Ear-Nose-Throat Final Dossier

2023 edition

إعداد محمود بركات

بسم الله الرحمن الرحيم

ملاحظات

- شامل حتى فاينل 2022
- 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
- الأزرق ملاحظات والأحمر مهم
- ببساطة كل شيء زي ما تعودنا
- زي ما تعودنا برضو بس هبل

Hearing loss & Assessment

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 MCQs

❖**Used tuning fork: 512Hz** (1) سنوات

❖**In right middle ear pathology, weber's test will be:** (1) سنوات

a. Centralized
b. Normal
c. Lateralized to the right
d. Lateralized to the left
e. Negative

(2) سنوات

❖**Patient came with hearing loss. On examination of a patient: Weber's test lateralizes to the right. Rinne test is bilaterally positive. The diagnosis is:**

a. Right CHL
b. Left SNHL
c. Right SNHL
d. Left CHL
e. Bilateral SNHL

Pneumatic otoscopy

Indications

1. Assessment of middle ear function
2. Diagnosis of otitis media

Contraindications

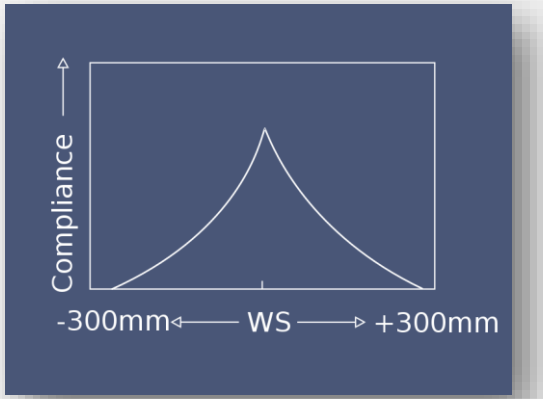
سنوات (1)

1. Tympanic membrane perforation
2. Active ear infection or acute otitis media
3. Recent ear surgery

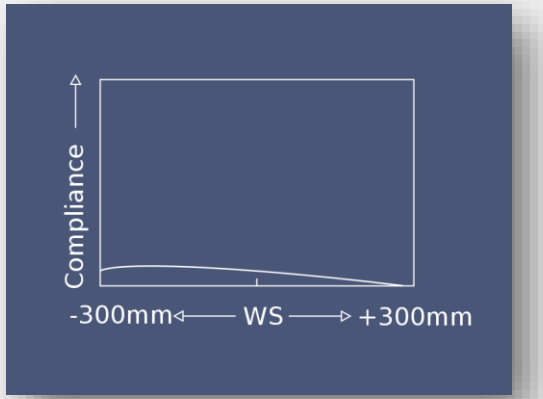
Tympanogram

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

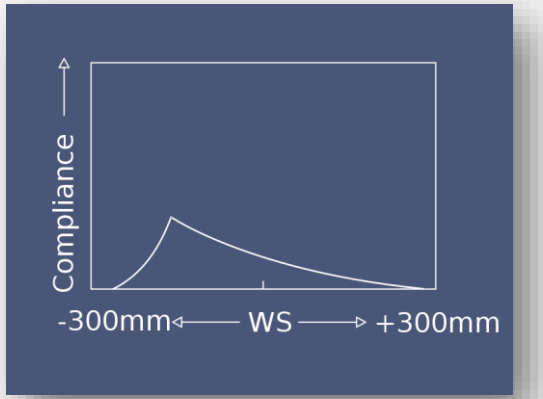
Tympanograms are categorized according to the shape of the plot



