A suggests normal middle ear function, but it occurs in some otosclerotic ears, particularly in early stages.

- Peak is between +/- 100 daPa
- Compliance from 0.3-1.5 ml

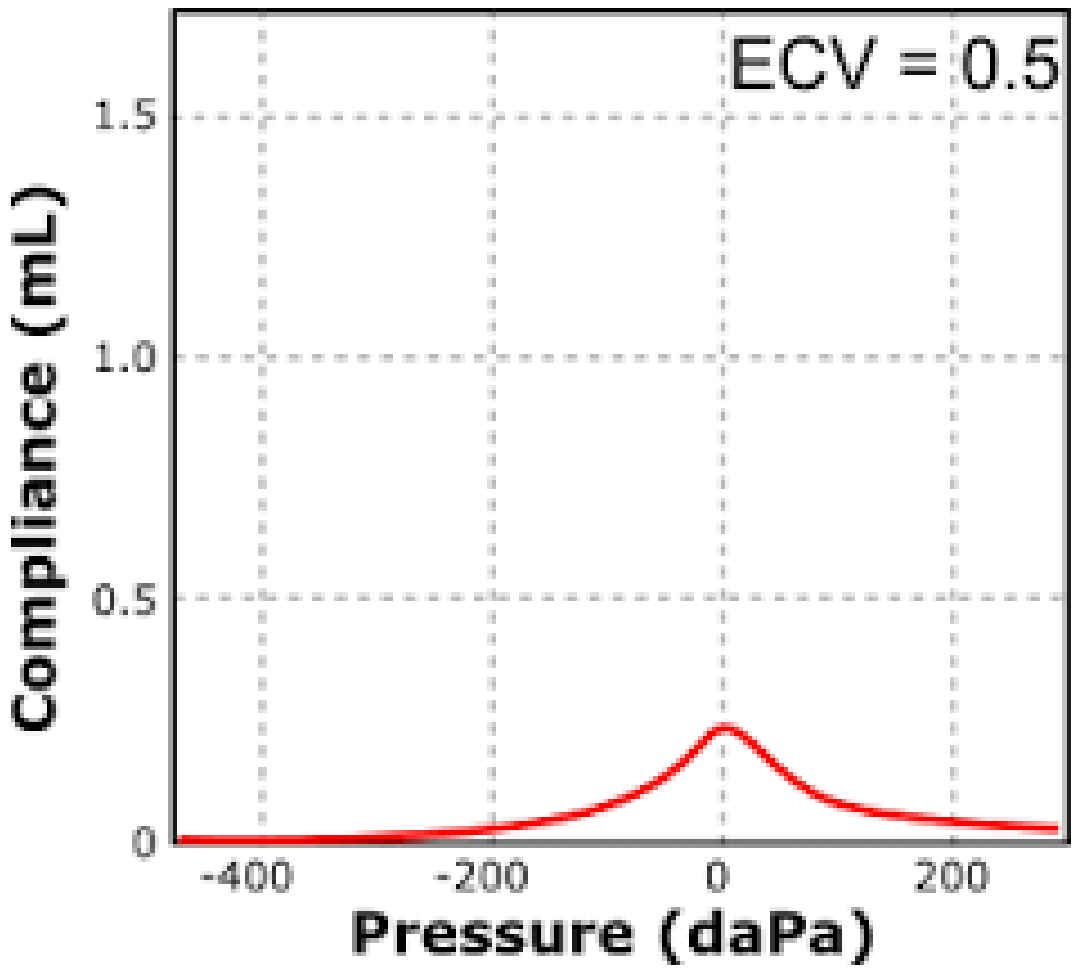


Tympanogram – Type A_S

Type A_S (A shallow) suggests a stiffened (less compliant) middle ear system.

DDx:

A. Otosclerosis
B. Malleus fixation
C. Scared tympanic membrane



- Peak is between +/- 100 daPa
- Compliance is less than 0.3 ml

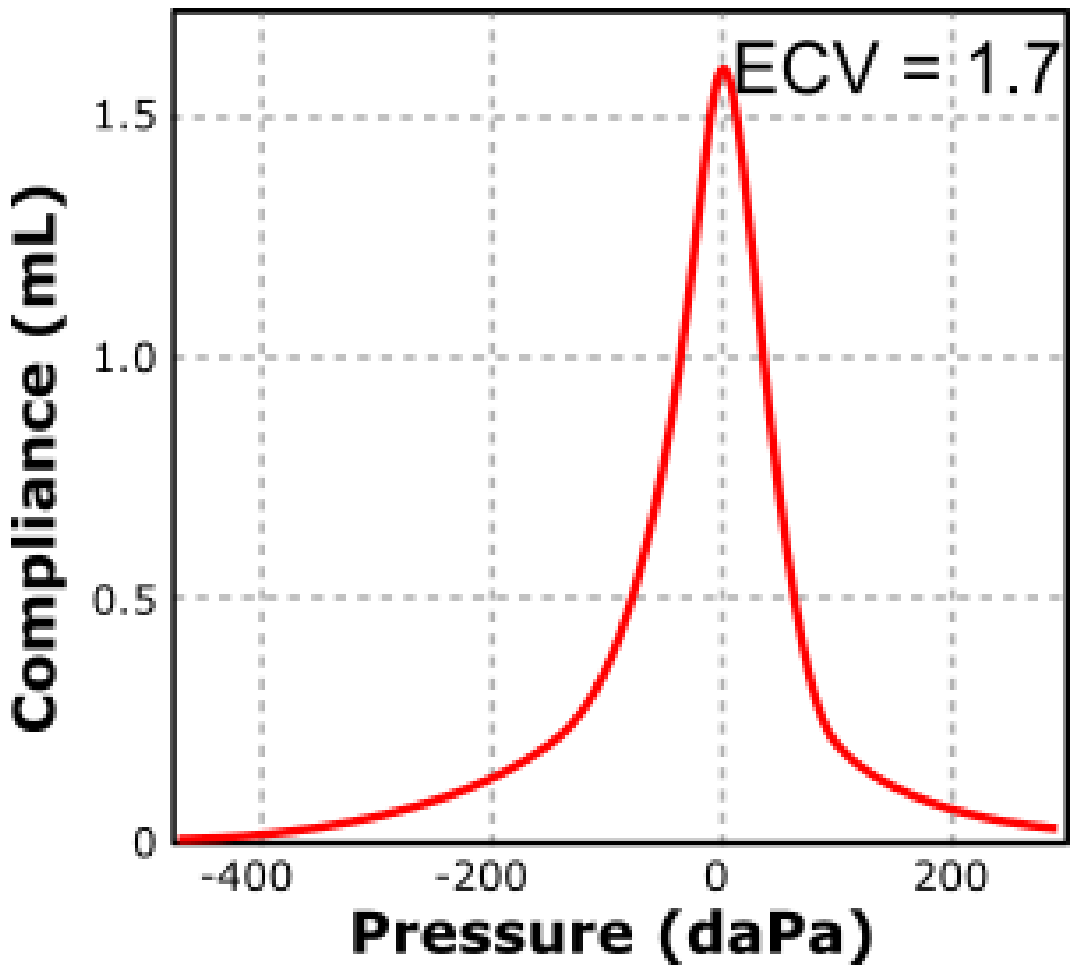
Tympanogram – Type A_D

Type A_D suggests high compliance at or near ambient pressure.

DDx:

A. Ossicular discontinuity
B. Thin and lax tympanic membrane
C. Post-stapedectomy

- Peak is between +/- 100 daPa
- Compliance is more than 1.5 m

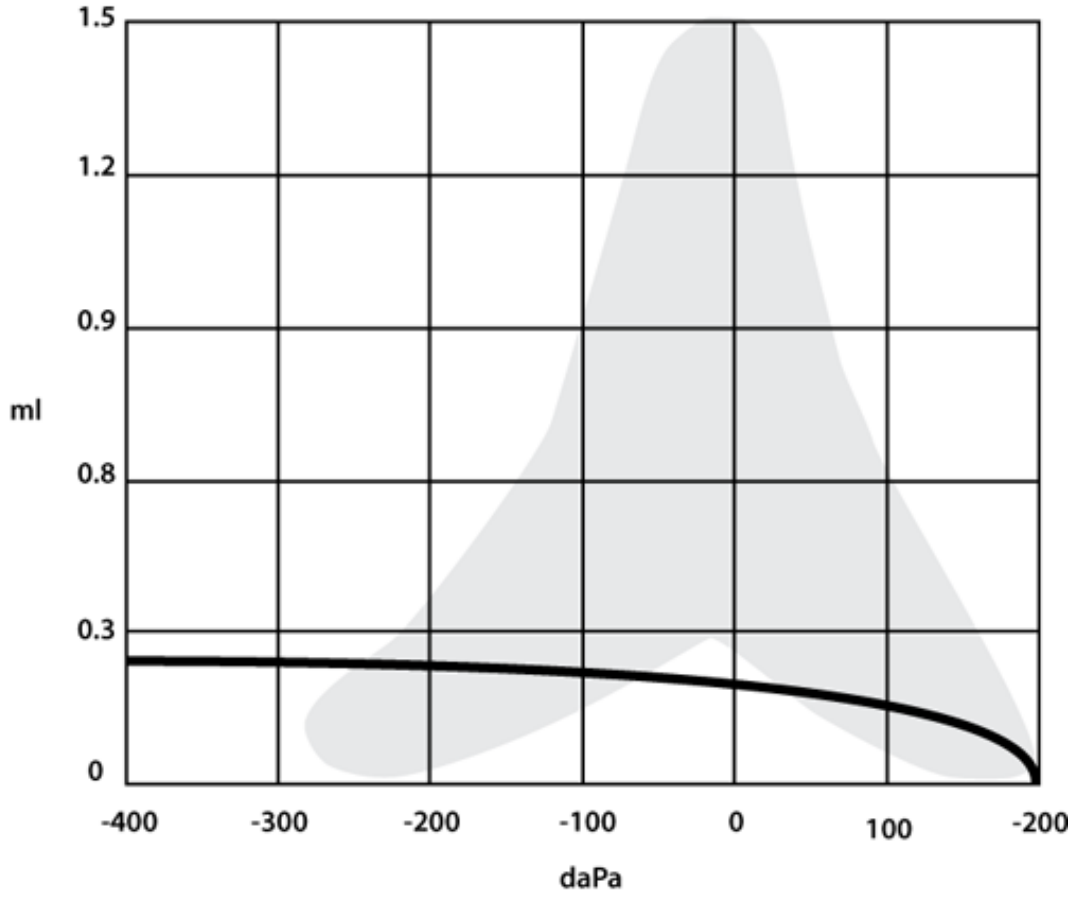


Tympanogram – Type B

Type B is a flat trace with no observed compliance or admittance peak.

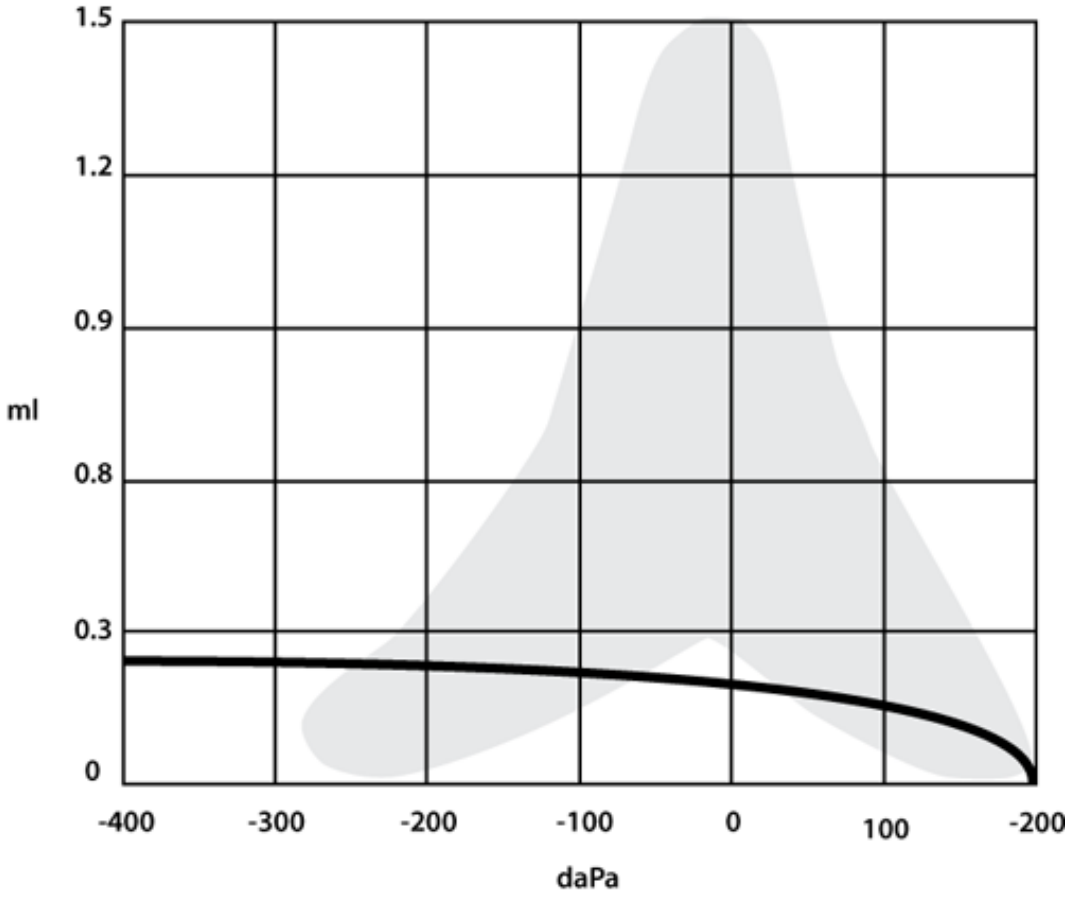
Type B tympanograms must be interpreted in conjunction with ear canal volume readings.

- Average ear canal volumes
  - for children are 0.5-1.0 mL
  - for adult are 1.0-1.5 mL



Tympanogram – Type B

- **Type B (small ear canal volume)** may suggest that the ear canal is occluded with wax/debris or that the immittance probe is pushed against the side of the ear canal.
- **Type B (normal ear canal volume)** usually suggests otitis media with effusion.
- **Type B (large ear canal volume)** suggests a perforation of the tympanic membrane. (because middle ear volume is added up to the volume of external ear canal)

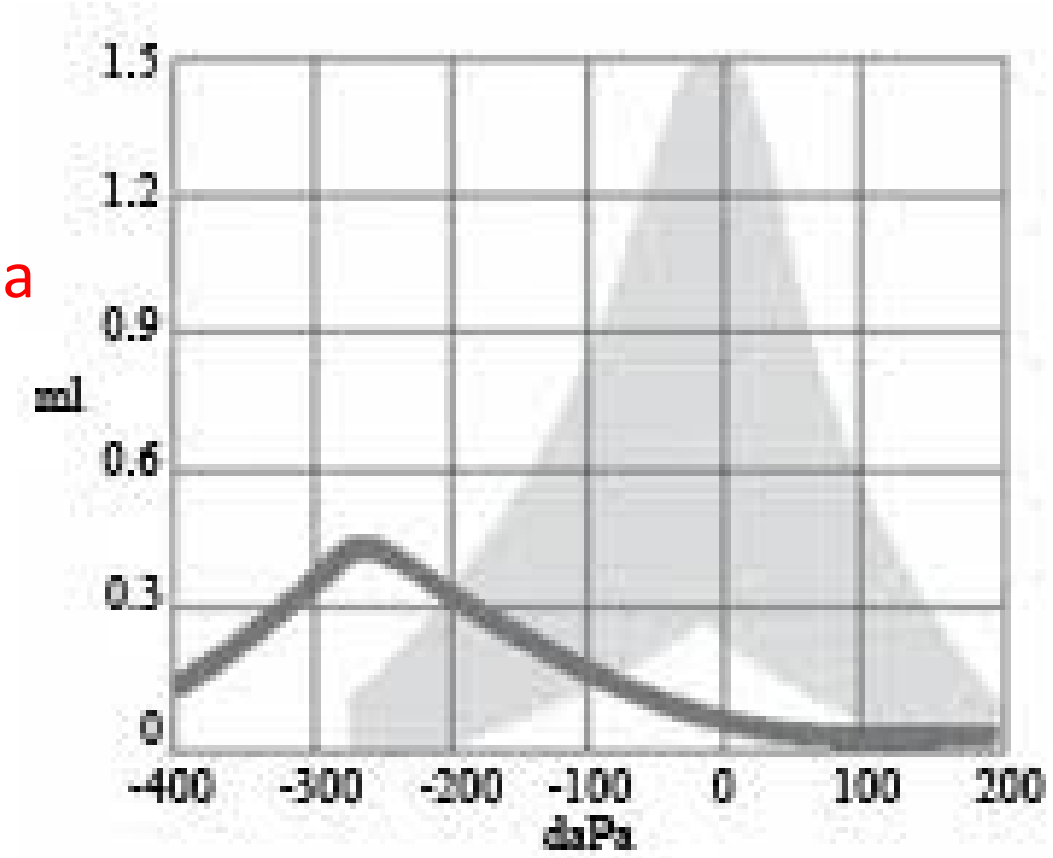


Tympanogram – Type C

Type C suggests significant negative pressure in the middle ear system.

DDx:

A. Developing or resolving otitis media
B. Malfunctioning eustachian tube
C. Tympanic membrane retraction

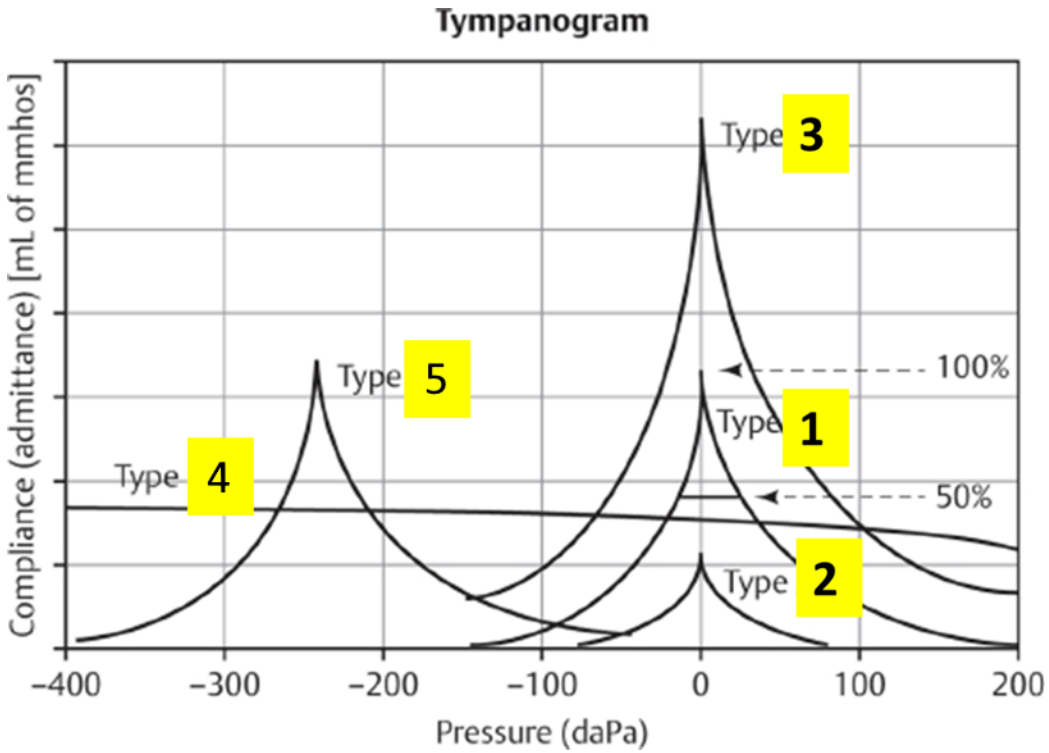


- Peak is below –100 daPa
- Compliance from 0.3-1.5 ml

Name each type with One possible cause and One choice treatment if found

Examples

1. Type A
   - Normal
2. Type As
   - Otosclerosis ⟶ Stapedectomy
3. Type Ad
   - Ossicular discontinuity ⟶ Ossicular chain reconstruction
4. Type B
   - TM perforation ⟶ Myringoplasty
5. Type C
   - Eustachian tube dysfunction ⟶ Surgery



Acoustic reflex

Afferent fibers: CNVIII, **Efferent fibers**: CNVII

- **Afferent lesion**
  - Absent of reflex bilaterally when a loud sound is applied on the affected side
  - Normal reflex bilaterally when a loud sound is applied on the normal side
- **Efferent lesion**
  - Normal reflex on the normal side
  - Absent of reflex on the affected side
  - If the facial nerve lesion is after the branch to the stapedius muscle a reflex is seen in th affected side

What is the result of stapedial reflex in these situations ?

Dead right ear

- Loud noise in the right results in no reflex
- Loud noise in the left ear results in normal reflex

Facial nerve injury above branch to stapedius muscle

- Loud noise in any of the ears results in a stapedial reflex only at the normal side

Facial nerve injury under branch to stapedius muscle

- Loud noise in any of the ears results in a stapedial reflex in both ears

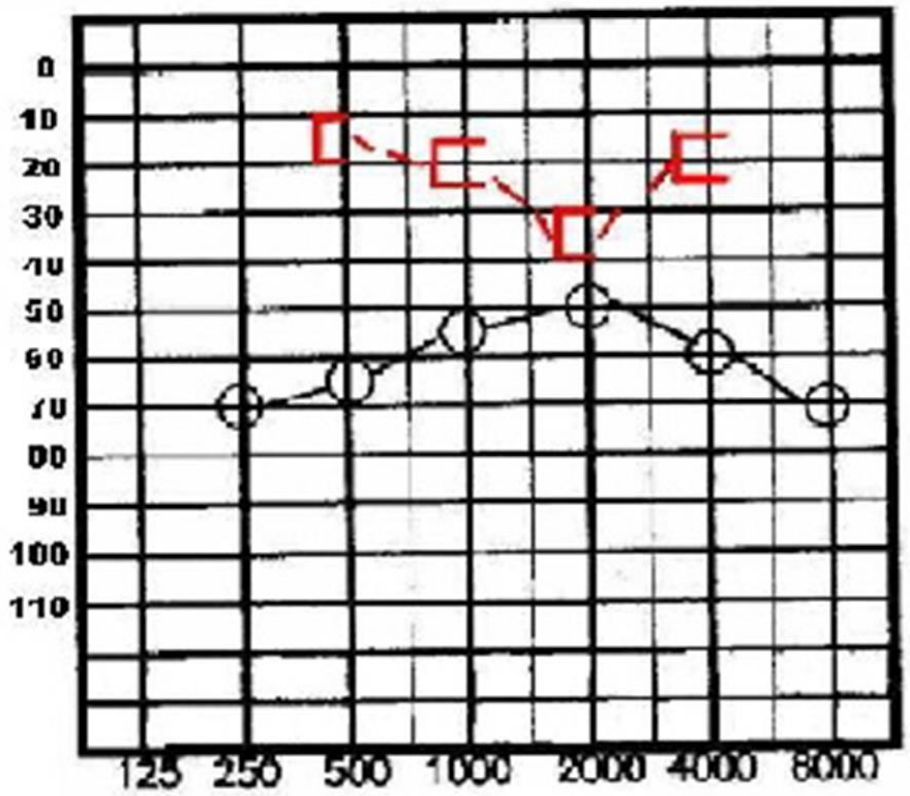
Pay attention to the history

- Bilateral high frequency SNHL in young ⟶ noise induced hearing loss
- Bilateral high frequency SNHL in older age ⟶ presbycusis
- Unilateral high frequency SNHL with unilateral tinnitus in young age group ⟶ Rule out acoustic neuroma (vestibular schwannoma)

This is a right ear audiogram

1.Describe the audiogram (findings)

- Bone conductions are within normal ranges except at 2k Hz which represent the characteristic Carhart notch of otosclerosis
- Air conductions are higher than normal by 30-50 dB and are poorer than bone conductions by more than 10 dB indicating a conductive hearing loss



2.What is the diagnosis

- Right ear otosclerosis

3.Mention 2 line of management

1) Medical: Florid supplement
2) Surgical: Stapedotomy

Answer the questions after checking the audiogram

1.What is the diagnosis

❖Right ear otosclerosis

2.Weber's test

❖Lateralize to the right side

3.Rinne's test (In exam mention both ears)

❖Right ear: Rinne negative

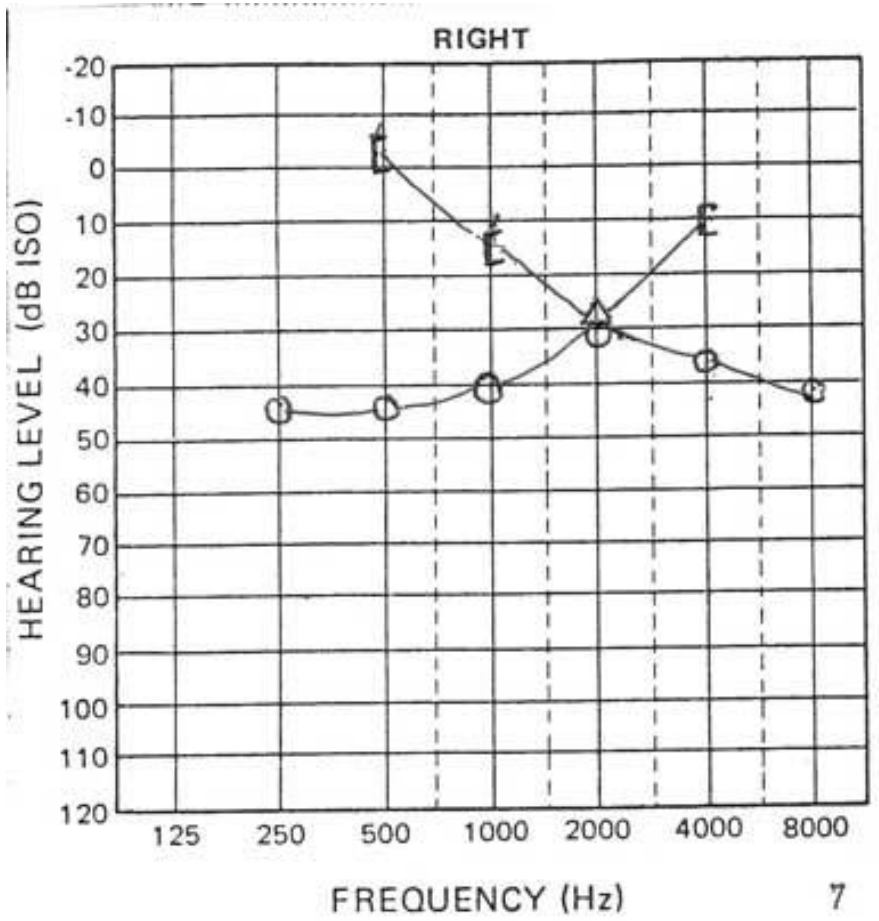
❖Left ear: Rinne positive

4.Tympanometry?

❖Right: Type As, Left: Type A (normal)

5.Mention a characteristic feature?

❖Carhart notch at 2000Hz



This is a left ear audiogram

1.What is the diagnosis

❖Left ear otosclerosis

2.Mention a characteristic feature?

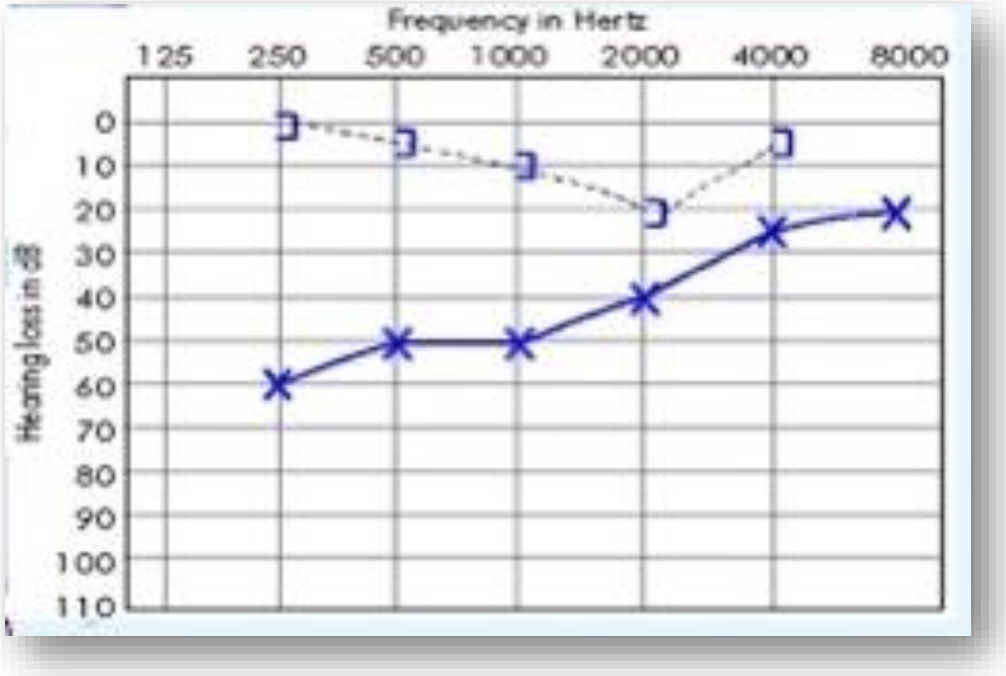
❖Carhart notch at 2000Hz

3.Tympanometry?

❖Left: Type As, Right: Type A (normal)

4.Weber's test

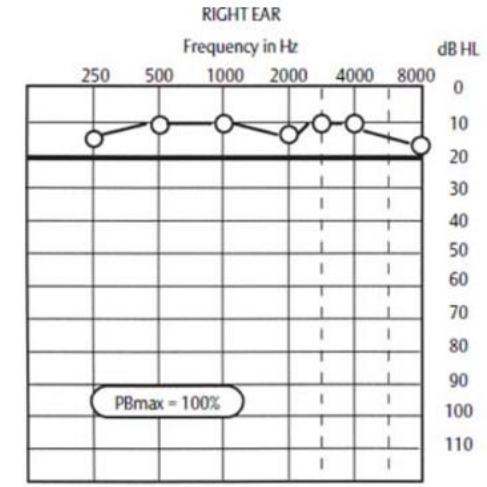
❖Lateralize to the right side



Answer the questions after checking the audiogram

1.Describe

- ❖Right ear: normal audiogram
- ❖Left ear: Both bone and air conductions are higher than normal at lower frequencies (> 25 dB) and are within 10 dB from each other indicating sensorineural hearing loss at lower frequencies

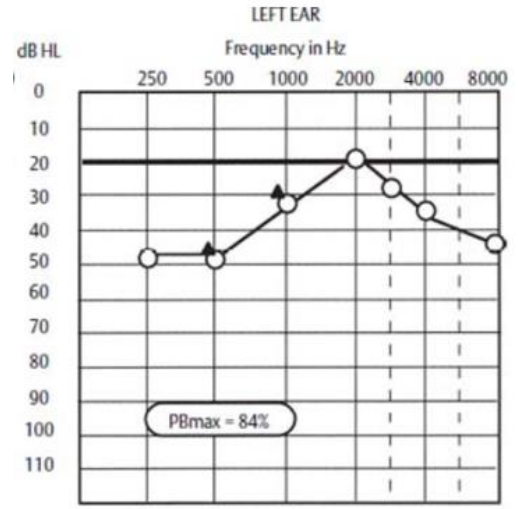


2.Diagnosis: Meniere's disease

3.Weber's test: Laterization to the right (normal) ear

4.Rinne's test: Right: Positive | Left: Positive

5.Tympanometry: Both: Type A (normal)



Answer the questions after checking the audiogram

1.Describe

- ❖Right: normal hearing
- ❖Left: sensorineural hearing loss at high frequencies

2.What should you exclude in this case ?