Type A response



Type B response

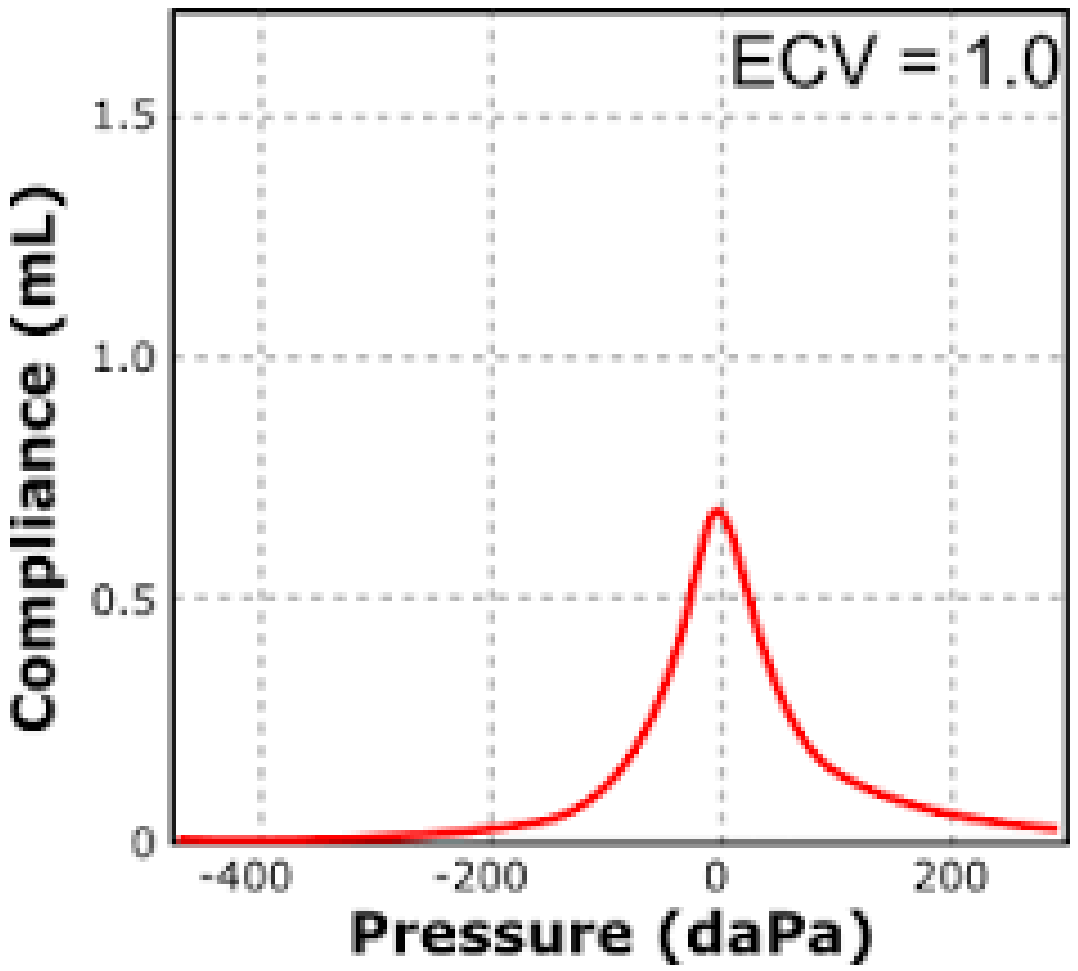


Type C response

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

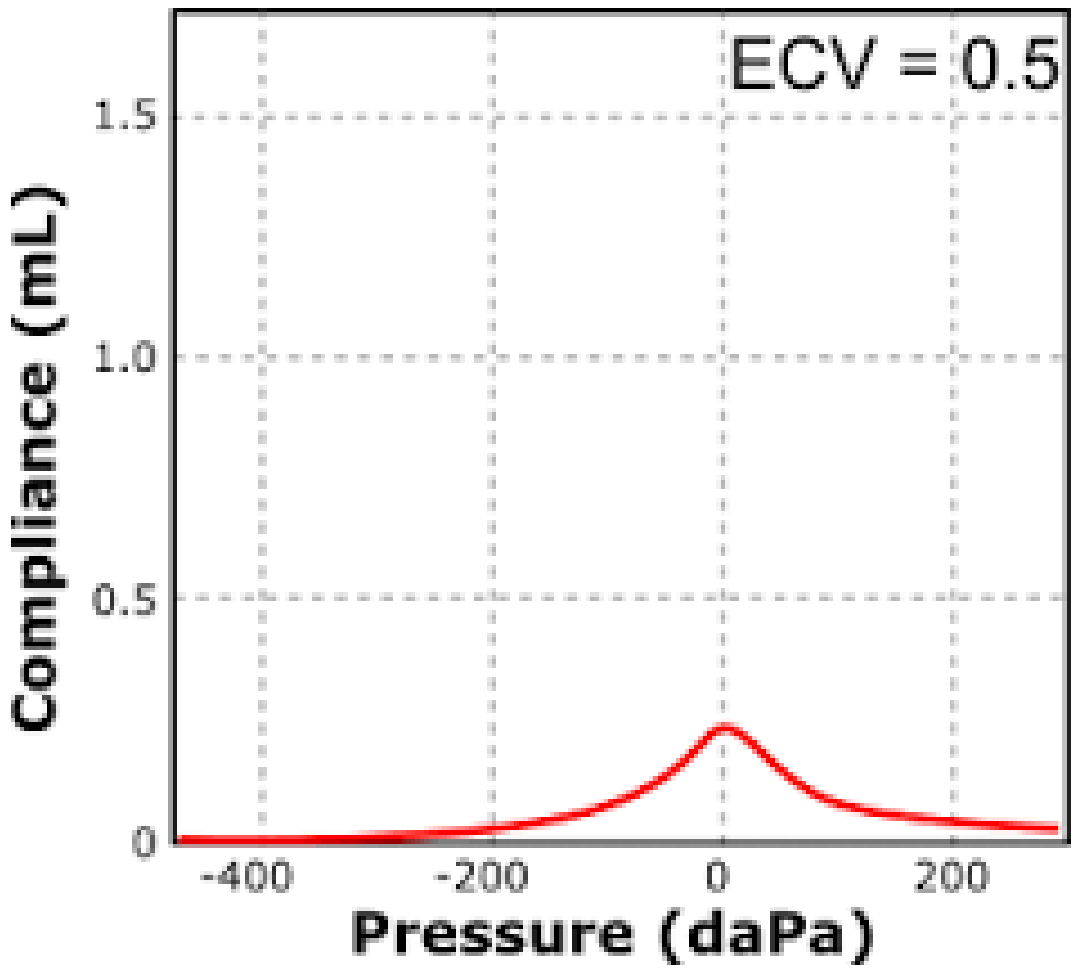


Tympanogram – Type A_S

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

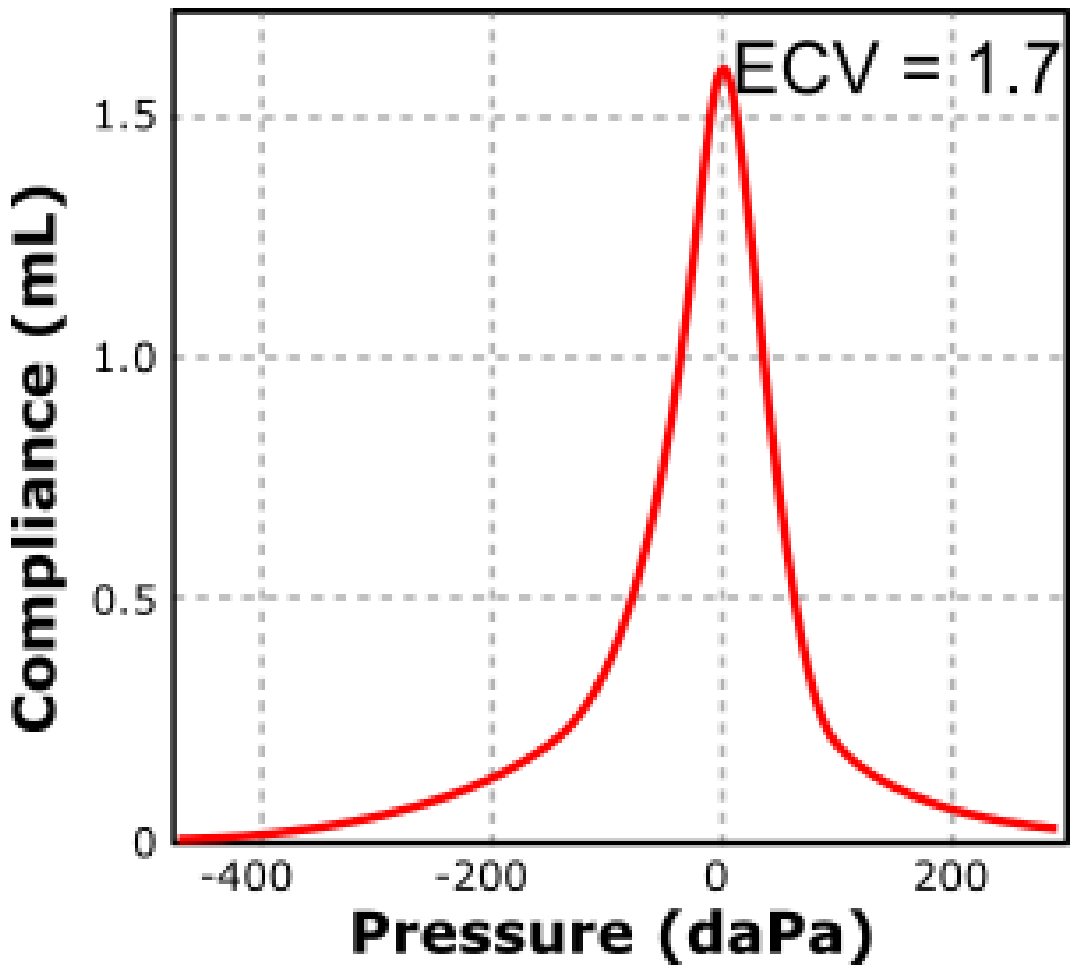
Tympanogram – Type A_D

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

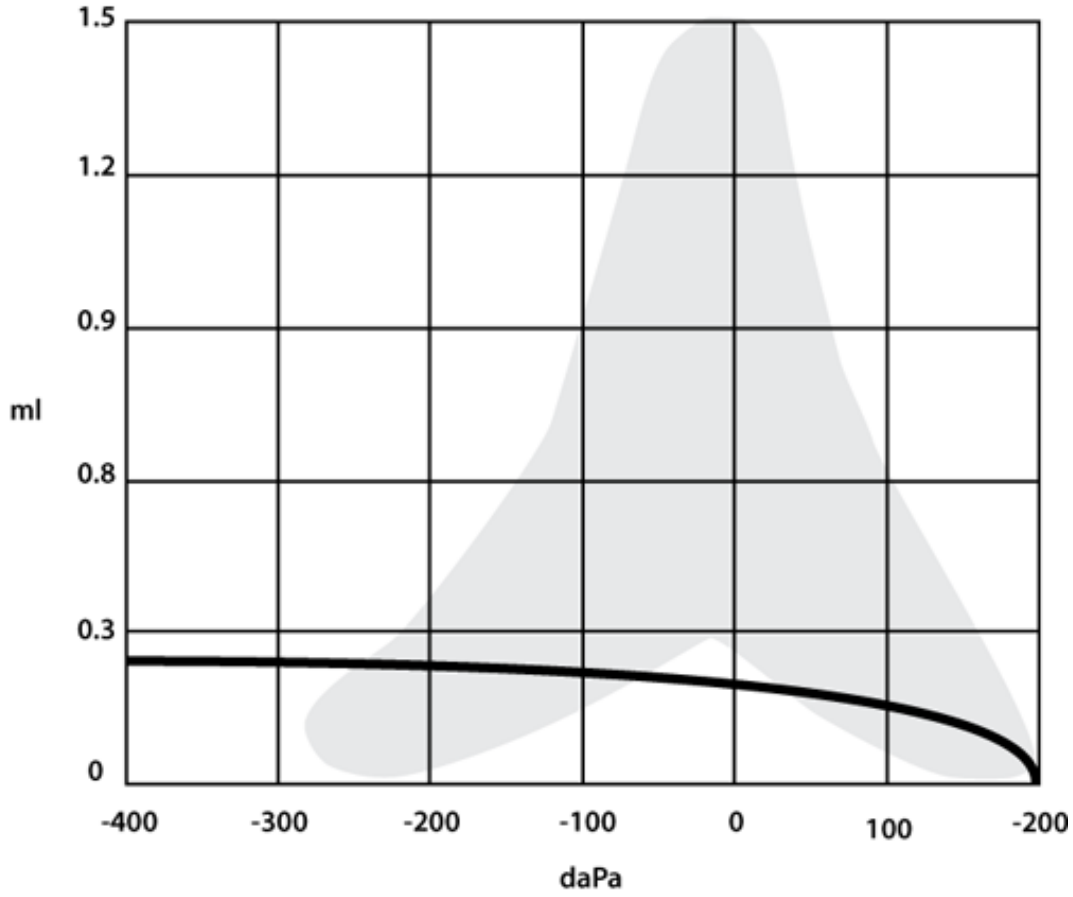


Tympanogram – Type B

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

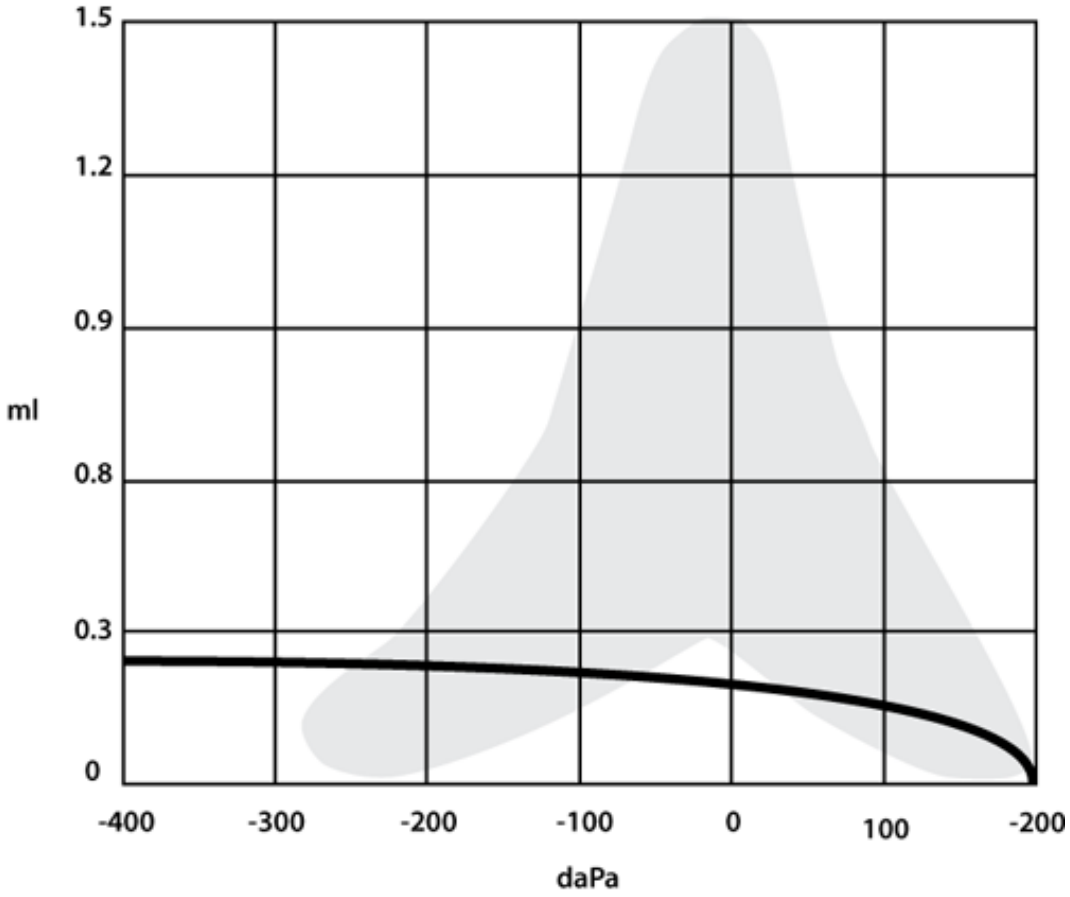
Type B tympanograms must be interpreted in conjunction with ear canal volume readings.

- 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)

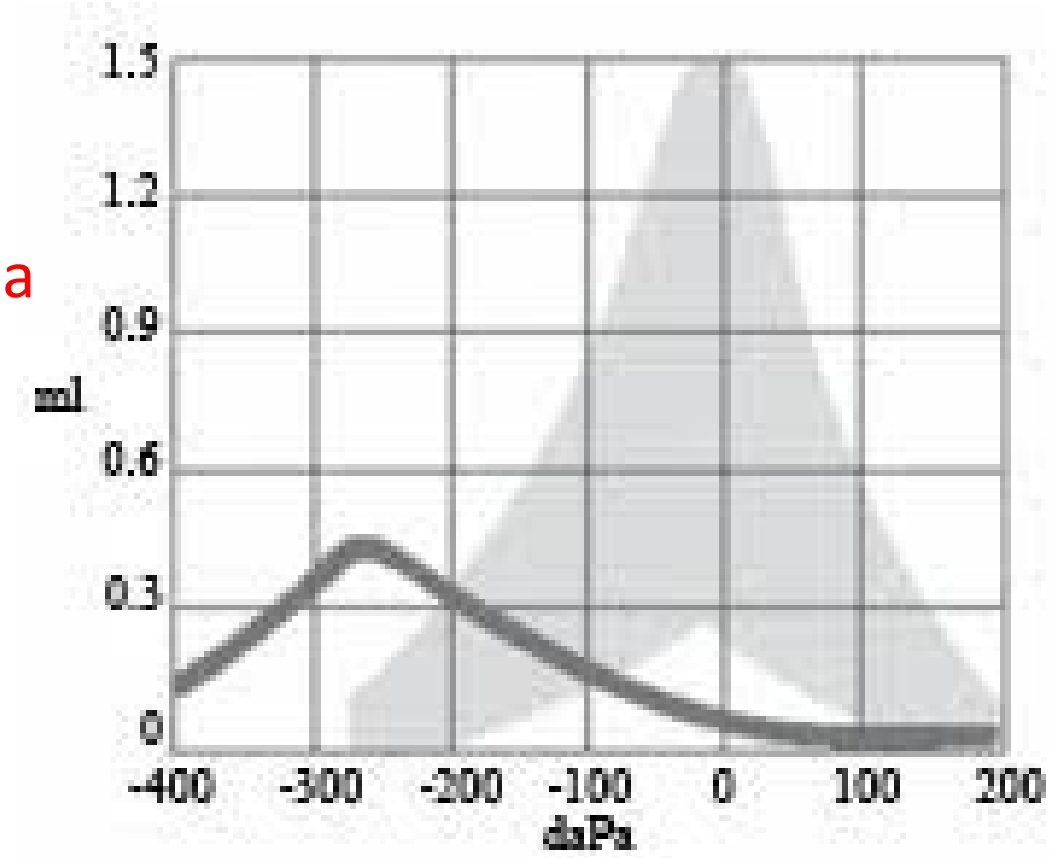


Tympanogram – Type C

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

Tympanogram MCQs

❖**Flat tympanogram is seen in:** سنوات (1)

a. Otosclerosis
b. Secretory otitis media
c. Meniere's disease
d. TM perforation
e. b + d

❖**One is true about tympanometry** سنوات (1)

a. Perforated tympanic membrane gives type C tympanogram
b. Tympanometry is not suitable for children less than 6 years of age
c. Otosclerosis gives type C tympanogram
d. Otitis media with effusion gives type B tympanogram
e. Ossicular discontinuity gives type B tympanogram

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.

سنوات (1)

Acoustic reflex (stapedial 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

OAE & ABR

❖Otoacoustic emissions (OAE) tests

- Used to determine cochlear status, specifically hair cell function
- Used to screen hearing in neonates, infants or individuals with developmental disabilities
- **Types of OAE**: Spontaneous OAE (SOAE), Evoked OAE (EOAE)

❖Auditory Brainstem Response (ABR) Audiometry

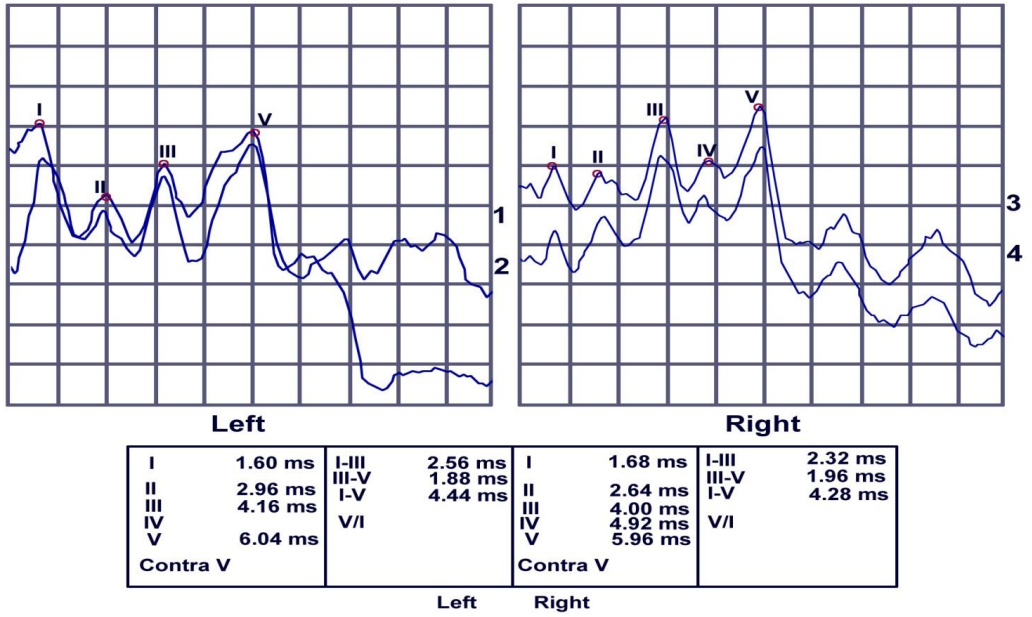
- Used to determine brainstem function in response to auditory (click) stimuli
- Considered an effective screening tool in the evaluation of suspected **retrocochlear pathology** such as an acoustic neuroma or vestibular schwannoma (but it's not the most sensitive and specific test for an acoustic tumor)
- May be used to detect auditory neuropathy or neural conduction disorders **in newborns**

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**

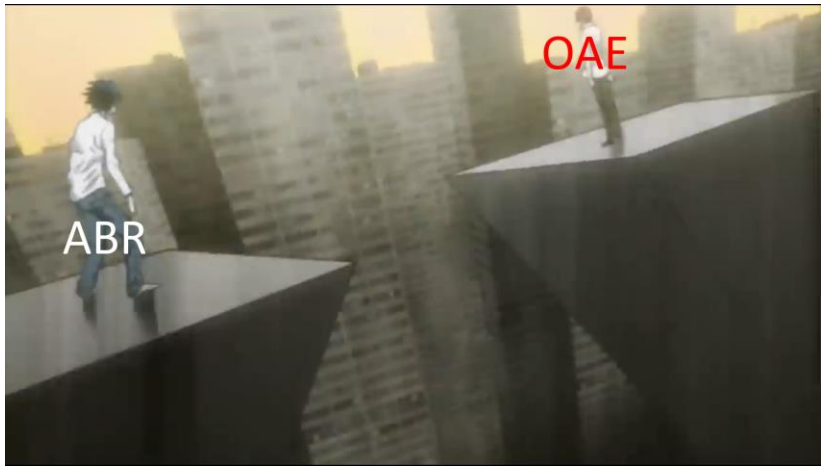


Normal adult ABR waveform response. I-V absolute latencies and interpeak intervals (I-III, III-V, I-V) are within normal limits bilaterally. Interaural differences for the I-V interpeak intervals (1.16ms) and wave V absolute latencies (.08 ms) are within normal limits.

OAE & ABR – MCQs

❖ **Neonatal hearing screening is done using:** سنوات (4)

a. Tympanometry
b. PTA (Pure Tone Average)
c. BERA (ABR) (Auditory Brainstem Response)
d. OAE (Otoacoustic emissions)
e. ECOG (electrocochleography)



على مر السنوات في أختلاف بين الطلاب في الأرشيف على الجواب هل هو OAE ولا ABR أنا اعتمدت OAE لأنه هو المكتوب عنده نستخدمه بالscreening

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

Hearing loss notes

❖Pay attention to the history د. أسامة

- 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)

❖Bad prognostic factors in sudden hearing loss

1. **Age**: Older age is the poorest prognostic factor سنوات (1)
2. **Severity of hearing loss**: Generally, the more severe the hearing loss at the onset, the less likely it is to fully recover
3. **Presence of vertigo**: may indicate a more severe underlying condition
4. **Delayed treatment**
5. **Bilateral involvement**

Wax impaction (Conductive hearing loss)

- **Mention 2 etiologies of this case**
  - Hairy or narrow ear canal, In-the-ear hearing aid, Cotton swab usage, Osteomata
- **Management**
  1. Water or cerumenolytic (bicarbonate solution, olive oil…)
  2. Manual debridement
  3. If ear wax is smooth ⟶ Suction or Syringing (Syringing direction ⟶ posteriorly superiorly)
- **Contraindication of syringing and cold caloric test** سنوات (1)
  - Otitis external, Otitis media, Tympanic membrane perforation, Organic foreign bodies or battery discs
- **The temperature of solution in syringing procedure is 37** سنوات (1)

Wax impaction MCQs

❖**All the following are contraindication to ear syringing except**

a. Previous ear surgery
b. Meniere's disease
c. Young children
d. History of chronic otitis media
e. History of otitis externa following previous syringing

Otitis Media with effusion as a cause of hearing loss

- **8-year-old child with bilateral conductive deafness**
- **The diagnosis is**
  a. Glue ear
  b. Otosclerosis
  c. Tympanosclerosis
  d. Bilateral atresia of auditory canal
  e. Space occupying lesion
  - Glue ear = Otitis Media with effusion not wax impaction

شرح

Otosclerosis (Conductive hearing loss)

- **Epidemiology**: Sex: ♀ > ♂ (2:1), Age of onset: 20-40 years (middle age)
- **Pathophysiology**: Stapedial otosclerosis (most common site) ⟶ fixation of stapes to oval window ⟶ conductive hearing loss
- **Chief symptoms of otosclerosis are** Deafness and tinnitus

سنوات (1)

- **Weber's and Rinne's tests of right ear otosclerosis**
  - Weber: Lateralize to the right side
  - Right ear: Rinne negative, Left ear: Rinne positive
- **Tympanometry of right ear otosclerosis**
  - Right: Type As, Left: Type A (normal)

سنوات (1)

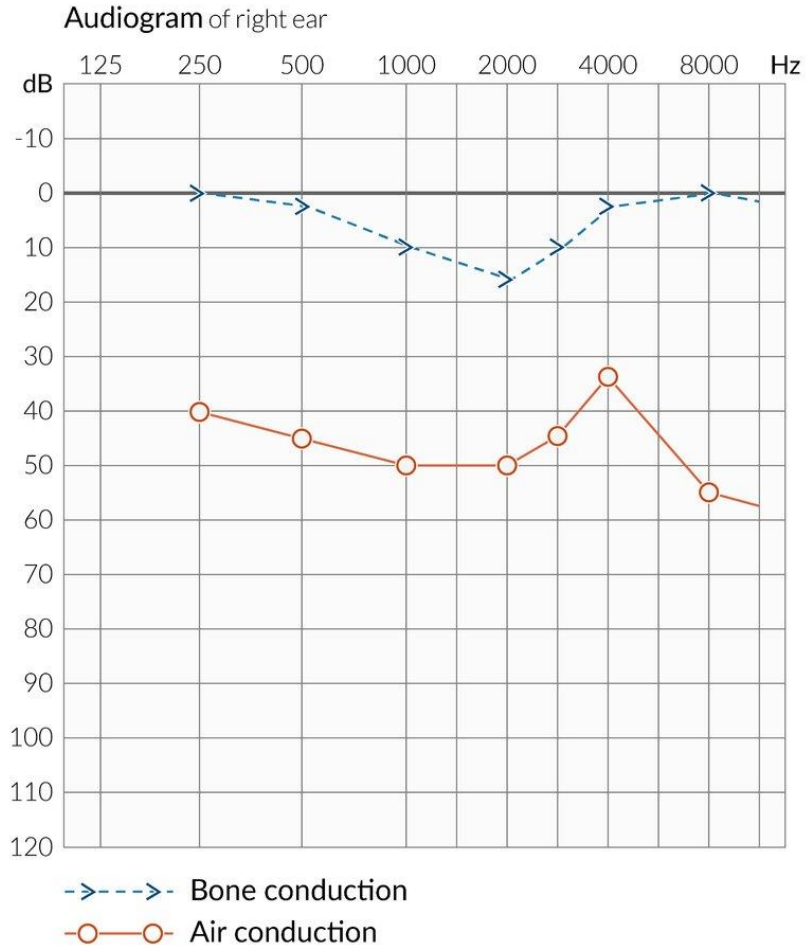
- **Speech discrimination test**: Not affected (Increasing loudness eventually leads to a speech comprehension of 100%)

Otosclerosis cont.