- ❖Vestibular schwannoma (Acoustic neuroma)

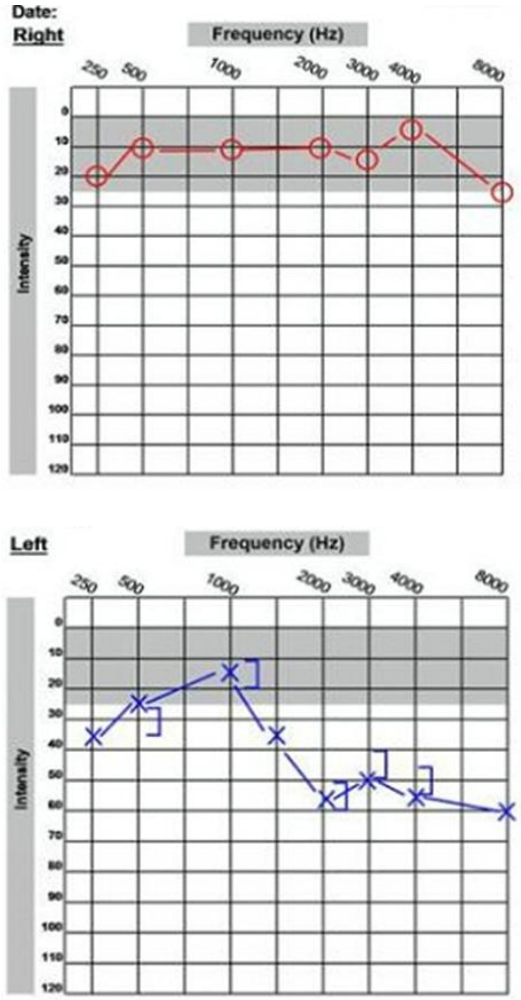
3.Other investigations

- ❖MRI or CT scan (of the posterior fossa)

4.Weber's test: Laterization to the right (normal) ear

5.Rinne's test: Right: Positive | Left: Positive

6.Tympanometry: Both: Type A (normal)



Unilateral sensorineural hearing loss must rule out vestibular schwannoma

27y dentist came with mild fever, and tinnitus

1.Describe

- Bilateral sensorineural hearing loss at higher frequencies most severe between 4k and 6k

2.Diagnosis: Noise induce hearing loss

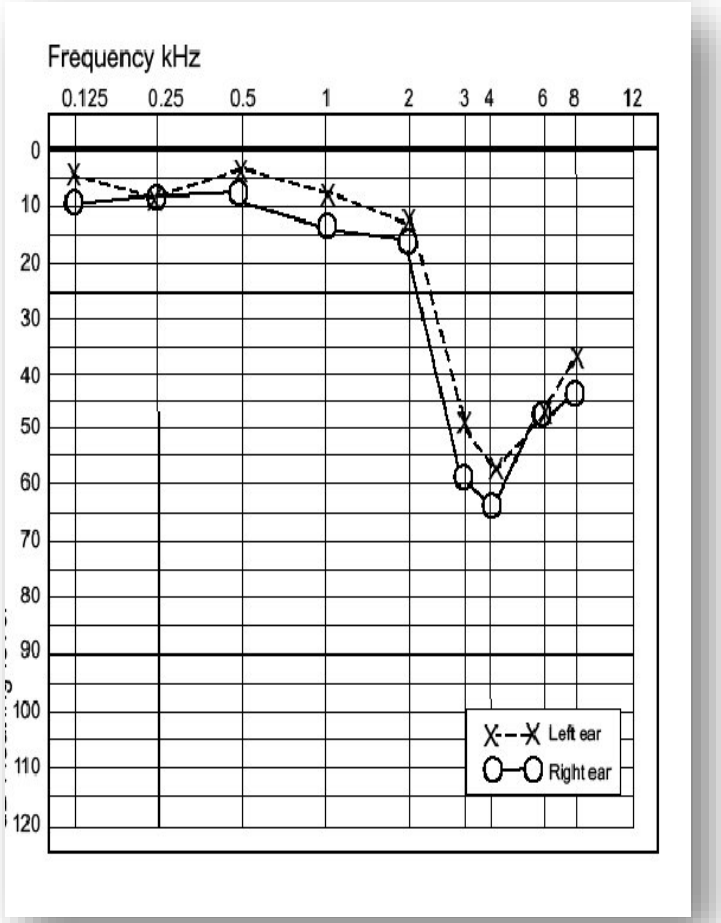
3.Management

- Avoid exposure to loud noise and hearing aids or cochlear implant

4.Weber's test: No laterization

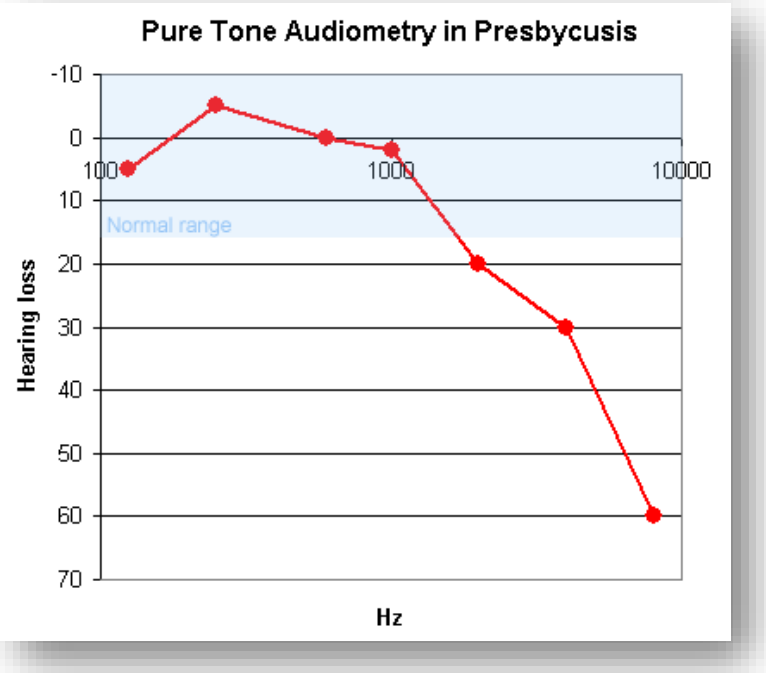
5.Rinne's test: Right: Positive | Left: Positive

6.**Tympanogram**: Both: Type A (normal)



73-year-old male started to suffer from a bilateral decrease in hearing

1. **Diagnosis**: Presbycusis
2. **Investigation**:
   - ❖ Audiogram
   - ❖ No need for CT because it's bilateral not unilateral
3. **Management**: Hearing Aid
4. **Weber's test**: No laterization
5. **Rinne's test**: Right: Positive | Left: Positive
6. **Tympanometry:** Both: Type A (normal)

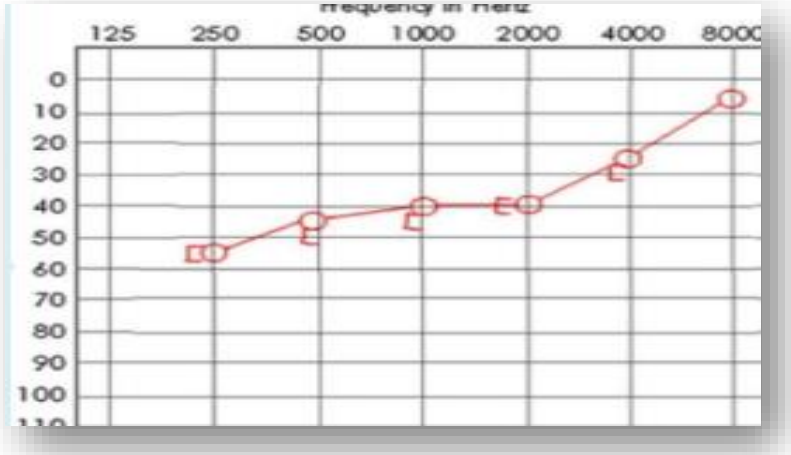


Answer the questions after checking the audiogram

- 40 years old women presented to the clinic with recurrent attack of right hearing loss along the duration of 3 years

- **Describe**
  - Left ear: normal audiogram
  - Right ear: Both bone and air conductions are higher than normal at lower frequencies (> 25 dB) and are within 10 dB from each other indicating sensorineural hearing loss at lower frequencies

- **Mention 4 symptoms**
  - Vertigo
  - Tinnitus
  - Ear fullness
  - Nausea and vomiting
  - Nystagmus



Child present with delayed speech

What should you explain to the child's parents?

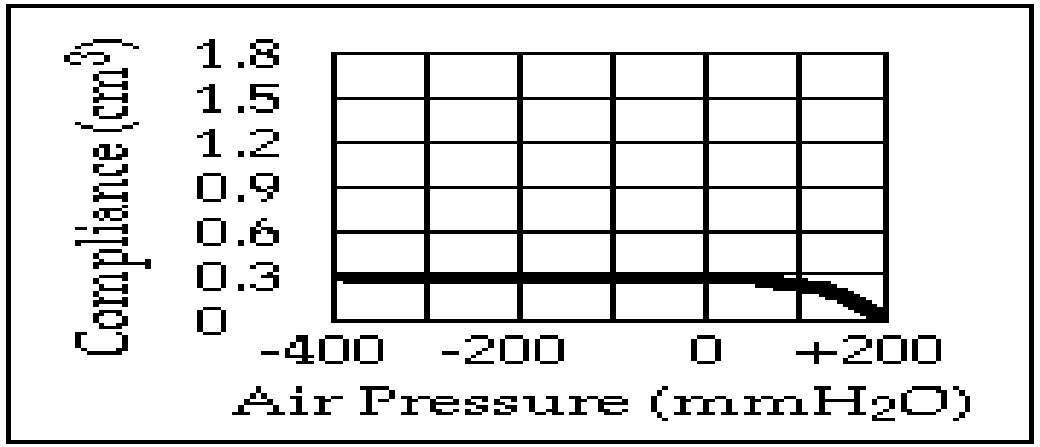
- In children, reduced hearing ability due to OME may result in speech and language impairment. Therefore, early initiation of treatment is important

2.Management:

- Further investigations (Monitor for 3 Months)

3.Treatment:

- Myringotomy with Grommet insertion and/or adenoidectomy if the patient is >4 years old



Answer the questions after checking the picture

1. **Describe what you see**
   - TM perforation with discharge
2. **Which ear is this ?**
   - Left ear
3. **Weber's test**: Laterization to the left
4. **Rinne's test**: Right: Positive | Left: Negative
5. **Tympanometry**: Left: Type B with large volume, Right: Type A (Normal)
6. **Audiometry**: Conductive hearing loss
7. **Management**:
   1. 1st to stabilize the patient (Swab culture, Regular aural toilet, antibiotics, systemic antibiotics in acute exacerbation of disease)
   2. Definitive: Myringoplasty

من باب الاحتياط

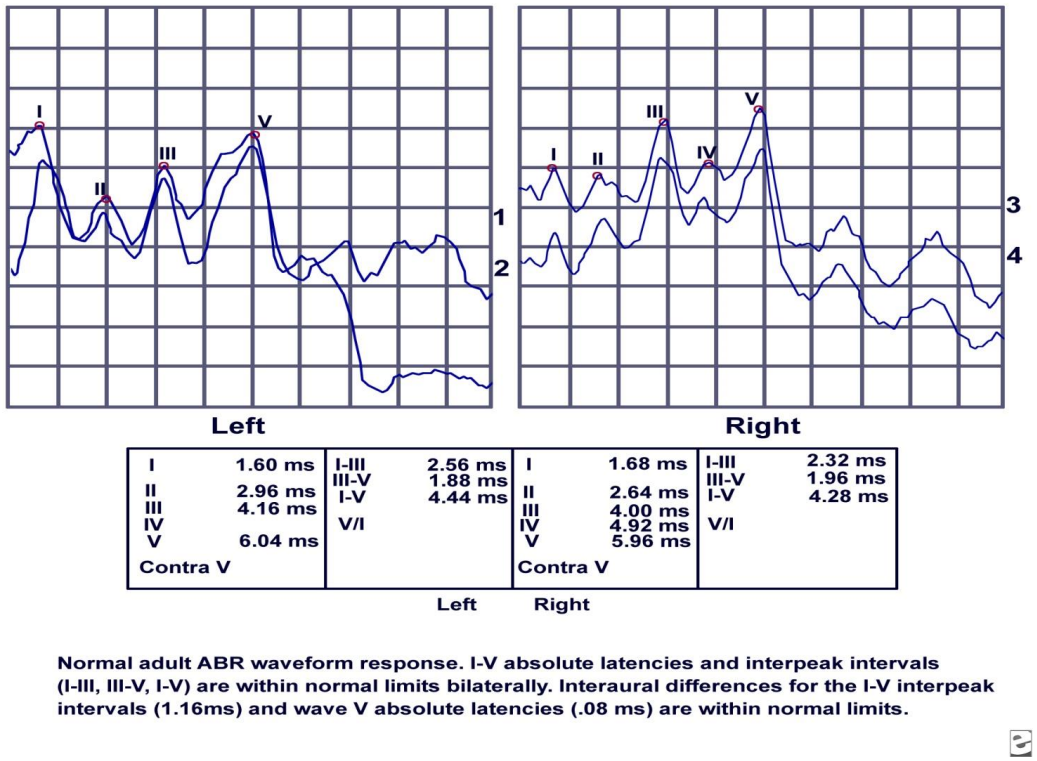
- **Speech audiometry**
  - **Speech-Recognition Threshold (SRT)**:
    - The objective of this measure is to obtain the lowest level at which a patient can correctly repeat 50% of words.
    - An SRT better than pure tone average by more than l0 dB suggests a Functional hearing loss (Nonorganic hearing loss); hearing loss without a detectable corresponding pathology in the auditory system.
  - **Speech-Awareness Threshold (SAT)**:
    - The objective of this measurement is to obtain the lowest level at which speech can be detected at least half the time.
  - **Interpretation**:
    - Increasing loudness eventually leads to a speech comprehension of 100% in patients with conductive hearing loss, but not in patients with sensorineural hearing loss. Loss of word comprehension is referred to as discrimination loss.
- **Otoacoustic emissions (OAE) tests** are used to determine cochlear status, specifically hair cell function
- **Auditory Brainstem Response (ABR) Audiometry** has a wide range of clinical applications, including screening for retrocochlear pathology, universal newborn hearing screening, and intraoperative monitoring

Auditory Brainstem Response (ABR) Audiometry

The auditory structures that generate the auditory brainstem response are believed to be as follows:

- Wave I/II: **E**ight Cranial Nerve
- Wave III: **C**ochlear Nucleus
- Wave IV: **O**live (Superior Olive)
- Wave V: **L**ateral Lemniscus
- Wave VI: **I**nferior Colliculus

Mnemonic: **E.COLI**



Normal adult ABR waveform response. I-V absolute latencies and interpeak intervals (I-III, III-V, I-V) are within normal limits bilaterally. Interaural differences for the I-V interpeak intervals (1.16ms) and wave V absolute latencies (.08 ms) are within normal limits.

Vertigo & Tinnitus

Vertigo

Central vertigo

1. Chronic (persistent)
2. Horizontal or vertical or mixed Nystagmus.
3. General weakness.
4. Difficulty in speech.
5. Diplopia.
6. No nausea or vomiting.

Peripheral vertigo

1. Acute (Episodic)
2. Horizontal Nystagmus.
3. Nausea, Vomiting, Sweating, Tachycardia, Tachypnea.
4. Causes: the most three common causes
   A. Benign paroxysmal positional vertigo.
   B. Vestibular neuritis (Labrynthitis) ‘’2nd most common’’.
   C. Meniere’s disease ‘’3rd most common’’.

Benign paroxysmal positional vertigo

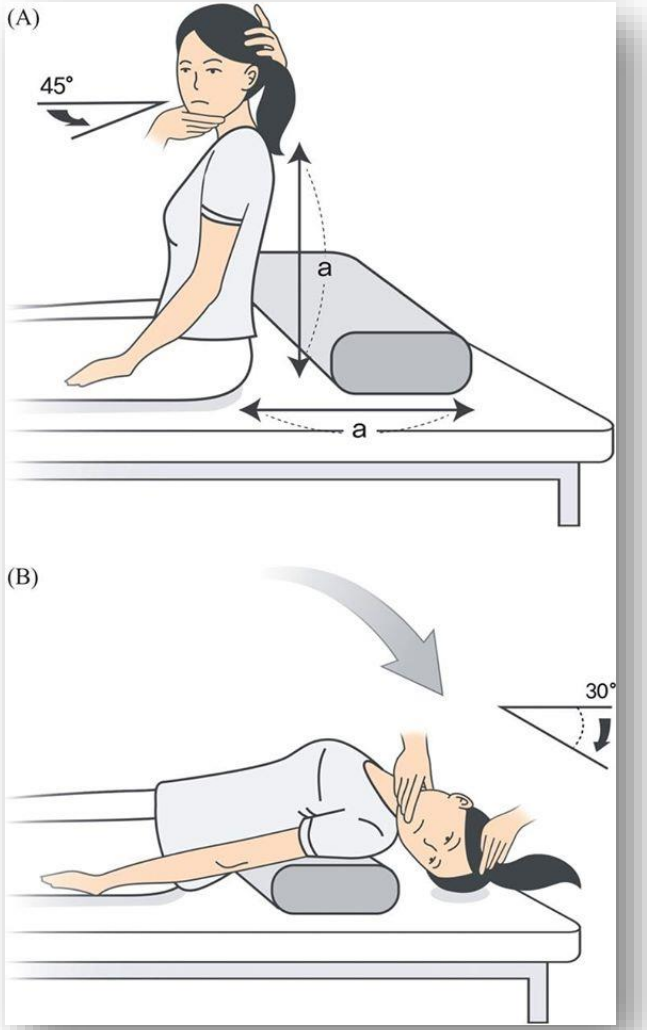
- **Definition**:
  - Episodic vertigo triggered by certain changes in the position of the head
- **Duration**:
  - Seconds to hours
  - Usually there is no tinnitus, hearing loss, nausea or vomiting (rare because it usually only takes seconds)
- **Test for diagnosis**:
  - Dix-Hallpike test

Benign paroxysmal positional vertigo

- **Treatment**:
  - Epley maneuver.
  - Surgery (if Epley maneuver doesn't cure it): Complete closure of the posterior semicircular canal.
- **Causes (etiology)**:
  - Idiopathic (50%).
  - Head trauma.
  - Chronic otitis media.
  - Viral infection.

Benign paroxysmal positional vertigo

1. **What is the name of this test?**
   - Dix-Hallpike maneuver
2. **What is this test used to diagnose ?**
   - Benign paroxysmal positional vertigo (BPPV)
3. **Describe a positive result of the test.**
   - It provokes a paroxysmal vertigo and nystagmus
4. **Prognosis**: Good
5. **Etiology**
   1. Idiopathic (50%).
   2. Head trauma.
   3. Chronic otitis media.
   4. Viral infection.
6. **Pathophysiology**: dislodge of canalith from utricle to semicircular canal (posterior one most commonly)



Vestibular neuritis (Labyrinthitis)

- **Etiology**
  - Viral infection.
- **Duration of vertigo**
  - Days to one week.
  - There is nausea , vomiting and fatigue.
- **Treatment**
  - IV Fluids.
  - Steroids.
  - Anti-emetic.

Meniere's disease

- **Etiology**
  - Idiopathic.
- **Duration of vertigo**
  - 20-30 minutes to hours.
- **Symptoms**:
  - Unilateral , fluctuating hearing loss for low frequencies
  - Tinnitus
  - Ear fullness
- **Tympanometry**: Type A (Normal)
- **Rinne's test**: Positive
- **Weber's test**: Lateralized to the contralateral side
- **Hearing loss**: Sensorineural hearing loss

Meniere's disease

❖**Treatment :**

1. Lifestyle change: low salt intake.
2. Thiazide diuretics
3. Anti-vertigo (Betahistine).
4. Intratympanic injection of aminoglycoside like Gentamycin (Ototoxic drug which damages the dark cells that produce the endolymph) can improve vertigo.
5. Surgery: Labyrinthectomy or Endolymphatic sac decompression.

❖**Meniere's syndrome causes (Not Meniere's disease)**

A. Chronic otitis media.
B. Viral infection.
C. Syphilis.

Causes of unilateral tinnitus

1. Meniere's disease.
2. Glomus tumor (Chemodectoma / Paraganlionoma)
   - Most common benign tumour in the middle ear and temporal bone, present with pulsatile tinnitus in females , Detected by MRI
3. Vestibular schwannoma.

Otitis externa

Otitis externa (pruritis, pain, discharge)

1. Fungal in origin:
   - See next slides
2. Bacterial otitis externa:
   - May cause stenosis
   - Management: Aural toilet + antibiotic ear drop
3. Malignant otitis externa
   - Management: Admission + IV antibiotic + surgical debridement

Otitis externa

❖**Signs of otitis externa**

1. Narrowed external auditory canal.
2. Edema and erythema of the external auditory canal.
3. Conductive hearing loss may be evident.
4. Discharge.
5. Tragus sign is positive (palpation of tragus elicits severe pain , in otitis media its moderate pain).

❖In case of severe itching + discharge ⟶ think of otitis externa

❖In case of severe itching + discharge + intact TM ⟶ fungal otomycosis (Aspergillosis)

Otomycosis (Fungal infection)

- **Symptoms:**
  A. Severe itching
  B. Chronic discharge with inflammation of the mucosa of tympanic membrane
- **Etiology (Pathogen)**
  - 90% Aspergillus (wet newspaper)
  - 10% Candida (whitish “Cheesy material”)
- **Treatment**:
  A. Avoid water entry to ear (Keep it dry)
  B. Ear toilet
  C. Topical antifungal 3-4 weeks

Otomycosis (Fungal infection)

- **Describe this picture**
  - Wet newspaper appearance (dark spots) due to fungal infection otitis externa (otomycosis)(Aspergillosis)
- **What is your diagnosis ?**
  - Otomycosis (Fungal infection)
- **Management**
  - Avoid water entry to ear (Keep it dry)
  - Ear toilet
  - Topical antifungal 3-4 weeks

Otitis media

Acute otitis media 1

- Dull tympanic membrane with redness + Otalgia for 3 days.
- Usually follows upper respiratory tract infections.
- **Sometimes nausea, vomiting, diarrhea and abdominal pain in pediatrics; Due to Vagus nerve innervation.**
  - DDx of acute otitis media in pediatrics (when there is nausea, vomiting, diarrhea and abdominal pain?
    1. Gastroenteritis.
    2. Appendicitis.
    3. Peritonitis.
- **Most common microorganisms ?**
  - Streptococcus pneumoniae
  - Hemophilus influenzae
  - Moraxella catarrhalis
- **Signs and symptoms:**
  - Classic triad of Otalgia, Fever, Conductive hearing loss
  - Other symptoms: otorrhea (indicates perforation), N&V, Anorexia, Irritability

Acute otitis media Phases

1. **Exudative inflammation** – 1-2 days
   - Fever, chills, rigors, meningism, pain (worst at night), muffled noise in ear, deafness, sensitive mastoid, tinnitus
2. **Resistance & Demarcation** – 3-8 days
   - Pus, middle ear exudate discharge spontaneously, decreased pain, decreased fever
3. **Healing phase** – 2-4 weeks
   - Aural discharge dries up and hearing return to normal

❖ Complications of AOM

1. TM perforation
2. Otitis media with effusion
3. Cholesteatoma
4. Ossicular necrosis
5. Chronic otorrhea
6. Chronic suppurative otitis media

Acute otitis media management

1. **Early stage**
   A. Antibiotics: 1st line Amoxycillin | 2nd line Amoclav, 2nd & 3rd Cephalosporins
   B. Analgesics
   C. Nasal vasoconstrictor: Ephedrine nasal drops
2. **Bulging stage**
   - Myringotomy if the bulging persist despite antibiotic therapy
3. **Discharging stage**
   - Topical & systemic antibiotics, Culture, Regular aural toilet

❖ **Cure criteria**:
- Tympanic membrane return to normal
- Regain normal hearing

❖ **In recurrent AOM**
- Long term antibiotics may be beneficial
- Myringotomy & grommet or tympanostomy tube for 6-12 months

Otitis media with effusion 1

Most common cause ?

- Adenoid hypertrophy → Eustachian tube dysfunction → negative pressure → retraction pocket → prevents adequate drainage → accumulation of fluid.

Most common symptom ?

- Mild conductive hearing loss.

Clinical presentation:

- May be asymptomatic.
- Typically, painless sensation of pressure in the affected ear.
- Must be suspected in children with delayed speech.
- History of hearing loss more than 3 months with no discharge or perforation indicates otitis media with effusion.

Otitis media with effusion 2

Hearing assessment:

- **Tympanometry**: Type B with normal volume.
- **Rinne test**: Negative
- **Weber test**: lateralized to the affected side.

Work up

1. Pneumatic otoscopy
2. Tympanometry
3. Audiometry
4. Nasal paranasal CT scan to exclude adenoid hypertrophy
5. MRI

Treatment:

- Usually medical: (controversial)
  - Nasal steroid.
  - Nasal Anti-histamines.
- Surgical: (in 10% of cases)
  - Adenoidectomy
  - Myringotomy with Grommet insertion under GA
- Complications of myringotomy
  - Infection.
  - Bleeding.
  - Permanent perforation.
  - Damage to the ossicles.
  - Damage to the facial nerve.

Otitis media with effusion 3

Diagnostics (Work up) Detailed

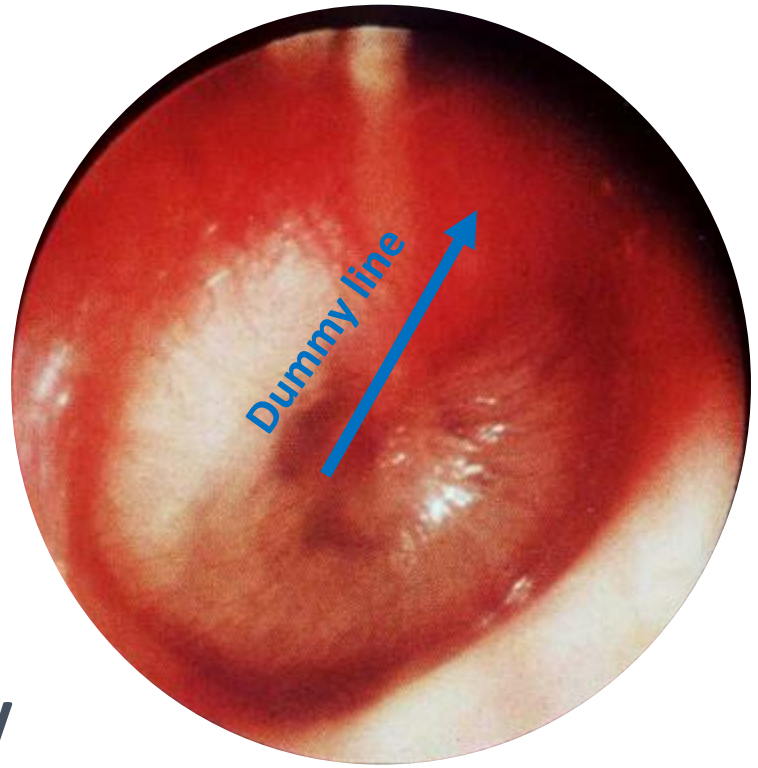
1. Best initial test: pneumatic otoscopy to assess the tympanic membrane
2. If pneumatic otoscopy is inconclusive: impedance tympanometry
3. Persistent OME for > 3 months or speech impairment: audiometry
4. Nasal paranasal CT scan to exclude adenoid hypertrophy in children or nasopharyngeal masses in adults
5. MRI if CT was inconclusive

Note: OME might be silent if there is no pain

Q1: Otitis media with effusion

25 years-old patient Mild hearing loss, pulsatile tinnitus , aural fullness

1. **Mention 2 ddx**
   - OME , Bulging stage otitis media
2. **Work up**
   1. Pneumatic otoscopy
   2. Tympanometry
   3. Audiometry (Persistent OME for > 3 months)
   4. Nasal paranasal CT scan; exclude masses
   5. MRI if CT was inconclusive
3. **Findings on Audiometry and tympanometry**
   - Audiometry: Conductive hearing loss
   - Tympanometry: Type B with normal volume

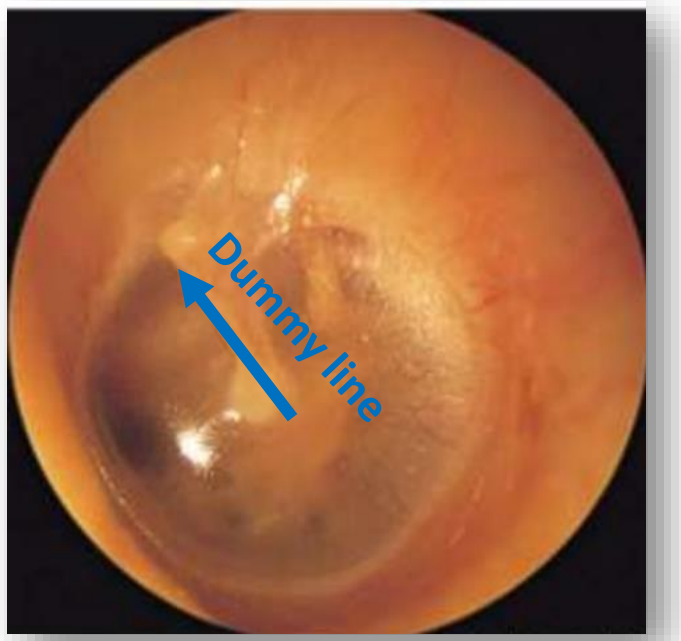


Q2: Mild hearing loss, pulsatile tinnitus, aural fullness

1. **Mention 2 DDx**
   - Otitis media with effusion , Meniere's disease
2. **Management**
   1. Management of OME
   2. Management of Meniere’s disease
3. **Findings on audiometry and tympanometry**
   1. OME: Conductive hearing loss, type B with normal volume
   2. Meniere's disease: Sensorineural hearing loss, type A

Q3: Otitis media with effusion

1. **Describe**
   - Orange, yellow tinged intact tympanic membrane
2. **Diagnosis, which ear is this ?**
   - Otitis media with effusion in the *left ear*
3. **Weber's test**: Lateralize to the affected ear (Left)
4. **Rinne's test**: Negative
5. **Mention 2 important investigations**
   A. Postnasal space X ray to exclude Adenoid hypertrophy
   B. Laryngoscopy to exclude naso-laryngeal CA
6. **What you have to exclude ?**
   - Nasopharyngeal carcinoma



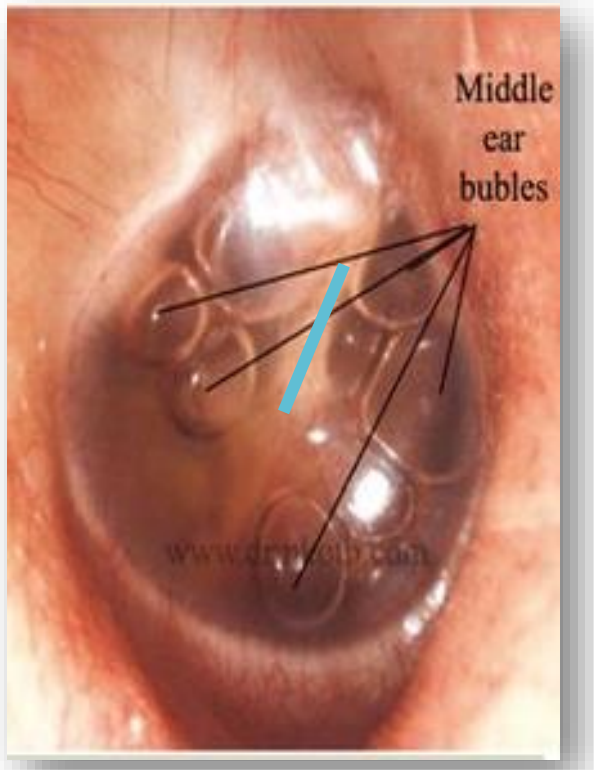
Q4: 3 years old child with hearing loss

❖Diagnosis

- Otitis media with effusion

❖Investigations

1. Pneumatic otoscopy
2. If pneumatic otoscopy is inconclusive ⟶ tympanometry
3. Persistent OME for > 3 months or speech impairment ⟶ audiometry
4. Nasal paranasal CT scan to exclude adenoid hypertrophy



❖Management

1. If the patient present without speech impairment at the time of diagnosis ⟶ monitor for 3 months
2. Patients with speech impairment or persistent OME at follow-up placement of tympanostomy tubes (gromet)

Q5: A child presented with hearing loss and a lump on the neck

❖Describe

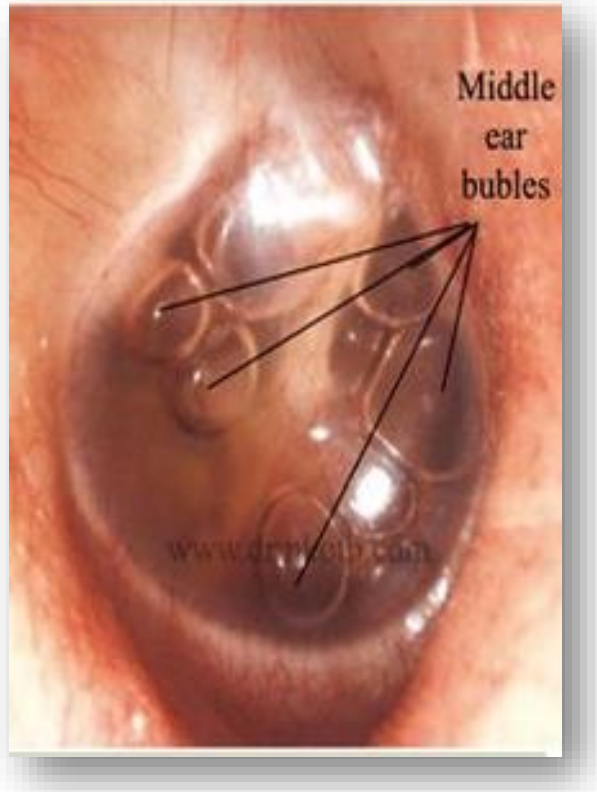
- Otitis media with effusion, dull retracted tympanic membrane with bubbles

❖What should we exclude in this case ?

- A nasopharyngeal carcinoma causing Eustachian tube dysfunction

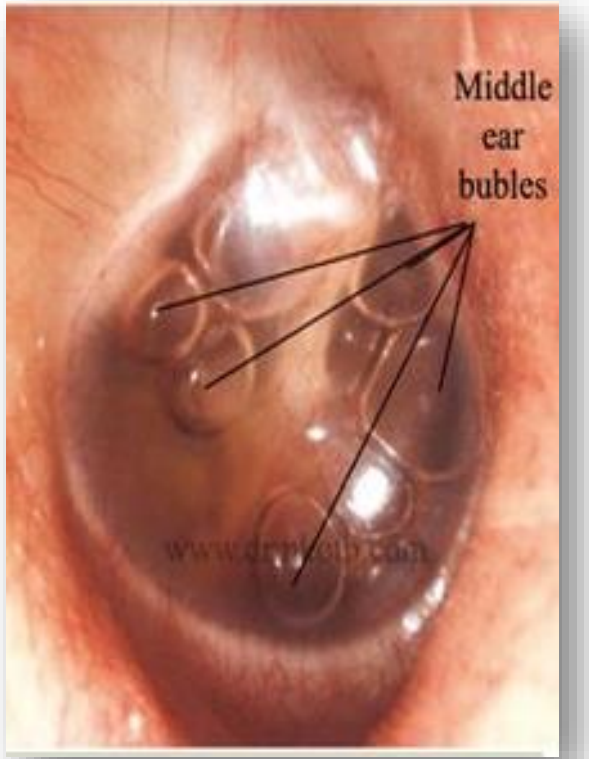
❖Investigations done ?

1. Pneumatic otoscopy
2. Nasal paranasal CT scan
3. Tympanometry
4. Audiometry



Q5: 50 years old presented with this condition

- **Diagnosis**
  - Otitis media with effusion
- **What findings do you see in this patient ?**
  - Dull retracted tympanic membrane
  - Air bubble sign
- **Mention 2 important investigations**
  1. Postnasal space X ray to exclude Adenoid hypertrophy
  2. Laryngoscopy to exclude naso-laryngeal CA



Q1: Grommet

1. **What is the name of this procedure ?**
   - Myringotomy with Grommet insertion.
2. **Indications of grommet insertion**
   1. 3 or more episodes of AOM in 6 months
   2. 4 or more attack in a year with at least one episode in the preceding 6 months
   3. OME with conductive hearing loss persists for 3 month or if there is recurrent pain
3. **Complications of Myringotomy with Grommet insertion**
   1. Infection.
   2. Bleeding.
   3. Permanent perforation.
   4. Damage to the ossicles.
   5. Damage to the facial nerve.
4. **Complications of grommet insertion**: Otorrhea (most common)

Q2: Grommet

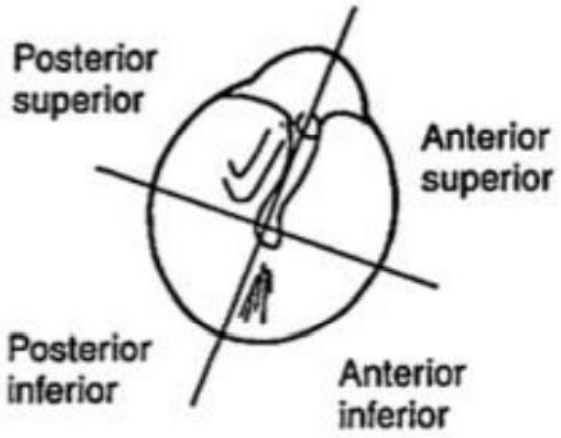
At which side (ear) are these grommets inserted ?

Left side

Right side

Right side

Grommet are typically placed in the anterior inferior quadrant because it's far away from the location of the ossicles (are located in the superior area) and because this part have the least pressure (high pressure prevent pus from draining) and healing rates thus the groomet can stay for longer duration



Q3: Grommet

1. **What is the name of this procedure ?**
   - Myringotomy with Grommet insertion
2. **Describe what you see ?**
   - tympanostomy tube at anterior-inferior part of left ear with ear discharge posterior to tube
3. **Is the left or right ear ?** *Left ear*
4. **Suspect what the cause for doing this procedure**
   - middle ear effusion due to facial nerve palsy ??
5. **Write 2 complication for this procedure**
   A. Otorrhea
   B. Permanent perforation

Q4: Grommet

- **Which side ?** *left ear*
- **Describe (Finding):**
  - left retracted tympanic mem with grommet insertion
- **Name of procedure**
  - Myringotomy with Grommet insertion
- **Indications**
  1. 3 or more episodes of AOM in 6 months
  2. 4 or more attack in a year with at least one episode in the preceding 6 months
  3. OME with conductive hearing loss persists for 3 month or if there is recurrent pain

Chronic otitis media 1

- **Definition**: persistent drainage from the middle ear through a perforated tympanic membrane lasting > 6–12 weeks
- **There should be**
  1. Chronic perforation.
  2. Chronic mastoiditis.
  3. Chronic Eustachian tube dysfunction.
  4. Chronic discharge.
- **Most common microorganism ?**
  - Pseudomonas aeruginosa.
- **Tympanometry**: Type B with High volume.
- **Rinne's test**: Negative
- **Weber's test**: Lateralized to the affected side.

Chronic otitis media 2

- **Treatment? (Medical)**
  - Swab culture.
  - Aural toilet (Regular suction).
  - Topical antibiotics (ear-drops).
- **Treatment of complications?**
  - Surgery (Mastoidectomy).

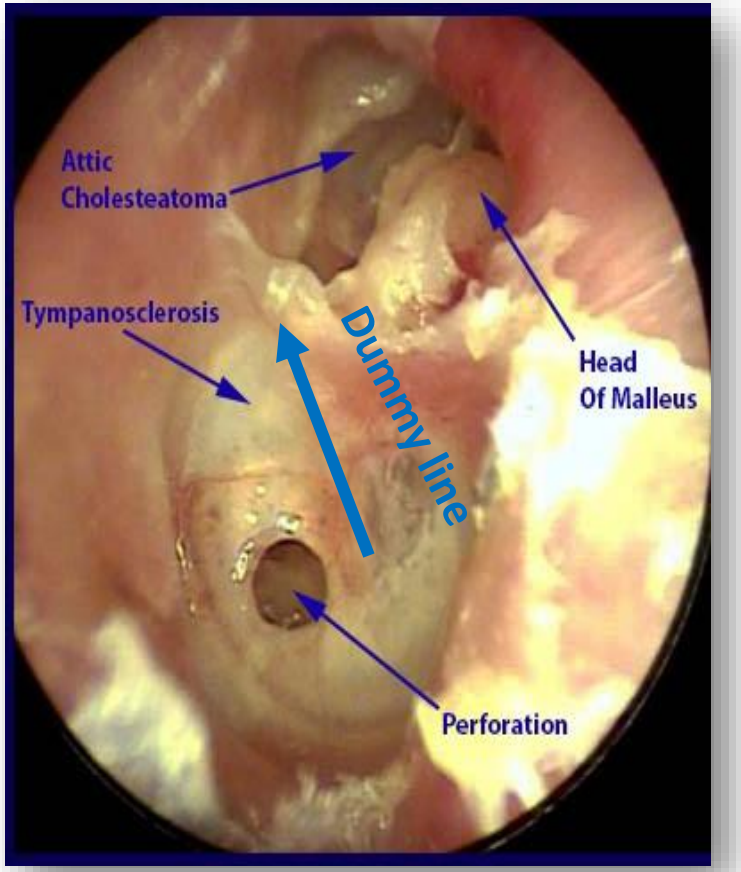
Q1: Cholesteatoma

❖ **Diagnosis**:

- Chronic otitis media with cholesteatoma

❖ **Management**:

1. Keep it dry
2. Regular aural toilet
3. Suction toilet
4. Antibiotics if there is an infection
5. Mastoidectomy (Definitive treatment)

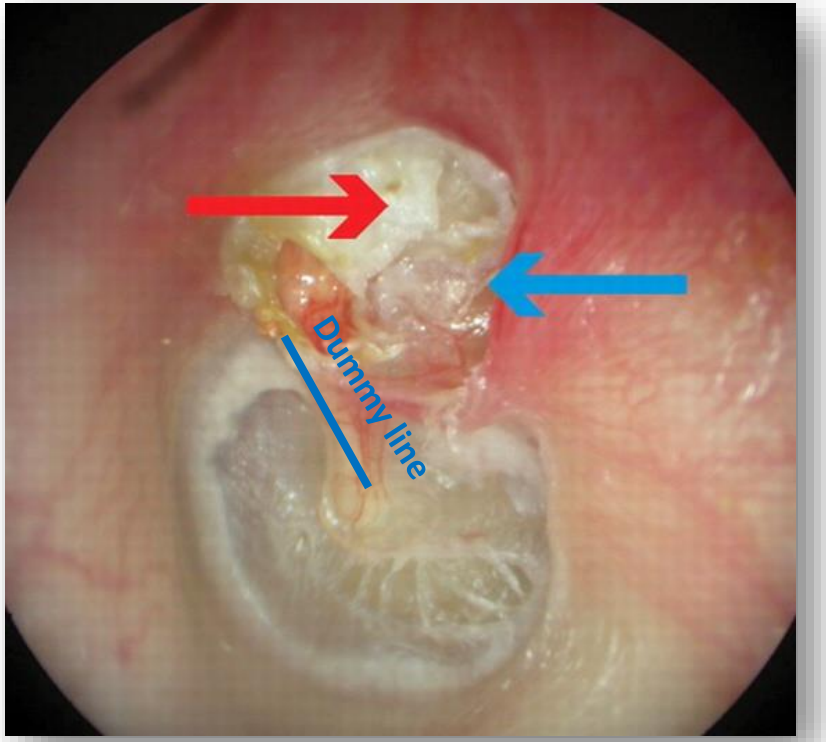


Q2: Cholesteatoma

1. **Describe what you see**
   - Large white lesion in pars flaccida erode the near bone without membrane perforation
2. **Diagnosis**:
   - Cholesteatoma (Primary acquired)
3. **Which ear R/L**
   - Left
4. **Management**:
   1. Regular aural toilet
   2. Suction toilet
   3. Antibiotics if there is an infection
   4. Mastoidectomy (Definitive treatment)

Q3: Cholesteatoma

1. **What side is this ?**
   - Left ear
2. **Describe**
   - White lesion cyst like in paraflacida with erosion of surrounding bone
3. **Diagnosis**
   - Cholesteatoma
4. **Result in audiogram**
   - Conductive hearing loss



Tympanic Membrane Perforation

❖Treatment of dry perforated tympanic membrane

A. Conservative (1st option).
B. Myringoplasty (Type one Tympanoplasty) ← Definitive treatment

❖Treatment of perforated tympanic membrane with discharge

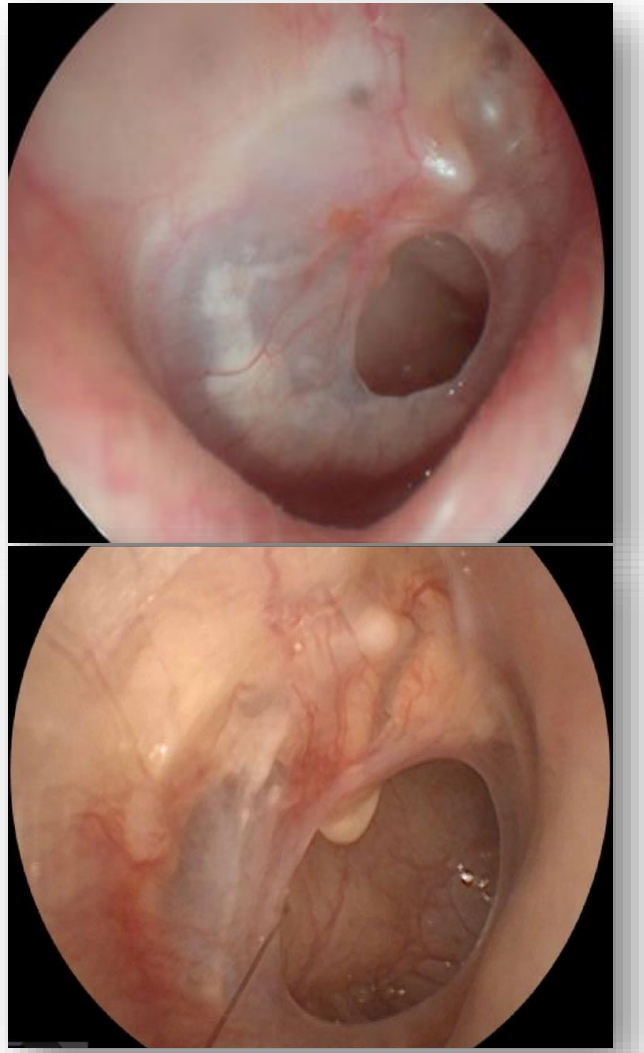
A. Aural toilet (regular suction)
B. Swab culture
C. Ear drop with antibiotic
D. Myringoplasty (Type one Tympanoplasty) ← Definitive treatment

❖Complications of Myringoplasty

A. Infection
B. Permanent perforation
C. Bleeding
D. Damage to external ear canal
E. Damage to facial nerve

Q1: Tympanic Membrane Perforation

1. **Describe, which ear**
   - *Right* central tympanic membrane perforation (tubotempanic tympanic membrane perforation) with discharge
2. **Investigations**
   1. Pneumatic otoscopy
   2. Tympanometry
   3. Audiometry
3. **Diagnosis:** chronic suppurative otitis media
4. **Management**
   - 1st to stabilize the patient (Swab culture, Regular aural toilet, antibiotics, systemic antibiotics in acute exacerbation of disease)
   - Definitive: Myringoplasty (Type one tympanoplasty)

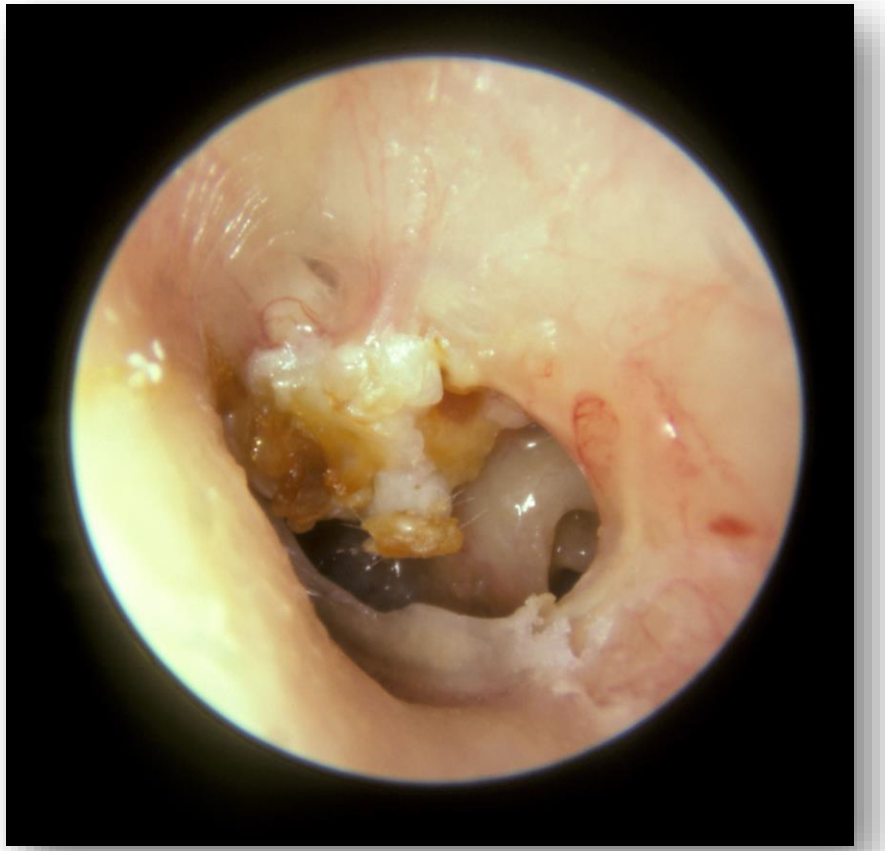


Q2: Tympanic Membrane Perforation

1. **Describe, which ear**
   - *Left* ear marginal tympanic membrane (atticoantral tympanic membrane perforation) perforation with discharge
2. **Rinne's test**: Negative
3. **Weber's test**: Lateralize to the left
4. **Tympanometry**: Type B with high volume
5. **Audiogram**: Conductive hearing loss
6. **Diagnosis:** chronic suppurative otitis media
7. **Management**:
   - 1st to stabilize the patient (Swab culture, Regular aural toilet, antibiotics, systemic antibiotics in acute exacerbation of disease)
   - Definitive: Myringoplasty (Type one tympanoplasty)

Q3: Tympanic Membrane Perforation

1. **Which side ?**
   - left side
2. **Describe what you see**
   - Large marginal tympanic membrane perforation with large white lesion in para flaccida
3. **Diagnosis**
   - cholesteatoma



Q4: Tympanic Membrane Perforation

1. **Mention one finding**
   - Subtotal TM perforation
2. **Which side**
   - Right ear
3. **Diagnosis**
   - Suppurative Chronic otitis media

Q5: Tympanic Membrane Perforation

1. **What are the pointed structures ?**
   A. Tympanosclerosis
   B. Perforation
2. **Left or Right ear ?**
   - Left ear
3. **Management**
   - 1st to stabilize the patient (Swab culture, Regular aural toilet, antibiotics, systemic antibiotics in acute exacerbation of disease)
   - Definitive: Myringoplasty (Type one tympanoplasty)

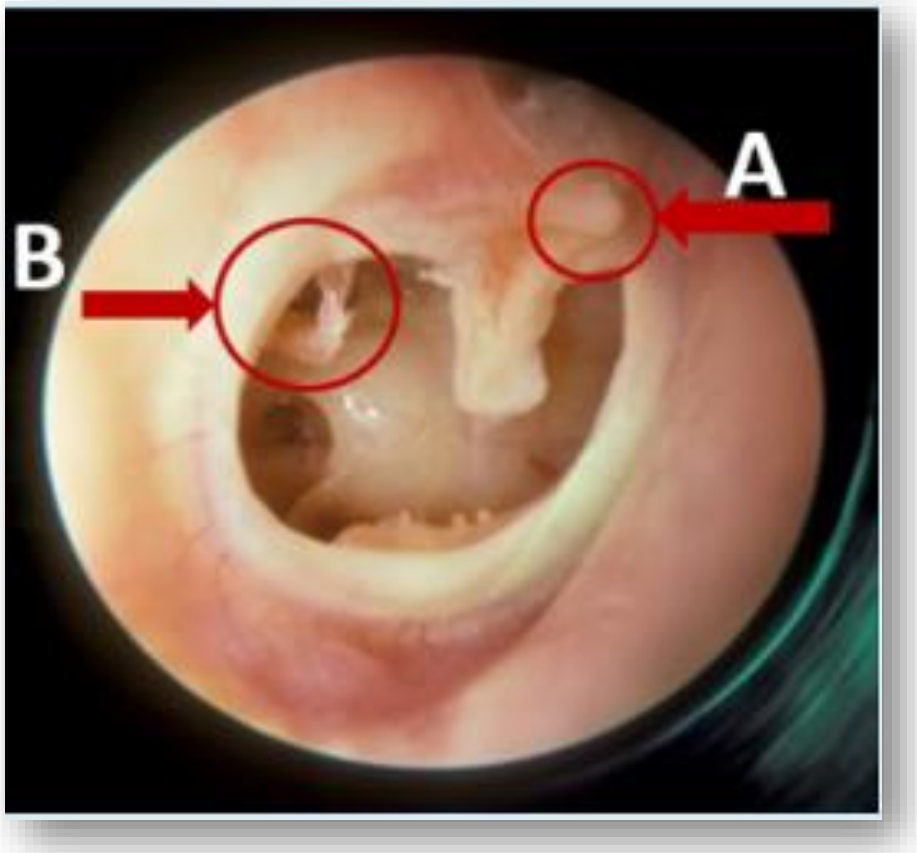
Q6: Tympanic Membrane Perforation

1. **Diagnosis**:
   - Chronic otitis media with dry marginal tympanic membrane perforation (atticoantral tympanic membrane perforation)
2. First line management in this case
   - Conservative treatment
3. **If there is discharge, what is management ?**
   A. Swab culture
   B. Aural toilet (regular suction)
   C. Antibiotic to prevent secondary infection
4. **Definitive management ?**
   - Myringoplasty (Type one tympanoplasty)

Q6: What are the labeled structures

A. Short process of malleus

B. Incudostapedial joint



Q7: Tympanic Membrane Perforation

1. **Management**
   - 1st to stabilize the patient (Swab culture, Regular aural toilet, antibiotics, systemic antibiotics in acute exacerbation of disease)
2. **Definitive management ?**
   - Myringoplasty (Type one tympanoplasty)

Facial nerve palsy

Facial nerve palsy 1

❖Most common causes:

1. Idiopathic (Bell's palsy).
2. Ramsay hunt syndrome (2nd most common): with vesicular eruption around the face and ear, type of hearing loss is Sensorineural.

❖Causes of recurrent facial palsy:

1. Melkersson-Rosenthal syndrome.
2. Sarcoidosis.
3. Parotid tumors.

❖Treatment of facial palsy:

1. Steroids (Prednisolone) in the morning 12 tablets daily for 5 days (patient should take it from 5:00AM to 7:00AM), should be within 48 hours of the palsy.
2. Antivirals are controversial.
3. Eye care (Artificial tears , Topical ointment , Eye cover).
4. Physiotherapy after two weeks.
5. Surgery.

Facial nerve palsy 2

- **Temporal bone fracture types**:
  - Longitudinal (80%) : Damage to the Tympanic membrane + Ossicles (Conductive hearing loss) + Late facial palsy.
  - Horizontal (20%) : Damage to Vestibulocochlear nerve or Labyrinth (Sensorineural hearing loss) + Immediate facial palsy.
- **Terminal branches in the parotid gland:**
  1. Temporal.
  2. Zygomatic.
  3. Buccal.
  4. Marginal mandibular.
  5. Cervical.
- **Stapedial reflex (Cochlear reflex, Acoustic reflex):**
  - Afferent : Vestibulocochlear nerve CN VIII.
  - Efferent : Facial nerve CN VII.

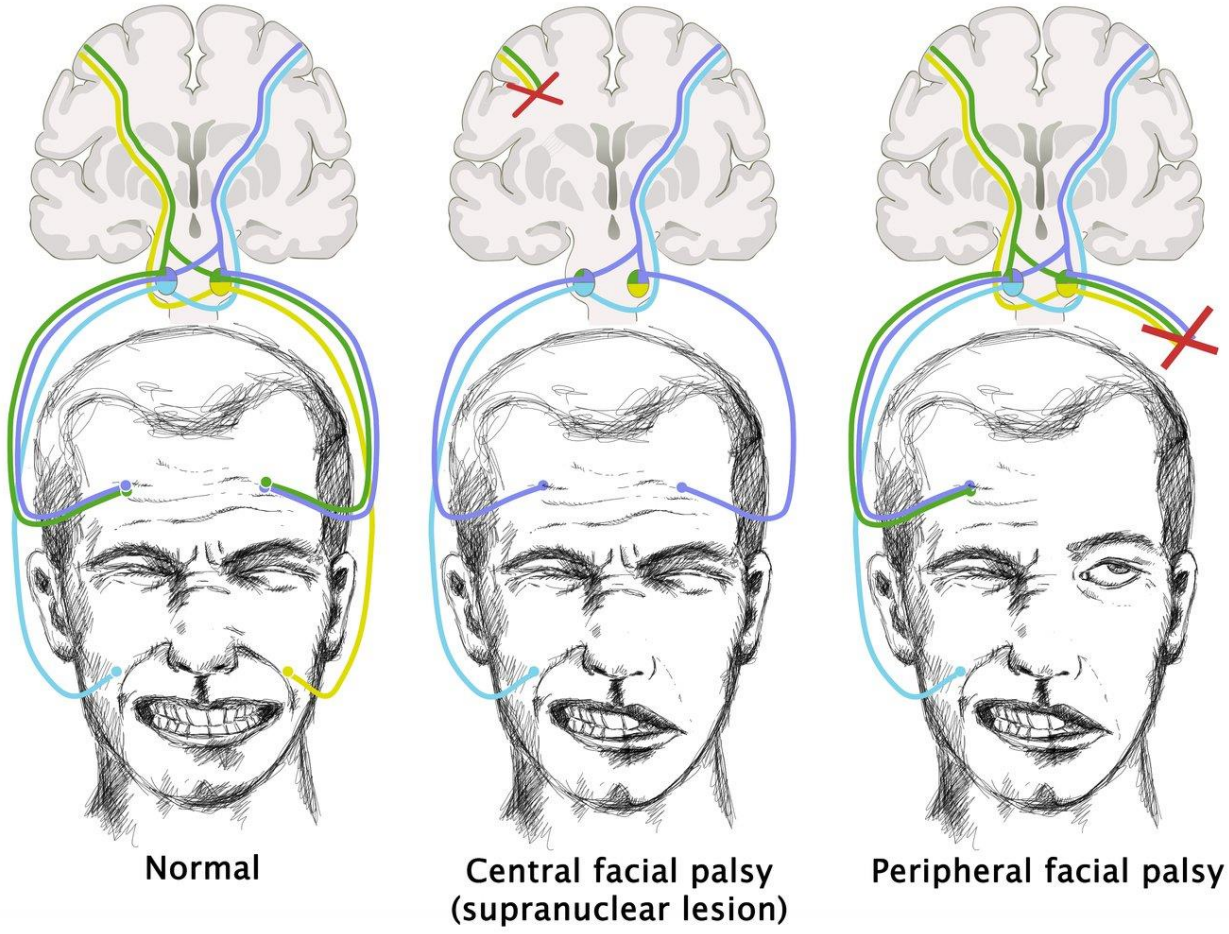
إذا مش فاهم يا بتروح
تفهم لحالك يا بتبصمج
السلايد التالي

Amboss

Facial nerve palsy 3

Examination findings in facial nerve palsy

- Muscles of the forehead and eyelid are bilaterally innervated by the facial nerve and as a result, central and peripheral lesions (red x) produce unique findings on physical examination. A central palsy (middle image) results in contralateral paralysis of lower facial muscles; whereas a peripheral palsy (right image) results in complete paralysis of the ipsilateral face.

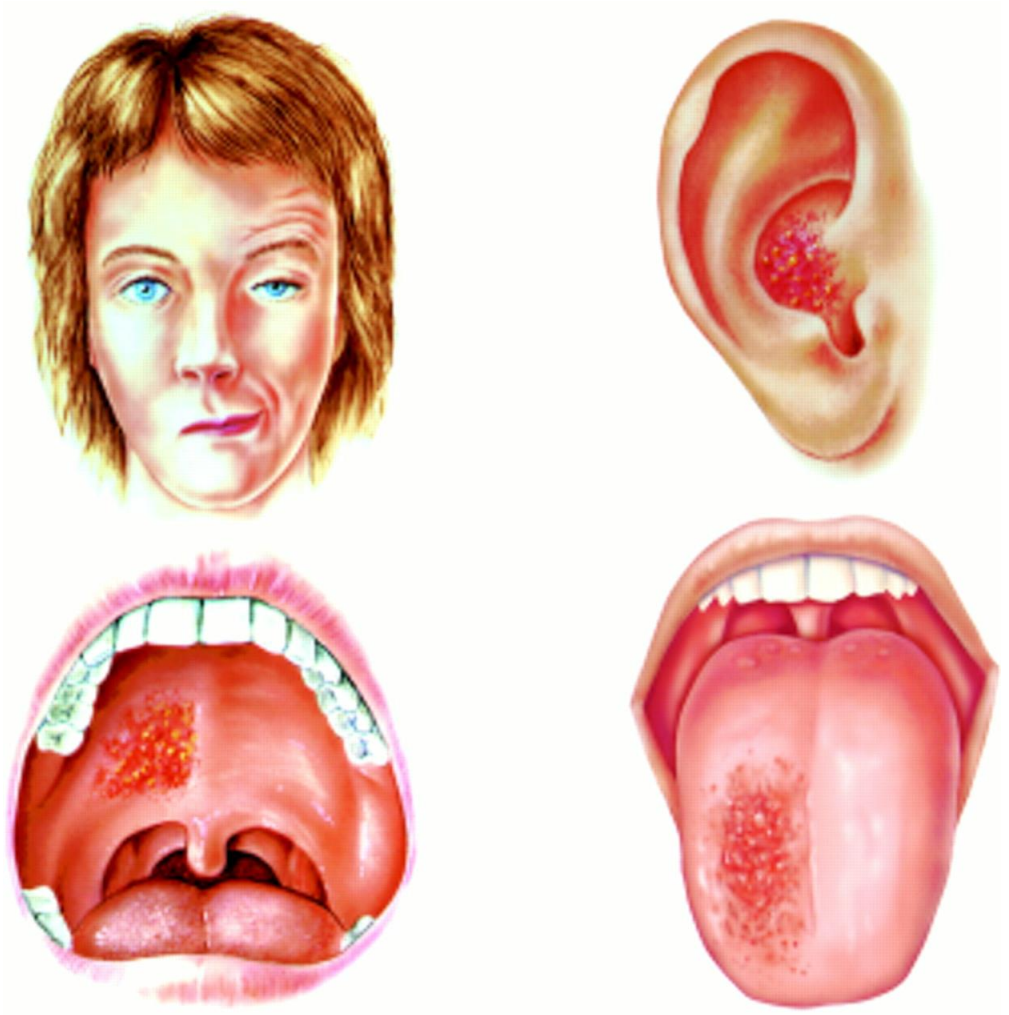


Facial nerve palsy 4

Upper motor neuron lesion (Central)	Lower motor neuron lesion (Peripheral)
Manifests in the contralateral side (Right upper motor neuron lesion will manifest in left lower face)	Manifests in the ipsilateral side (Right lower motor neuron lesion will manifest in the right whole face)
Closure of the eye is preserved	Inability (or weakness) to close the ipsilateral eye
Forehead movement is normal (frontal wrinkling isn't lost)	Forehead movement is paralyzed (Frontal wrinkling is lost)
Deviated angle of mouth	Deviated angle of mouth

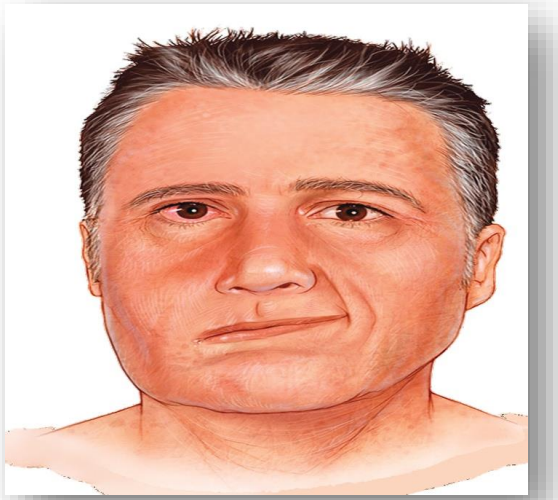
- Deviation is to the normal side
- 90% of patient recover without treatment in 3 months

Ramsay hunt syndrome 5



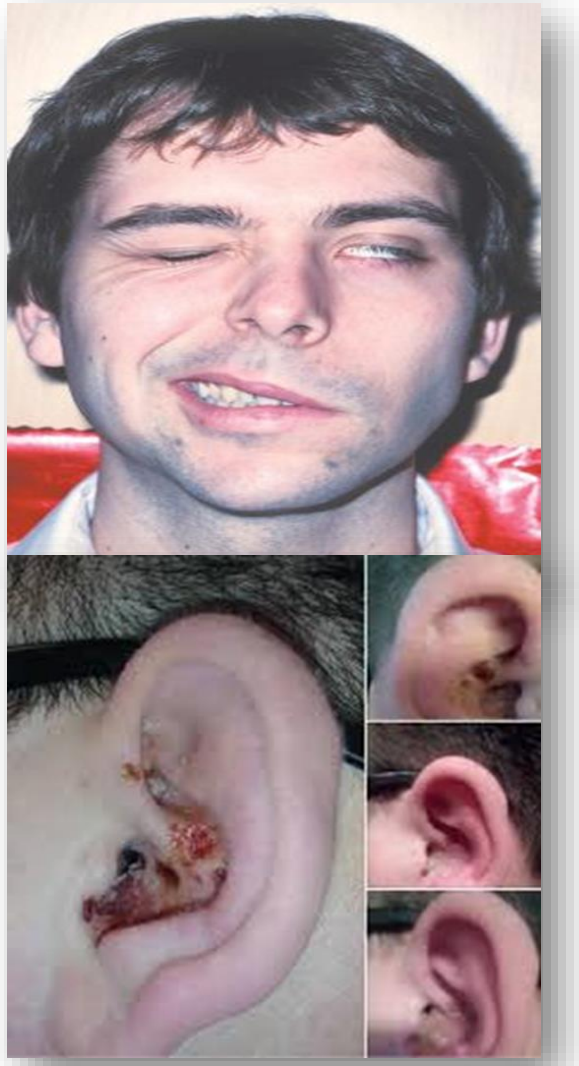
Q1: 50 old complain of ear pain and facial asymmetry

1. **Diagnosis:**
   - Ramsay hunt syndrome
2. **Most common cause:**
   - Varicella zoster virus (VZV)
3. **Management:** (Ramsay hunt syndrome)
   1. Steroids (Prednisolone) in the morning 12 tablets daily for 5 days , should be within 48 hours of the palsy.
   2. Antivirals are controversial.
   3. Eye care (Artificial tears , Topical ointment , Eye cover).
   4. Physiotherapy after two weeks.
   5. Surgery.