- **Audiogram**:
  - **Air conduction**: reduced in the affected ear by approx. 35dB
  - **Bone conduction**: characteristic notched hearing loss at 2000Hz (Carhart notch)

سنوات (2)

- **Impedance audiometry for otosclerosis**: Normal pressure Low compliance
- **Note**: Bilateral otosclerosis is more common than unilateral otosclerosis (80% bilateral)
- **Mention 2 line of management**
  - Medical: Florid supplement
  - Surgical: Stapedotomy



Otosclerosis MCQs

- A middle-aged woman presented with slowly progressing conductive hearing loss. On examination, normal tympanic membrane and normal Eustachian tube.

❖ **The likely diagnosis is**:

a. Presbycusis
b. Otosclerosis
c. Meniere's disease
d. Tympanosclerosis

شرح

Meniere disease (Sensorineural)

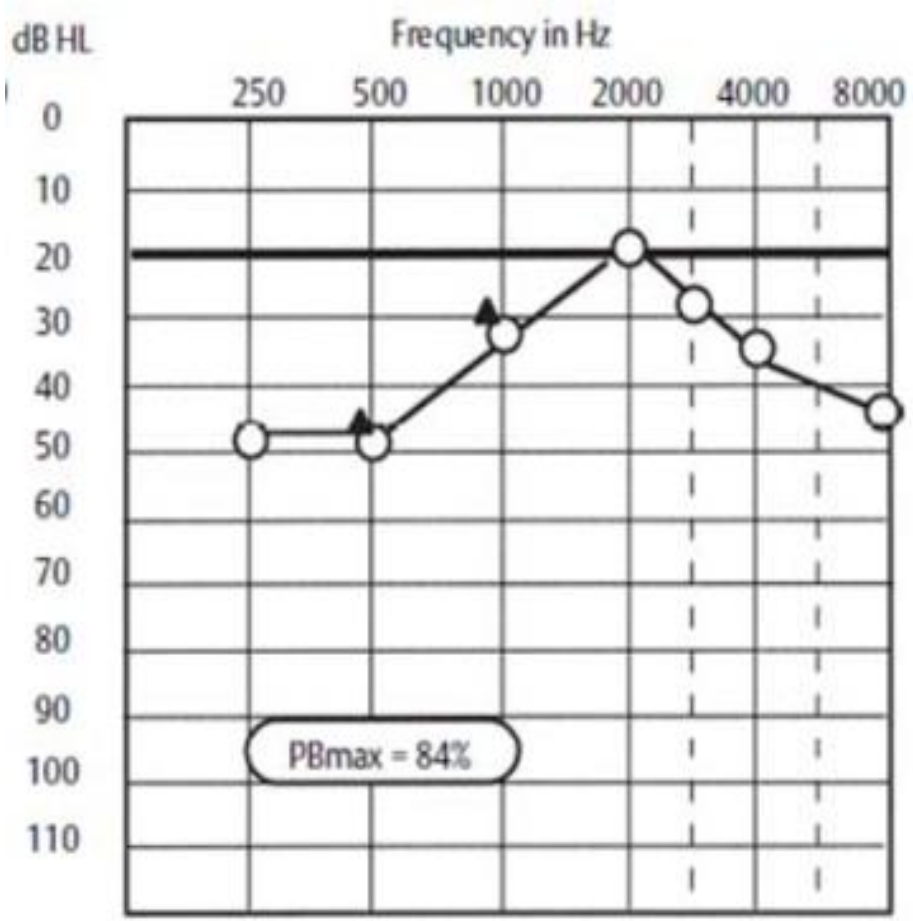
- **Epidemiology**: Sex: ♀ ≥ ♂, Peak incidence: 40–50 years
- سنوات (2) **Pathophysiology**: impaired endolymph resorption that results in endolymph hydrops (accumulation of fluid in the endolymphatic sac)
- سنوات (3) **Chief symptoms**: Meniere triad (Peripheral vertigo, Tinnitus, Asymmetric fluctuating steadily progressive sensorineural hearing loss)
- **Weber's and Rinne's tests**
  - **Weber test:** lateralization to the healthy ear
  - **Rinne test:** bilaterally positive
- **Tympanometry of right ear**: Both ears: Type A (normal)
- **Speech discrimination test**: Affected (discrimination loss)

Meniere disease (Sensorineural)

- **Audiogram**
  - 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

سنوات (3)

- **Impedance audiometry**
  - Normal pressure and compliance
- **Mention 2 line of management**
  - Lifestyle modification: Low-sodium diet
  - Thiazide diuretics



Meniere disease MCQs 1

❖ **Meniere's disease characterized by all except**

a. Vertigo
b. Tinnitus
c. Endolymphatic sac hydrops
d. Symptoms may give an aura
e. High frequency fluctuating hearing loss

❖ **Meniere's disease, one true statement**

a. Vertiginous attacks characteristically occur without warning
b. A normal caloric response excludes the diagnosis
c. Endolymphatic hydrops is the underlying pathology
d. Copious otorrhea is common
e. Progressive, high frequency SNHL is characteristic

Meniere disease MCQs 2

❖**Wrong about Meniere disease**:

a. vertigo lasts seconds to minutes (may be this)
b. Paroxysmal vertigo
c. Low frequency SNHL
d. Cochlear symptoms preceding vestibular symptoms

❖**Meniere's syndrome is associated with all the following except**

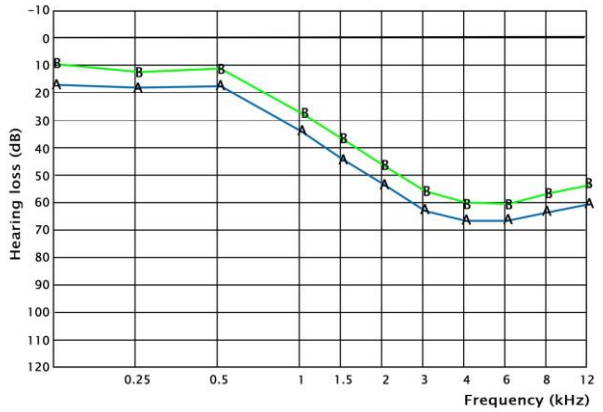
a. Otosyphilis
b. Acoustic neuroma
c. Autoimmune disease
d. Viral labyrinthitis
e. Gardener's syndrome (familial adenomatous polyposis)

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

- Chronic otitis media
- Viral infection
- Syphilis

Presbycusis (Age-related – Sensorineural)

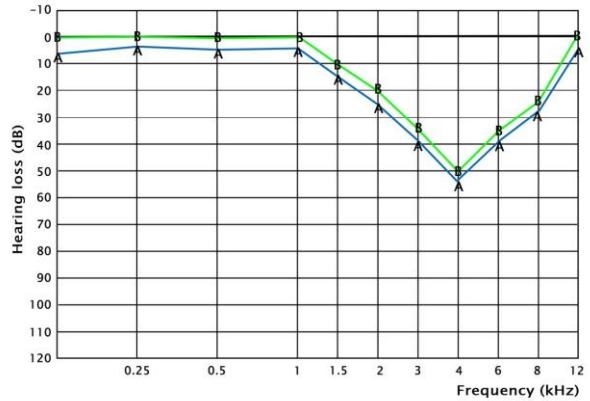
- **Epidemiology**: Most common cause of sensorineural hearing loss, ~60s
- **Pathophysiology**: progressive and irreversible damage of the hair cells of the organ of Corti (especially near the basal turn of the cochlea) that impairs high-frequency hearing
- **Chief symptoms**: Progressive bilateral hearing loss, particularly of higher frequencies
- **Weber's and Rinne's tests**
  - **Weber test:** lateralization to the healthy ear
  - **Rinne test:** bilaterally positive
- **Tympanometry of right ear**: Both ears: Type A (normal)
- **Speech discrimination test**: Affected (discrimination loss)
- **Impedance audiometry**: Normal pressure and compliance



- **Audiogram**: Patients struggle to hear the higher frequencies in both air and bone conduction
- **Treatment**: Hearing aids or cochlear implants

Noise-induced hearing loss (Sensorineural)

- **Pathophysiology**: hearing loss due to continuous exposure to sounds > 85 dB or a single exposure to sounds > 120 dB
- **Chief symptoms**: Slowly progressive hearing loss, beginning with loss of high-frequency hearing
- **Weber's and Rinne's tests**
  - **Weber test:** lateralization to the healthy ear
  - **Rinne test:** bilaterally positive
- **Tympanometry of right ear**: Both ears: Type A (normal)
- **Speech discrimination test**: Affected (discrimination loss)
- **Impedance audiometry**: Normal pressure and compliance
- **Audiogram**: hearing is most impaired at frequencies of **4000 Hz** in both bone and air conduction
- **Treatment**: Hearing aids or cochlear implants



Noise-induced hearing loss – MCQs

❖ **The typical audiogram finding in noise induced hearing loss** سنوات (3)

- a. Conductive hearing loss in the low frequencies
- b. Conductive hearing loss at 4000 Hz
- c. Sensorineural hearing loss at 2000 Hz
- d. Sensorineural hearing loss at 4000 Hz
- e. Mixed hearing loss in the high frequencies

❖ **Which of the following is not a cause of conductive hearing loss ?**

a. Otitis media
b. Perforation
c. Loud noise deafness
d. Otosclerosis
e. Cholesteatoma

السؤال تكررت فكرته كثير وباختلف جوابه حسب الخيارات فمهم تكون عارف أسباب كل نوع

Vestibular schwannoma (Acoustic neuroma)

- **Epidemiology**
  - Most common benign tumor in the cerebellopontine angle.
  - 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
- **Chief symptoms**: Progressive unilateral sensorineural hearing loss for high frequencies with tinnitus
- **Earliest manifestations**: Tinnitus and loss of corneal reflex
- **First nerve affected**: Trigeminal nerve
- **Second nerve affected**: Sensory facial nerve
- **Investigations**: **Cerebellopontine angle MRI**

Vestibular schwannoma (Acoustic neuroma)

❖**Investigations cont.**:

- **Tympanometry**: Type A (Normal)
- **Rinne's test**: Positive
- **Weber's test**: Lateralized to the contralateral side
- **Hearing loss**: Sensorineural hearing loss
- **Speech discrimination test**: Affected (discrimination loss)
- **Impedance audiometry**: Normal pressure and compliance

❖**Treatment**:

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

❖**Complications of surgery**: Permanent hearing loss, Facial nerve palsy

Acoustic tumor MCQs

❖**Which of the following is the most sensitive and specific test for an acoustic tumor ?** سنوات (3)

a. Brainstem evoked response audiometry (can screen for acoustic tumor)
b. MRI with gadolinium (most sensitive and specific test)
c. CT with contrast
d. Electrocochleography
e. Air contrast CT

❖**The most important methodology in the diagnosis of unilateral peripheral vestibular lesions is** سنوات (2)

a. History
b. Physical exam
c. Audiometric tests
d. Radiology
e. Vestibular function test

Acoustic tumor MCQs

❖**65-year-old patient with sensorineural hearing loss and tinnitus, what is your next step ?**

a. Brainstem evoked response audiometry (can screen for acoustic tumor)
b. Brain MRI with gadolinium (most sensitive and specific test)
c. CT with contrast
d. Electrocochleography
e. Air contrast CT

شرح

Ototoxic drugs

- Some medicines damage the sensory cells used in hearing and balance in the inner ear (sensorineural)
- **Treatment**: stop the medication
- **Some medicines that may impact hearing include the following** سنوات (1)

1. Analgesics (aspirin/salicylates, paracetamol, codeine, indomethacin, ibuprofen, phenylbutazone)
2. Antibiotics (aminoglycosides, ampicillin, macrolides) (as tablets and ear drops)
3. Tetanus antitoxin
4. Antiseptics (chlorhexidine, povidone-iodine, alcohol)
5. Antimalarials (quinine, chloroquine)
6. Caffeine
7. Tobacco (toothpaste)
8. Ear drops containing propylene glycol

Usher syndrome MCQs

❖SNHL, one is false:

a. Presbycusis is the most common cause
b. Associated with QT prolongation in Jervell and Lange–Nielsen syndrome
c. Associated with goiter in Usher syndrome
d. Air conduction is better than bone conduction in the affected ear on Rinne's
e. Idiopathic Sudden SNHL can be treated with steroids

❖**Usher syndrome**:

- Rare genetic disorder affects both hearing & vision
- Inherited in an autosomal recessive manner
- The vision loss is due to retinitis pigmentosa
- Treatment: hearing aids, cochlear implants, vision aids, & mobility training

Vertigo & Tinnitus

Vertigo

	Central vertigo	Peripheral vertigo
Duration	Chronic (persistent)	Acute (Episodic)
Nystagmus	Horizontal or vertical or mixed Nystagmus	Horizontal Nystagmus only
Other symptoms	General weakness, Difficulty in speech, Diplopia, No nausea or vomiting	Nausea, Vomiting, Sweating, Tachycardia, Tachypnea
Causes	Stroke Vestibular migraine Multiple sclerosis	**Most common causes**: **1st**: Benign paroxysmal vertigo (1) سنوات **2nd**: Vestibular neuritis (Labrynthitis) **3rd**: Meniere's disease

Vertigo

شرح

	Etiology	Duration	Provoking factors	Special features	Physical exam	Treatment
BPPV	• Idiopathic (50%) • Head trauma • Chronic OM • Viral infection	Seconds – Hours	Change in head position (Lying on affected head)	Positional	Dix-Hallpike test	• Epley maneuver • If failed → Surgery
Vestibular neuritis	Viral infection	Days to one week	• Change in head position • Recent URTI	Nausea, vomiting and fatigue	–	• IV Fluids • Steroids • Anti-emetic
Meniere disease	Idiopathic	20-30 minutes to hours	Spontaneous	Meniere triad	SNHL	• Lifestyle change • Thiazide diuretics • Anti-vertigo • Intratympanic injection of aminoglycoside • Surgery
Central	Vestibular migraine Multiple sclerosis Stroke	**Migraine**: Hours **MS**: Days – Wks **Stroke**: Long-term	Drugs CVS disease	–	HINTS exam	According to etiology

Vertigo Notes

- Causes of unilateral tinnitus د. أسامة
  - Meniere's disease.
  - Glomus tumor (Chemodectoma / Paraganlionoma)
    - Most common benign tumor in the middle ear and temporal bone, present with pulsatile tinnitus in females , Detected by MRI
  - Vestibular schwannoma.
- **Subjective tinnitus Vs Objective tinnitus**
  - **Subjective tinnitus**: The perception of sound in the absence of any external source. The sound is only heard by the individual experiencing it and cannot be detected by an external observer.
  - **Objective tinnitus**: Objective tinnitus is a less common form of tinnitus where the sound can be heard by an external observer, such as a healthcare professional. It is typically caused by a physical source or underlying condition such as muscle spasms, vascular abnormalities, etc., and the sound can often be measured or detected through diagnostic tests.