Q1: Facial nerve palsy cont.

4. **Describe**
   - First picture: Left facial nerve palsy
   - Second pic: Zoster vesicular eruption within external auditory meatus
5. **What will you see on tympanometry and audiometry ?**
   - Tympanometry: Type A
   - Audiometry: Sensorineural hearing loss
6. **Why are vesicles spread in this specific pattern ?**
   - Because they run with facial nerve distribution (because virus affect geniculate nucleus)



Q3: 72Y present to ER with severe ear pain 2 days ago normal external ear

1. **Diagnosis**
   - Ramsay-Hunt syndrome
2. **What is the cause of otalgia ?**
   - Severe pain precedes herpetic eruption
3. **Treatment:** (Ramsay hunt syndrome)
   1. Steroids (Prednisolone) in the morning 12 tablets daily for 5 days , should be within 48 hours of the palsy.
   2. Antivirals are controversial.
   3. Eye care (Artificial tears , Topical ointment , Eye cover).
   4. Physiotherapy after two weeks.
   5. Surgery.

Ear trauma

Auricular hematoma

❖Etiology

- Blunt trauma: blows to the ear (e.g., during boxing or wrestling)
- Penetrating trauma: lacerations and/or perforation of the ear (e.g., due to earring misplacement, ear piercing)

❖Pathophysiology:

- Trauma to the ear → bleeding from the perichondral vessels → accumulation of blood and serous fluid between the perichondrium and the cartilage → subperichondrial hematoma

❖Clinical features

- Sudden tense, tender, and fluctuant swelling of the auricle
- Loss of normal anatomical landmarks of the anterosuperior aspect of the auricle
- Ecchymosis

Auricular hematoma

❖Management

- Small (≤ 2 cm) auricular hematomas ≤ 2 days old: needle aspiration
- Large auricular hematomas (> 2 cm), and auricular hematomas 2–7 days old: incision, drainage, and placement of a compression dressing (to prevent reaccumulation)
- Hematomas > 7 days old: referral to otolaryngology or plastic surgery
- Daily follow-up for 3–5 days to monitor for reaccumulation
- Prophylactic administration of levofloxacin for 7–10 days after drainage
- Patients can return to sports after 7 days if the hematoma does not reaccumulate.

Cauliflower ear

❖Complications

- Cauliflower ear: a permanent deformity of the ear caused by an untreated or inadequately drained auricular hematoma
- Perichondritis

Q1: Auricular hematoma

- **What is your diagnosis ?**
  - Auricular hematoma
- **What is your management ?**
  - Incision, drainage, and placement of a compression dressing (to prevent reaccumulation)
  - Daily follow-up for 3–5 days to monitor for reaccumulation
  - Prophylactic administration of levofloxacin for 7–10 days after drainage
  - Patients can return to sports after 7 days if the hematoma does not reaccumulate.

2

ENT

NOSE

Choanal atresia

- Emergency respiratory distress syndrome
- Congenital condition characterized by a bony (90% of cases) and/or membranous (10%) obstruction of the posterior nasal passage
- Part of CHARGE syndrome
- Diagnostics:
  - The inability to pass the catheter through the nasal cavity is an indication of choanal atresia.
  - Confirmatory tests: contrast rhinography in the supine position or CT scan
  - On CT complete obstruction of posterior nasal space

Rhinosinusitis

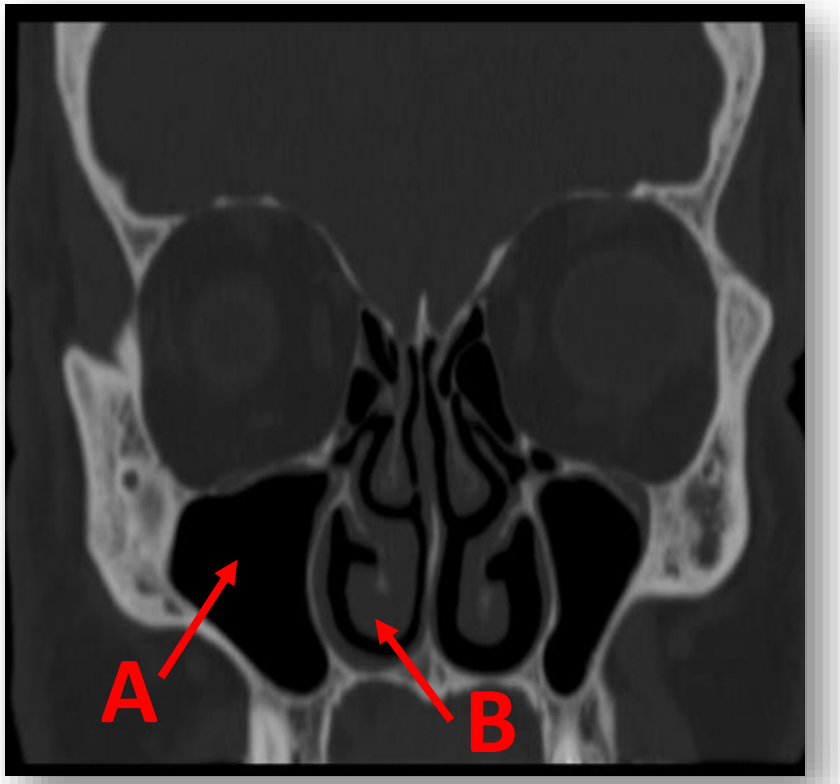
شاملة دوسيه د. حرازنة بشكل مختصر

Sinuses

- Sphenoid sinus & Posterior ethmoid to the superior meatus
- Frontal, Anterior ethmoid, middle ethmoid, and maxillary to the middle meatus
- Nasolacrimal duct to the inferior meatus

Sinuses

1. **Name of this test**
   - Coronal paranasal CT scan
2. **Identify A,B**
   A. Right maxillary sinus
   B. Right inferior turbinate
3. **Where does the posterior ethmoidal sinus drain**
   - Superior meatus



Allergic rhinitis notes 1

د. أسامة

د. حرازنة

❖Common signs of allergic rhinitis:

1. Pale enlarged turbinate.
2. Rhinorrhea
3. Mouth breathing from Nasal congestion
4. Sniffing

❖Commonest causes of chronic cough: (بالترتيب)

1. Postnasal drip due to adenoid or sinusitis
2. Bronchial asthma / COPD
3. GERD

❖Allergic rhinitis symptoms (detailed):

1. Sensitive to specific allergens
2. Pruritus of nose, eyes, palatine, ear
3. Repetitive sneezing
4. Watery rhinorrhea
5. Watery eyes
6. Nasal congestion
7. Coexisting asthma or eczema
8. Post-nasal drip
9. Diminished quality of life
10. General fatigue
11. Seasonal symptoms
12. Coughing and sneezing

Allergic rhinitis notes 2

- **A rhinoscopy of allergic rhinitis shows**
  - Hypertrophied & edematous lower turbinate
  - Pale mucosa
  - Watery secretion
  - Nasal polyps
- **When are investigations indicated in allergic rhinitis ?**
  - If there is no response to treatment after clinical diagnosis
- **Allergic rhinitis investigations**
  - Blood test (IgE + eosinophilia)
  - Nasal biopsy (exclude tumor)
  - Skin test
  - Radioallergosorbent test (RAST)
    - is a blood test using radioimmunoassay test to detect specific IgE antibodies in order to determine the substances a subject is allergic to.

Allergic rhinitis lines of treatment

1. Avoidance of allergen
2. Normal saline douching
3. Topical agents
   A. Steroid nasal spray
   B. Vasoconstrictor nasal drops
   C. Mast cell stabilizers
4. Oral agents
   A. Anti-histamine (preferred 2nd generation)
   B. Systemic steroid (in severe allergy)
5. Surgical (for obstruction)
   A. Septoplasty: if the patient has nasal septal deviation
   B. Turbinate reduction surgery: for severe hypertrophied turbinate that doesn't respond to treatment
6. Desensitization (1-3y) (Subcutaneous/Sublingual)

Topical steroid is given with head down (to avoid the septum), while the vasoconstrictor is given with head elevated

Vasomotor rhinitis & Rhinitis medicamentosa

- Vasomotor rhinitis is due to excessive parasympathetic activity
- Vasomotor rhinitis is associated with profuse rhinorrhea and nasal obstruction mimicking allergic rhinitis
- A rhinoscopy of vasomotor rhinitis: (Vs Allergic rhinitis)
  1. Boggy turbinate
  2. Erythematous mucosa
- Vasomotor rhinitis management
  1. Local anticholinergic medication
  2. Anti-histamine (chlorpheniramine)
  3. Exercise (decrease parasympathetic activity)
- **Rhinitis medicamentosa**: is a condition of rebound nasal congestion suspected to be brought on by extended use of topical decongestants (more than 2 weeks)

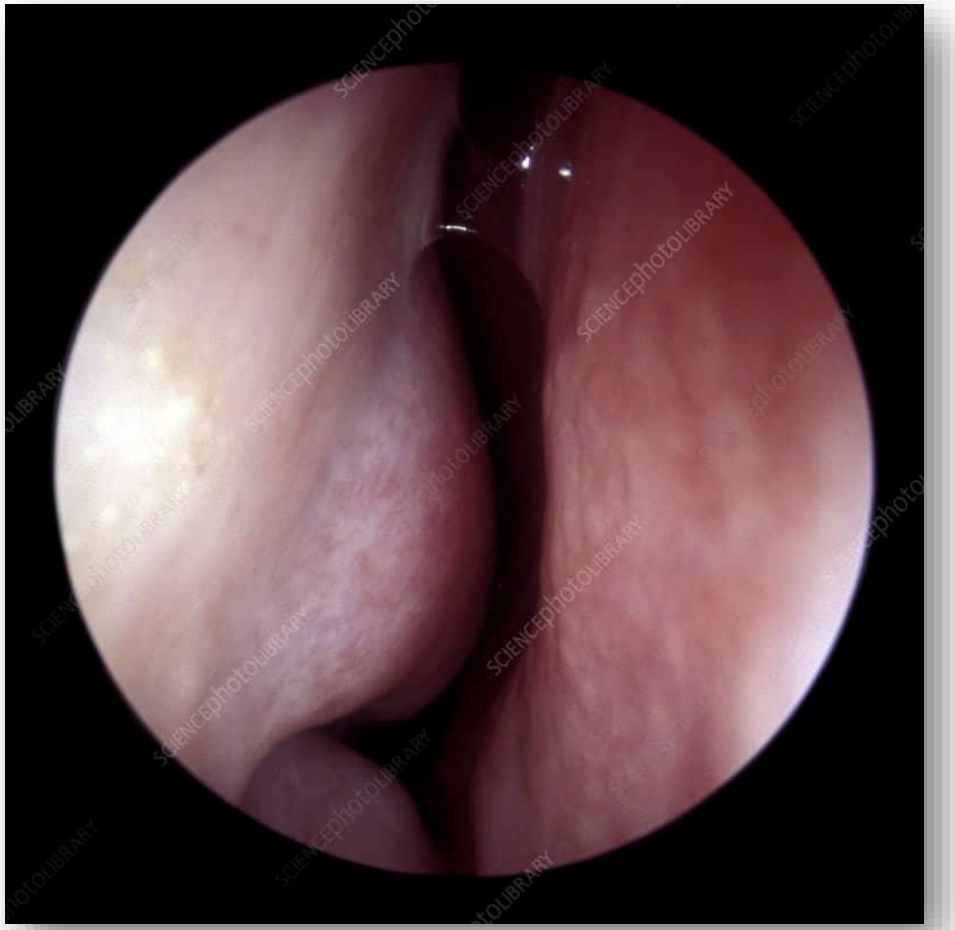
Q1: Allergic rhinitis

1.Findings:

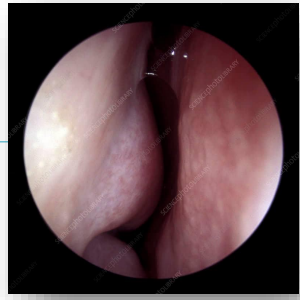
- Hypertrophied & pale turbinate
- Edematous mucosa
- Watery secretion

2.Write 2 ddx

- Allergic rhinitis
- Vasomotor rhinitis
- Polyp
- Tumor ??



Q1: Allergic rhinitis



3. Management

1. Avoidance of allergen
2. Normal saline douching for cleaning the nasal cavity and preventing stasis
3. Mainstay of treatment: Anti-histamine (2nd generation) + steroid nasal spray
4. Add vasoconstrictor nasal sprays for up to 2 weeks only; to relieve congestion
5. Consider adding mast cell stabilizers
6. If severe consider systemic steroids
7. Septoplasty to relieve obstruction; if deviation is present
8. Turbinate reduction surgery if severe hypertrophied turbinate is not responding to treatment
9. Consider desensitization in patients allergic to a single specific substance (1-3y sub-Q, sub-lingual)

Q2: Allergic rhinitis

Name of this study

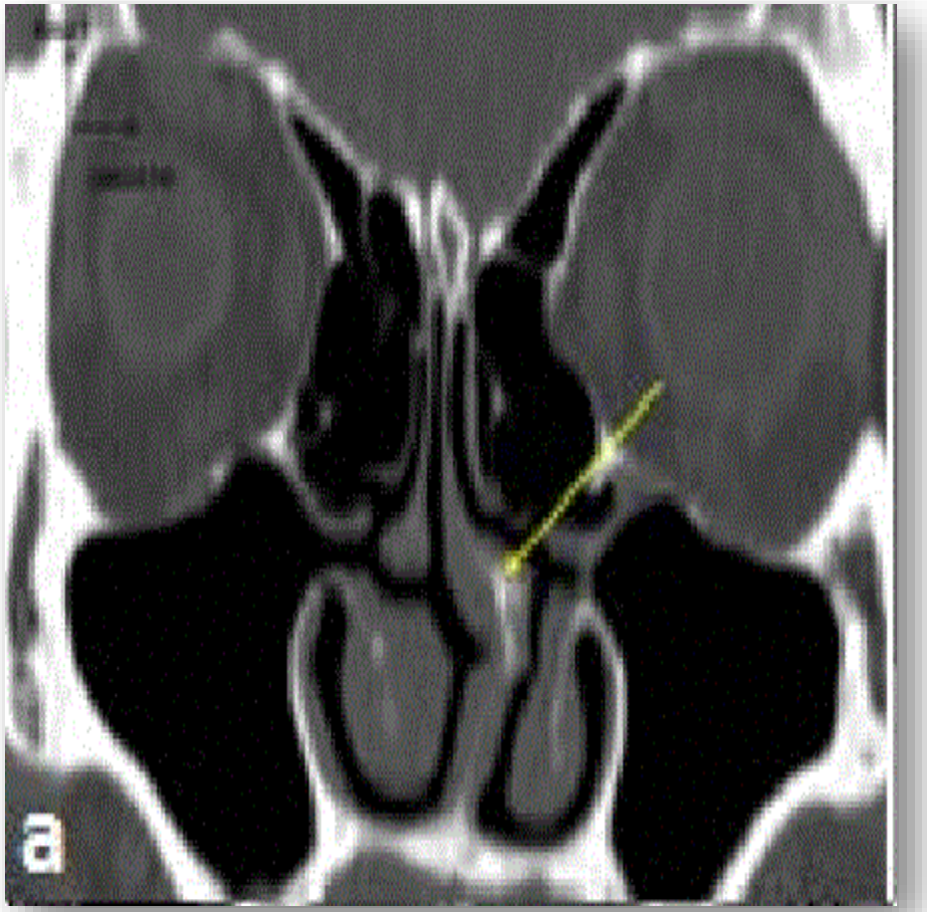
- Coronal nasal and para nasal sinuses CT scan

What do you see?

- Right inferior turbinate hypertrophy and nasal septum deviation to the left side

Management:

- Septoplasty
- Determine the cause of turbinate hypertrophy and treat the underlying cause; most likely to be allergic rhinitis if the turbinate is pale



Q3: Allergic rhinitis

What is the name of this instrument

- Nasal speculum

What is the use of this instrument

- Anterior rhinoscopy

Mention 3 physical signs of allergic rhinitis

1. Pale hypertrophied turbinate.
2. Pale edematous mucosa.
3. Watery rhinorrhea.
4. Nasal poylps.

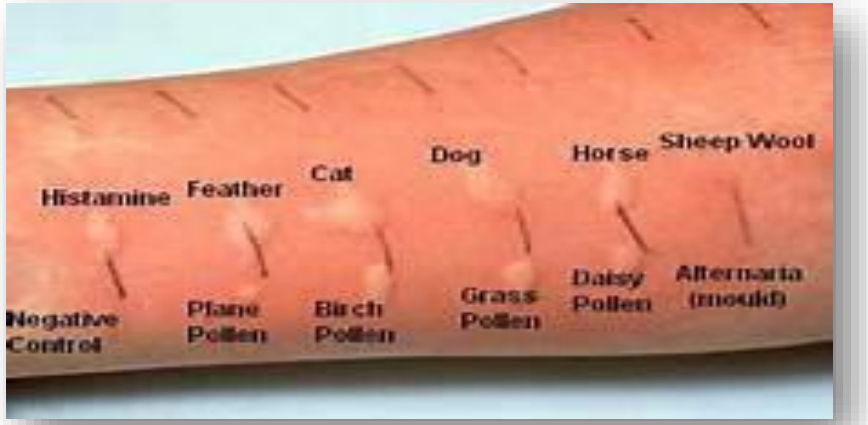
Q4: Allergic rhinitis

What is the name of this test ?

- Skin prick test

Why do we use it ?

- Allergic rhinitis diagnosis



If positive, what are the expected findings when preforming anterior rhinoscopy ?

1. Hypertrophied & edematous lower turbinate
2. Pale mucosa
3. Watery secretion

Sinusitis CT scan

- The best investigation for sinusitis: CT scan
- The best for fungal sinusitis: MRI (on CT you will see calcification so request MRI to make sure)
- Axial CT for congenital anomalies
- On CT if:
  - Opacification is complete ⟶ chronic sinusitis
  - Air fluid level ⟶ acute sinusitis
  - Opacification in sinus and nasal cavity and bilateral ⟶ polyp

Acute sinusitis notes 1

- ❖ Acute sinusitis is associated with nasal obstruction, purulent rhinorrhea, throbbing headache
- ➢ Frontal sinusitis is associated with throbbing frontal headache
- ➢ Posterior Ethmoidal sinusitis is associated with throbbing bitemporal headache
- ➢ Sphenoidal sinusitis is associated with throbbing occipital headache
- ➢ Maxillary sinusitis is associated with throbbing cheeks headache
- ➢ Anterior Ethmoidal sinusitis is associated with throbbing periorbital headache
- ❖ Acute sinusitis is usually preceded by URTI or dental infection
- ❖ On CT and X-ray acute sinusitis present with air-fluid level in the affected sinus
- ❖ The absence of rhinorrhea in sinusitis suggests complete obstruction

Acute sinusitis notes 2

- **The most common causing agents of acute sinusitis are** (بالترتيب)
  - S.pneumoniae
  - H.influenzae
  - M.catarrhalis
- **Acute sinusitis management**:
  1. Antibiotics 2-3 weeks
  2. Vasoconstrictor nasal drops (to aid drainage)
  3. Antral washout (for resistance maxillary sinusitis cases only)
  4. Functional endoscopic sinus surgery (FESS)
- **Complications of sinusitis**: (Acute & chronic)
  1. Local, 5%: Mucocele, Osteomylitis (Pott's tumor)
  2. Orbit, 75%: Cellulitis → abscess → Cavernous sinus thrombosis (Do CT)
  3. Interacranial, 20%: Epidural/Subdural/Intracerebral abscess (Do MRI)

Q1: Acute sinusitis

❖**What is the name of this study ?**

- Coronal paranasal CT scan

❖**Describe what you see (Findings)**:

- Bilateral maxillary & ethmoidal sinuses air-fluid levels
- Nasal septal deviation to the right side
- Enlarged right inferior turbinate

❖**Management**:

1. Antibiotics 2-3 weeks
2. Vasoconstrictor nasal drops (to aid drainage)
3. Antral washout (for resistance maxillary sinusitis cases only)
4. Functional endoscopic sinus surgery (FESS)

Q2: Acute sinusitis

❖**What is the name of this study ?**

- Coronal paranasal CT scan

❖**Describe what you see (Findings)**:

- Bilateral maxillary & ethmoidal sinuses air-fluid levels
- Nasal septal deviation to the right side
- Enlarged right inferior turbinate

❖**Management**:

1. Antibiotics 2-3 weeks
2. Vasoconstrictor nasal drops (to aid drainage)
3. Antral washout (for resistance maxillary sinusitis cases only)
4. Functional endoscopic sinus surgery (FESS)

Q1: Acute sinusitis complications

1. **Diagnosis**
   - Orbital cellulitis
2. **Describe**:
   - Periorbital edema and erythema due to periorbital cellulitis, as a complication of acute ethmoidal sinusitis
3. **What is the best investigation to do ?**
   - CT scan
4. **Where does the posterior ethmoidal sinus drain**
   - Superior meatus
5. **Write 2 indications of surgery**
   1. No response to medical treatment
   2. Impending or manifested complication

Q2: Acute sinusitis complications

1. **What is the name of this study?**
   - Axial paranasal CT scan
2. **Describe**:
   - Ethmoidal sinus opacification as with opacification periosteum of orbital septum and proptosis of the eye
3. **Diagnosis**
   - Subperiosteal abscess
4. **Management**
   - Surgical evacuation and IV AB

Chronic sinusitis notes 1

- Chronic sinusitis is persistent symptoms of sinus inflammation > 12 weeks
- Chronic sinusitis is associated with nasal obstruction, nasal/post-nasal purulent discharge, cacosmia, and less pain.
- Chronic sinusitis shows air fluid level on CT scan only if there is an acute on top of chronic sinusitis
- In chronic sinusitis the most common causative agent is anaerobes thus we give metronidazole
- **Chronic sinusitis management**
  1. Antibiotics (Metronidazole & Amoxiclav); up to 3 Courses
  2. Nasal decongestion; 2 weeks with each course
  3. Topical steroid; throughout the courses
  4. Surgery: Open or FESS

Chronic sinusitis notes 2

❖Complications of sinusitis: (Acute & chronic)

1. Local, 5%: Mucocele, Osteomylitis (Pott's tumor)
2. Orbit, 75%: Cellulitis → abscess → Cavernous sinus thrombosis (Do CT)
3. Interacranial, 20%: Epidural/Subdural/Intracerebral abscess (Do MRI)

❖FESS complications:

- Local: Bleeding, Adhesion, Mucocele, Stenosis, Recurrence
- Orbital: Orbital hematoma, Diplopia, Blindness
- Intracranial: CSF leak, Meningitis

❖Predisposing factors:

1. Recurrent URTI
2. Immotile cilia
3. Immunodeficiency
4. Adenoids
5. Cystic fibrosis
6. Anatomic deformities
7. Allergy
8. GERD

Q1: Chronic sinusitis

This patient came complaining from nasal obstruction, purulent nasal discharge and cacosmia for the past 5 months

What is the name of this study?

- Coronal paranasal CT scan

Describe what you see

- Opacification over the left and right maxillary sinuses, ethmoidal sinuses and the nasal cavity.

Management

1. 3 courses of antibiotics over 3 months
2. Nasal decongestant for 2 weeks with each course
3. Topical steroids throughout the courses
4. Surgical open or FESS

Q2: Chronic sinusitis

What is the name of this study?

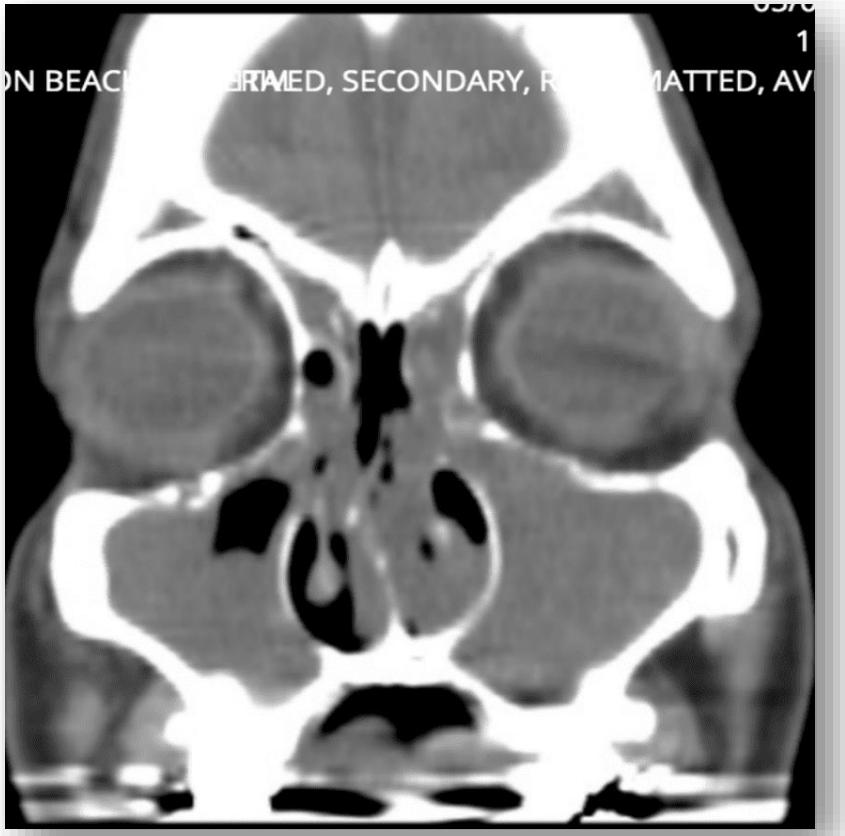
- Coronal paranasal CT scan

Describe what you see

- Complete opacification in both maxillary and ethmoid sinuses and intranasally with no air-fluid levels

Diagnosis

- chronic rhinosinusitis



Q3: 40 years old presented to clinc

What is the name of this study?

- Coronal paranasal CT scan

Describe what you see

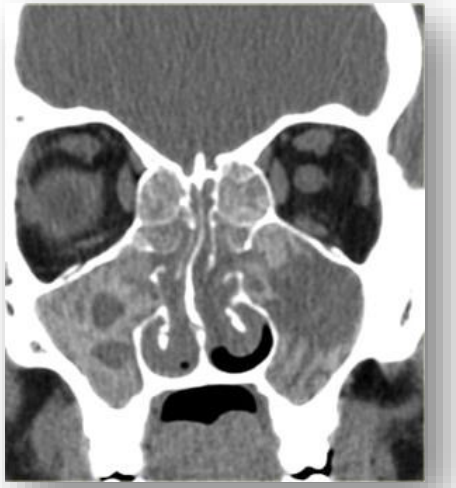
- There's opacity all over the left and right maxillary, ethmoidal sinuses and nasal cavity.

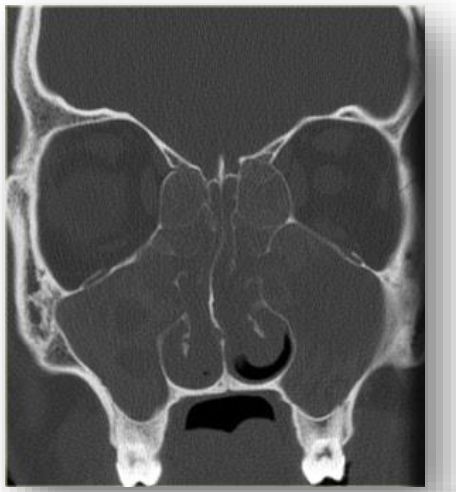
Name 2 findings on physical exam

- hypertrophied inferior turbinate , mucosal edema , discharge

Management (4 lines)

1. Up to 3 courses of antibiotics over 3 months
2. Nasal decongestant for 2 weeks with each course
3. Topical steroids throughout the courses
4. Surgical open or FESS





Q4: Chronic sinusitis

What is the name of this study?

- Coronal paranasal CT scan

Diagnosis

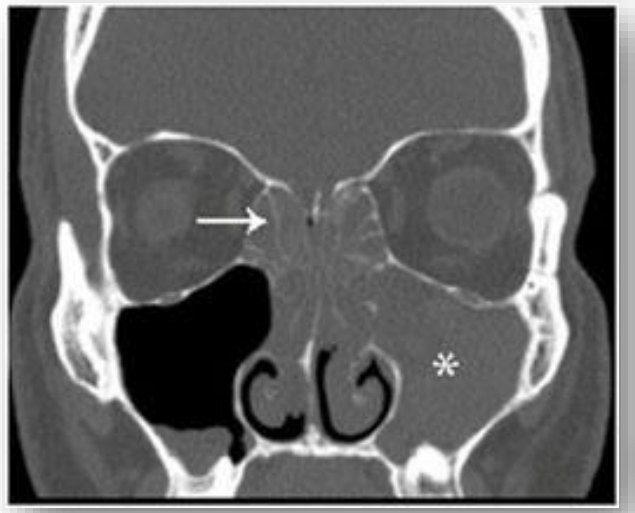
- Chronic sinusitis

Treatment

1. 3 courses of antibiotics over 3 months
2. Nasal decongestant for 2 weeks with each course
3. Topical steroids throughout the courses
4. Surgical open or FESS

Predisposing factors

1. Recurrent URTI
2. Immotile cilia
3. Immunodeficiency
4. Adenoids
5. Cystic fibrosis
6. Anatomic deformities
7. Allergy
8. GERD



Q5: Chronic sinusitis

What is the name of this study?

- Coronal paranasal CT scan

Describe what you see (Findings)

- Air-fluid level in left maxillary and opacification in both ethmoid

One Differential diagnosis

- Acute on top of chronic sinusitis

Management

1. 3 courses of antibiotics over 3 months
2. Nasal decongestant for 2 weeks with each course
3. Topical steroids throughout the courses
4. Surgical open or FESS

Fungal sinusitis

- Fungal sinusitis are usually invasive and can destroy bone; thus, can mimic **malignancies**
- Fungal sinusitis management:
  1. Surgical debridement
  2. Local steroid spray (for allergic fungal sinusitis)
  3. If invasive add anti-fungal (Amphotericin B)

Q1: Fungal sinusitis

If we exclude malignancy

What is the second differential ?

- Fungal sinusitis

Management

1. Surgical debridement
2. Local steroid
3. If invasive give anti-fungal (Amphotericin B)

Q2: Fungal sinusitis

1. **What is the name of this study?**
   - Coronal paranasal CT scan
2. **Describe what you see**
   - Complete opacification of Left Maxillary sinus, with central micro calcification, without sinus invasion
3. **Diagnosis**:
   - Fungal sinusitis
4. **Management**
   1. Surgical debridement
   2. FESS
   3. No medical treatment required

Q3: Fungal sinusitis

1. **What is the name of this study?**
   - Axial paranasal CT scan
2. **Describe what you see**
   - Opacity in the left maxillary sinus with central calcification
3. **Diagnosis**:
   - Fungal sinusitis
4. **Management**
   1. Surgical debridement
   2. FESS
   3. No medical treatment required

Q4: Fungal sinusitis

This is a radiological investigation of 35y old male , uncontrolled DM type I , presented with one day history of right proptosis , loss of vision , and nasal congestion

1. **What is in top of you DDx list ?**
   - Acute fulminant fungal rhinosinusitis
2. **What nasal endoscopic finding you most likely suspect ?**
   - Nasal pallor or necrotic eschar
3. **Management**
   1. Surgical debridement and biopsy for surgical exam
   2. Nasal irrigation
   3. FESS
   4. Systemic anti-fungal
   5. Medical consult to control blood sugar and HbA1C check

4. Describe

أوصف لحالك زهقت،
السؤال كان ضع دائرة

Nasal polyps' notes

- Samter's triad: Nasal polyps, aspirin allergy and asthma
- The Nasal polyps are most commonly from the ethmoidal sinuses
  - Edematous semitranslucent masses in the nasal or paranasal cavities
- Nasal polyps' management:
  - Medical: Topical steroids & up to 2 courses of oral steroids for 1 year
  - If medical treatment failed or contraindicated, consider surgery
  - Surgical: FESS, nasal polypectomy, nasal snare
- Antrochoanal polyps are transparent, large, single, unilateral polyps
- Antrochoanal polyp treatment is surgical; have high recurrence rate with medical treatment

Q1: Unilateral nasal mass

1. **Name of this procedure**
   - Anterior Rhinoscopy
2. **Describe the photo (Findings)**
   - By Anterior Rhinoscopy procedure , there is a pale, glistening and grape like nasal polyp
3. **Mention 3 DDx (Unilateral mass)**
   - Antrochoanal polyp
   - Inverted papilloma
   - Hypertrophy of inferior turbinate
4. **Mention 2 important Investigations for this patient**
   - Coronal nasal and para nasal sinuses Ct scan
   - Sweat test for chloride level to rule out cystic fibrosis

Q1: Unilateral nasal mass

5. Write 4 symptoms that the patient complains from
    1) Nasal obstruction
    2) Watery discharge
    3) Coughing and sneezing
    4) Pruritis of nose, eyes, palatine, ears
    5) Mouth breathing
    6) Sniffing
    7) Fatigue

Q2: Unilateral nasal mass

1. **Diagnosis ? Why ?**
   - Glistening and pale growth liken to peel grape
2. **Risk factors**
   1. Asthma
   2. Allergy to aspirin
   3. Cystic fibrosis
   4. Allergic rhinitis
3. **Physical exam u should do ?**
   - Anterior rhinoscopy
4. **2 point differentiate it from inf turbinate?**
   - Painless and mobile

Q3: Bilateral nasal mass

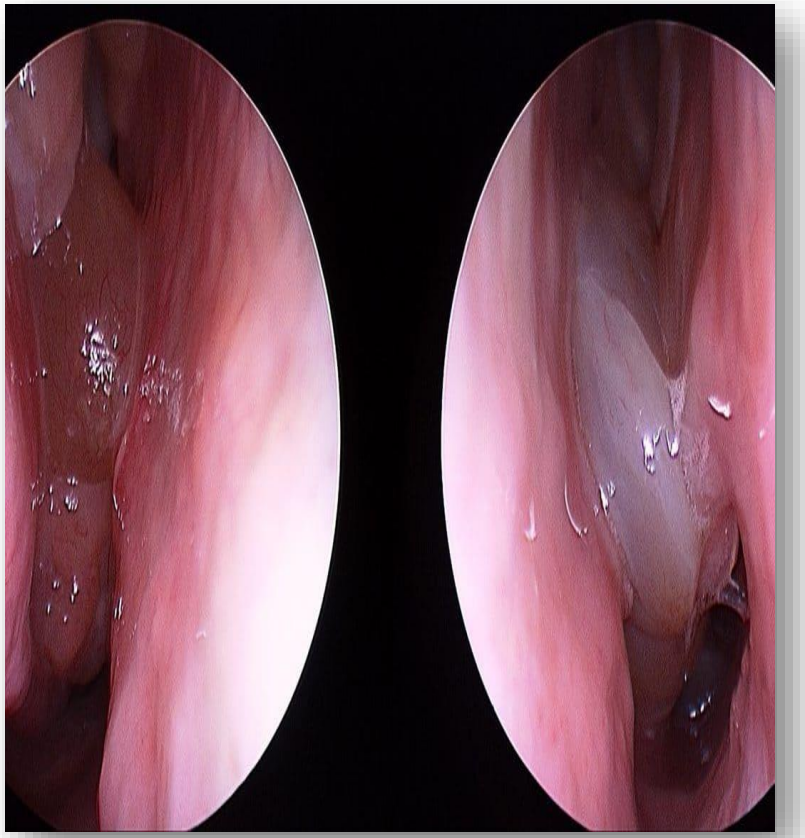
This patient come with nasal obstruction

1. **Diagnosis**
   - Bilateral nasal polyps
2. **Describe:**
   - multiple pale glistening grape like mass in both nostrils
3. **Management**
   1. Medical:
      A. Local steroid
      B. Up to 2 course of systemic steroid over 1 year (tapering dose); most common used steroid is Prednesinol
   2. If failed medical or C/I consider surgery
      A. Functional endoscopic sinus surgery
      B. Nasal polypectomy
      C. Nasal snare

Q4: What is your management?