Benign paroxysmal positional vertigo

❖ **What does not apply to benign positional nystagmus ?** سنوات (6)

a. Brief sudden attacks of vertigo
b. Precipitated by head movements
c. Supposed to be due to cupulolithiasis
d. Fatigable
e. No latency period

The key characteristics of nystagmus in BPPV

1. Positional (Precipitated by head movements)
2. Brief episodes
3. Horizontal or rotary
4. Latent onset and fatigable
5. Geotropic or apogeotropic

❖ **Which of the following statements is true regarding nystagmus classical of BPPV ?**

a. It is not fatigable
b. It is ageotropic
c. It has a latent period
d. The latent period is more than 2 minutes
e. It is up-beating horizontal nystagmus

Tinnitus

❖**Regarding tinnitus, all the following are correct, except** سنوات (2)

- Subjective tinnitus is heard by the patient only
- Objective tinnitus is more likely to be treated
- Aspirin can cause tinnitus
- Tinnitus in patients with SNHL is made worse in quiet environment
- Maskers are not needed in patients with hearing aids

❖**Which of the following is not a cause of tinnitus**

a. Loud noise
b. Meniere disease
c. High frequency SNHL
d. Otitis media

Cranial nerves

Cranial nerves and actions that you should know

CN #	Nerve name	Function
CN 5	Trigeminal Nerve	1. Mastication (Masseter, Temporalis, Lateral & medial pterygoid) 2. facial sensation (ophthalmic, maxillary, mandibular divisions) 3. Somatosensation from anterior 2/3 of tongue 4. Dampening of loud noises (tensor tympani)
CN 7	Facial Nerve	1. Facial movement, eye closing (orbicularis oculi) 2. Auditory volume modulation (stapedius) 3. Taste from anterior 2/3 of tongue (chorda tympani) 4. Lacrimation 5. Salivation (submandibular and sublingual glands)
CN 8	Vestibulocochlear Nerve	Hearing and balance
CN 9	Glossopharyngeal Nerve	1. Taste and sensation from posterior 1/3 of tongue 2. Swallowing, Salivation (parotid gland) 3. Elevation of pharynx/larynx (stylopharyngeus)
CN 10	Vagus Nerve	1. Taste from supraglottic region 2. Swallowing 3. soft palate elevation 4. midline uvula 5. talking 6. cough reflex

Cranial nerve reflexes

Reflex	Afferent limb	Efferent limb
Corneal & Lacrimation	V1 (Ophthalmic)	Bilateral VII
Cough	X	X
Gag	IX	X
Jaw jerk	V3 (Mandibular)	V3 (Mandibular)
Stapedial	VIII	Bilateral VII

Cranial nerves MCQs

- **The afferent arm of the gag reflex is mediated via** Glossopharyngeal
- **Trigeminal supply all the following except**
  a. Temporalis
  b. Masseter
  c. Buccinator
  d. Lateral pterygoid
  e. Medial pterygoid
- **Stapedial reflex is mediated by which nerves ?** (4) سنوات
  a. V and VIII
  b. VI and VII
  c. VI and IX
  d. VII and VIII
  e. VIII and IX

Facial N. palsy

Facial nerve palsy 1

❖Most common causes:

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

❖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.

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** سنوات (2)

Facial nerve palsy MCQs 1

❖**Hyperacusis in Bell's palsy is due to the paralysis of which muscle ?** سنوات (3)

a. Tensor tympani
b. Levator palati
c. Tensor veli palatini
d. Stapedius
e. Posterior auricular muscle

❖**Regarding Bell's palsy, one is incorrect** سنوات (2)

a. Should be diagnosed only after exclusion of other causes
b. Can be recurrent
c. Can be bilateral
d. There is ipsilateral facial weakness
e. EMG and NCS are of no value

Facial nerve palsy MCQs 2

❖**Bell's palsy**: سنوات (1)

- UMN lesion of the facial nerve
- LMN lesion of the facial nerve
- Trigeminal nerve lesion
- Surgery is required in most of cases
- Full recovery uncommon

❖**The hallmark finding in Ramsey-Hunt syndrome is** سنوات (2)

a. Sensorineural hearing loss
b. Nystagmus (with vertigo)
c. Facial paralysis
d. Otitis externa
e. Vesicles

❖**Facial palsy due to acute otitis media**: IV antibiotics & steroids سنوات (1)

Temporal bone fractures

Temporal bone fracture

Longitudinal fracture

- 80% of temporal bone fractures
- Lateral forces along the petrosquamous suture line
- 15-20% facial nerve involvement
- EAC laceration
- Conductive or mixed hearing loss
- 80% of conductive hearing loss resolve spontaneously

Transverse fracture

- 20% of Temporal Bone Fractures
- Forces in the Antero-Posterior direction
- 50% Facial Nerve Involvement
- EAC intact
- Sensorineural hearing loss
- Less likely to improve

Temporal bone fracture

Longitudinal fracture	Transverse fracture
80% of temporal bone fractures	20% of Temporal Bone Fractures
Lateral forces along the petrosquamous suture line	Forces in the Antero-Posterior direction
15-20% facial nerve involvement	50% Facial Nerve Involvement
External auditory canal laceration	External auditory canal intact
Conductive or mixed hearing loss	Sensorineural hearing loss
80% of conductive hearing loss resolve spontaneously	Less likely to improve

Temporal bone fractures MCQs 1

❖**Temporal bone fractures, one incorrect**:

a. The commonest is the longitudinal type
b. Facial nerve involvement is rare with longitudinal fractures
c. facial nerve involvement is common with transverse fractures
d. Transverse fractures is less common than longitudinal fractures
e. Bleeding from the ear is common with transverse type

❖**Which type of petrous bone fractures will most likely cause facial nerve paralysis ?**

سنوات (2)

a. Longitudinal fractures
b. Transverse fractures
c. Comminuted fractures
d. All types of fractures result in facial paralysis immediately
e. Spiral fractures

Temporal bone fractures MCQs 2

❖ **CSF otorrhea occurs in trauma to**:

a. Parietal bone
b. Cribriform plate
c. Petrous temporal bone
d. tympanic membrane
e. Occipital bone

Ear Anatomy

Ear anatomy – Outer ear

❖Auricle (pinna)

- Consists of elastic cartilage
- covered with closely adherent perichondrium (which gives it its blood supply) & with skin
- سنوات (2) **During Otoscopic examination, the pinna should be retracted**: **upward and backward**

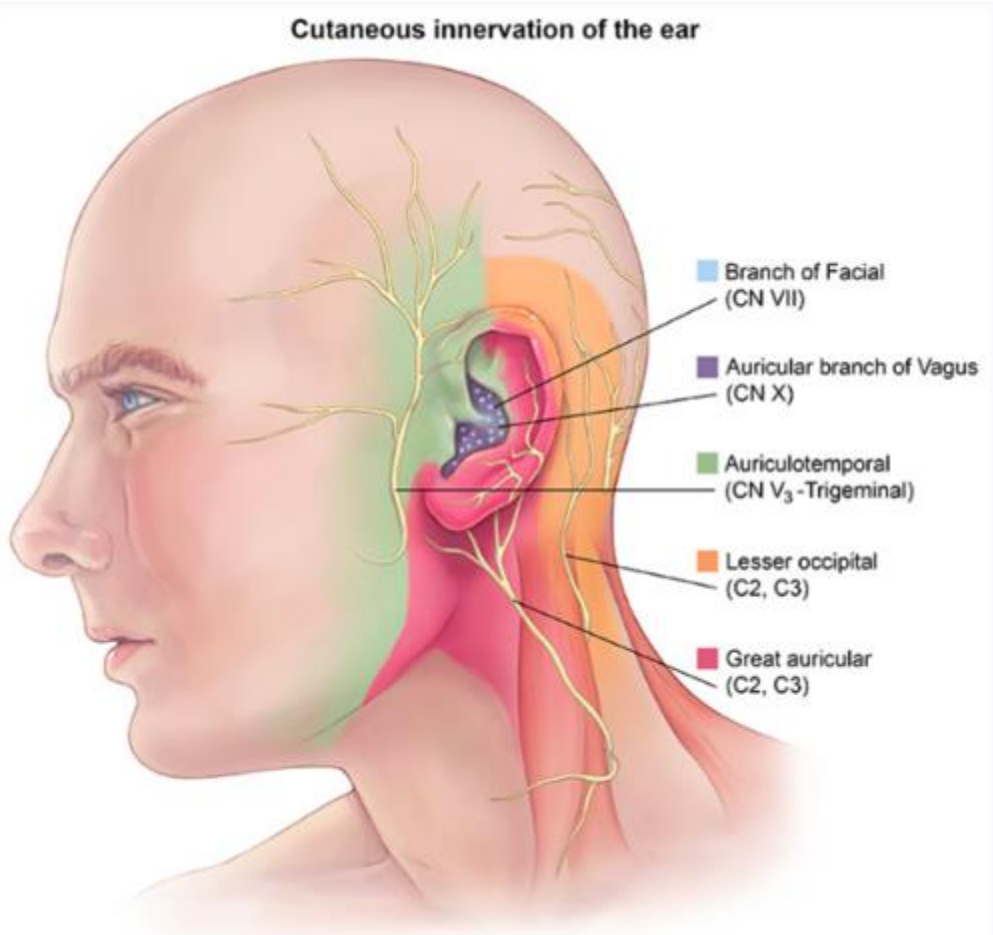
❖External auditory meatus (auditory canal)

- سنوات (1) The external auditory meatus is about **25 mm** in length.
- سنوات (1) **The outer third is formed by cartilage** (where it contains hairs and ceruminous or 'wax-producing' glands), and the inner two thirds are formed by bon
- Lined by thin keratinized stratified squamous epithelium along the entire canal; also covers the external tympanic membrane.
- The skin of the inner part is thin, adherent and sensitiv
- سنوات (1) Wax, debris or **foreign bodies may easily lodge at the medial end of the meatus**.

Ear anatomy – Outer ear

❖ Nerve supply of external ear (3) سنوات

- **Greater auricular nerve (branch of the cervical plexus)** innervates the skin of the auricle
- **Lesser occipital nerve (branch of the cervical plexus)** innervates the skin of the auricle
- **Auriculotemporal nerve (branch of the mandibular nerve)** innervates the skin of the auricle and external auditory meatus.
- **Branches of the facial and vagus nerves** innervates the deeper aspect of the auricle and external auditory meatus



Ear anatomy – Outer ear MCQs

❖ **All the following nerves supply the external ear, except:** سنوات (2)

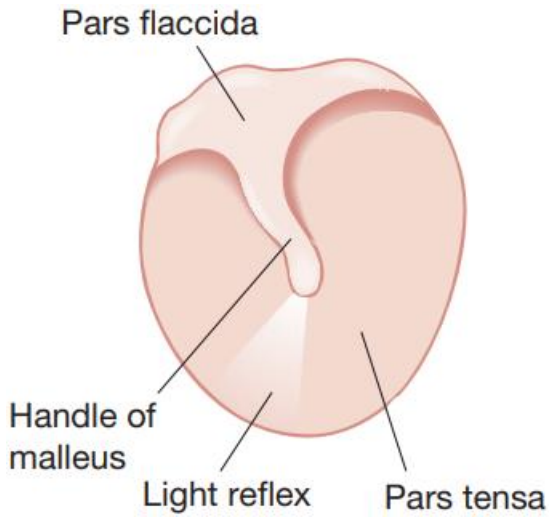
a. Jacksonian nerve
b. Great auricular nerve (branch of the cervical plexus)
c. Vagus nerve
d. Trigeminal nerve
e. Auriculotemporal nerve

❖ **External ear is supplied by:**

a. V nerve (V_3 → Auriculotemporal nerve)
b. VII nerve
c. X nerve
d. Cervical plexus (via great and lesser auricular nerves)
e. All of the above

Ear anatomy – Tympanic membrane

- The tympanic membrane is composed of three layers from out to in:
  - Skin, fibrous tissue and mucosa
- The normal appearance of the membrane is **pearly** and opaque
- When light reflects off the drum it forms a characteristic triangular 'light reflex' in the **anteroinferior quadrant**
- If you see this 'light reflex' that is good evidence that the drum is normal
- The 'pars flaccida' is the part of the eardrum that covers the upper section of the middle ear
- The drum is more tense in the lower section; hence it is called the 'pars tensa'



Ear anatomy – Tympanic membrane MCQs

❖ **Light reflex lies in which quadrant of normal tympanic membrane:** سنوات (2)

- Anteroinferior

❖ **The normal color of the tympanic membrane is:** سنوات (2)

- Pearly grey

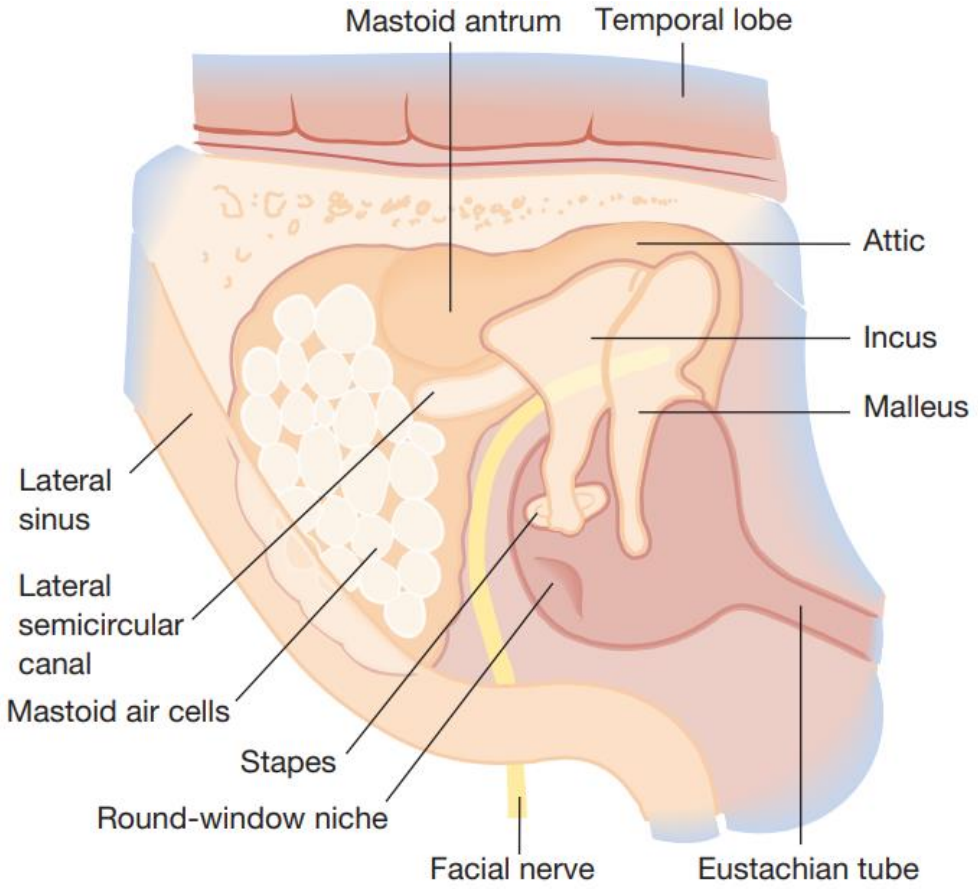
❖ **Which is not a sign of retracted tympanic membrane?**

a. Prominent lateral process of malleus
b. Normal cone of light
c. The handle of malleus becomes more horizontal
d. Air bubbles
e. Dilated blood vessels on the tympanic membrane

Ear anatomy – Middle ear

❖The middle ear

- Medial to the eardrum, the tympanic cavity is an air-containing space 15 mm high and 15 mm antero-posteriorly, although only 2 mm deep in parts
- **The middle ear contains the ossicles**:
  - Malleus, incus and stapes
- **Its medial wall is crowded with structures closely related**:
  - The facial nerve, the round and oval windows, the lateral semicircular canal and the cochlea



Ear anatomy – Eustachian tube

❖The Eustachian tube

- The Eustachian tube connects the middle ear with the nasopharynx at the back of the nasal cavity.
- The tube permits aeration of the middle ear and if it is obstructed fluid may accumulate in the middle ear causing deafness.
- **The tube is shorter, wider and more horizontal in the infant than in the adult.**
- Secretions or food may enter the tympanic cavity more easily when the baby is **supine** particularly during feeding.
- The tube is **normally closed** and **opens on swallowing** because of **Tensor veli palatini muscle (mainly)** and **Levator veli palatini muscle**
- This movement is impaired in cleft palate children who often develop accumulation of middle-ear fluid (otitis media with effusion).

Ear anatomy – Eustachian tube MCQs

❖**True about Eustachian tube are**:

a. Length is 36 mm in adults
b. Contraction of tensor palate muscle closes the tube during swallowing
c. The outer one third of the tube is cartilaginous
d. More horizontal in adults (More horizontal in infants)
e. Angulated in infants (Angulated in adults)

❖**The infant Eustachian tube differs from that in adults in that the tube in infant is**: Shorter

❖**Which muscle close eustachian tube ?** basically, none, although Levator veli palatini muscle action indirectly contributes to the closure of the Eustachian tube after it has opened.

Ear anatomy

❖ **Clinical examination of the ear, one of the following is not true**

- The normal tympanic membrane is blue in color
- Mobility of the eardrum can be assessed with siegles speculum
- The pars flaccidia is also known clinically as the attic
- Pneumatic otoscopy is helpful in differentiating a perforation from a retraction pocket
- Examination of the nasopharyngeal end of the Eustachian tube should be routine in the presence of an effusion

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

Otitis Externa

Otitis externa

❖Definitions:

- **Acute otitis externa**: inflammation of the EAC lasting < 6 weeks
- **Chronic otitis externa**: Lasting at least 6 weeks to 3 months
- **Malignant otitis externa**: Severe variant of acute otitis externa (AOE) in which necrotizing inflammation of the external auditory canal (EAC) develops.

❖Infectious causes

- Bacterial infections (most common cause of otitis externa)
  - **Most common**: Pseudomonas aeruginosa (~ 40% of cases), (swimming)
  - **Other** :Staphylococcus aureus, Proteus mirabilis, Escherichia coli
  - **Management**: Aural toilet + antibiotic ear drop
- Viral infections (rare): Herpes zoster, influenza viruses
- Fungal infections (less common): Aspergillus (accounts for 90% of all fungal otitis externa), Candida

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

- Severe itching
- Chronic discharge with inflammation of the mucosa of tympanic membrane

❖Etiology (Pathogen)

- 90% Aspergillus (wet newspaper)

سنوات (1) • **Black-headed filamentous growth: Aspergillus niger**

- 10% Candida (whitish “Cheesy material”)

❖Treatment

- Avoid water entry to ear (Keep it dry)
- Ear toilet
- Topical antifungal 3-4 weeks

Otomycosis (Fungal infection)

- **In otomycosis, black-headed filamentous growth caused by**
  a. Aspergillus niger
  b. Aspergillus fumigatus
  c. Aspergillus flavus
  d. Candida albicans
  e. Dermatophytes

Malignant (Necrotizing) otitis externa

- **Pathogens**: Similar to acute otitis externa (P. aeruginosa most common)
- **Risk factors for MOE**
  - Older adults (> 50 years of age)
  - Diabetes mellitus
  - Immunosuppression
- **Otoscopic findings:** Granulation tissue at the cartilage-bone junction of the external auditory canal
- **Management**: Admission + IV antibiotic + surgical debridement
- **Complications**: Osteomyelitis of the skull base manifesting with:
  - Facial nerve palsy and, less commonly, other cranial neuropathies (e.g., IX, X, XI, XII)
  - Meningitis
  - Cerebral abscess
  - Septic cerebral venous thrombosis

Malignant otitis externa MCQs 1

❖ **Malignant otitis externa, all the following are true except**

a. The causative agent is usually pseudomonas aeruginosa
b. The parotid gland is involved by direct extension of disease
c. A purulent discharge coming through a tympanic perforation is commonly seen
d. A urinalysis is indicated
e. Gradenigo syndrome may occur

❖Gradenigo syndrome (Petrous apicitis)

- Rare complication of otitis media, specifically involving the petrous apex of the temporal bone
- **Characterized by a triad of** Otalgia, Ipsilateral abducens nerve palsy, Retro-orbital pain

Malignant otitis externa MCQs 2

❖ **Necrotizing otitis externa, all the following are true except**

a. Usually affects those over the age of 50 years (due to Immunosuppression)
b. Affects only diabetic patients
c. Granulation may involve the lower cranial nerves
d. Most patient have evidence of microvascular disease
e. This condition may be associated with active chronic ear disease (due to Immunosuppression)

❖ **Malignant otitis externa caused by**

- S.aureus
- H.influenzae
- Pseudomonas

Otitis Media

Acute otitis media 1

- **Definition**: Dull tympanic membrane with redness + Otalgia for 3 days
- Etiology: Usually follows upper respiratory tract infections
- **Most common microorganisms ?**
  - **1st: Streptococcus pneumoniae** سنوات (5)
  - 2nd: Hemophilus influenzae
  - 3rd: Moraxella catarrhalis
- **Signs and symptoms:**
  - Classic triad of Otalgia, Fever, Conductive hearing loss
  - Other symptoms: otorrhea (indicates perforation), N&V, Anorexia, Irritability
  - Sometimes nausea, vomiting, diarrhea and abdominal pain in pediatrics; Due to Vagus nerve innervation.

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, ↓ pain, ↓ fever
3. **Healing phase** – 2-4 weeks
   - Aural discharge dries up and hearing return to normal

❖ Complications of AOM

سنوات (1)

1. Acute mastoiditis (Most common)
2. TM perforation
3. Otitis media with effusion
4. Cholesteatoma
5. Ossicular necrosis
6. Chronic otorrhea
7. Chronic suppurative otitis media

Acute otitis media management

1. **Early stage**
   A. Antibiotics: **1st line**: Amoxycillin, **2nd line**: Amoclav or 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

Acute otitis media MCQs

❖**Ideal tympanic membrane site for myringotomy incision and grommet insertion is**: سنوات (2)

a. Anterior superior quadrant
b. Anterior inferior quadrant
c. Posterior superior quadrant
d. Pars flacida
e. Posterior inferior

❖**Mainstay of treatment in acute otitis media in children is** سنوات (2)

a. Myringotomy
b. Ear drops
c. Antibiotics orally or parentally
d. Local and systemic antibiotics
e. Local and systemic antibiotics in addition to myringotomy

Mastoiditis

- **Definition**: inflammation of the mastoid air cells
- **Epidemiology**: most commonly occurs in children < 2 years
- **Pathophysiology**
  - Infection spreads from the middle ear cavity into the mastoid, which is a closed bony compartment → collection of pus under tension and hyperemic resorption of the bony walls → destruction of the air cells (coalescent mastoiditis) → mastoid becomes a pus-filled cavity (empyema mastoid)
- **Clinical features of mastoiditis**
  - Recurrence of otalgia and fever after initial improvement
  - Symptoms persist for > 2 weeks
  - Tender and edematous mastoid
  - Ear displaced laterally and forward
  - **Otoscopy findings**: may be normal, TM may be bulging and erythematous, May be perforated with otorrhea

Acute mastoiditis MCQs

❖ **Acute mastoiditis, all of the following are true except**

a. This is most common in young children
b. Postauricular swelling with anterior displacement of the pinna is the commonest presenting sign
c. Sagging of the posterosuperior meatal wall is an important diagnostic sign
d. Parenteral antibiotics should be given only after culture and sensitivity
e. Surgery, normally a simple cortical mastoidectomy, is necessary if a subperiosteal abscess has formed

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. In adults, nasopharyngoscopy may also be required to rule out nasopharyngeal masses

Note: OME might be silent if there is no pain

Best evaluation for otitis media with effusion: impedance audiometry سنوات (1)

Otitis media with effusion MCQs 1

❖**OME all the following are true except**

a. Is most prevalent in the first decade life
b. Eustachian tube dysfunction is an important etiological factor
c. This more likely in the presence of large infected adenoid
d. Passive smoking dose play a role (Passive smoking increase the risk of OME and asthma in children)
e. Bacterial infection is unlikely to play any role, because the effusion is sterile

❖**Most common cause of otitis media with effusion** سنوات (3)

- Nasopharyngeal neoplasm
- Allergy
- Otitic barotraumas
- Inadequate treatment of acute otitis media
- Chronic sinusitis

Otitis media with effusion MCQs 2

❖**Unilateral OME in an adult, you should exclude** سنوات (3)

a. Malignant tumors of the middle ear cleft
b. Adenoid hypertrophy
c. Oropharyngeal tumors
d. Nasopharyngeal tumors
e. Allergic rhinitis

❖**Adult patient came with OME, what is your next step ?** سنوات (2)

a. Pneumatic otoscopy
b. Impedance tympanometry
c. flexible nasal endoscopy
d. Audiometry
e. Paranasal sinuses CT scan

Otitis media with effusion MCQs 3

❖**All points towards chronic middle ear effusion except** سنوات (3)

a. Negative Rinne’s test
b. Red tympanic membrane
c. Reduced mobility of the drum
d. Flat tympanogram
e. Conductive deafness

Chronic suppurative otitis media 1

- **Definition**: persistent drainage from the middle ear through a perforated tympanic membrane lasting > 6–12 weeks
- **Etiology**: typically, a polymicrobial infection
  - When a single pathogen is isolated, **S. aureus** and **P. aeruginosa** are the most common species isolated
- **Clinical features**
  - Painless, recurrent otorrhea
  - Nonintact tympanic membrane
  - **Tympanometry**: Type B with High volume
  - **Rinne's test**: Negative
  - **Weber's test**: Lateralized to the affected side

Chronic suppurative otitis media 2

- **Treatment? (Medical)**
  - Swab culture + Aural toilet (Regular suction) + Topical antibiotics (ear-drops)
- **Treatment of complications?**
  - Surgery (Mastoidectomy)
- **Red flags for complications of CSOM**
  - Otalgia
  - Signs of systemic illness, e.g., fever
  - Focal neurologic signs
  - Altered mental status
  - Headache
  - Clinical features of mastoiditis
  - Immunocompromised state

Chronic suppurative otitis media 3

- **Urgent complications of CSOM (Similar to urgent comp. of AOM)**
  - **Local spread (extracranial)**: mastoiditis, labyrinthitis, facial nerve palsy
  - **CNS spread (intracranial)**: lateral sinus thrombosis, meningitis, otogenic abscess
- **Nonurgent complications**
  - Tympanosclerosis
    - May be asymptomatic or lead to conductive hearing loss
    - White calcified plaques in the tympanic membrane seen on otoscopy
  - Persistent hearing loss

Subtypes and variants of CSOM

- **Tubotympanic CSOM (safe CSOM)**
  - TM perforation is centrally located and only involves the pars tensa.
  - Otorrhea may or may not be foul-smelling
  - Complications are unlikely (thus called safe CSOM)
  - No cholesteatoma
- **Atticoantral CSOM (unsafe CSOM)**
  - TM perforation affecting any of the following locations:
    - Peripheral edge of the TM (i.e., marginal perforation)
    - Superoposterior quadrant of the TM
    - Pars flaccida (i.e., attic perforation)
  - Otorrhea is typically foul-smelling.
  - Acquired cholesteatoma
  - Granulations
  - Increased risk for complications of CSOM (thus called unsafe CSOM)
- **Post-tympanostomy tube CSOM**

CSOM – MCQs 1

❖**What is not true about tubotympanic type of CSOM ?** سنوات (3)

a. Commonly occur as a complication of acute otitis media
b. The discharge is scanty and purulent
c. The perforation in the pars flaccida
d. It rarely gives rise to serious complications
e. Medical treatment is the first line of treatment

❖**True about safe Chronic suppurative otitis media** سنوات (2)

a. Etiology is multiple bacteriology
b. Oral antibiotics are not affective
c. Ear drops and topical therapy have no role
d. Otitic hydrocephalus is a known complication
e. The treatment is exclusively and urgently surgical

CSOM – MCQs 2

❖**A patient with chronic suppurative otitis media, one is correct** سنوات (2)

a. On audiogram: Air conduction 10, bone conduction 5

b. On audiogram: Air conduction 40, bone conduction 20

c. Type C tympanogram

d. Speech discrimination is affected

❖**Complications of suppurative otitis media one is false**

- These include a retropharyngeal abscess
- They involve the middle cranial fossa
- Complication may give a positive Tobey-Ayer test (A test used to diagnose unilateral and bilateral lateral sinus thrombophlebitis)
- They are more likely to give rise to otogenic intracranial hypertension with the left ear (occur equally with both the left and right ears)
- Complication may be confused with mumps

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

Cholesteatoma 1

❖**Definition**: A growing pocket or sac of skin that forms within the middle ear and/or mastoid bone. سنوات (1)

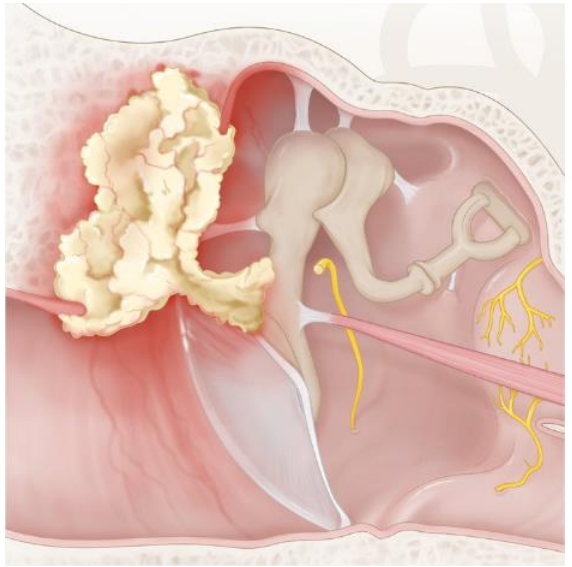
❖**Pathophysiology**: Keratinizing squamous epithelium grows from the tympanic membrane or the auditory canal into the middle ear mucosa or mastoid air cells.