1. **Medical**:
   A. Local steroid
   B. Up to 2 course of systemic steroid over 1 year (tapering dose); most common used steroid is Prednesinol
2. **If failed medical or C/I consider surgery**
   A. Functional endoscopic sinus surgery
   B. Nasal polypectomy
   C. Nasal snare

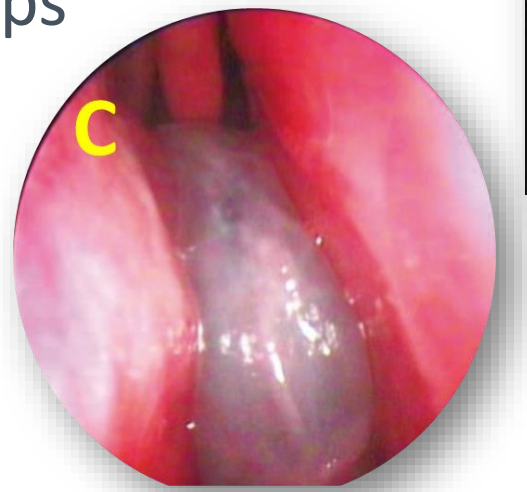
Note: You should write the full name of the procedure and not FESS



Diagnosis: Nasal polyps

Q5: Antrochoanal Polyps

- **Describe the images A,B,C**:
  - A: Opacification in right maxillary sinus and nasal cavity
  - B: Mass in the oropharynx that was pushing forward the soft palate
  - C: Edematous semitranslucent masses in the nasal cavity
- **Diagnosis**: Antrochoanal Polyps
- **Management**:
  - Surgical intervention



Q6: Antrochoanal Polyps

Name of this study

- Coronal nasal and para nasal sinuses CT scan

Diagnosis

- Antrochoanal polyp

Your management

- Have a poor response to medical treatment
- Surgical removal by Function Endoscopic sinus surgery

Q7: Nasal polyps

❖This is the nasal endoscopic view for a 45 years old male who known to be asthmatic , his drug history is negative except for salbutamol inhaler. From his history ONE of the following is not considered a risk factor for his pathology:

1. Male gender
2. Age 45 years old
3. Asthma
4. Salbutamol use
5. Positive family history of same condition.

Q7: Nasal polyps

❖This is the nasal endoscopic view for a 45 years old male who known to be asthmatic, his drug history is negative except for salbutamol inhaler. Treatment for this patient consist of all the following except:

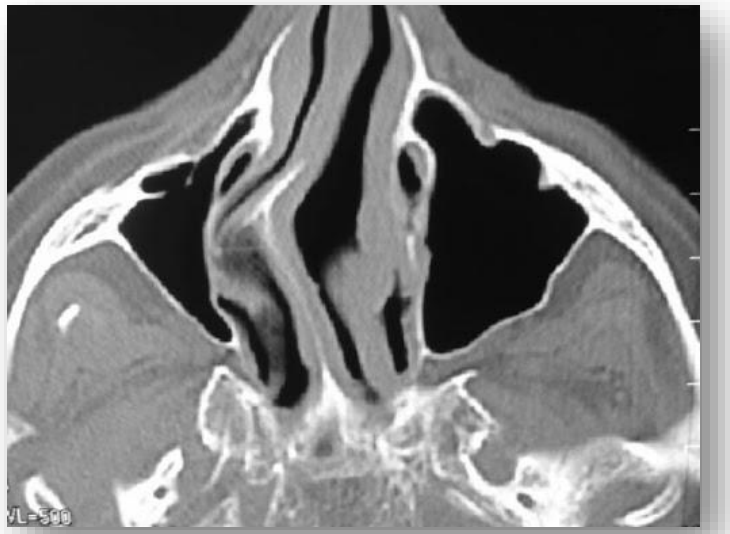
1. Oxymetazoline
2. Beclomethasone
3. Epinephrine
4. Prednisolone
5. Clarithrimycin

Opacification of paranasal sinuses

1. **What is the name of this study?**
   - Coronal paranasal sinuses CT scan
2. **Describe**
   - Opacification expansion at right maxillary and nasal cavity
3. **DDx**
   1. Nasal polyp
   2. Antrochoanal polyp
   3. Inverted papilloma
   4. Fungal sinusitis
   5. Chronic sinusitis

Nasal septum

Nasal septal deviation



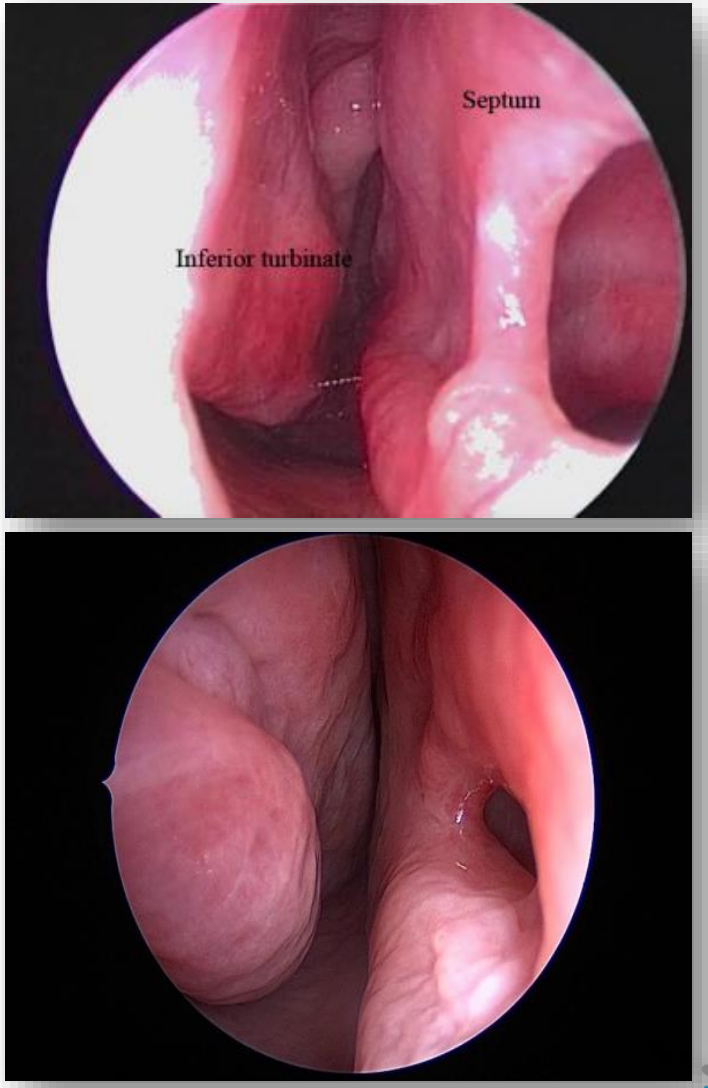
1. **What is the name of this investigation**
   - Paranasal sinuses axial CT scan
2. **Describe what you see (findings)**
   - Nasal septal deviation to the right side
3. **Mention 2 symptoms**
   1. Nasal obstruction.
   2. Epistaxis (sometimes).
   3. Dryness or hypertrophy in the contralateral nasal orifice.
4. **Complication of nasal deviation:**
   - Sinusitis
5. **Management (Treatment)**: Septoplasty
6. **If the patient has allergic rhinitis in spring, what is management** (check next slide)

5. If the patient has allergic rhinitis in spring, what is the management

1. Avoidance of allergen
2. Mainstay of treatment: Anti-histamine (2nd generation) + steroid nasal spray
3. Add vasoconstrictor nasal sprays for up to 2 weeks only; to relieve congestion
4. Normal saline douching for cleaning the nasal cavity and preventing stasis
5. If severe consider systemic steroids
6. Septoplasty to relieve obstruction; if deviation is present
7. Turbinate reduction surgery if severe hypertrophied turbinate is not responding to treatment

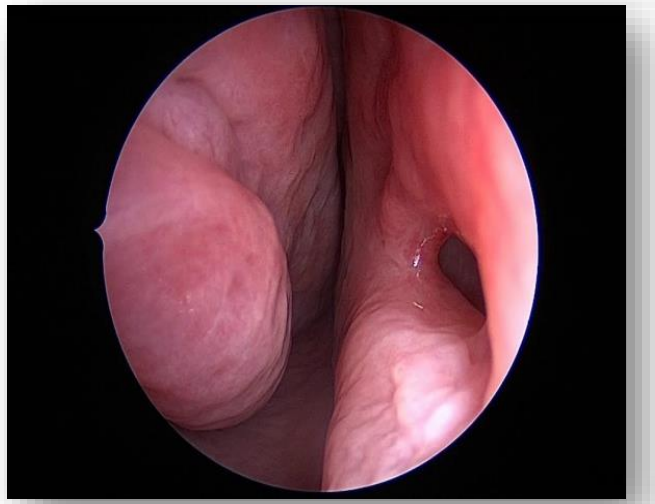
Nasal septal perforation

1. **Diagnosis**
   - Nasal septal perforation
2. **Describe what you see**
   - Nasal septal perforation
3. **Mention 3 symptoms associated**
   1. Nose pain
   2. Epistaxis
   3. Wheezing through the nose
   4. Feeling of obstruction in the nose
   5. Rhinorrhea
   6. malodorous smell in the nose



Nasal septal perforation

4. **Mention 2 possible Causes**
    1. Trauma
    2. Foreign body
    3. Iatrogenic
    4. Nasal packing
    5. Cocaine abuse
    6. Malignancy
    7. Wegener (granulomatosis with polyangiitis)



Nasal trauma

Management of nasal trauma 1

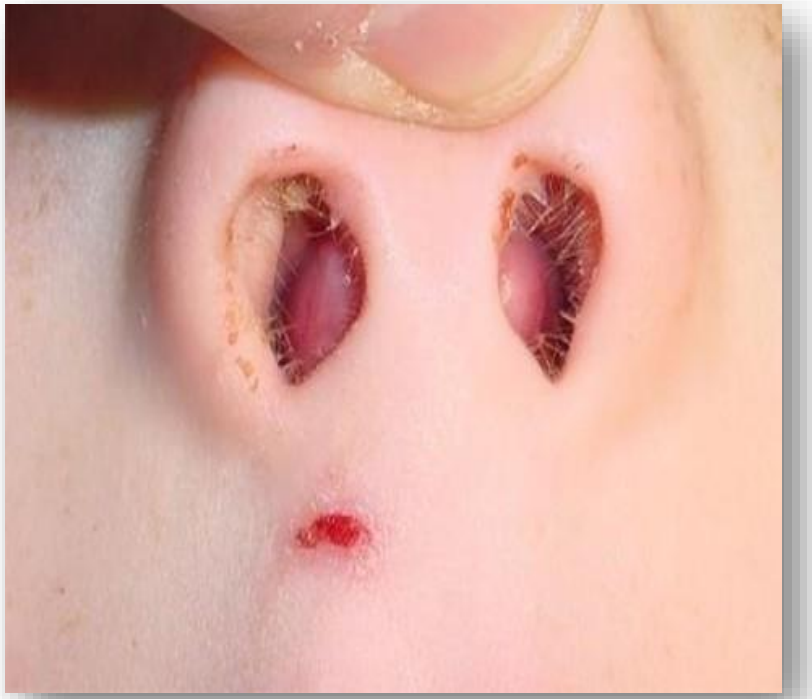
1. Ensure airway is patent
2. Give adequate ventilation
3. Stabilize patient
4. If its open wound and contaminated with foreign matter, copious irrigation will be required or sometimes, Some debridement may be needed
5. Pretreatment with anxiolytic and pain medications should be considered
6. Lateral nasal bone X ray .
7. Reduction of acute nasal fractures (open or closed) to realign cartilaginous and bony structures to their locations before the injury, to decrease discomfort and maximize airway patency

Management of nasal trauma 2

8. Do incision (horizontal)and drainage+ I.V antibiotic if there is septal hematoma + bilateral swelling (to prevent septal abccess and septal perforation)
9. Final external and internal (endoscopic, if possible) examination before releasing a patient who has undergone manipulation and reduction of a nasal fracture
10. Prophylactic antibiotics may be prescribed when indicated, such as in a grossly contaminated open fracture
11. An external splint or cast should be applied to the nasal dorsum for about one week.
12. Nasal packing if required

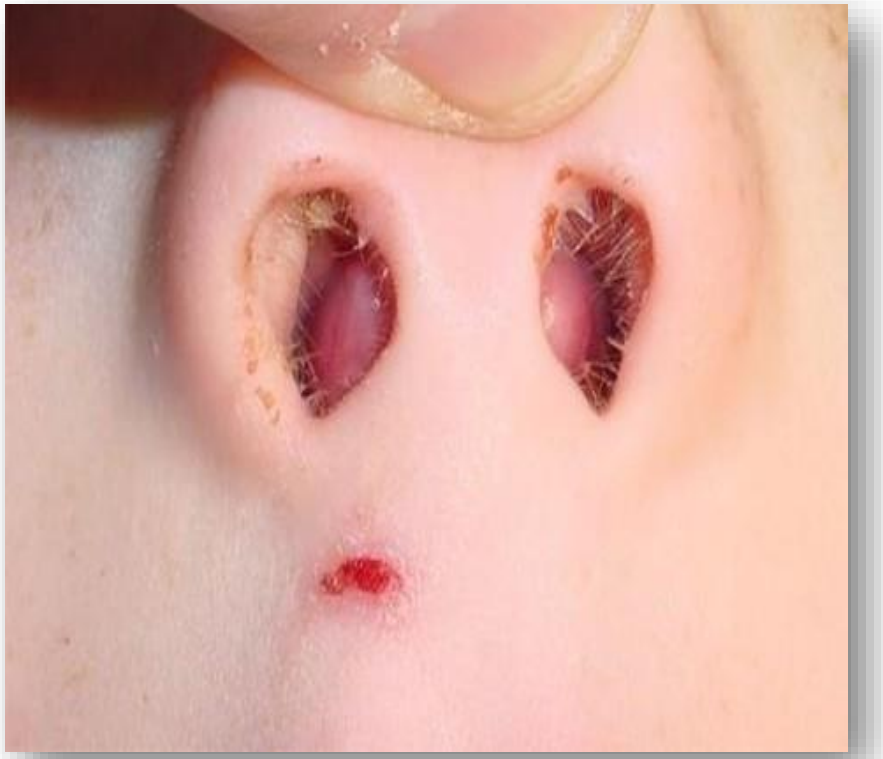
History of pt. with trauma

1. **Diagnosis**
   - Bilateral nasal Septal Hematoma
2. **Mention 3 complications**
   A. Septal Perforation
   B. Bone fracture
   C. Septal deviation
   D. Abscess
3. **Most important step in management**
   - Incision & drainage + I.V. antibiotics + Nasal packing



History of pt. with trauma

4. **Management** (management of nasal trauma)
   1. ensure airway is patent
   2. give adequate ventilation
   3. stabilize patient
   4. do incision (horizontal)and drainage+ I.V antibiotic if there is septal hematoma + bilateral swelling (to prevent septal abscess and septal perforation)



طبعا يفضل تكتب كل النقاط ال12 تاعت ال nasal trauma management

Epistaxis

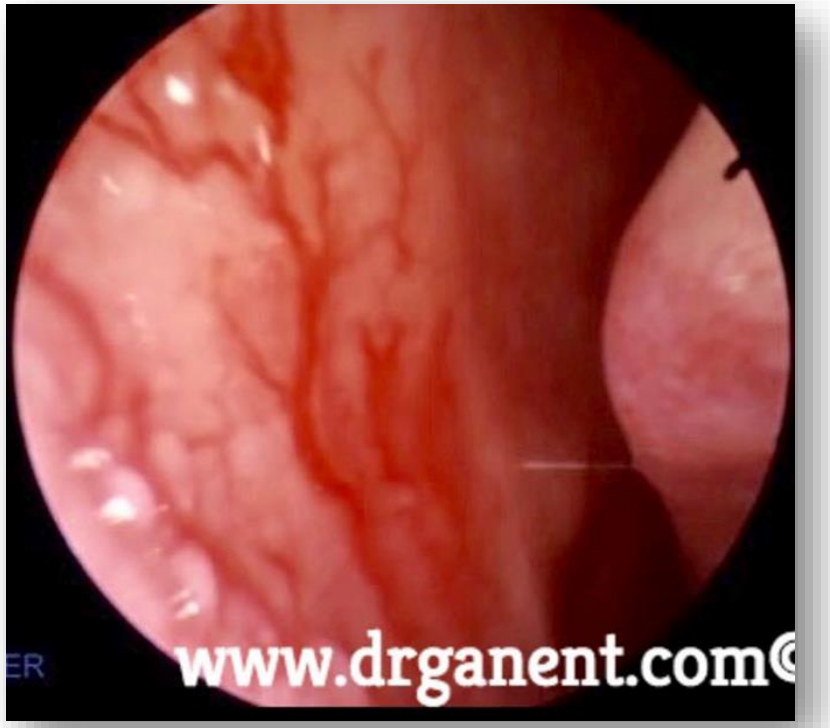
شاملة دوسيه د. حرازنة بشكل مختصر ويفضل ترجع للدوسية

Epistaxis Notes

- The Kiesselbach plexus(Littles area) is formed by the anastomoses between the superior labial arteries, anterior ethmoidal, greater palatine, and sphenopalatine. (LEGS)
- Most important artery for embolization in case of epistaxis → Sphenopalatine
- Etiology
  - Primary Epistaxis : Idiopathic
  - Secondary Epistaxis : Local or systemic factors
- Congenital cause for epistaxis → Hereditary Hemorrhagic Telangiectasia (HTT) → treated by : septodermoplasty
- Most important cause for toxic shock syndrome is nasal packing

Nasal hyperemia

- **Describe**
  - Nasal hyperemia
- **What is the name of the most common site of epistaxis**
  - The Kiesselbach plexus (Littles area)



Mention 2 Epistaxis Causes (Risk factors)

Local

1. Trauma
2. Foreign body
3. Septal deviation
4. Neoplasm
5. Atmospheric changes
6. Dry weather
7. Drugs (ex. antihistamine & steroid)
8. Infection
9. Adenoiditis
10. Juvenile angiofibroma
11. Malignant tumors of the naxopharynx

General

1. CVS (HTN, Atherosclerosis, Mitral stenosis)
2. Kidney (Chronic nephritis)
3. Drugs (Anticoagulants, Aspirin)
4. Mediastinal masses (increase venous pressure in nose)
5. Infection
6. Vicarious menstruation
7. Blood dyscrasias
8. Vascular abnormalities
9. Migrine

This patient presented to the ER with epistaxis

1. **What are the management steps in order?**

Detailed

1. ABC
2. Direct pressure on the nostrils & squeezed together & lower the patient head (5-10 mins)
3. Topical vasoconstriction (Pressure with gauze moistened with epinephrine)
4. Humidification
5. If epistaxis continues after 10-15 minutes → Cautery (First line)
6. Nasal packing (Second line)
7. Arterial ligation or embolization

Briefly

1. ABC
2. Compression
3. Topical vasoconstriction
4. humidification
5. Cautery
6. Nasal Packing
7. Ligation

A variation of the previous question

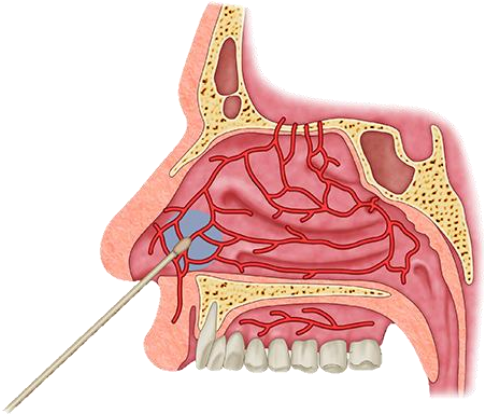
- What is the management of epistaxis after ABC, compression, ice ?
  1. Topical vasoconstriction
  2. humidification
  3. Cautery
  4. Nasal Packing
  5. Ligation

This patient presented to the ER with epistaxis

2. **Mention 3 complication of this condition**
   A. Shock
   B. Aspiration
   C. Anemia
   D. Sinusistis
   E. Iatrogenic complications during packing or cauterization
3. **Most common area to bleed**
   - 90% in little's area (Kisselbach's plexus)

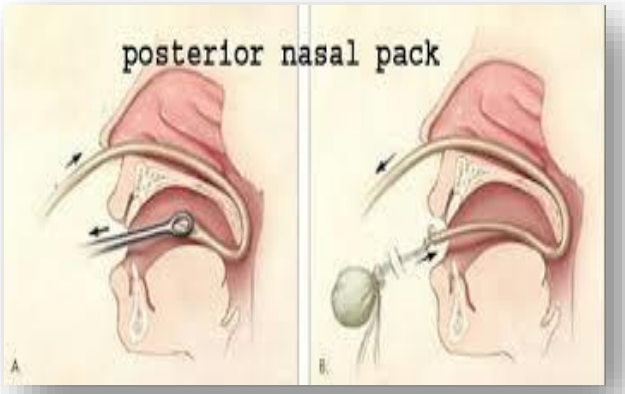
Cauterization

1. Write Down Types of Cauterization
   A. Chemical: Silver nitrate
   B. Thermal: Bipolar suction diathermy
2. Mention 3 Contraindications
   1) Large area of bleeding
   2) Bleeding from both nares (Bilateral epistaxis)
   3) Acute infection



A HTN 40 yrs. old male pt. come to ER with epistaxis

1. **Name of this procedure?**
   - Posterior nasal packing
2. **In which condition use this procedure ?**
   - Posterior plexus epistaxis
3. **What will you do with a pt. after this type of procedure?**
   - Admission to ICU
4. **Mention 2 steps the doctor should follow after this procedure**
   1. Admission to ICU
   2. Continuous cardiorespiratory monitoring ??
5. **Mention 2 Complications of this procedure**



A. Sinusitis
B. hypoxia
C. Septal perforation
D. Alar necrosis
E. Balloon migration
F. Aspiration
G. Vasovagal attacks
H. Toxic shock synd.
I. Mucosal pressure necrosis

20Y male patient present to the ER with epistaxis

- **Describe**
  - Telangiectasia on the skin and mucosa of the lips and the tongue
- **Diagnosis**
  - Hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu disease)
- **Clinical features**
  1. Recurrent epistaxis
  2. Telangiectasia
  3. Cyanosis
- **Management of this case**
  1. ABC
  2. Compression
  3. Topical vasoconstriction
  4. Septodermoplasty

Case

- A 15-year-old male patient complains of severe recurrent unilateral epistaxis, with nasal obstruction what is the most likely diagnosis (what diagnosis you should rule out) ?

Answer: Juvenile nasopharyngeal angiofibroma

Nasopharyngeal Neoplasm

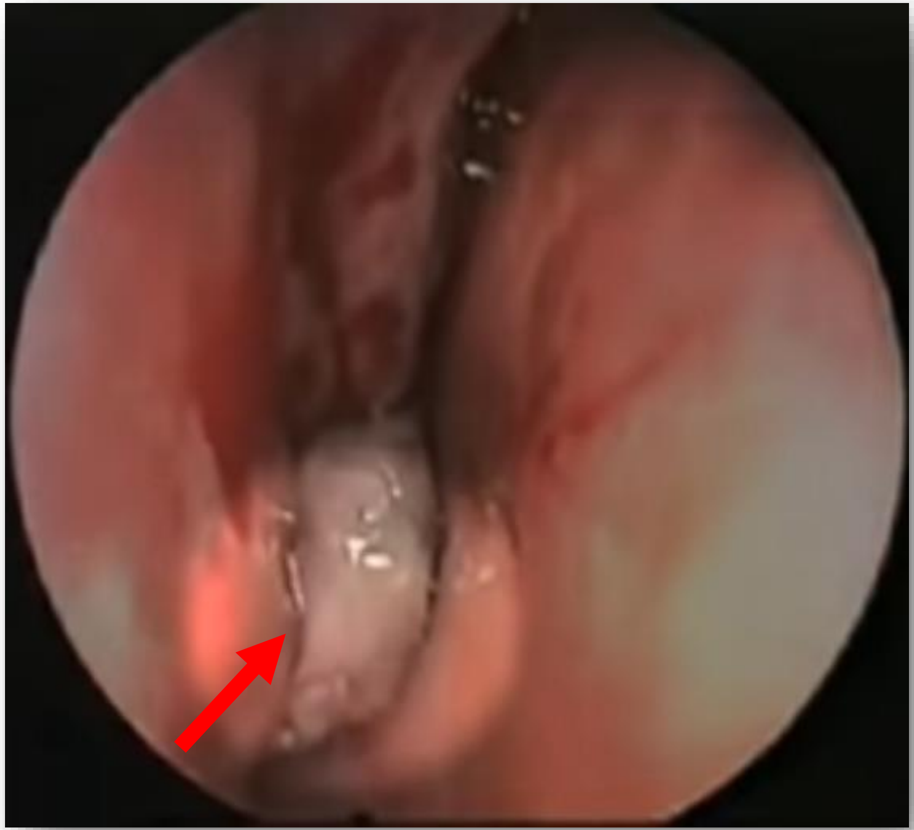
Nasopharyngeal tumors

- **Most common symptoms**:
  - 50% Unilateral huge neck mass
  - 30% Nasal symptoms ex. epistaxis
  - 20% Ear symptoms ex. OME
- **Treatment**:
  - Grade 1, 2: Radiation
  - Grade 3, 4: Chemotherapy, Radiotherapy, Surgery
- **Trotters Triad of Nasopharyngeal tumors**:
  1. Ipsilateral conductive hearing loss
  2. Ipsilateral ear pain + facial pain
  3. Ipsilateral paralysis of soft palate

د. أسامة

Angiofibroma

- ❖ Adolescent male
- ❖ Symptoms:
  - ○ Severe epistaxis
  - ○ Unilateral nasal obstruction
- ❖ Never biopsy !