❖**2 Types**:

- **Congenital cholesteatoma**: Present at birth, Embryonic nests of epidermal cells that remain in the middle ear
- **Acquired cholesteatoma (more common)**

سنوات (3)

- **Primary**: eustachian tube dysfunction → tympanic membrane epithelium retracts inwards → retraction pocket
- **Secondary**: Epithelium migrates inwards through a perforation in the tympanic membrane, which is commonly caused by recurrent/chronic otitis media



Cholesteatoma 2

❖Clinical features

- May be asymptomatic
- Painless otorrhea (scant but foul-smelling discharge from the affected ear)
- Conductive hearing loss
  - Occurs late in primary cholesteatoma
  - Occurs early in secondary cholesteatoma

❖Diagnostics

- **Otoscopic findings**:
  - **Primary acquired**: retraction pocket with squamous epithelium and debris that often appears as a brown, irregular mass
  - **Congenital and secondary acquired**: white or pearly mass behind the tympanic membrane
- **Imaging**: to assess the degree of bone destruction
  - X-ray of the mastoid process
  - CT scan of the temporal bone
  - MRI is only indicated if intracranial extension is suspected
- **Audiometry**: to assess the degree of hearing loss

Cholesteatoma 3

- **Treatment**: Surgery is always indicated because of the risk of complications
  - Excision of the cholesteatoma (by canal wall-up or canal wall-down mastoidectomy) to control the discharge and create a dry ear
  - Reconstruction of the middle ear structures and sound-conducting apparatus
- **Complications**
  1. Destruction of ear ossicles
  2. Perilymph fistula
  3. Facial nerve paralysis
  4. Erosion of temporal bone → extradural abscess, meningitis, sigmoid sinus thrombosis
  5. Aural polyp

Cholesteatoma MCQ 1

❖ **Which of the following are the two most important tools in diagnosing cholesteatoma ?** سنوات (3)

a. Otoscopy and radiographic imaging
b. History and culture data
c. Audiometry and otoscopy
d. Radiography and audiometry
e. Physical examination and patient demographics

❖ **Regarding cholesteatoma, one is true**

- Should be left untreated
- Consists of columnar epithelium
- May metastasize to contralateral temporal bone
- Mainly treated medically
- Eustachian tube dysfunction may be an etiology

Cholesteatoma MCQ 2

❖ **Cholesteatoma mostly found**

a. Attic
b. Posterior to the hand of malleolus
c. Anterior to the hand of malleolus
d. None of above

Choanal atresia

Choanal atresia 1

- Emergency respiratory distress syndrome
- **Definition**: Congenital condition characterized by a bony (90% of cases) and/or membranous (10%) obstruction of the posterior nasal passage
- **Pathophysiology**: Persistence of bucconasal membrane (one of many hypothesis)
- **Epidemiology**
  - Sex: ♀ > ♂ (~ 2:1), Unilateral is twice as common as bilateral choanal atresia
  - Part of **CHARGE** syndrome (**C**oloboma, **H**eart defects, **A**tresia choanae, **R**etardation of growth, **G**enital abnormalities, and **E**ar abnormalities)

Choanal atresia 2

❖Clinical features

○ Bilateral choanal atresia

- Early presentation
- Infants are only able to breathe through the mouth (immediately postpartum)
- Cyanosis that worsens when feeding and improves when crying
- Upper airway obstruction (e.g., noisy breathing, dyspnea)
- Food intake impossible: Complete airway obstruction is a life-threatening condition immediately following birth because of the worsening dyspnea associated with feeding

○ Unilateral choanal atresia

- Typically presents later in life
- Chronic rhinitis in the affected nasal passage with purulent nasal discharge over several weeks

Choanal atresia 3

- **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
- **Treatment**
  - **Bilateral choanal atresia**: Urgent insertion of an oropharyngeal airway (or even intubation) as a temporary airway until surgery (surgical perforation)
  - **Unilateral choanal atresia**: Observation and subsequent surgery when the infant is 1–2 years old

Choanal atresia MCQs

❖ **A newborn with cyanosis and respiratory difficulty improved by insertion of an oral airway. The most probable diagnosis is** سنوات (5)

a. Laryngomalacia
b. Congenital laryngeal web
c. Congenital subglottic stenosis
d. Congenital bilateral choanal atresia
e. Congenital vocal cord paralysis

❖ **Congenital choanal atresia, one true statement** سنوات (2)

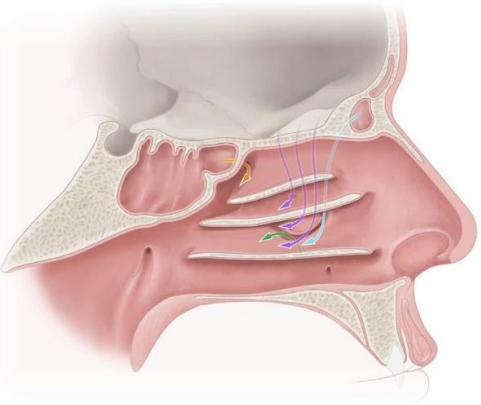
- a. This is most commonly a membranous closure.
- b. It is most commonly bilateral.
- c. It occurs more often in males.
- d. If unilateral, it tends to present late with persistent watery rhinorrhea
- e. Bilateral cases may be fatal

Rhinosinusitis

شاملة دوسيه د. حرازنة بشكل مختصر

Nose anatomy – Sinuses drainage

Nasal meatuses	Sinuses drainage
Sphenoethmoidal recess	Sphenoid sinuses
Superior meatus	Posterior ethmoidal sinus
Middle meatus	1. Frontal sinus (into the infundibulum) 2. Anterior ethmoidal sinus 3. Middle ethmoidal sinus 4. Maxillary sinus
Inferior meatus	Nasolacrimal duct



Nose anatomy MCQs 1

❖ **All of the following are true except**

a. Sphenoid sinus drain into the sphenoethmoidal recess
b. Maxillary sinus drain into the middle meatus
c. Frontal sinus drain into the superior meatus
d. Nasolacrimal duct open into the inferior meatus
e. Anterior ethmoidal sinus drain into the middle meatus

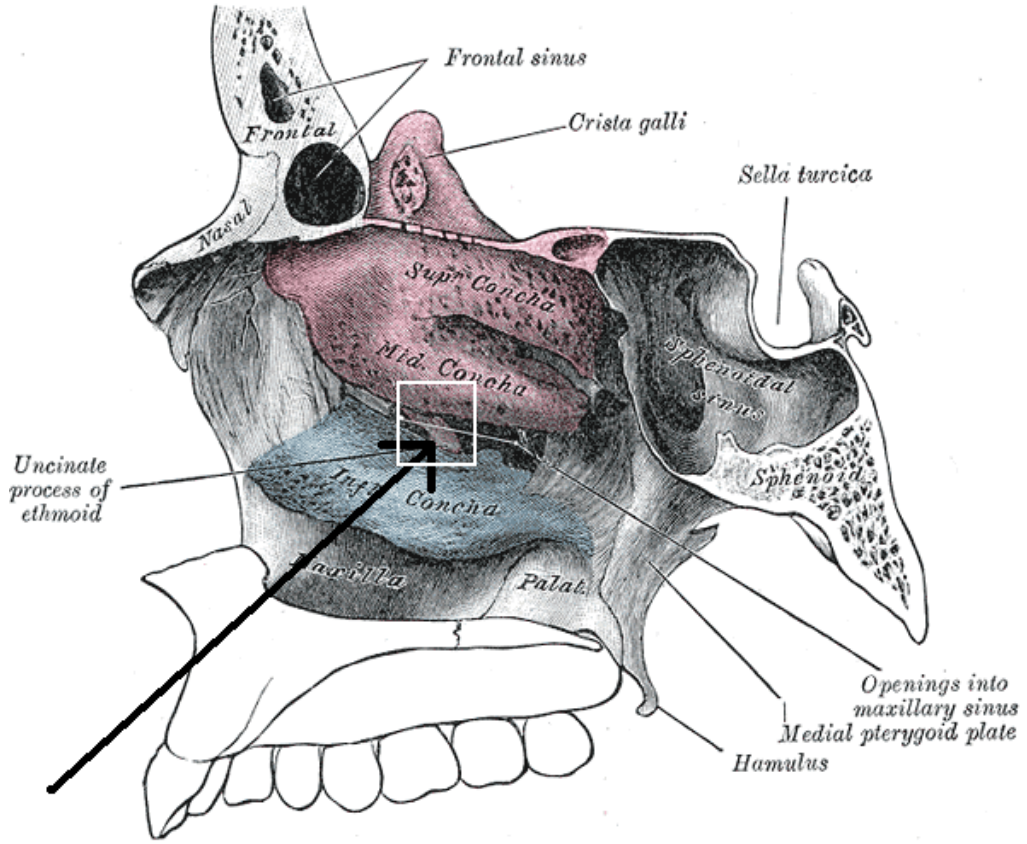
❖ **Which of the following structures drain into the inferior meatus ?**

a. Maxillary sinus
b. Ethmoid sinus
c. Sphenoid sinus
d. Nasolacrimal duct
e. All of the above

Nose anatomy MCQs 2

❖**The uncinate process is a portion of which bone**:

a. Maxillary
b. Ethmoid
c. Palatine
d. Sphenoid



Allergic rhinitis 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 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), e.g., Oxymetazoline سنوات (1)

Allergic Rhinosinusitis MCQs 1

❖**Which is important in early allergy ?**

a. IgE
b. IL-6
c. IL-4
d. Bradykinin
e. All the above

❖**Type 1 hypersensitivity reaction is mediated by** الله يرزقنا هيك أسئلة سنوات (2)

a. IgG
b. IgA
c. IgE
d. IgD
e. IgM

Allergic Rhinosinusitis MCQs 2

❖ **What is the best treatment for allergy to dog dander ?** سنوات (3)

a. Avoidance
b. Terfenadine
c. Cromolyn
d. Beclomethasone
e. Prednisolone

❖ **The best and most desirable treatment for allergy is**

a. SART-based immunotherapy
b. Skin test-based immunotherapy
c. Non-sedative antihistamine
d. Nasal corticosteroid
e. Allergen avoidance

Allergic Rhinosinusitis MCQs 3

❖ **Which of the following symptoms is most suggestive of allergic rhinitis ?**

سنوات (2)

a. Anterior rhinorrhea
b. Posterior rhinorrhea
c. Itching and sneezing
d. Nasal congestion
e. Purulent postnasal drip

❖ **Which is not associated with allergic rhinitis ?**

- Nasal obstruction
- Sneezing
- Itching
- Purulent rhinorrhea
- Positive skin testing

Allergic Rhinosinusitis MCQs 4

❖ **Prolonged use of vasoconstrictor nose drops results in:** سنوات (2)

- Rhinitis sicca.
- Vasomotor rhinitis.
- Allergic rhinitis.
- Rebound phenomenon.
- Mulberry turbinates (caused by pneumatization (air cell formation) within the turbinate bones of the nasal cavity)

❖ **Treatment of allergic rhinitis, all are true except** سنوات (2)

a. A voidance of allergens is frequently impractical
b. Desensitization based on skin testing is useful in some cases of hay fever
c. Vasoconstrictor drops provide effective immediate relief
d. Antihistamines give useful relief of nasal obstruction, but have little effect on Sneezing and rhinorrhea
e. Topical steroids is the mainstay of the management of symptoms

Allergic Rhinosinusitis MCQs 5

❖ **The most common cause of periannual allergy is**

a. Fruit allergy
b. Egg
c. Dust mite
d. Drug

❖ **Etiology of allergic rhinitis, all the following are true except**

- It is often familial
- IgE is the reaginic antibody
- Coexisting asthma or eczema implies atopy
- Inhaled allergens are the commonest trigger factor
- Aspirin gives relief by reducing the inflammatory reaction (Aspirin and other NSAIDS can worsen symptoms in some individuals with allergic rhinitis)

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

Sinusitis CT scan MCQs

❖ **Best section in CT scan for maxillary sinus is** سنوات (2)

a. Axial
b. Coronal
c. Three dimensional
d. Sagittal
e. Transverse

Acute sinusitis 1

❖Clinical features

- 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

❖**Etiology**: Usually preceded by URTI or dental infection

❖Notes

- 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 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, Osteomyelitis (Pott's tumor)
  2. **Orbit (75%)**: Cellulitis → abscess → Cavernous sinus thrombosis (Do CT)
  3. **Intracranial (20%)**: Epidural/Subdural/Intracerebral abscess (Do MRI)

Acute sinusitis MCQs

سنوات (1) ❖**The most common sinus to be inflamed is** maxillary sinus

سنوات (1) ❖**The most common sinus to be inflamed in children is** ethmoidal

سنوات (1) ❖**The difference in incidence in maxillary sinusitis between children & adults is attributed to** level of the floor of the sinus

سنوات (1) ❖**Initial step in managing acute bacterial sinusitis**: antibiotics + decongestants

❖**Acute infective sinusitis, one of the following is true** سنوات (1)

a. Pain is limited to the area overlying the affected sinus
b. Mucopurulent nasal discharge is necessary to make the diagnosis
c. There is initially reduced mucosal glandular secretion
d. Oedema of the overlying tissues is commoner in children
e. An empyema is a collection of seromucinous fluid in the sinus

Chronic sinusitis 1

- **Definition**: Persistent symptoms of sinus inflammation > 12 weeks
- **Symptoms**: Nasal obstruction, nasal/post-nasal purulent discharge, cacosmia, and less pain
- **Most causative agents**: Anaerobes (thus we give metronidazole)
- **Note**: Chronic sinusitis shows air fluid level on CT scan only if there is an acute on top of chronic sinusitis
- **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, Osteomyelitis (Pott's tumor)
2. **Orbit (75%)**: Cellulitis → abscess → Cavernous sinus thrombosis (Do CT)
3. **Intracranial (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:

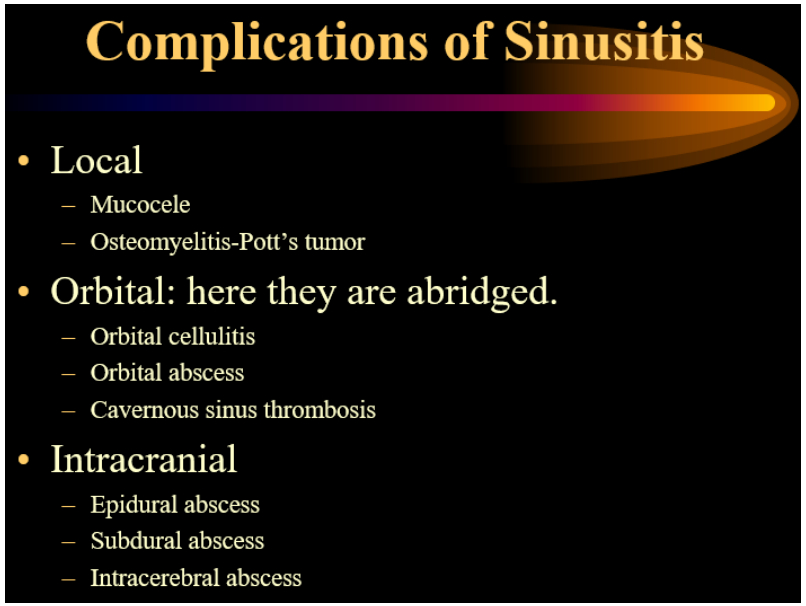
1. Recurrent URTI
2. Immotile cilia
3. Immunodeficiency
4. Adenoids
5. Cystic fibrosis
6. Anatomic deformities
7. Allergy
8. GERD

Chronic sinusitis MCQs

❖**All are complications of sinusitis except** سنوات (1)

a. Meningitis
b. Temporal lobe abscess
c. Orbital cellulitis
d. Osteomyelitis
e. Cavernous sinus thrombosis

○ Answer according to Dr. slides



❖**One of the following is not a cardinal feature of chronic sinusitis** سنوات (1)

a. Fever
b. Nasal obstruction
c. Nasal/post-nasal purulent discharge
d. Cacosmia
e. Less pain

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)

- **True or False: The hallmark of the treatment of fungal sinusitis is antifungal drugs**
  - False, Surgical debridement is the hallmark

سنوات (1)

Nasal polyps 1

- **Definition**: benign lesions of the nasal mucosa or paranasal sinuses due to chronic mucosal inflammation
- The Nasal polyps are most commonly from the ethmoidal sinuses (allergic origin) سنوات (1)
- **Special form**: **antrochoanal polyp**
  - Antrochoanal polyps are transparent, large, single, unilateral polyps
  - Arise from the maxillary sinus سنوات (1)
  - **Epidemiology**: Sex: ♀ < ♂, Age: children and young adults
  - **Clinical features**: nasal obstruction or features of sinusitis
  - **Treatment** is surgical; have high recurrence rate with medical treatment
- **Risk factors**:
  - Allergic rhinitis
  - Cystic fibrosis (CF)
  - Kartagener's syndrome
  - Aspirin exacerbated respiratory disease (**Samter's triad**: Nasal polyps, aspirin allergy and asthma)

Nasal polyps 2

- **Clinical features**: Postnasal drip, Bilateral nasal obstruction
- **CT scan** can determine the exact location and extent of polyps
- **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

- **A bleeding nasal polyps indicates** hemangioma in nasal septa سنوات (1)

Nasal polyps MCQs 1

❖**Nasal polyposis associated with all the following diseases except**

a. Allergic rhinitis
b. Cystic fibrosis
c. Aspirin intolerance
d. Kartagener's syndrome
e. Follicular tonsillitis

❖**One of the following is not used in the treatment of nasal polyps**

a. Systemic steroids
b. Local steroids
c. Simple polypectomy
d. Antibiotics
e. Functional endoscopic sinus surgery

Nasal polyps MCQs 2

❖ **All are causes of bilateral nasal obstruction except** سنوات (2)

- Adenoids
- Allergic rhinitis
- Antrochoanal polyp
- Atrophic rhinitis
- Ethmoidal polyp

❖ **Which is true about antrochoanal polyps ?**

- They are the most common type of polyps
- Arises from the lining of ethmoid sinus
- The mainstay of treatment is medical
- It is common in old age groups
- The patient has good inspiratory airway with blockage on expiration

This phenomenon is known as the "inverted bottleneck" pattern and is a distinguishing feature of antrochoanal polyps.

Nasal polyps MCQs 3

❖**Regarding antrochoanal polyp one is false**

a. Arise from the maxillary sinus
b. Usually, solitary
c. More in females (have a slight male predominance)
d. Associated with sinusitis
e. May be bilateral & causing obstruction (Although antrochoanal polyps are typically unilateral, occurring on one side, they can occasionally be bilateral)

❖**All the following regarding Antrochoanal polyp are true, except**

a. Arises from maxillary sinus ostium and grows anteriorly (posteriorly ☺)
b. Is often a unilateral condition
c. Often affects younger populations (More common in children and young adults)
d. Is best treated using endoscopic sinus surgery
e. Simple polypectomy can magnify the risk of recurrence

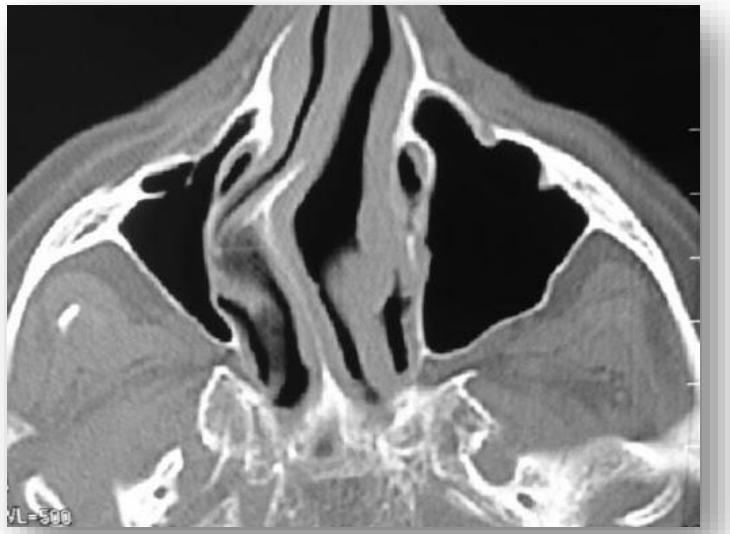
Nasal polyps MCQs 4

❖ **Nasal polyposis, all the following are true except**:

- Allergic rhinitis is the underlying etiology
- Usually arise from the ethmoid sinus
- Medical treatment is effective in many cases
- Recurrence is common after surgery
- Nasal obstruction is a predominant symptom

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)

Nasal septal perforation 1

- **Definition**: Perforation through all of the layers of the nasal septum (including cartilage), resulting in a communication between the nasal cavities
- **Etiology**:
  - Iatrogenic (e.g., due to septoplasty, tight nasal packs)
  - Trauma (e.g., nose foreign body, nasal fracture)
  - Substance-related (e.g., from the use of cocaine, intranasal decongestants, intranasal steroids)
  - Autoimmune (e.g., granulomatosis with polyangiitis, systemic lupus erythematosus, sarcoidosis)
  - Infection (e.g., tuberculosis, leprosy, syphilis)
  - Neoplasia (e.g, carcinoma of the nasal septum)

Nasal septal perforation 2

- **Clinical features**
  - Nose pain
  - Nasal whistling sound (in nasal septal perforation)
  - Epistaxis
  - Nasal obstruction
  - Rhinorrhea
  - Crusting
  - Hyposmia & malodorous smell in the nose
- **Diagnostics**: Anterior rhinoscopy and nasal endoscopy
- **Treatment**: General measures: routine saline lavage, application of nasal emollients

Nasal septal perforation MCQs

❖ **Causes of septal perforation include the following except**

a. Leishmaniasis
b. T.B
c. Leprosy
d. Trauma
e. Syphilis

Nasal trauma

Management of nasal trauma 1

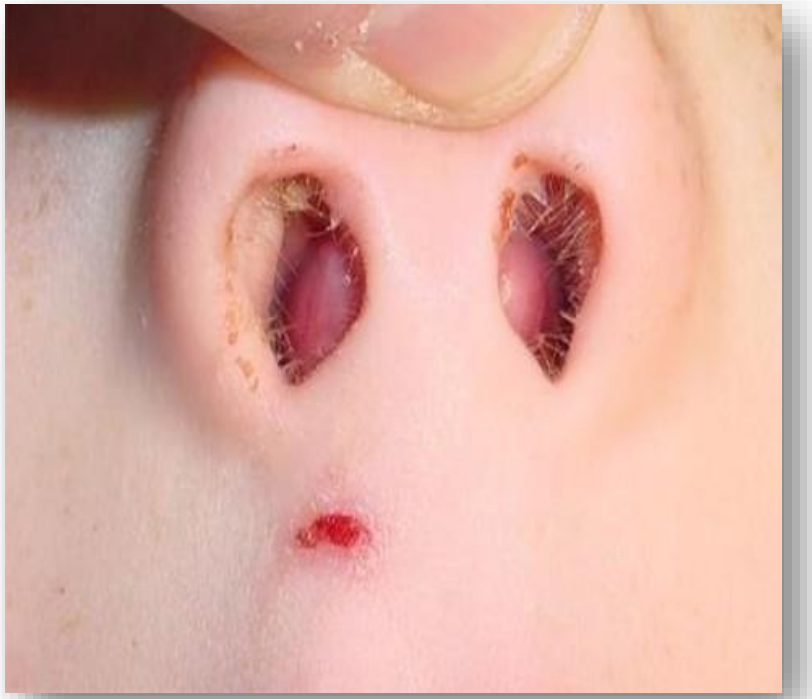
1. Ensure airway is patent
2. Give adequate ventilation
3. Stabilize patient
4. If its open wound and contaminated with foreign matter, copious irrigation will be required or sometimes, Some debridement may be needed
5. Pretreatment with anxiolytic and pain medications should be considered
6. Lateral 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

Nasal septal hematoma

- **Definition**: a collection of blood around the nasal septal bone or cartilage with intact nasal mucosa
- **Etiology**: nasal or facial trauma
- **Diagnostics**: rhinoscopy showing unilateral or bilateral balloon-like bloody protrusion
- **Treatment**: immediate incision & drainage + I.V. antibiotics + Nasal packing
- **Complications**
  - Septal Perforation
  - Bone fracture
  - Septal deviation
  - Septal Abscess



Septal hematomas

❖Regarding septal hematomas, one of the following is true سنوات (4)

a. Septal hematomas are usually traumatic in origin
b. Unilateral nasal obstruction is the commonest symptom
c. They are likely to resolve spontaneously without complication
d. Treatment is conservative unless an abscess develops
e. Septal abscess is always secondary to septal hematoma

❖**Complications of septal hematoma include, which one is true ?**

a. Anosmia
b. Saddle nose
c. Septal deviation

Epistaxis

شاملة دوسيه د. حرازنة بشكل مختصر

Nose anatomy – Vasculature

- **The nasal septum is supplied by the following arteries**:
  - Anterior and posterior ethmoidal branches of the ophthalmic artery, which is a branch of the internal carotid artery
  - Sphenopalatine branch of the maxillary artery, which is a branch of the external carotid artery
  - Superior labial branch of the facial artery, which is also a branch of the external carotid artery
- **The Kiesselbach plexus is formed by the anastomoses between** the superior Labial arteries, anterior Ethmoidal, Greater palatine, and Sphenopalatine. (mnemonic: LEGS)
- The Kiesselbach plexus is located in the anteroinferior region (Little's area) of the nasal septum and is **the most common site of epistaxis**. سنوات (2)

Nose anatomy – Vasculature MCQs

❖**Kiesselbach's plexus receives branches from all except** سنوات (3)

a. Sphenopalatine artery
b. Superior labial artery
c. Posterior ethmoidal artery
d. Anterior ethmoidal artery
e. Greater palatine artery

❖**Which one is derived from internal carotid artery ?** سنوات (2)

a. Anterior ethmoid artery
b. Sphenopalatine artery (external carotid → ophthalmic → Sphenopalatine)
c. Maxillary artery (external carotid → Maxillary)
d. Superior labial artery (external carotid → facial → Superior labial)
e. Greater palatine artery

Epistaxis Notes

- 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

Mention 2 Epistaxis Causes (Risk factors)

Local

1. Trauma (Fracture nasal bone is the most common cause overall)
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

What are the management steps of epistaxis in order ?

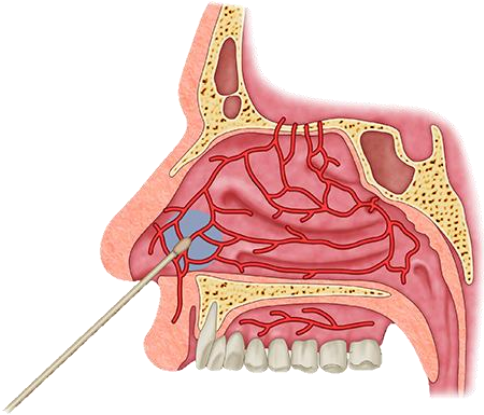
1. ABC
2. Direct pressure on the nostrils & squeezed together & lower the patient head (5-10 mins)
3. Topical vasoconstriction (Pressure with gauze moistened with epinephrine)
4. Humidification
5. If epistaxis continues after 10-15 minutes ⟶ Cautery (First line)
6. Nasal packing (Second line)
   - Anterior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

This patient presented to the ER with epistaxis

- **Mention 3 complication of this condition**
  - Shock
  - Aspiration
  - Anemia
  - Sinusitis
  - Iatrogenic complications during packing or cauterization
- **Most common area to bleed**
  - 90% in little's area (Kisselbach's plexus)

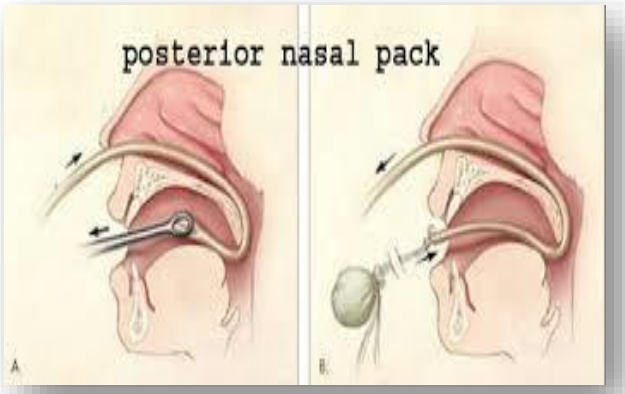
Cauterization

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

Epistaxis MCQs 1

- **Regarding posterior nasal packing, which statement is false ?** سنوات (3)
  - Almost always placed in conjunction with an anterior pack
  - The most used catheter is a Foley's catheter/balloon (size 12 French)
  - Seals the posterior nasal choana
  - Patients should be admitted to the hospital
  - Insertion of the Foley's catheter and inflation both done blindly
- The most common cause of epistaxis is سنوات (2)
  - a. Hypertension
  - b. Fracture nasal bone.
  - c. Blood diseases.
  - d. Idiopathic.
  - e. Hereditary hemorrhagic telangiectasia.

Epistaxis MCQs 2

❖ **50-year-old male with recurrent epistaxis, bleeding spots were identified in right anterior septum, what is your next step ?**

a. Silver nitrate cautery
b. Anterior packing
c. Posterior packing
d. Arterial ligation
e. Arterial embolization

- First line treatment for recurrent epistaxis is cautery

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

Juvenile angiofibroma 1

- **Definition**: Rare, benign, but locally aggressive tumor of the nasopharynx. It is composed of vascular and fibrous tissue.
- **Epidemiology**
  - Accounts for 0.05% of all head and neck tumors
  - **Sex**: occurs exclusively in males
  - **Age**: 10–20 years
- **Clinical features**
  - Progressive unilateral nasal obstruction with septum deviation to the contralateral side (80–90% of cases)
  - Recurrent epistaxis, often torrential, (45–60% of cases)
- **Diagnostics**: Contrast-enhanced CT scan is the investigation of choice

سنوات (1)

- **Treatment**: Mainly surgical excision of the tumor

Juvenile angiofibroma 2

❖ Treatment

○ Surgical excision of the tumor

- Surgical approach depends on size and extent of the tumor (e.g., transmaxillary, transnasal)
- Preoperative embolisation of feeding vessels necessary to reduce intra-operative blood loss

○ Stereotactic radiatiotherapy (e.g., gamma knife)

- Reduces tumor vascularization and size
- Indicated in recurrent cases or evidence of intracranial extension
- Risk of damage to adjacent structures (e.g., eye, brain, spinal cord) is minimised compared to external beam radiotherapy.

○ Hormone therapy with flutamide

- Androgen receptor blocker for presurgical tumor reduction
- Adverse reactions (e.g., gynecomastia, loss of libido)
- Complete tumor eradication not possible

Juvenile angiofibroma MCQs

❖**Juvenile angiofibroma, one false statement**: سنوات (3)

- Benign
- Non-invasive
- Adolescent male predominance
- Nasal obstruction and epistaxis
- 0.5% of head and neck neoplasms

❖**Patient with angiofibroma what will u do**

a. Surgery (depends on size and extent of the tumor)
b. Radiotherapy (Indicated in recurrent cases or evidence of intracranial extension)
c. Wait spontaneous regression
d. Hormone therapy with flutamide (Complete tumor eradication not possible)

Adenoids

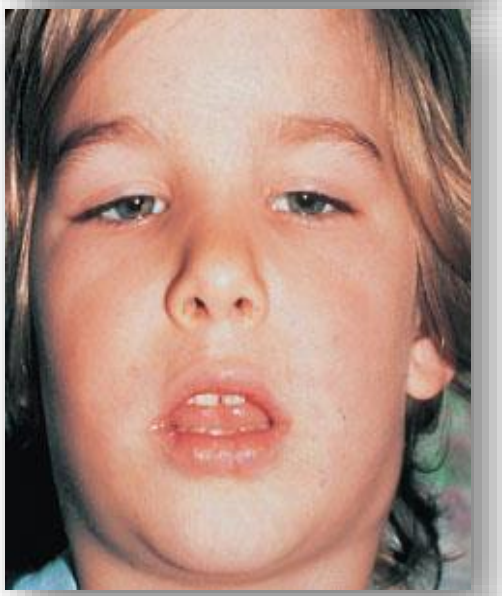
Adenoids

1. **Describe**

سنوات (1)

- Adenoid face (Open-mouthed posture + Long, narrow face + elevated nostrils + short upper lips + Crowded, crooked teeth + Dull expression + High-arched palate)

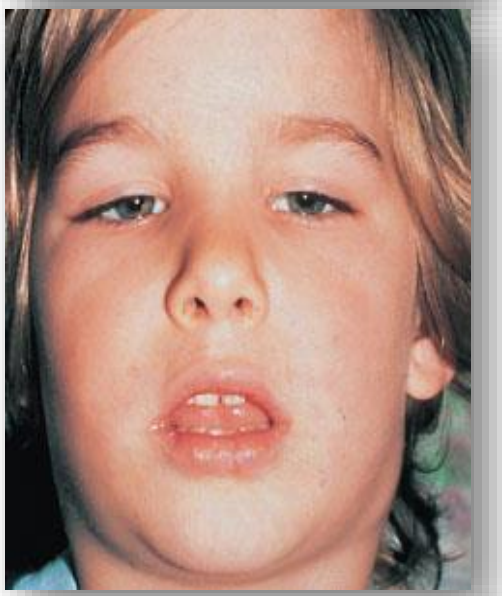
2. **Investigations to confirm dx?**
   A. Postnasal space examination with mirror
   B. Nasopharyngoscopy
   C. Lateral Xray
3. **Tympanometry and audiogram**
   - Tympanometry: Type B with normal volume
   - Audiogram: Conductive hearing loss



Adenoids

4. Mention 3 symptoms the patient suffer from

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



5. Management

- Medical: Penicillin +/- Intranasal steroid
- Surgery: Adenoidectomy

Adenoid hypertrophy

❖**All the following are true regarding Adenoid hypertrophy except**

a. Sleep apnea may be present
b. OME may be present
c. Dysphagia may be present
d. Nasal discharge and nasal speech may be present
e. More common in children

❖**About adenoids** سنوات (2)

a. Lined by squamous epithelium
b. No crypts
c. No capsule
d. In the posterior nasopharynx

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

Adenoidectomy

❖ **Which of the following is indication for adenoidectomy ?** سنوات (2)

a. Malocclusion.
b. Delayed speech development.
c. Recurrent peritonsillar abscess.
d. Recurrent tonsillitis.
e. Pharyngeal abscess.