بس إذا كثير بنفسك تعمله خزعة حاول تخزقه منيح مشان ينزف منيح ونسحب الشهادة منك ونرتاح
مش لو نمت أحسنلي من هيك تنهيف ؟

Nasopharyngeal cancer

Diagnosis

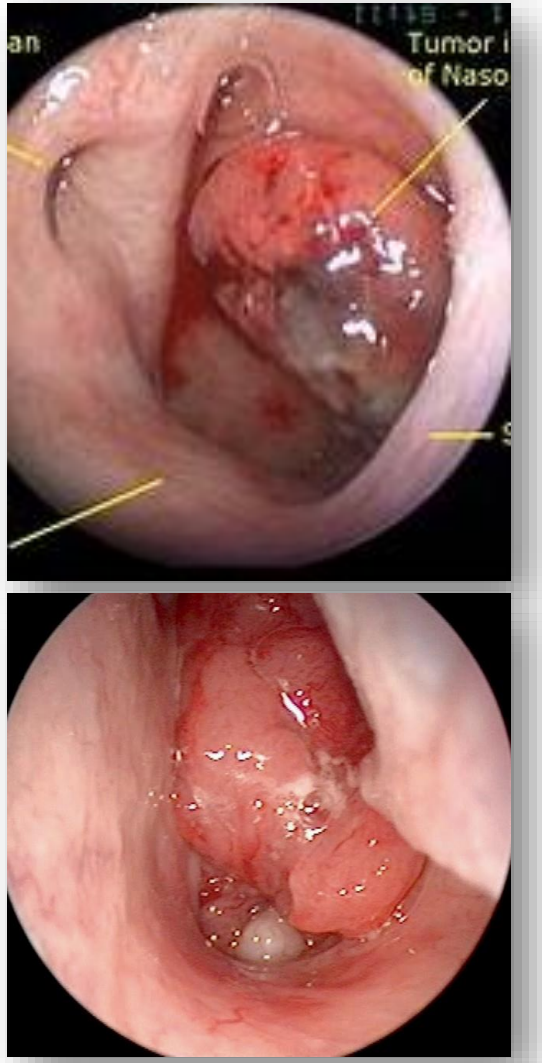
❖Nasopharyngeal cancer

Steps of investigations الترتيب مهم

1. History (suggestive symptoms) & physical examination
2. CBC, chemistry
3. Neck ultrasound
4. Fiberoptic Endoscopic examination/Nasopharyngioscopy
5. CT scan with bone and soft tissue windows (Extent of tumor)
6. MRI (soft tissue involvement, recurrences)
7. Biopsy
8. Serology (Anti EBV antibodies)

Otoscopic findings

❖Dull tympanic membrane due to middle ear effusion with change in its color



Neoplasm of nose and sinus 1

- Most common in maxillary sinus 55%
- 1% sphenoid + frontal
- Most common site for Adenocarcinoma is ethmoidal.
- Axial CT of sinus: (see next slide)
  - If unilateral mass in sinus: tumor
  - If Bilateral : polyps (pale in color)
- CT image of sinus is important in mini-OSCE The mass will be between nasal septum and turbinate in both cases.
- **Ohngren's line** (مهم جدا بس لليوم ما جاء عليه سؤال بالميني هه)
  - Connect what ? Medial canthus of the eye to angle of the mandible
  - Indicate what ? Tumors above this line have poor prognosis

Neoplasm of nose and sinus 2

- **DDx of Unilateral opacity in nasal sinuses on CT** :
  1. Inverted papilloma.
  2. Antrochoanal polyp.
  3. Tumor. (first 2 are more important).
- **DDx of Bilateral opacities in nasal sinuses on CT**:
  1. Nasal polyps.
  2. Chronic sinusitis.
  3. Fungal sinusitis.
- **Investigations:** MRI/CT/Nasal endoscopy/Biopsy
- **Treatment of any sinus tumor** is surgery + radiation + chemotherapy

Neoplasm of nose and sinus 3

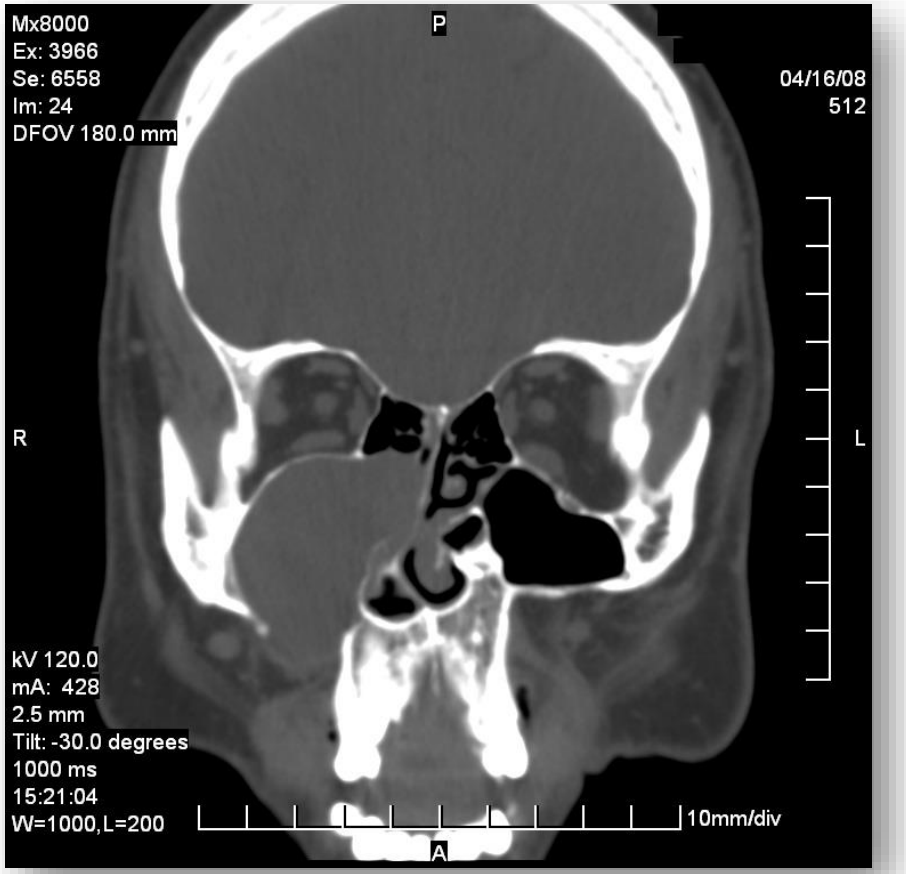
- Most common paranasal sinus malignancy in children < 5 years is Rhabdomyosarcoma
- Non-Hodgkin lymphoma >> most common >> most aggressive >> chemotherapy
- Hodgkin lymphoma >> less common >> less aggressive >> radiotherapy

Sinus mass

1. **Name of this study**
   - Coronal paranasal sinus CT scan
2. **Describe what you see**
   - Opacification of the ethmoidal sinus and nasal cavity with involvement of the orbital structure and invasion to bone
3. **Mention 2 DDX**
   A. SCC
   B. Adenocarcinoma
   C. Adinocystic carcinoma
   D. Fungal sinusitis

Sinus mass

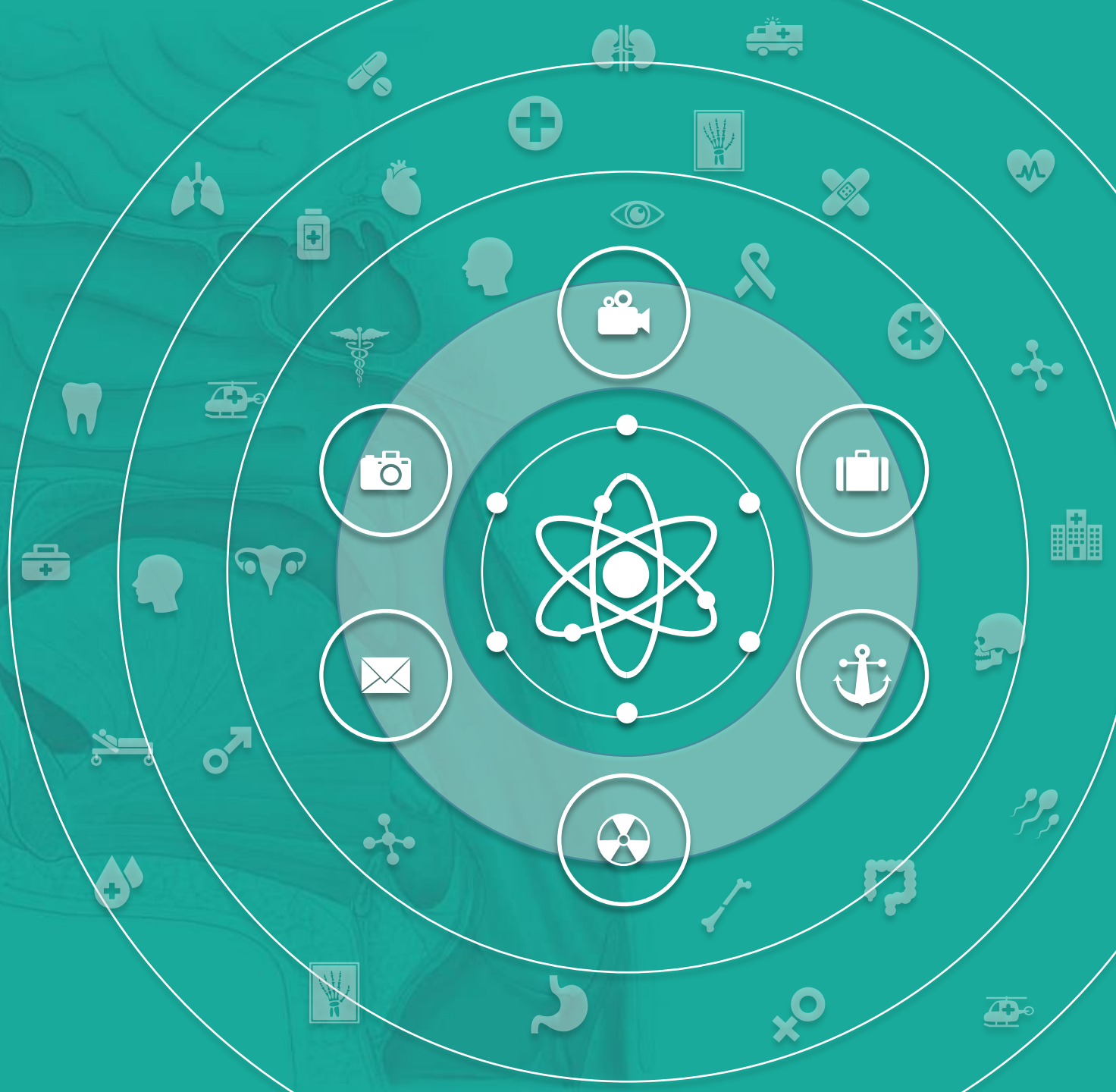
1. **Name of this study**
   - Coronal paranasal sinus CT scan
2. **Describe what you see**
   - Opacification in right maxillary sinus and there is involvement of the orbital structure
3. **Mention 2 DDX**
   A. Mucocele
   B. Paranasal sinus tumor



3

ENT

THORAT



Tonsils

لا تنسى تشوف دوسيه د. حرازنة

Tonsils Anatomy

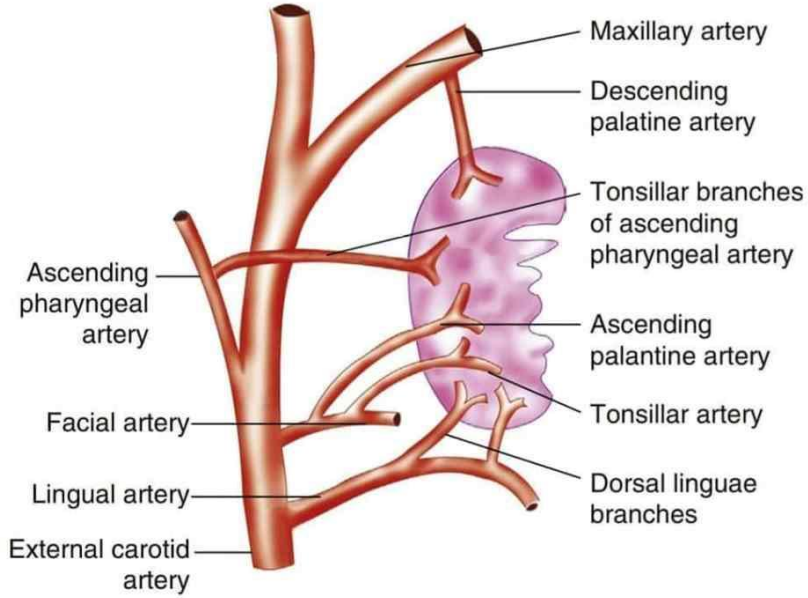
(**L**ove **F**ather **A**nd **M**other)

L = **L**ingual artery (Dorsal lingual)

F = **F**acial artery (Tonsillar branch & Ascending palatine)

A = **A**scending pharyngeal artery

M = **M**axillary artery (Descending palatine)



The carotid artery is far from bed of tonsils → 1.5 cm

Tonsillitis 1

- The most common cause is viral 80%
- **Viral tonsillitis**
  - Most common pathogens: (Adenovirus and Rhinovirus)
  - ✓Low grade fever.
  - ✓Tonsil redness and congestion.
  - ✓Cough, sneezing and rhinorrhea.
- **Bacterial tonsillitis**
  - Most common pathogens: (Streptococcus pyogenes “GAS”)
  - ✓High grade fever.
  - ✓Lymphadenitis.
  - ✓Exudate and pus on tonsils.
  - ✓Treatment of choice: Penicillin.

Tonsillitis 2

❖DDx of bacterial tonsillitis

1. Diphtheria.
2. Malignancy.
3. Fungal infection.
4. Infectious mononucleosis (EBV).
5. CMV.
6. Scarlet fever.

Tonsillitis

❖The most likely diagnosis

- Acute Follicular tonsillitis

❖Management of this condition

- Rest and encouraged to take plenty of water
- Analgesia
- Antibiotic, most common organism is streptococcus so penicillin is the drug of choice, if allergic erythromycin should be given , for 7-10 days

❖Indications for surgery

- Recurrent infection of throat (7 or more in 1 year/5 per year for 2 years /3 per year for 3 years).
- Suspected malignancy (asymmetrical tonsils).
- Airway obstruction (OSA).

Tonsillectomy

❖Absolute Indications for tonsillectomy:

1. Recurrent infection of throat (7 or more in 1 year / 5 per year for 2 years / 3 per year for 3 years).
2. Suspected malignancy (asymmetrical tonsils).
3. Airway obstruction (OSA).

❖Relative indications for tonsillectomy:

1. Second peritonsillar abscess (Quinsy).
2. Febrile convulsion.
3. Halitosis.
4. Dysphagia.

❖Complications of tonsillectomy:

1. Bleeding :(Primary , Reactionary , Secondary).
2. Infection.
3. Tonsillar remnant.
4. Tongue , dental injury.

د. أسامة

Post tonsillectomy bleeding

- **Primary hemorrhage**: during operation.
- **Reactionary hemorrhage**: during first 24 hours.
- **Secondary hemorrhage**: after (1) week due to infection.

❖ Blood supply of the tonsils:

1. Tonsillar branch (from facial A.)
2. Ascending palatine (from facial A.)
3. Ascending pharyngeal (from ECA)
4. Dorsal lingual (from lingual A.)
5. Descending palatine A. (from maxillary A.)

❖ Treatment of bleeding post tonsillectomy

1. ABC.
2. Compression + Vasoconstrictor.
3. Cauterization.
4. Ligation (only in Primary and Reactionary hemorrhage).
5. Antibiotics (in Secondary hemorrhage).

Post tonsillectomy plan:

1. NPO for 2 hours.
2. Cold water and food (For vasoconstriction).
3. Avoid hot and harsh food for 10 days.
4. Prophylactic antibiotics and high dose painkillers (for referred ear pain).

Peritonsillar abscess

❖Presentation

1. 95% are unilateral bulging with pus and exudate.
2. Trismus. (Most important symptoms)
3. Drooling of saliva. (Most important symptoms)
4. Dysphagia.
5. Sore throat.
6. High grade fever.

❖Treatment

- Pediatric:
    1. Give systemic antibiotic
    2. Aspiration with incision and drainage if the patient doesn't improve with the antibiotic in 48 hours.
- Adults: Aspiration with incision and drainage

Q1: Obstructive tonsillar hyperplasia

1. Describe

- Bilateral hypertrophy/enlargement of the palatine tonsils , They nearly meet in the midline or overlap .. Nearly obstruct the passage to oropharynx

2. Diagnosis

- Obstructive tonsillar hyperplasia

3. Complications

1. Poor attention
2. Decrease mentation
3. Attention span decrease
4. Poor school performance
5. Sleep disorder
6. Dysphagia & faliure to thrive
7. Depression
8. ADHD
9. Aggression

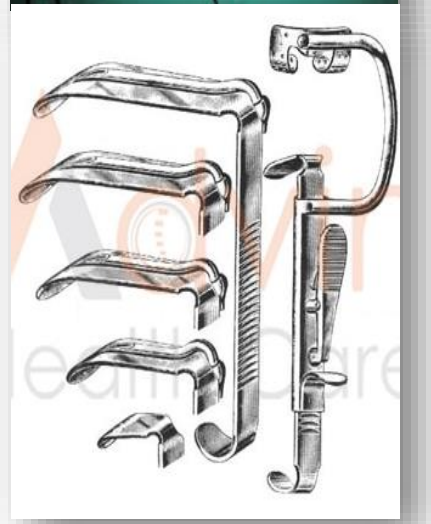
Q1: Obstructive tonsillar hyperplasia

4. Management plan
   - Brodsky reports that adenotonsillar hyperplasia may respond to one month of antibiotics (Augmentin, clindamycin).
   - Penicillin is still the 1st line agent for acute adenotonsillitis, and in the face of a negative throat culture for GABHS, should still be used if clinical suspicion is high.

مش متأكد من الحل

Q1: Tonsillectomy

- What is the name of this procedure ?
  - Tonsillectomy
- Mention the absolute indication for it
  1. Recurrent infection of throat (7 or more in 1 year / 5 per year for 2 years / 3 per year for 3 years).
  2. Suspected malignancy (asymmetrical tonsils).
  3. Airway obstruction (OSA).
- Relative indications for tonsillectomy:
  1. Second peritonsillar abscess (Quinsy).
  2. Febrile convulsion.
  3. Halitosis.
  4. Dysphagia.



Q1: Post tonsillectomy bleeding

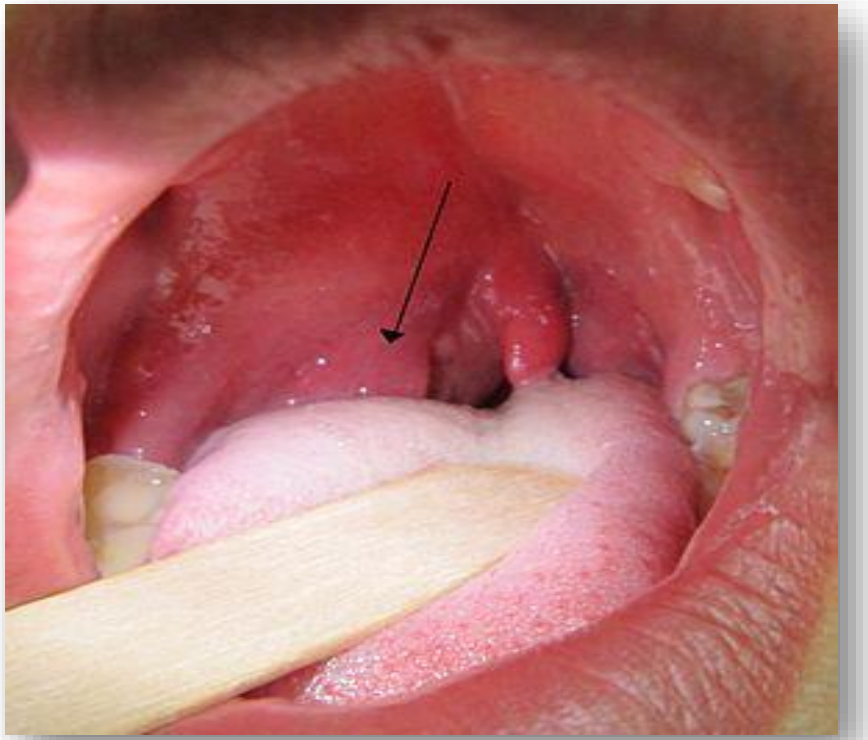
- **Mention the types of post tonsillectomy bleeding and why the happen**
  1. *Primary*: A primary injury to a blood vessel (during surgery)
  2. *Reactionary*: It happens when blood pressure rises (sometimes after taking fluid therapy) so it dislodges a blood clot causing hemorrhage during the first 24 hours after surgery
  3. *Secondary*: Due to secondary infection 5-10 days after surgery
- **Management of each type**
  - All are managed with resuscitation, compression, and cauterization, then
  - for primary and reactive bleeding consider ligation
  - for secondary bleeding consider give antibiotics

Q1: Peritonsillar abscess

27 years old patient present to the office with fever, difficulty in swelling, neck pain and trismus (lock jaw)

1. **What is your diagnosis ?**
   - Right side Peritonsillar abscess
2. **How to manage this case ?**
   A. ABC + antipyretics
   B. Incision and drainage (immediate without waiting) + antibiotic + fluid
3. **Write 2 Indication of tonsillectomy**
   A. Recurrent tonsilitis
   B. Obstructive sleep apnea

   For more check the previous slides



سؤال سنوات معدل العمر فيه لأنه كان نفس الي قبله

Q2: Peritonsillar abscess

A 7 years old male comes with this complain.

1. **What is your diagnosis ?**
   - Right side Peritonsillar abscess
2. **How to manage this case ?**

انتبه كيف انه العلاج
باختلف باختلاف العمر

   A. ABC + antipyretics
   B. Systemic antibiotic
   C. Aspiration with incision and drainage if the patient doesn't improve with the antibiotic in 48 hours.
3. **When is tonsillectomy indicated in peritonsillar abscess ?**
   - After the second attack of quinsy (relative indication)

Q3: Peritonsillar abscess

Describe

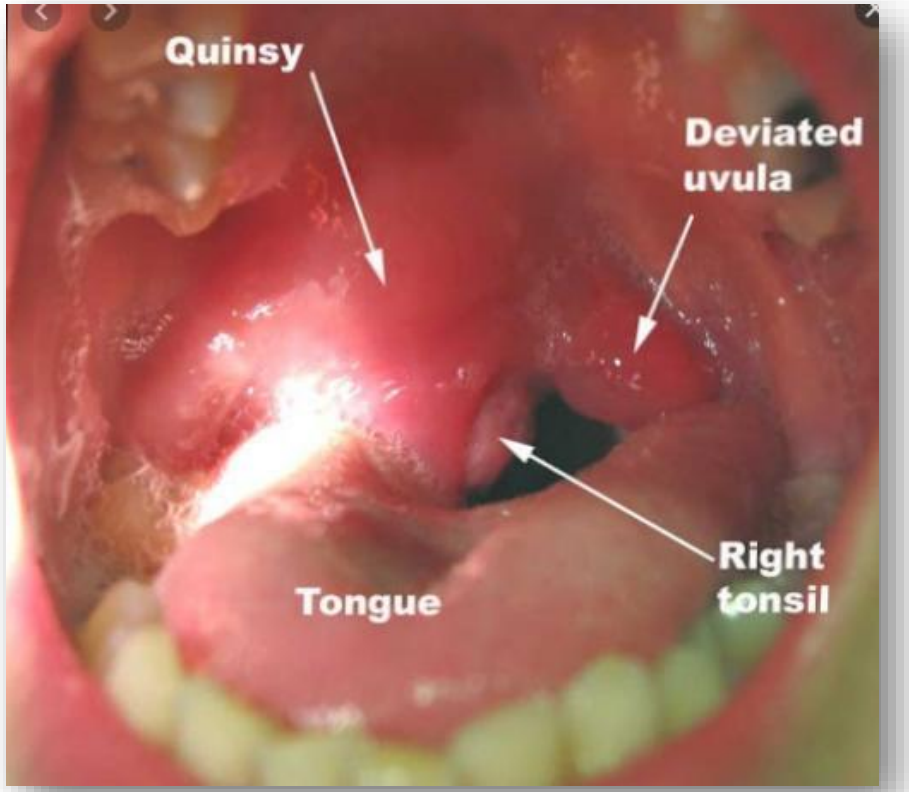
- Peritonsillar bulging/abscess due to accumulation of pus in peritonsillar fossa (Quinsy)

Treatment

- See previous slides

Mention 2 symptoms

- Trismus (Most important symptoms), Dysphagia, Sore throat, High grade fever



Quinsy: An abscess that forms between one of your tonsils and the wall of your throat.

Adenoids

لا تنسى تشوف دوسيه د. حرازنة

Pharyngeal tonsils hypertrophy (Adenoids)

❖Symptoms

1. Snoring
2. Difficult noisy breathing
3. Nasal obstruction
4. Nasal discharge
5. Voice change
6. Otitis media with effusion
7. Obstructive sleep apnea

❖What Investigation you should ask for ?

- Post-nasal space X-ray

❖Treatment of adenoid hypertrophy?

- Medical:
  - Anti-histamines
  - Topical nasal steroids.
- Surgical: Adenoidectomy.

Adenoidectomy

❖**Indications of adenoidectomy**:

1. Sleep apnea
2. Recurrent infection (acute otitis media , Rhinosinusitis)
3. Chronic otitis media with effusion

❖**Specific Contra-indications for adenoidectomy**:

1. Cleft palate or submucous palate
2. Neurological abnormality impairing palatal function like Down syndrome

❖**Non-specific contra-indications for adenoidectomy**:

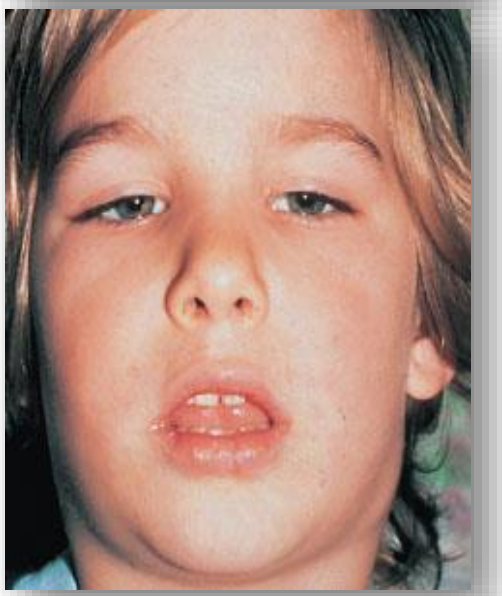
1. Bleeding disorders
2. Upper respiratory tract infection

Q1: Adenoids

1. **Name of the study**
   - Post-nasal space X-ray
2. **Diagnosis**
   - Adenoid hypertrophy
3. **Mention 2 contraindications of the surgery**
   - Specific Contra-indications for adenoidectomy:
     1. Cleft palate or submucous palate
     2. Neurological abnormality impairing palatal function like Down syndrome
   - Non-specific contra-indications for adenoidectomy:
     1. Bleeding disorders
     2. Upper respiratory tract infection

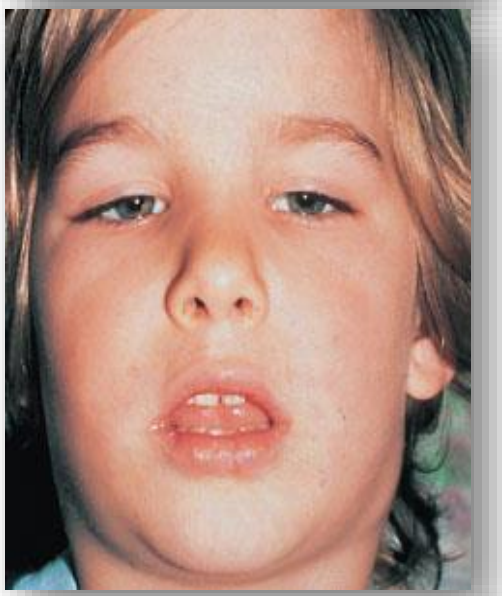
Q2: Adenoids

1. **Describe**
   - Adenoid face (Mouth breathing + elongated face + elevated nostrils + short upper lips)
2. **Spot diagnosis**
   - Adenoid hypertrophy
3. **Investigations to confirm dx?**
   A. Postnasal space examination with mirror
   B. Nasopharyngoscopy
   C. Lateral Xray
4. **Write the specific contraindication for the surgery**
   - See the previous slide



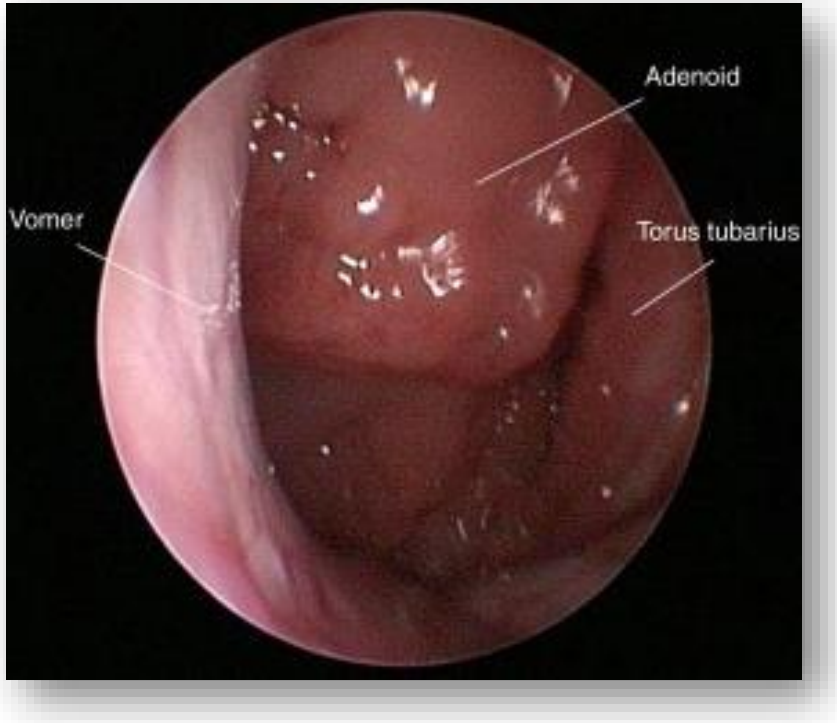
Q2: Adenoids

5. **Mention 3 symptoms the patient suffer from**
   A. Snoring
   B. Difficult noisy breathing
   C. Nasal obstruction
   D. Nasal discharge
   E. Voice change
   F. Otitis media with effusion
6. **Management**
   - Medical: Penicillin +/- Intranasal steroid
   - Surgery: Adenoidectomy
7. **Tympanometry and audiogram**
   - Tympanometry: Type B with normal volume
   - Audiogram: Conductive hearing loss



Q3: Adenoids

1. **Diagnosis**
   - Adenoid hypertrophy
2. **Mention 2 Presenting symptoms**
   A. Snoring
   B. Difficult noisy breathing
   C. Nasal obstruction
   D. Nasal discharge
   E. Voice change
   F. Otitis media with effusion



3. **Mention 2 Contraindication of surgery**
   A. Cleft palate or submucous palate
   B. Neurological abnormality impairing palatal function like Down syndrome

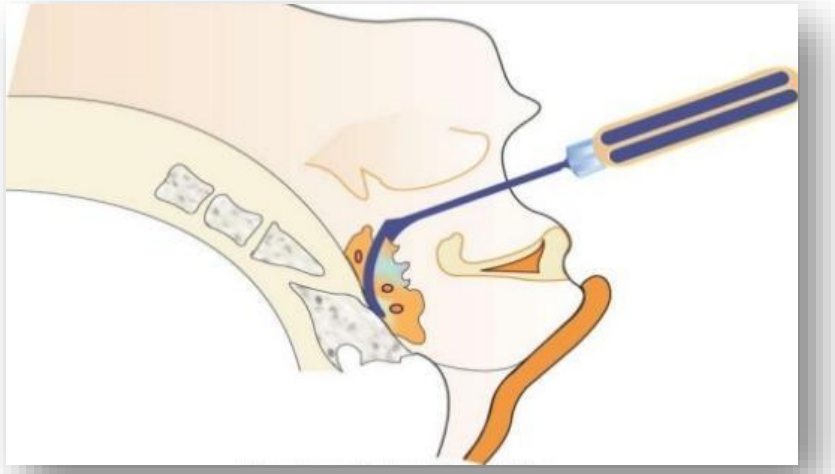
Q4: Adenoids

In the dental exam of a 7-years-old boy referred to ENT consultation by his dentist

- **Mention 2 possible complications this child may suffer from as a result of his nasal pathology**
  1. Obstructed sleep apnea
  2. Otitis media with effusion
  3. Chronic sinusitis
  4. Speech problems
- **Is this dental pathology reversible ?**
  - No!

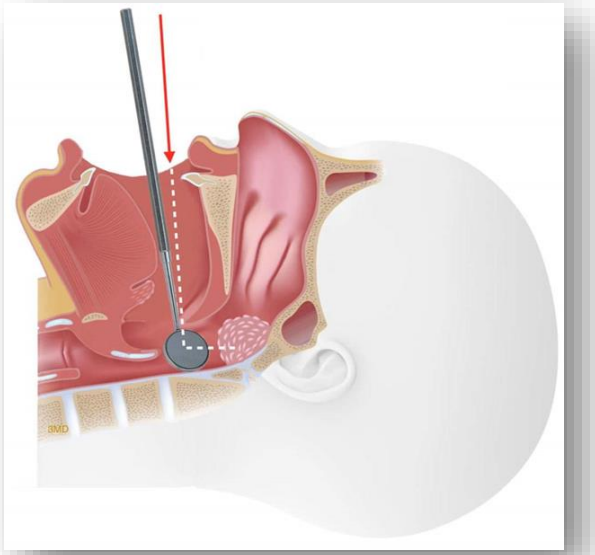
Adenoidectomy

- **Name of this surgery**
  - Curettage adenoidectomy
- **Mention 2 indication**
  1. Sleep apnea
  2. Recurrent infection (acute otitis media , Rhinosinusitis)
  3. Chronic otitis media with effusion

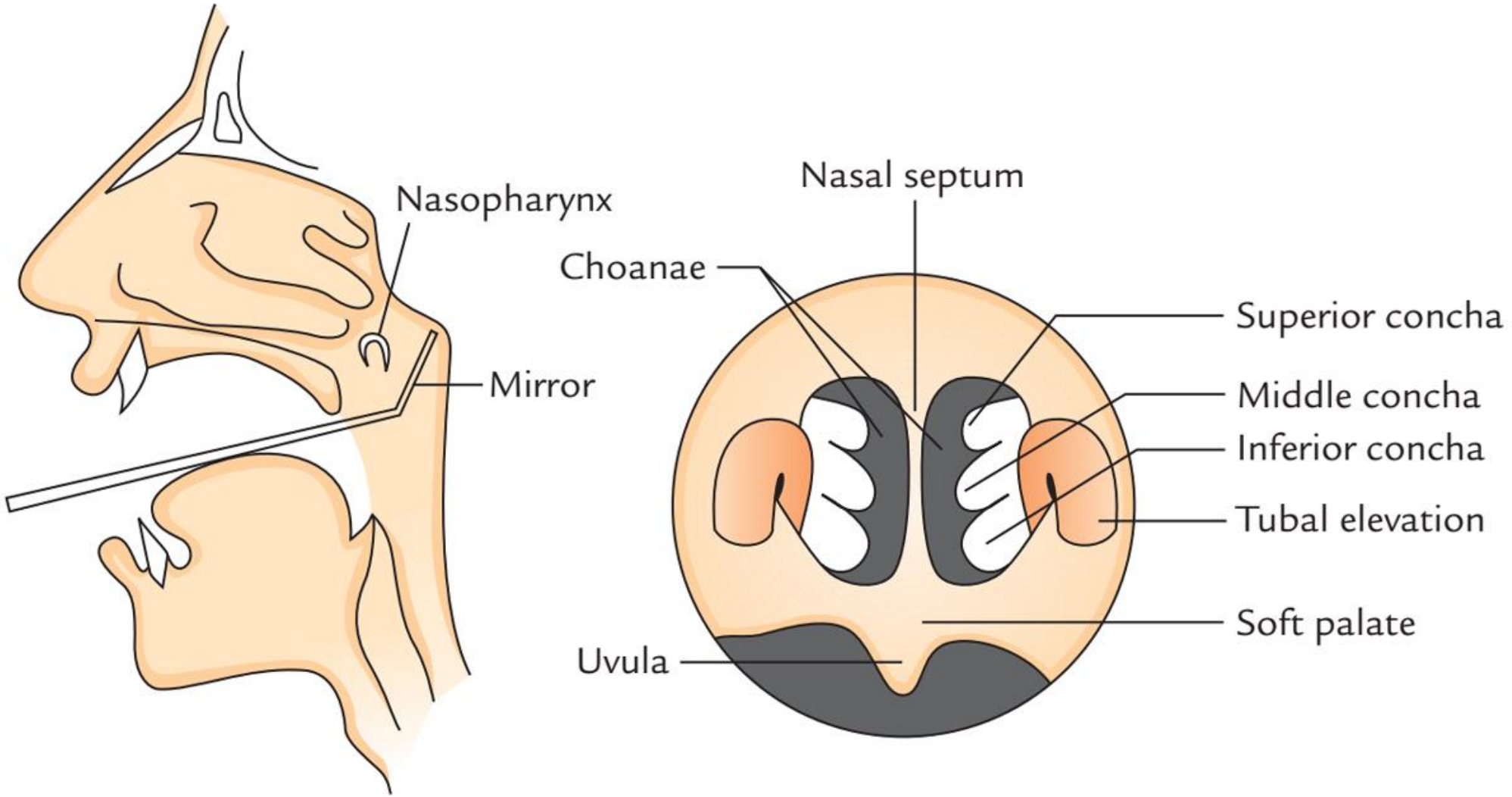


Posterior rhinoscopy

- **Name this procedure**
  - Posterior rhinoscopy
- **Mention any three structures you can see**
  1. Eustachian tube opening (Lateral)
  2. Posterior end of middle, inferior and superior nasal turbinates (Medial)
  3. Posterior part of septum (Medial)
  4. End posterior surface of the soft palate (Inferior)
  5. Rosenmullers fossa (Behind Eustachian tube)
- **Name another procedure replace this technique ?**
  - Fiberoptic endoscopy



Posterior rhinoscopy – Visualized structures



Stridor & Hoarseness

Vocal cord palsies

- Recurrent laryngeal nerve palsy:
  - Adduction to medial side (because cricothyroid muscle not affected).
  - Normal respiration and voice
- Bilateral recurrent laryngeal palsy:
  - Adduction
  - Inspiratory stridor
- Unilateral superior and recurrent laryngeal palsy:
  - Abduction, cadaveric paramedian position of ipsilateral side, contralateral side cross medline
  - Normal respiration and voice
- Bilateral superior and recurrent:
  - Bilateral (cadaveric)
  - Aphonia
  - Normal respiration
- Cricothyroid muscle is supplied by superior laryngeal nerve

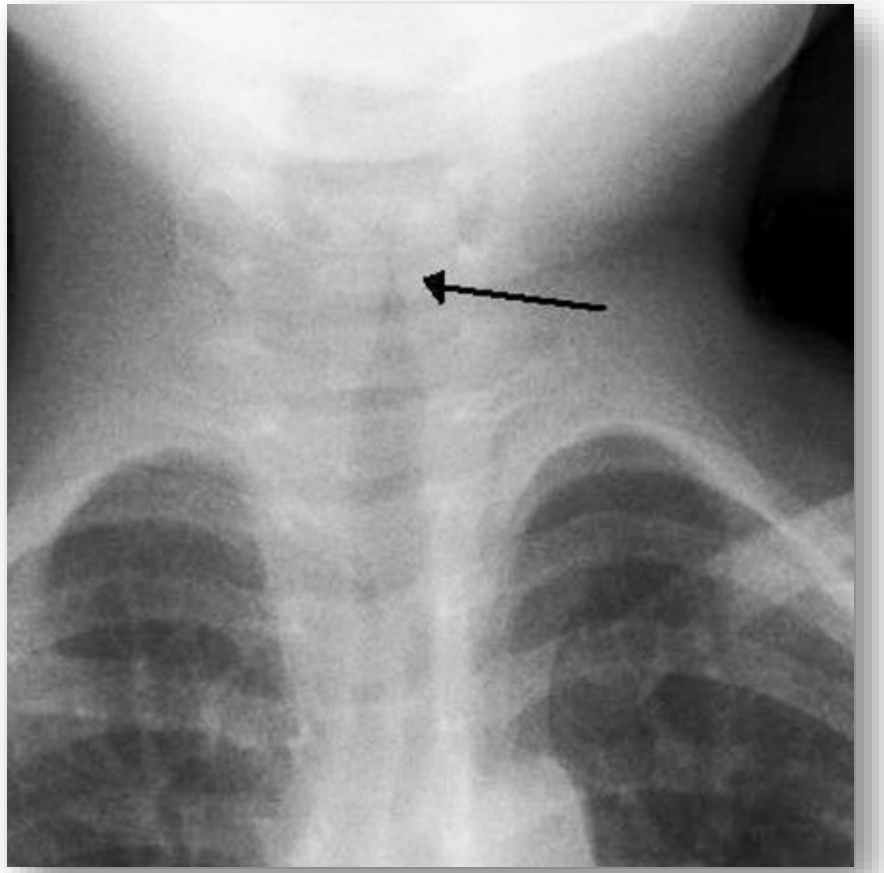
Vocal cord notes

- What is the second step in recurrent laryngeal nerve palsy management after examination ?
  - Second step: CT scan from skull base to chest
- When to investigate a hoarseness in voice ?
  - If the hoarseness presented for >3weeks
- Vocal cord cysts are reactive (compensatory) lesion on the other side
- Laryngeal polyps are unilateral >3mm
- Laryngeal nodule <3 mm
  - Bilateral
  - Seen in male child and female adult
  - In junction of anterior third and posterior two thirds
  - Mostly seen in teachers and singers

د. أسامة

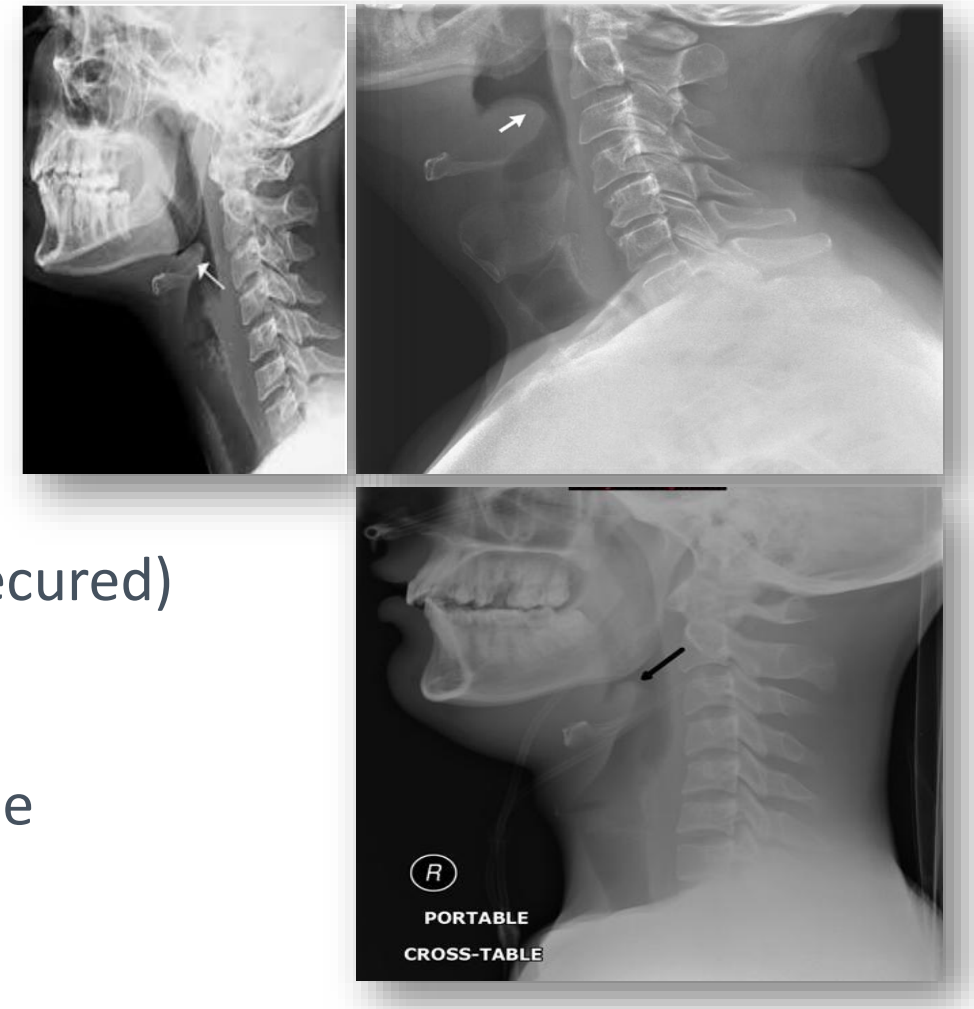
Croup

1. **Describe what you see**
   - Subglottic tracheal narrowing produces the shape of a church steeple within the trachea itself
2. **The name of the sign**
   - Steeple sign
3. **Spot diagnosis**
   - Croup (Laryngotracheobronchitis)
4. **Management:**
   1. Ensure Airway is patent
   2. Steroid
   3. Nebulizer epinephrine
   4. Oxygenation
   5. Tracheostomy (sometimes)
   6. No need for Antibiotic



Q1: A child presented with stridor and fever

1. **Name of the sign**
   - Thumb Sign
2. **Spot Diagnosis**
   - Acute Epiglottitis
3. **Management**
   1) Avoid any sort of airway examination
   2) ABC (make sure to check if the airway is secured)
   3) High flow O2
   4) Broad spectrum antibiotic
   5) Nebulized adrenalin and IV dexamethasone
   6) Blood and throat culture
   7) Analgesia
   8) ENT consultant



Q2: Nasolaryngio-scopic view of child

1. **Describe**
   - Enlarged/swollen edematous erythematous epiglottis and narrowed laryngeal inlet
2. **Most likely cause**
   - Acute epiglottitis due to Homophiles Influenza type B Infection
3. **Mention 3 symptoms the patient might come complaining from**

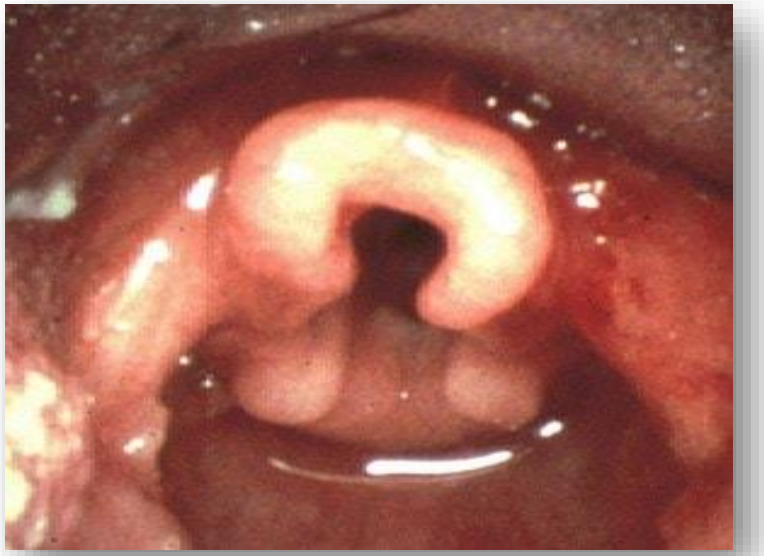
A. Acute onset stridor
B. Cyanosis
C. Fever
D. Hot potato voice
E. Dyspnea
F. Dysphagia
G. Drooling

Laryngomalacia

- Congenital cause of laryngomalacia
- Due to bilateral vocal cord palsy
- Most common cause of stridor in the neonatal period and early infancy (takes around 6-9 months for the stridor to become aberrant)
- Endoscopy shows omega sign/shape on inspiration
- **Management**:
  - Surgery (supraglottoplasty)
  - Give antacid even if the patient don't have GERD
- **Aggravated by**:
  A. Crying
  B. Feeding
  C. Supine position and head flexion
- **Relieved by**:
  A. Prone position and head extension

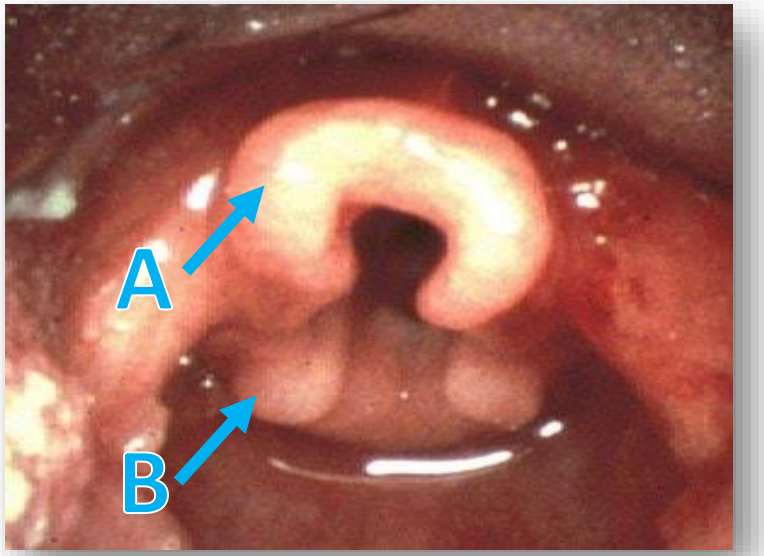
Q3: Laryngomalacia

1. **What is the name of this sign**
   - Omega shaped epiglottis
2. **Describe what you see**
   - Omega shaped epiglottis seen in laryngomalacia
3. **Spot diagnosis**
   - Laryngomalacia
4. **Management**
   - Usually benign and self-limiting and improves as child reachea age of 1 year, in cases where significant obstruction or lack of weight gain is present, surgical correction or supraqlottoplasty may be considered.



Q3: Laryngomalacia

5. **Aggravating and relieving factors**
   - Aggravated by:
     A. Crying
     B. Feeding
     C. Supine position and head flexion
   - Relieved by:
     A. Prone position and head extension



A. Omega shape epiglottis
B. Aryepiglottic fold

6. **What would you ask parents about ?**
   - Cyanosis and failure to thrive

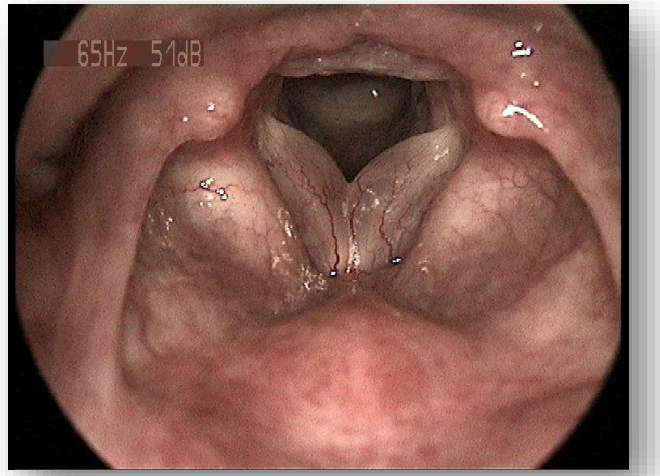
7. **If they answer that everything is normal what is your management ?**
   - Reassurance and it will resolve spontaneously by age of 1 year and give anti reflux medication

Subglottic stenosis

- Glottis diameter in children
  - Normal: 6mm
  - Borderline: 5mm
  - Stenosis: 4mm
- Grade 1: 50% stenosis; No treatment needed
- Grade 2: 51-70% stenosis
- Grade 3: 71-99% stenosis
- Grade 4: No detectable lumen

Q5: 70 years male pt. come to ER with raspy voice , Hoarseness of voice, partial airway obstruction

1. **Diagnosis**
   - Reinke’s edema (Polypoid corditis, Smoker corditis)
2. **Describe what do you see**
   - General edema of vocal cord
3. **Management**
   A. ABC
   B. Smoking cessation
   C. Treat of reflux
   D. Microlaryngiosscopic surgery (lateral cordotomy)

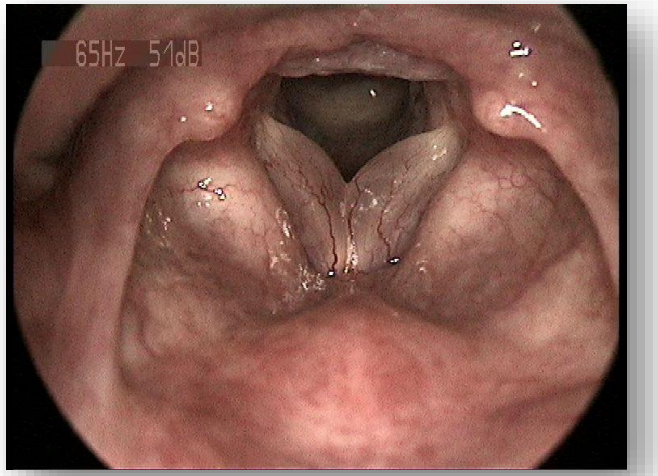


65% bilateral, Seen mostly in old age

Q5: 70 years male pt. come to ER with raspy voice , Hoarseness of voice, partial airway obstruction

4. **Name 3 risk factors**
   A. Longstanding smoking
   B. Thyroid disease
   C. Hormonal disease
   D. Stomach acid reflux
   E. Voice overuse

5. **What is the name of the abnormal high pitch sound and partial airway obstruction seen in this pt. ?**
   - Stridor



Q2: Vocal cord cyst

Name of the procedure

❖Fiberoptic laryngoscopy

Diagnosis

❖Vocal fold cyst

Differential diagnosis (DDx)

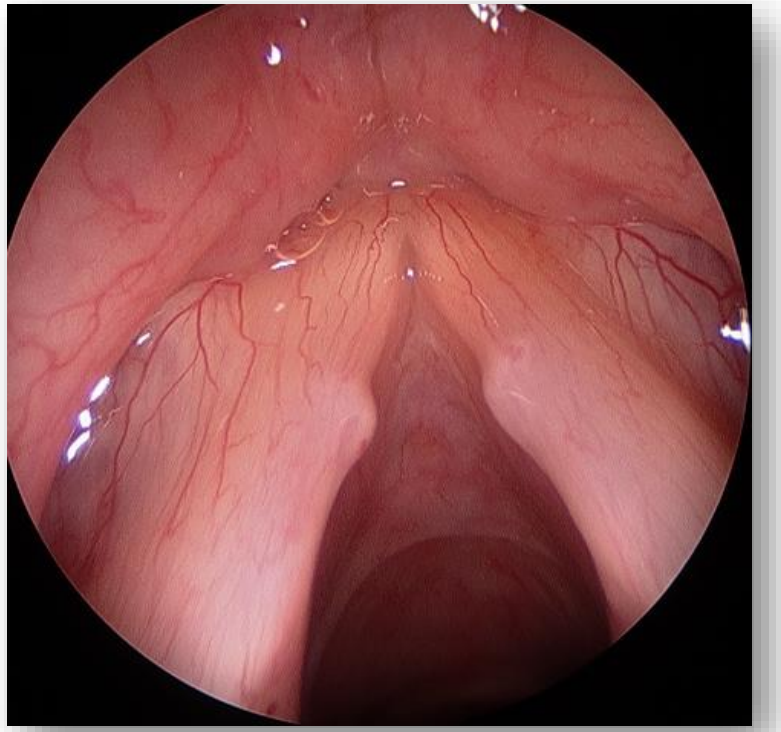
❖Tumor, Polyps

Investigations

1. Indirect laryngoscopy
2. Fiberoptic laryngoscopy
3. X-ray
4. Ct/MRI
5. Triple endoscopy (Direct laryngoscopy, esophageoscopy, broncoscopy)
6. biopsy

Q2: Teacher come with this complain

1. **Diagnosis**
   - Vocal cord nodules
2. **Management**
   - Voice therapy
   - In severe or resistant cases, surgical intervention may be warranted



Laryngeal carcinoma

Papilloma

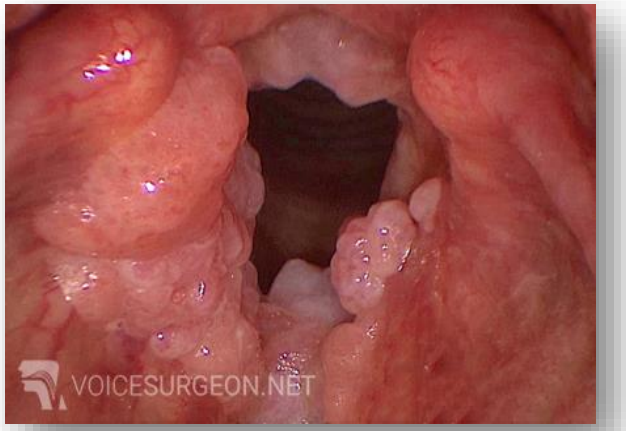
Most common benign tumor of larynx.

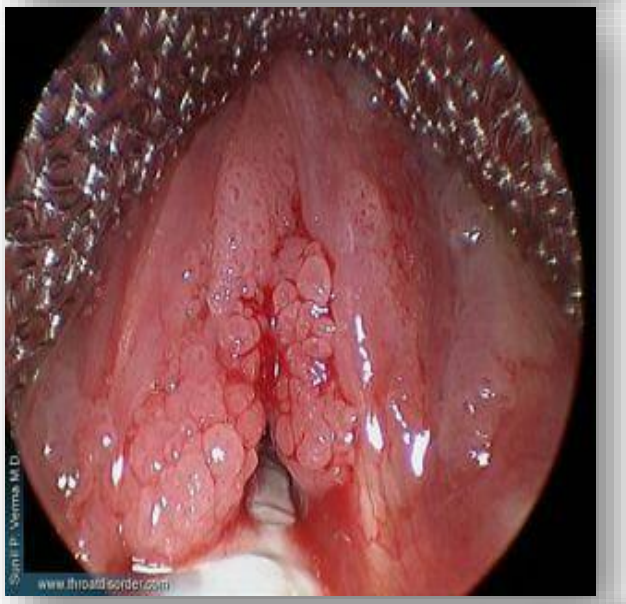
Differentiate between papilloma and polyps

Papilloma	Polyps
Premalignant	Benign
Unilateral	Bilateral
Originate from lateral wall	Originate from ethmoids
Cause destruction of bone	no destruction of bone
–	opacification on x-ray

Q1: Respiratory papillomatosis

1. **Finding**
   - laryngeal papilloma
2. **What's your Top diagnosis ?**
   - Recurrent respiratory papillomatosis
3. **What’s the most likely cause ? (Pathogen)**
   - Human papilloma virus Infection
4. **Your management (2 points)**
   A. Antiviral (Acyclovir)
   B. Surgical excision (Debulking)
5. **Commonly used management**
   - Surgical excision (Debulking)





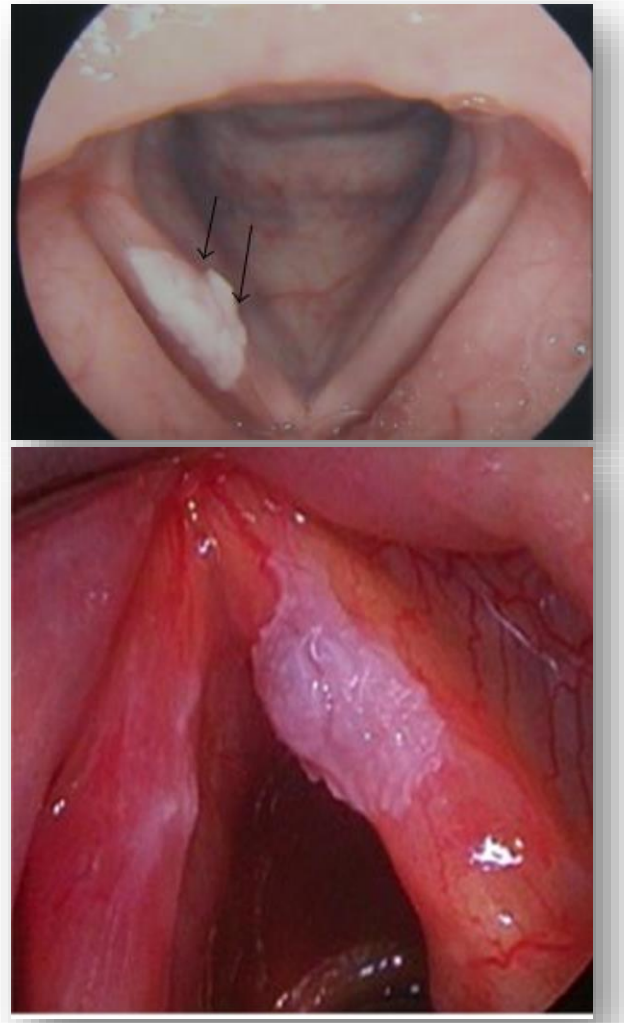
Laryngeal carcinoma

- **Glottic carcinoma**:
  - Most common laryngeal CA
  - Good prognosis
  - Early presentation by Hoarseness, no lymph drainage, no mets, dysphagia
- **Granuloma (aka intubational granuloma)**: history is important
- **Supraglottic carcinoma**:
  - Bad prognosis, aggressive
  - Presented by delayed symptom, i.e. dysphagia
- **CA Larynx investigation**

A. Indirect mirror
B. Laryngoscopy
C. CT / MRI
D. Triple endoscopy
E. Biopsy

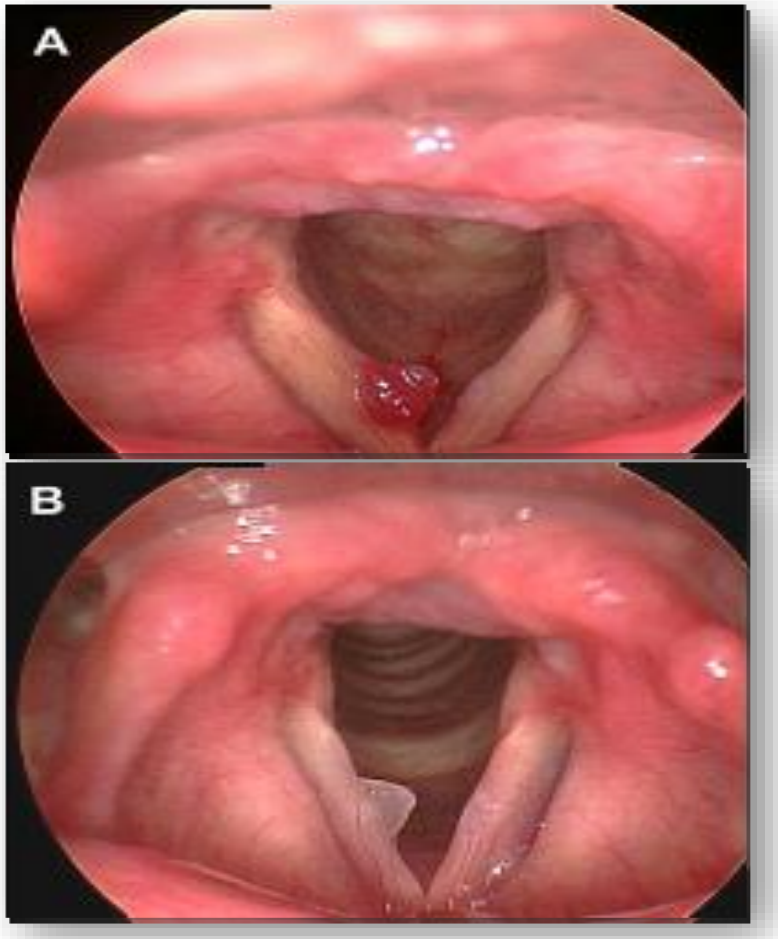
Q3: Smoker came with hoarseness of voice

1. **Mention 2 differential diagnosis for this finding**
   A. Leukoplakia
   B. Papillomatosis
   C. Laryngeal Cancer
   D. Fungal infection
2. **Mention 2 important investigations**
   A. Fiber optic nasal endoscopy (most important)
   B. Indirect laryngeal endoscopy (laryngeal mirror examination)
3. **All investigations**
   A. Indirect mirror
   B. Laryngoscopy
   C. CT / MRI
   D. Triple endoscopy
   E. Biopsy



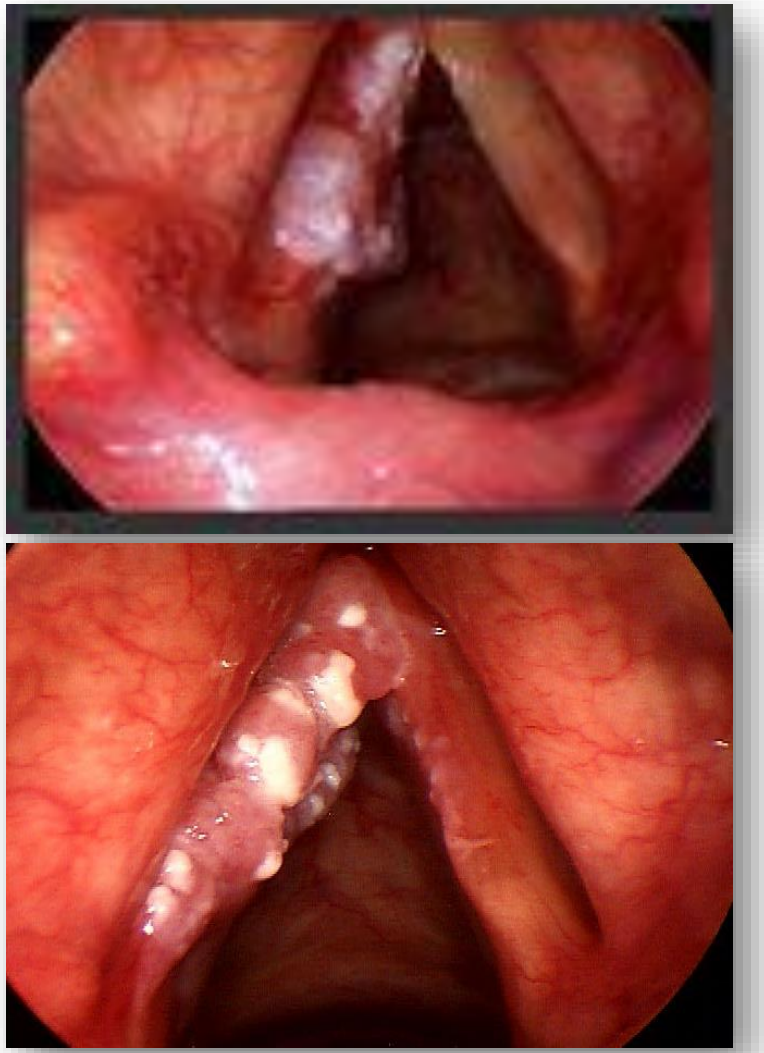
Q4: Laryngeal carcinoma

- **Write 2 DDx**
  A. Vocal cord polyp
  B. Tumor
- **Write 2 symptoms the patient can complain from**
  A. Hoarseness of voice
  B. Dysphagia
  C. Hemoptysis
- **What's your next step ?**
  - Biopsy to exclude malignancy



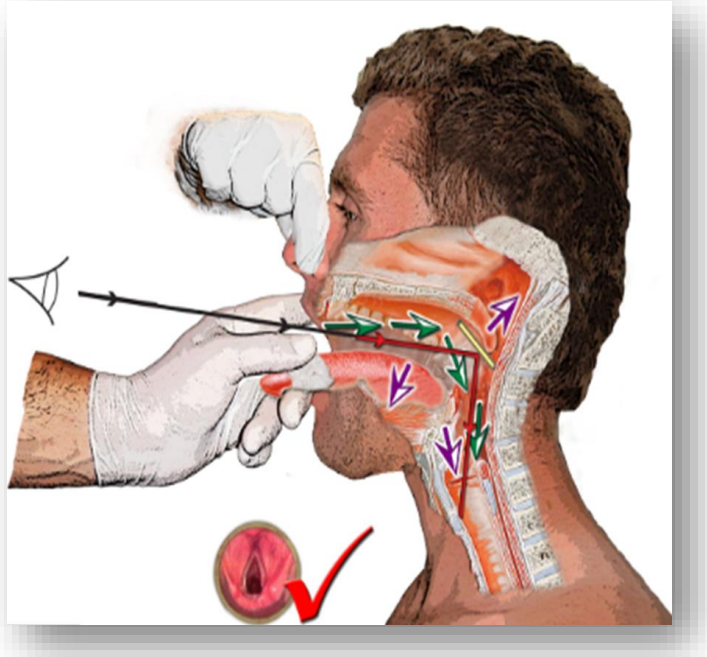
Q5: Laryngeal carcinoma

1. **With what instrument do you view this area?**
   - Flexible laryngoscopy
2. **What should we exclude?**
   - Laryngeal carcinoma
3. **How to confirm your diagnosis of this finding**
   - Biopsy to exclude malignancy



Indirect laryngoscopy

- **Name of this procedure**
  - Indirect laryngoscopy
- **Structures that cab be visualized by it**
  - Vocal cords and glottis—including upper tracheal rings, larynx, and hypopharynx
- **Procedure alternative to it**
  - Direct laryngoscopy with the laryngoscope



Tracheostomy

شاملة دوسيه د. حرازنة بشكل مختصر

Tracheostomy 1

Mention the types of tracheostomy

1. Temporary
2. Permanent

Write 3 procedures to enter the trachea

A. Percutaneous tracheostomy
B. Surgical tracheostomy
C. Cricothyroidectomy

Preformed at which level

- Pediatrics: between 2nd and 3rd tracheal interspace
- Adults: between 3rd and 4th tracheal interspace

Tracheostomy 2

What are the indications of tracheostomy ?

❖Acute

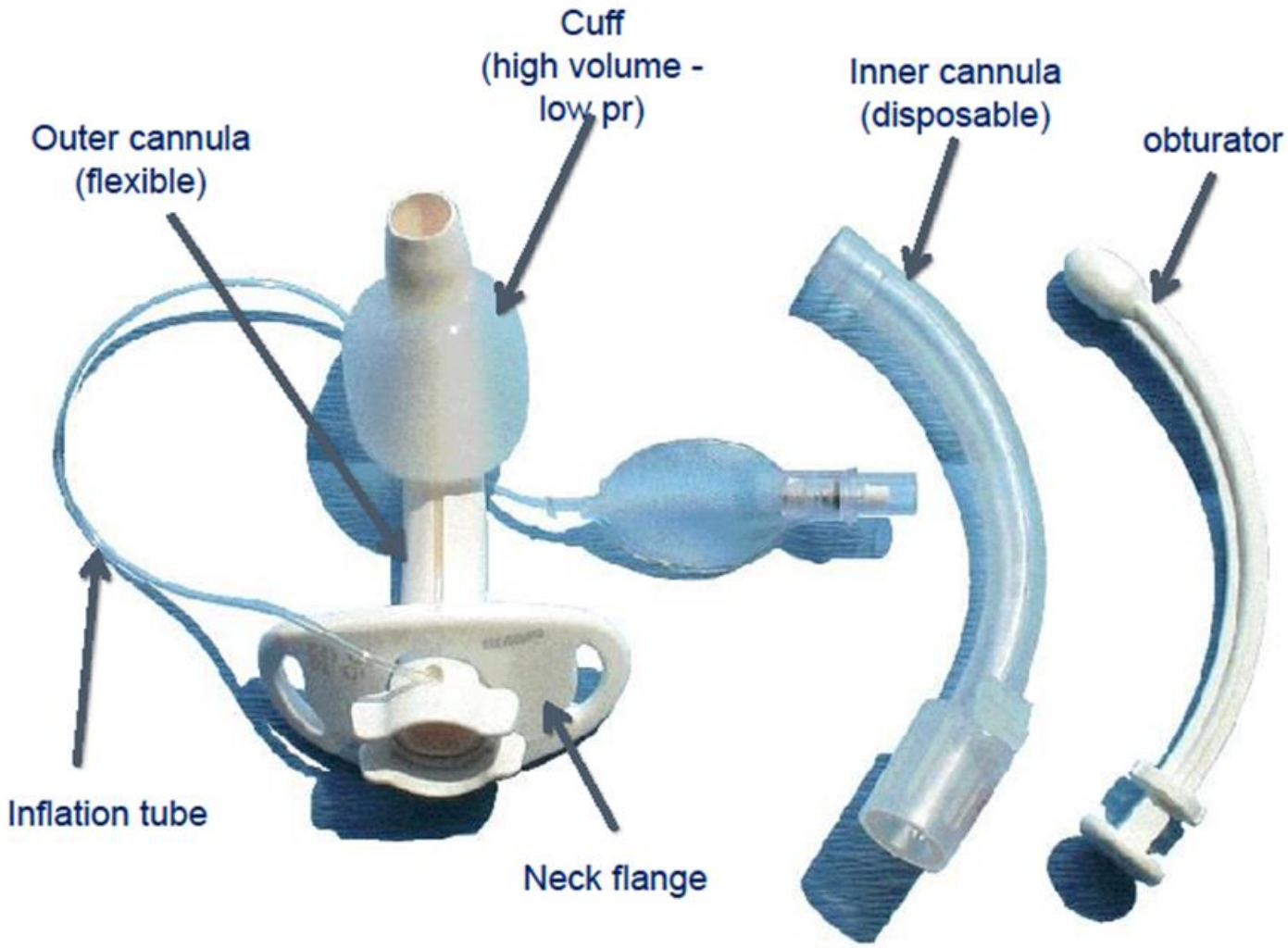
1. Maxillo-facial Trauma
2. Poisoning
3. Upper airway obstruction
4. Acute angioedema & inflammation of head & neck

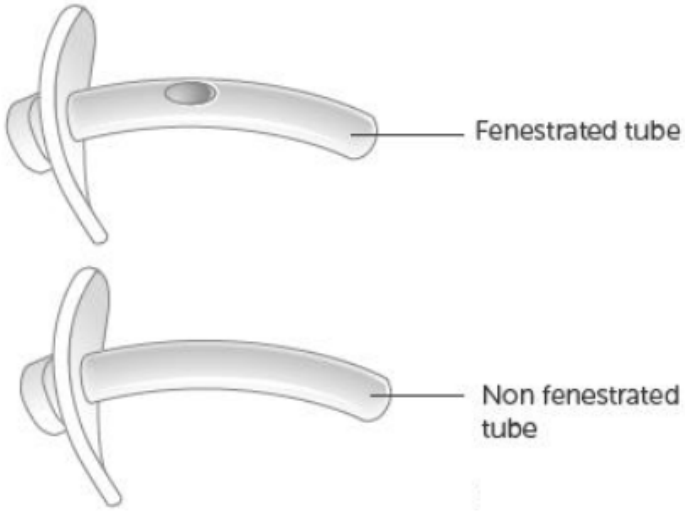
❖Chronic

1. Any patient on ventilation for more than 2 weeks (most common indication)
2. Pulmonary toilet
3. Sleep apnea & chronic aspiration
4. Total laryngectomy

❖Elective

Cuffed tracheostomy tube parts





1.Percutaneous tracheostomy

- ICU, bedside tracheostomy
- Use guide wire & dilator
- Under vision of bronchoscope through endotracheal tube
- **Advantages**: Less time, less expensive, reduced tissue trauma
- **Contraindications**:
  1. Unstable cervical spine
  2. Obese, thick neck
  3. Refractory coagulopathy

Steps of ICU bedside tracheostomy ?

1. The patient should be placed supine with towels under the shoulder blades so that the neck is fully extended
2. Withdraw the endotracheal tube
3. The bronchoscope is fed through the endotracheal tube but kept with the tube itself.
4. The neck should be carefully palpated, and the anatomy should be identified
5. Horizontal skin incision made about 2-3 cm in length
6. The paratracheal tissue is cleared by blunt dissection, until the trachea is clearly palpable.
7. Once you have endotracheal tube withdrawn far enough, the introducer needle is then used to puncture the anterior wall of the trachea under direct bronchoscopic visualization.
8. A guidewire is fed through the catheter. On the bronchoscope, it should be seen going distally down the trachea towards the carina
9. The catheter is removed over the wire leaving it in place. The first small blue dilator is used to dilate the track
10. The large progressive dilator is then used to further dilate the track over the extended catheter
11. Introduce the tracheostomy
12. Reconnect to the ventilator
13. Stitch for fixation in four corners

2. Surgical tracheostomy

Briefly, write down steps of this procedure under GA

1. Patient under GA & supine position
2. Mark 1 cm above suprasternal notch or 2 cm below the cricoid cartilage
3. Cervi-linear skin incision along relaxed skin tension line (RSTL) between sternal notch & cricoid cartilage
4. Midline vertical incision dividing strap muscles.
5. Division (or retraction) of thyroid isthmus.
6. Divide the 2nd tracheal ring & insert tracheostomy tube (with concomitant withdrawal of ETT), inflate the cuff, then secure with tape or sutures.
7. Connect ventilator tube
8. Check the cuff is well inflated
9. After 3 days change cuffed tube to uncuffed tube to prevent stenosis

2. Surgical tracheostomy notes

- Cuffed tube → to prevent aspiration
- Done under GA and with endotracheal tube
- The incision is done in the 2nd or the 3rd tracheal interspace between the 3rd and 4th tracheal ring
- Pediatric tracheostomy
  - between the 2nd and 3rd tracheal ring
  - No excision of the anterior wall of the trachea
  - Secure the tube with 2 sutures

3.Cricothyroidectomy

Emergency incision, temporary only

Indications:

1. Severe facial or nasal injuries
2. Massive mid facial trauma preventing adequate ventilation
3. Anaphylaxis
4. Chemical inhalation injuries

❖**Contraindications**:

1. Inability to identify cricothyroid membrane
2. Tumor
3. Acute laryngeal disease (ex. infection, trauma)
4. Tracheal transection
5. Small children

Post op. care in tracheostomy

1. CXR → Directly after the procedure to ensure that the tube is in place, and to check for pneumothorax or pneumomediastinum
2. Antibiotics
3. Humidification of air
4. Regular suction every 1 hour → to avoid obstruction
5. Swallowing & position
6. Tube changing after 3 days

Tracheostomy 3

❖Closure

- Check the dossier (لأني ما فهمت)

❖Complications

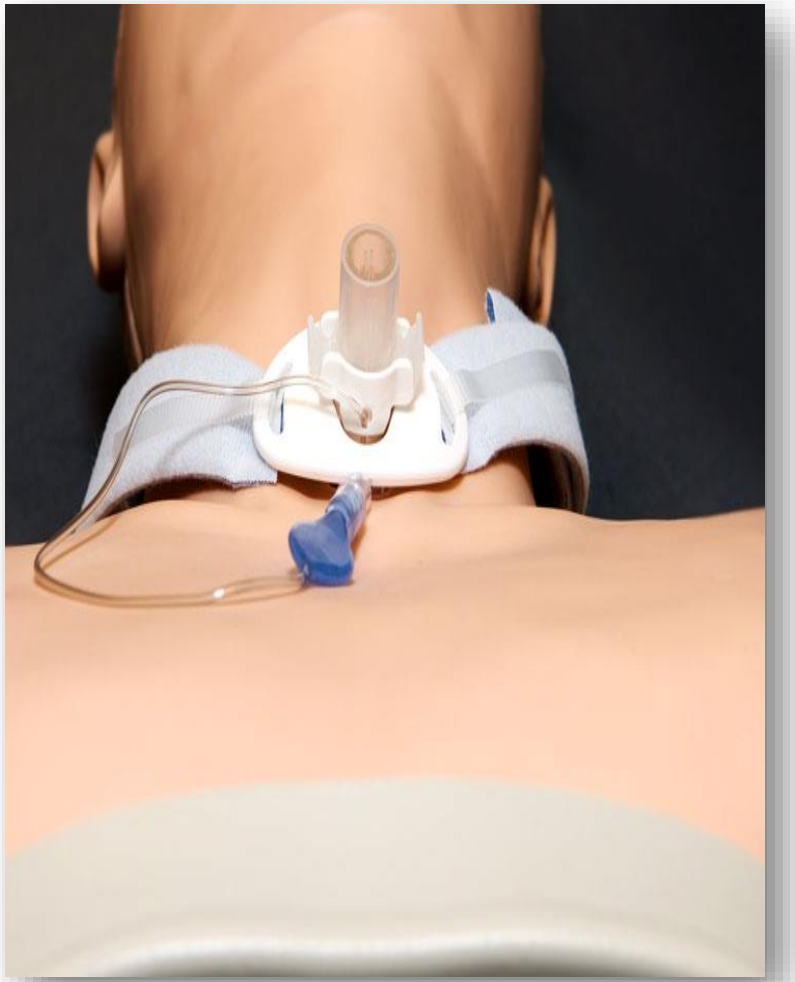
1. Bleeding (most common complication)
2. Subcutaneous emphysema
3. Tracheal stenosis
4. Injury to recurrent laryngeal nerve, thyroid isthmus, and/or thyroid cartilage
5. Tracheostomy scar

❖Contraindications

1. Anemia
2. Unstable patient

Q1: Tracheostomy

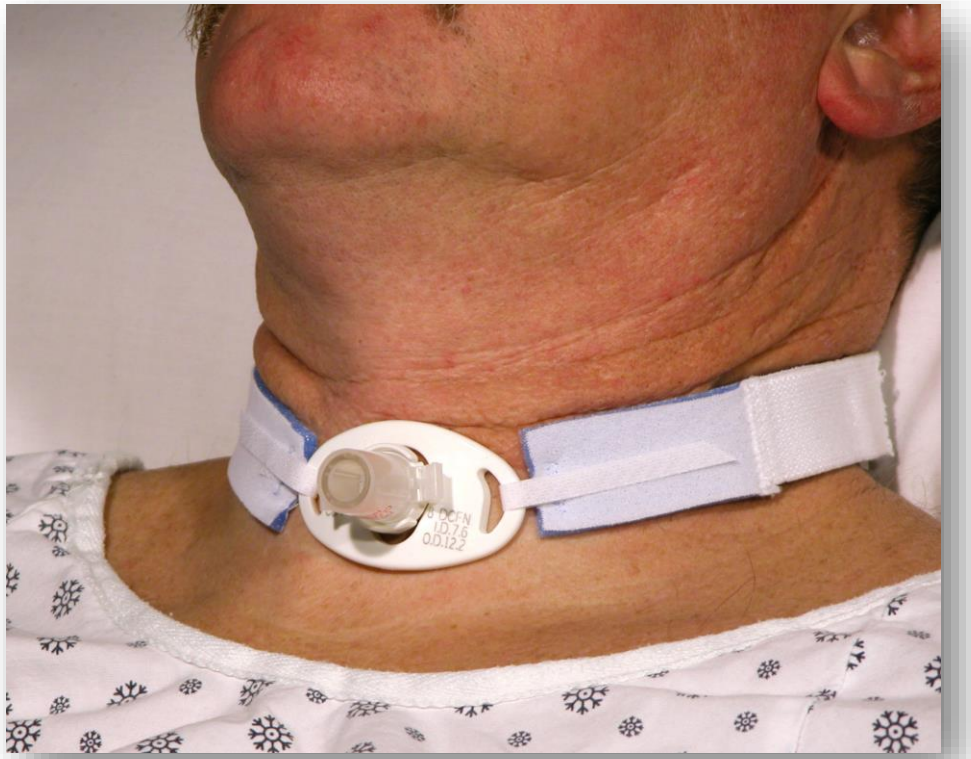
1. **What is the most common indication?**
   - Prolonged endotracheal intubation
2. **What is the most common complication?**
   - Bleeding
3. **What is the site of incision?**
   - Between sternal notch and cricoid cartilage
4. **Write 3 procedures to enter the trachea**
   A. Surgical tracheostomy
   B. Percutaneous tracheostomy
   C. Cricothyroidectomy



Q2: Tracheostomy

1. **Name of the procedure**
   - Tracheostomy
2. **Mention 2 indications**
   1. Poisoning
   2. Upper airway obstruction
   3. Acute angioedema & inflammation of head & neck

3. **Preformed at which level**
   - Pediatrics: in the 2nd and 3rd tracheal interspace
   - Adults: in the 3rd or the 4th tracheal interspace



Q3: Tracheostomy

1. **Name of the tube**
   - Cuffed tracheostomy tube
2. **Most common complication intra-operation**
   - Bleeding
3. **Mention 2 more complications**
   1. Tube obstruction
   2. Tube displacement
4. **Mention 2 indications**
   1. Upper airway obstruction
   2. Maxillo-facial Trauma
   3. Total laryngectomy

Q4: Tracheostomy

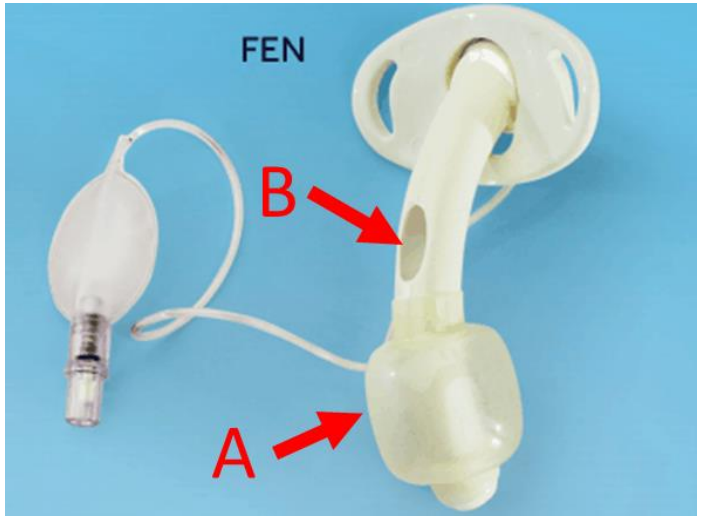
1. **Name of the tube**
   - Cuffed tracheostomy tube
2. **Mention 2 early complications**
   1. Bleeding
   2. Malposition
3. **Mention 2 common indications**
   1. Upper airway obstruction
   2. Maxillo-facial Trauma

Q5: Tracheostomy

1. **The Arrow points at**
   - Pilot balloon
2. **Mention 2 indications for permanent insertion**
   1. Laryngeal paralysis or collapse
   2. Severe secretory respiratory disease
   3. Nasal neoplasia
3. **Why it should be replaced immediately.. to prevent what ?**
   - To prevent formation of granulation tissue around it, to prevent blocking of tube by secretion

Q5: Tracheostomy

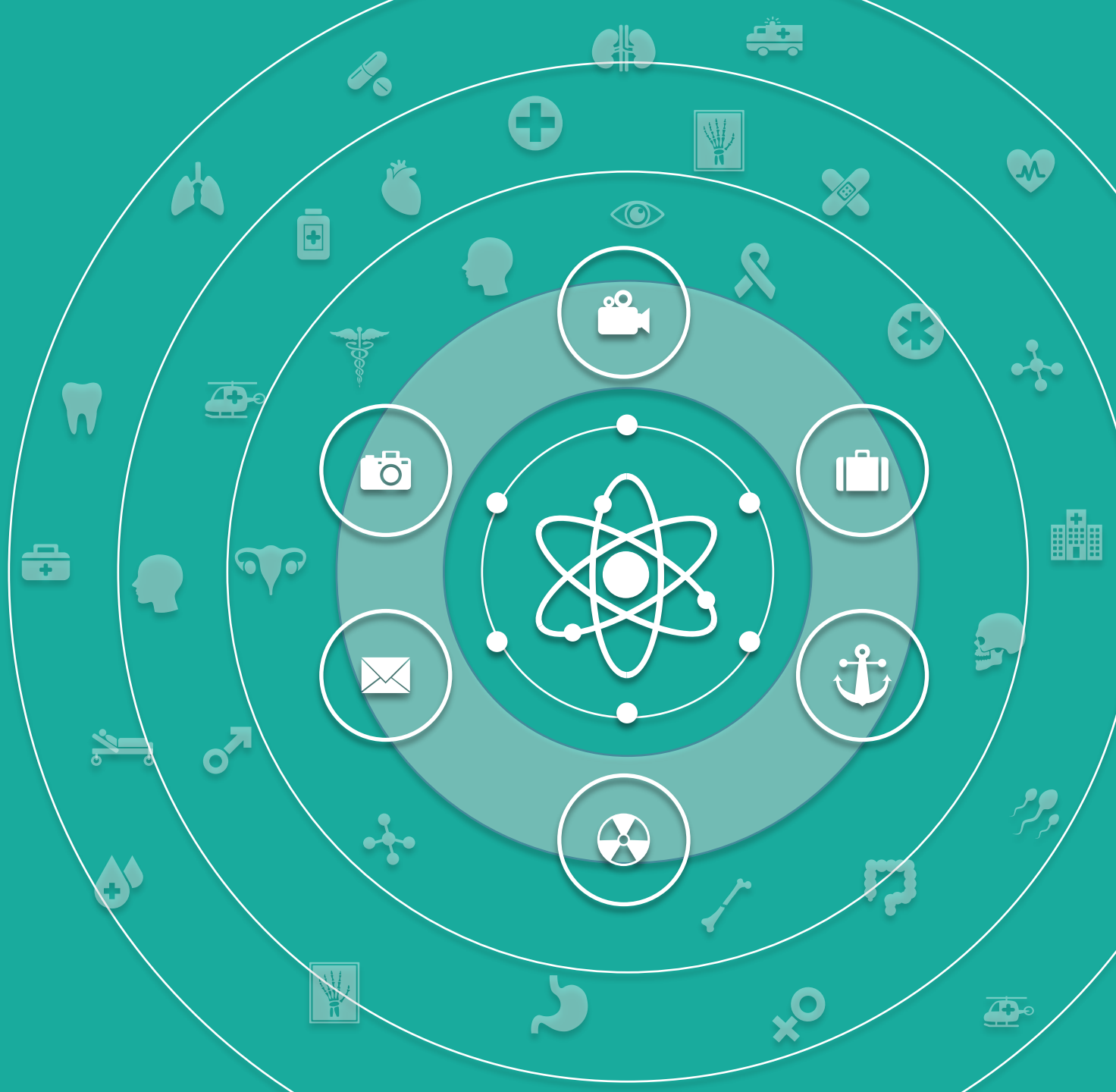
1. **The Arrow points at**
   A. Cuff
   B. Fenestration
2. **One function of A, B**
   A. Prevent aspiration
   B. Provide another alternative opening in case the primary bottom one got obstructed
3. **Mention 2 indications**
   1. Upper airway obstruction
   2. Maxillo-facial Trauma
4. **At which level to do surgery**
   - Pediatrics: between 2nd and 3rd tracheal interspace
   - Adults: between 3rd and 4th tracheal interspace



4

ENT

FOREIGN BODIES



1. Nasal foreign bodies

- **Unilateral** purulent rhinorrhea is a foreign body until proven otherwise
- The most common locations for nasal foreign bodies to lodge are
  - Anterior to the middle turbinate
  - Below the inferior turbinate
- Small **disc batteries** cause tissue destruction via low-voltage electrical currents and liquefactive necrosis
- Major **complications** of foreign bodies lodged in the nasal cavity are
  1. Septal perforation
  2. Nasal synechiae
  3. Stenosis of the nasal cavity
  4. Rhinoliths
- **Rhinoliths** are radio-opaque and typically are found on the floor of the nasal cavity

Management of nasal foreign bodies

- Direct instrumentation is used for easily visualized, nonspherical, nonfriable foreign bodies lodged in the nose
- Suction is used for easily visualized, spherical or smooth foreign bodies lodged in the nose
- Balloon catheters are used for small, round objects lodged in the nose that are not easily grasped by direct instrumentation
- Ring probe is used for spherical & friable foreign bodies lodged in the nose
- Positive pressure is used for large, occlusive foreign bodies lodged in the nose

2. Throat foreign bodies

- The sudden onset of stridor in a formerly normal child must always be regarded as being due to a foreign body lodged in the throat until proved otherwise
- Throat foreign body complications
  1. Aspiration
  2. Laryngeal edema and obstruction
  3. Perforation to the esophagus
- Throat foreign body management complications
  1. Airway obstruction
  2. laryngeal edema
  3. Injury of esophagus by the FB
  4. Pushing the foreign body into the subglottic space, esophagus, or trachea

Management of throat foreign bodies

- **Examine**: exam the pharynx and the larynx
- **Imaging**:
  - Radiography (Both AP & lateral view)
  - Esophagoscopy
  - Laryngoscopy
- **Treatment**:
  - Heimlich's maneuver
  - Cricothyrotomy or emergency tracheostomy should be done if Heimlich's maneuver fails
  - Once acute respiratory emergency is over, foreign body can be removed by direct laryngoscopy.

3. Management of ear foreign bodies

1. Ear irrigation in case of foreign body lodged is contraindicated in:
   A. Tympanic membrane perforation
   B. If there are acute otitis media, otitis media with effusion
   C. Soft objects, organic matter, or seeds, which may swell if exposed to water
   D. Patients with button batteries
2. Suction
3. Grasp the object with forceps
4. Place a right-angled hook behind the object and pull it out

Management of ear foreign bodies

- Live insects can be killed rapidly by instilling alcohol, 2% lidocaine (Xylocaine), or mineral oil into the ear canal.
- This should be done before removal is attempted but should not be used when the tympanic membrane is perforated. (Dr. Osama says we can use normal saline in case tympanic membrane is perforated)
- After the foreign body is removed, inspect the external canal. For most foreign bodies, no medications are needed. However, if infection or abrasion is evident, fill the ear canal 5 times/day for 5-7 days with a combination antibiotic and steroid otic suspension (eg, Cortisporin or Cipro HC).

Q1: Foreign bodies

Describe what you see in A & B.

A. Disk battery in nasal cavity As a foreign body

B. Foreign Body in external ear canal

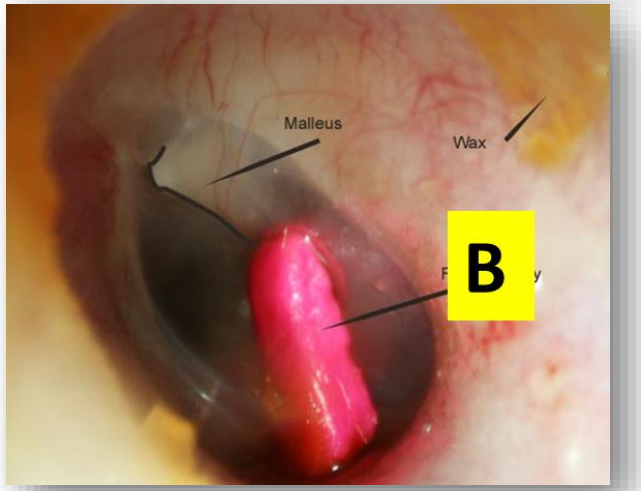
How to manage each case ? (انتبه لنوع وشكل الجسم)

A. If it was easily visualized ⟶ by suction and right-angled hook, if it was deep inside ⟶ by balloon catheter, magnetics might be helpful

B. Irrigation, Suction, or by instrumentation, also give a combination antibiotic and steroid otic suspension if infection or abrasion is evident

How can the damage occur in case A ?

❖Extensive tissue destruction via low-voltage electrical currents, and liquefactive necrosis if their alkaline contents leak out



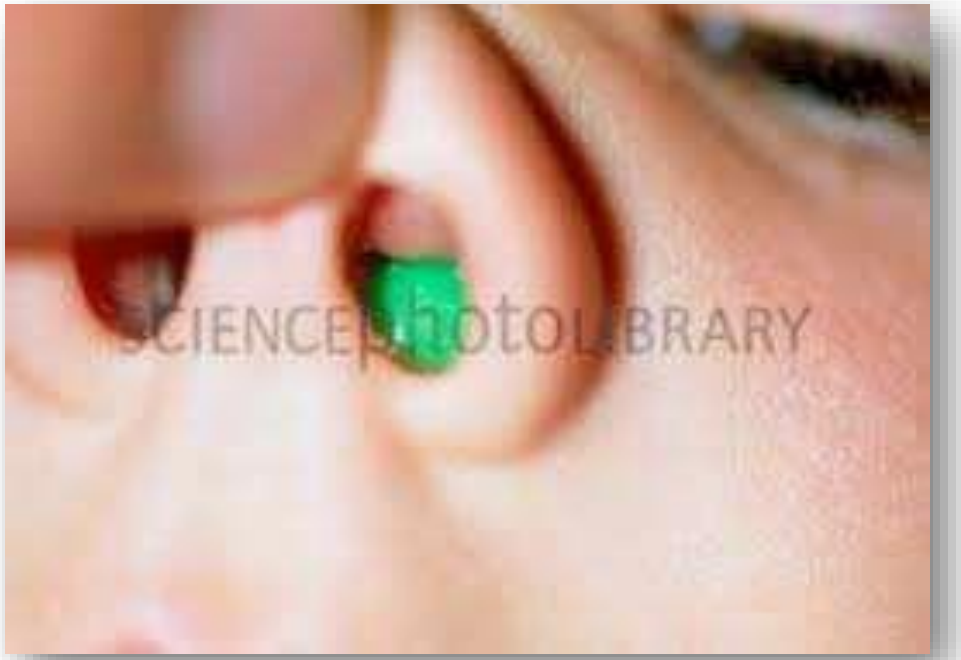
Q2: Foreign bodies

Describe what you see

- Foreign body in the nose

Possible symptoms

1. Unilateral purulent rhinorrhea
2. Unilateral nasal obstruction
3. Epistaxis
4. Nasal perforation
5. Foul smelling
6. Pain
7. Sneezing



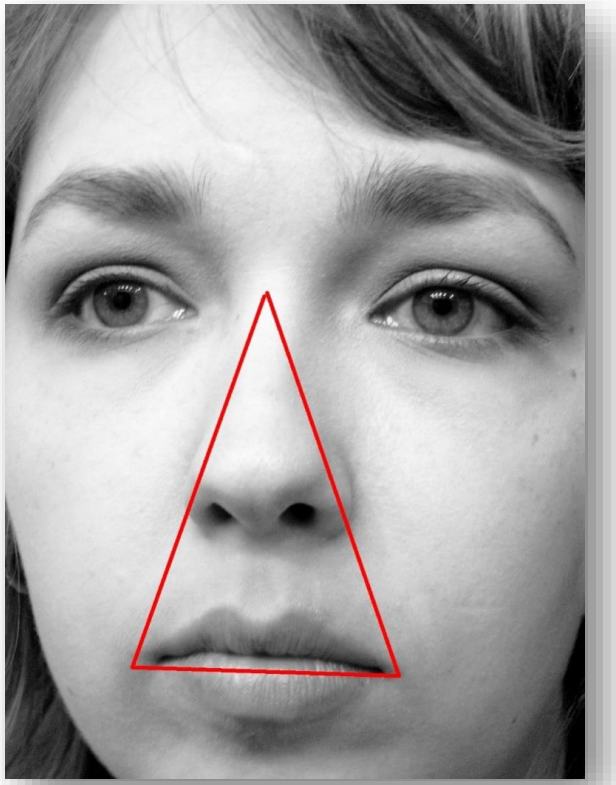
How to manage

- Remove by suction

Possible complications

1. Septal perforation
2. Stenosis of nasal cavity
3. Nasal synechiae
4. Rhinolith

Q3: A 7 years old child come to ER with unilateral nasal discharge foul smelling



Most likely diagnosis

- Nasal Foreign body

1st step to confirm your diagnosis

- Anterior rhinoscopy

Complications

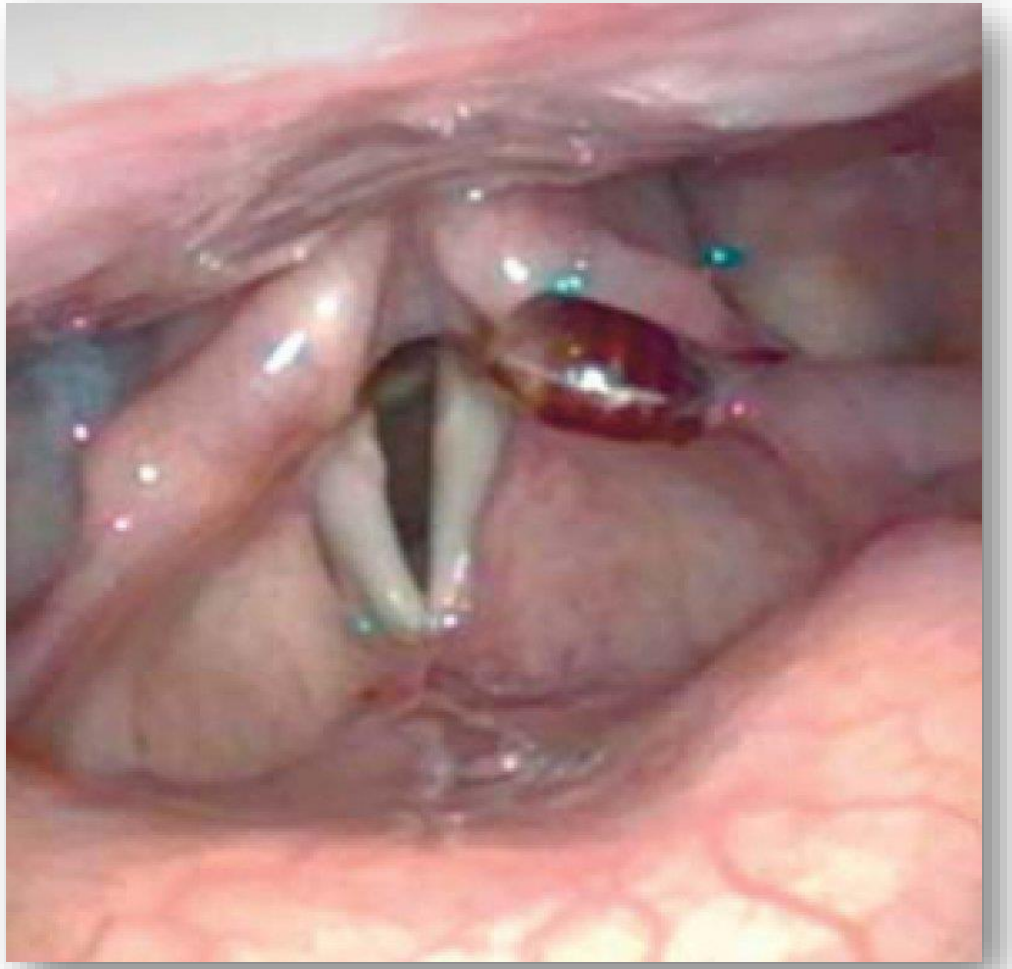
1. Septal perforation
2. Stenosis of nasal cavity
3. Nasal synechiae
4. Rhinolith

Why infection in this triangle is dangerous?

- Can result in retrograde infection from nasal area to brain causing cavernous sinus thrombosis ,meningitis and brain abscess

5 years old present with sudden onset of stridor

1. **Most likely diagnosis**
   - Throat foreign body
2. **Possible symptoms**
   - Coughing, stridor, or hoarseness
   - History of choking, dysphagia, odynophagia, or dysphonia
3. **Complications**
   1. Aspiration
   2. Laryngeal edema and obstruction
   3. Perforation to the esophagus
4. **How to manage**
   1. Exam the pharynx and larynx
   2. Radiography
   3. Esophagoscopy & laryngoscopy



45Y female present with severe unilateral otalgia

- **Diagnosis**
  - Insect in ear canal as foreign body
- **Management**
  1. Live insects must be killed rapidly before attempting to remove it by instilling alcohol, 2% lidocaine (Xylocaine), or mineral oil into the ear canal
  2. Removed by suction or instrumentation
- **Contraindicated methods**
  - Irrigation

Case

- A 3-year-old child came to ER complaining of unilateral, foul smelling, nasal discharge for 2 weeks, what is the most likely diagnosis (what diagnosis you should rule out) ?

- **Answer**: Foreign body


"That's all Folks!"