Tonsils

Tonsils Anatomy

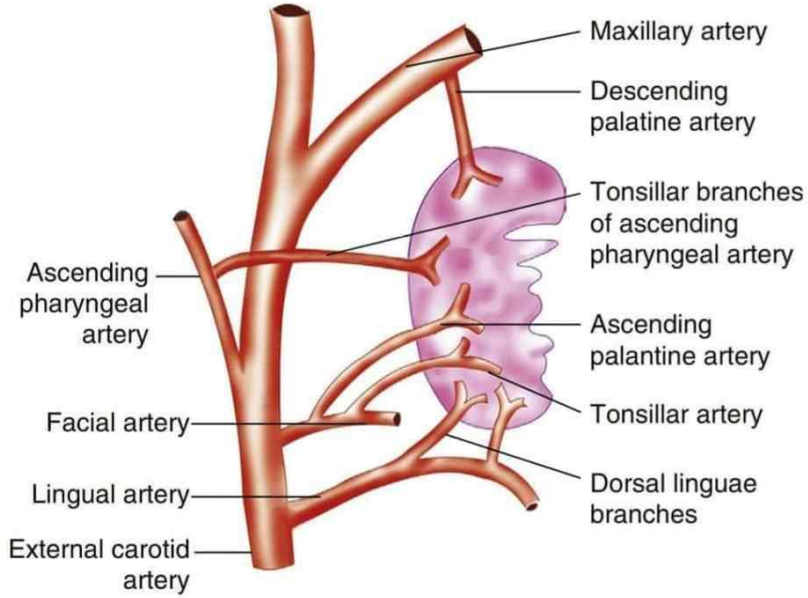
(**L**ove **F**ather **A**nd **M**other)

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

Tonsils Anatomy MCQs

❖**Blood supply of the palatine tonsils includes all of the following except:** سنوات (2)

a. Tonsillar branch of the facial artery
b. Sphenopalatine artery
c. Ascending palatine artery
d. Dorsal lingual artery
e. Ascending pharyngeal artery

❖**Tonsillar artery is a branch of**

a. Internal carotid artery
b. External carotid artery
c. Facial artery
d. Lingual artery
e. Maxillary artery

Tonsillitis

❖The most common cause is viral 80%

Viral tonsillitis	Bacterial tonsillitis
Most common pathogens: (Adenovirus and Rhinovirus)	Most common pathogens: (Streptococcus pyogenes “GAS”)
Low grade fever	High grade fever
Tonsil redness and congestion	Exudate and pus on tonsils.
Cough, sneezing and rhinorrhea	Lymphadenitis (Anterior cervical)
Treatment is supportive	Treatment of choice: Penicillin

❖DDx of bacterial tonsillitis

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

Acute Follicular tonsillitis

- **The most likely diagnosis**
  - Acute Follicular tonsillitis (bacterial 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
- **Complications of Acute tonsillitis**
  - Cervical adenitis, Retropharyngeal abscess, Parapharyngeal abscess, Peritonsillar abscess, Intratonsillar abscess, Inflammatory torticollis, Hemorrhagic tonsillitis

Acute tonsillitis MCQs

❖**Acute tonsillitis, one of the following is true**

a. Peak incidence is in the 1- 3 years ago group
b. A preceding viral infection of the upper respiratory tract is a predisposing factor
c. The alpha hemolytic streptococcus is the commonest bacterial cause (viral is the most common cause)
d. Enlargement of the jugulodigastric lymph nodes is rarely seen except in glandular fever
e. Infectious mononucleosis (glandular fever), the absolute lymphocyte count is reduced

❖**Peak incidence**

- Acute viral tonsillopharyngitis: children < 5 years and young adults
- Acute GAS tonsillopharyngitis: children aged 5–15 years; rare in children aged < 2 years

❖**Peak season**: Acute GAS tonsillopharyngitis most commonly occurs in winter and spring.

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.

Tonsillectomy MCQs 1

❖ **Tonsillectomy should be considered for the following except** سنوات (2)

a. Obstructive sleep apnea
b. Three episodes tonsillitis in three consecutive years
c. 2nd attack of peritonsillar abscess
d. Asymptomatic tonsillar hyperplasia
e. Unilateral tonsillar hyperplasia

❖ **Early post-tonsillectomy complications include the following except**

سنوات (2)

- Pneumonia
- Referred otalgia
- Edema of uvula
- Bleeding secondary to infection
- Anesthetic complications

Tonsillectomy MCQs 2

- In patients with recurrent peritonsillar abscess, tonsillectomy is done
  - Immediately
  - 2 weeks
  - 4 weeks
  - 6 weeks
  - 12 weeks ??

Post tonsillectomy bleeding

❖Types of Post tonsillectomy bleeding

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

❖Treatment of bleeding post tonsillectomy

- ABC.
- Compression + Vasoconstrictor.
- Cauterization.
- Ligation (only in Primary and Reactionary hemorrhage).
- 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

- **Most frequently occurs in** adults aged 20–40 years
- **Presentation**
  1. 95% are unilateral bulging with pus and exudate.
  2. Features of tonsillitis: High grade fever, Sore throat, Dysphagia
  3. Trismus. (Most important symptoms)
  4. Drooling of saliva. (Most important symptoms)
  5. “Hot potato” voice (muffled speech)
  6. Uvula shifted to the contralateral side
- **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

Peritonsillar abscess (Quinsy) MCQs 1

❖**Quinsy is the collection of pus in which of the following** سنوات (2)

a. Peritonsillar space
b. Parapharyngeal space
c. Retropharyngeal space
d. Within the tonsil crypts
e. Sublingual space

❖**Peritonsillar abscess, the commonest etiology**

a. Group a b-hemolytic streptococcus
b. Hemophilus influenza
c. Staphylococcus aureus
d. Mixed flora (aerobes and anaerobes)
e. Bacteroides

Peritonsillar abscess (Quinsy) MCQs 2

❖**Quinsy, all the following are true except** سنوات (2)

a. This is defined as a peritonsillar abscess
b. It is commonest in young adults
c. The pus lies in the space between the superior constrictor muscle and the carotid Sheath
d. Trismus and dribbling are clinical features
e. Treatment consists of systemic antibiotics and drainage

❖**Peritonsillar abscess is differentiated from acute tonsillitis by**

- A. It is unilateral
- b. There is change in voice and dribbling of saliva
- c. There is trismus **(most specific)**
- d. Tonsil is pushed medially
- e. All the above

Peritonsillar abscess (Quinsy) MCQs 3

❖**Regarding symptoms in mouth and throat disease, one is false** سنوات (2)

a. Laryngeal cancer may cause odynophagia
b. Quinsy may cause xerostomia
c. Quinsy may cause trismus
d. Laryngeal cancer may cause stridor
e. Anticholinergic drugs may cause xerostomia

❖**Regarding quinsy where does the pus lie ?** سنوات (2)

a. Lateral to the superior constrictor muscle
b. Medial to the superior constrictor muscle
   - The pus typically accumulates in the space between the tonsillar capsule and medial to the superior constrictor muscle

Peritonsillar abscess (Quinsy) MCQs 4

- One of the following is false: سنوات (2)
  - a. Uvula papilloma usually associated with submucous cleft
  - b. Bifid uvula may be a sign for submucous cleft
  - c. Uvula deviation usually seen with peritonsillar abscess
  - d. Tonsillar exudates usually seen with follicular tonsillitis
  - e. Follicular tonsillitis could be managed by antibiotics and analgesics

Parapharyngeal abscess MCQs

❖ Trismus in Parapharyngeal abscess occurs due to spasm of: سنوات (2)

a. Temporalis muscle
b. Medial pterygoid muscle
c. Lateral pterygoid muscle
d. Masseter muscle
e. Superior constrictor muscle

- **Peritonsillar abscess** can result in infection of the Parapharyngeal space if the superior constrictor muscle is penetrated

❖**A woman presented with right parotid swelling as a result of infection. The likely microorganism is** Staph aureus

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

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

Chronic non-specific pharyngitis MCQs

❖**Chronic non-specific pharyngitis, all the following are true except**

a. this is associated with smoking
b. It is exacerbated by chronic bronchitis
c. Lymphoid hypertrophy is seen in some cases
d. Tonsillectomy is the treatment of choice

❖**Chronic non-specific pharyngitis**

- **Definition**: Persistent inflam. of the pharynx without a specific identifiable cause
- **Symptoms** include a persistent sore throat, discomfort or pain while swallowing, a sensation of a lump in the throat, and mild hoarseness
- **Clinical findings**: The pharynx may appear red, swollen, or congested
- **Diagnosis**: by exclusion
- **Management**: Treatment of chronic non-specific pharyngitis focuses on symptomatic relief and addressing underlying factors.

Stridor & Hoarseness

Larynx Anatomy MCQs

❖**The narrowest part in the infantile larynx is:** سنوات (3)

a. The supraglottic area
b. The subglottic area
c. The vocal cords
d. The pyriform sinus
e. Oropharynx

❖**During direct laryngoscopy examination, all the following sites are visualized except**

a. Epiglottis
b. Arytenoides
c. subglottic space
d. Pyriform sinus
e. Vocal cords

Stridor & Hoarseness

Acute Stridor	Chronic stridor
1. Croup 2. Epiglottitis 3. Laryngitis 4. Neck space abscess 5. Foreign body inhalation 6. Anaphylaxis	1. Laryngomalacia (most common cause) 2. Vocal cord paralysis 3. Vocal cord nodules 4. Vocal fold cysts 5. Reinke's edema 6. Subglottic stenosis 7. Subglottic hemangioma 8. Macroglossia or Micrognathia 9. Malignancy

شرح

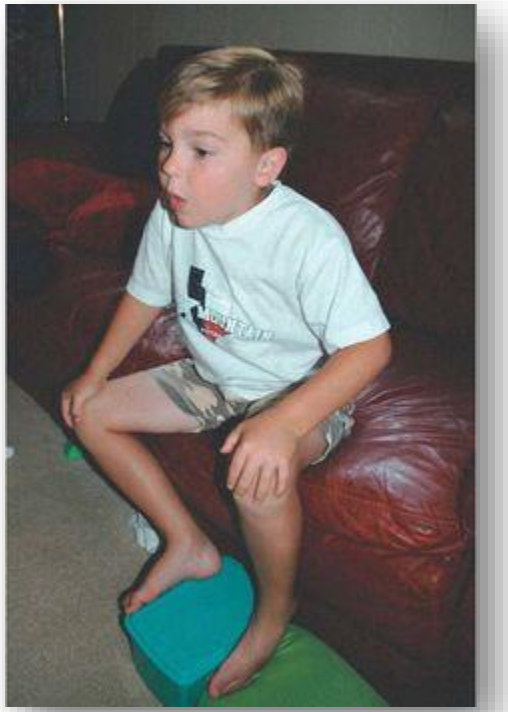
Croup (Laryngotracheitis, Laryngotracheobronchitis)

- **Epidemiology**: Peak incidence: 6 months to 3 years
- **Etiology**: Parainfluenza viruses (most common cause); RSV
- **Clinical features**: Characteristic features include seal-like barking cough, hoarseness, and inspiratory stridor due to subglottic narrowing
- **Diagnosis**: based on the presence of characteristic clinical features of croup
- سنوات (2) **Chest x-ray**: Steeple sign (subglottic narrowing on anteroposterior view)
- **Management**: Ensure Airway is patent + Oxygenation + Corticosteroid (single dose of Dexamethasone) + Nebulized epinephrine + Sometimes might need a tracheostomy

شرح

Epiglottitis

- **Epidemiology**: Peak incidence: 6–12 years
- سنوات (1) **Etiology**: H.influenzae type B (most common)
- **Clinical features**: The hallmarks of epiglottitis are the three Ds: **D**ysphagia, **D**rooling, and **D**istress
- **Tripod position**: eases respiration as the airway diameter is increased by leaning forward and extending the neck in a seated position
- **Lateral X-ray** shows Thumb sign
- سنوات (1) **Management**: 3rd generation cephalosporin or amoxicillin/clavulanate



Tripod position

Epiglottitis MCQs 1

❖**What is not true about acute epiglottitis ?** سنوات (2)

- Common in children
- Caused by H.influenzae
- Hoarseness is presenting symptom
- Painful swallowing
- Drooling of saliva

❖**All the following are true in acute epiglottitis except**

- The commonest organism is hemophiles influenza type one
- Occur mainly in children age between 2-7 years
- Usually, hoarseness of voice started few hours later
- Direct laryngoscopy before induction of endotracheal tube
- Dysphagia developed following by refusal of oral food

Epiglottitis MCQs 2

❖ **Regarding Acute epiglottitis, the most appropriate sentence is**

a. Only occurs in children
b. Streptococcus pneumonia is the usual causative agent
c. The peak age of incidence is between 18 months and 3 years
d. It is characterized by mild fever and most commonly affect females
e. The airway should be secured primarily

❖ **4-year-old come with fever 39 progressive dyspnea, drooling and dysphagia dynamically stable, management:**

- Lateral X-ray theater

Laryngomalacia 1

- **Definition**: Collapse of supraglottic structures during inspiration due to anatomical and/or functional abnormalities
- **Epidemiology**
  - Most common cause of congenital stridor (cause of stridor in 45–75% infants)
  - Most common congenital anomaly of the larynx
- **Etiology**: Almost always congenital
- **Clinical features**
  - Symptoms typically begin within the first 2 months of life and peak at 6–8 months.
  - **Inspiratory stridor**: worsens in the supine position, during crying, upper respiratory tract infections, agitation, and feeding relieved by prone position and head extension
  - Feeding difficulties (e.g., regurgitation, emesis)
  - Approx. 60% of affected children have concomitant GERD
  - **Severe course**: failure to thrive, obstructive sleep apnea, cyanosis

Laryngomalacia 2

- **Diagnostics**: Flexible laryngoscopy (gold standard)
  - Direct visualization of the airway
  - Collapse of supraglottic structures during inspiration and an omega-shaped epiglottis.
  - Clinical correlation is required to establish a diagnosis of laryngomalacia.
- **Treatment**
  - Reassurance and monitoring in mild cases (approx. 90% of cases resolve by two years of age)
    - Acid suppression therapy (e.,g, PPI, histamine receptor blockers) for patients with symptoms of GERD
    - Speech and swallow therapy
    - Ensure appropriate weight gain
  - Supraglottoplasty in severe cases

Laryngomalacia

- **A 6-month-old baby has had mild inspiratory stridor for the last 2 months. The most likely cause of this is** سنوات (3)
  a. Laryngomalacia (most common cause)
  b. Acute epiglottitis (Is an acute not chronic)
  c. Croup (Is an acute not chronic)
  d. Tonsillar hypertrophy
  e. Foreign body aspiration (Is an acute not chronic)
- **The best way to diagnose laryngomalacia is** سنوات (3)
  - Clinical history
  - Neck soft tissue lateral view
  - Flexible fiberoptic laryngoscopy
  - Direct laryngoscopy under general anesthesia
  - Video stroboscopy

Laryngomalacia

- **The commonest cause of congenital stridor** سنوات (4)
  - Epiglottitis
  - Vocal cord paralysis
  - Laryngeal web
  - Subglottic stenosis
  - Laryngomalacia
- **What doesn’t apply to laryngomalacia ?**
  - Hoarseness is absent
  - It is the commonest cause of stridor in neonates
  - Tracheostomy is frequently required
  - Diagnosis is made by fiberoptic nasolaryngoscopy
  - Disappears by the age of 2 years

Laryngomalacia

❖**Which one is wrong about laryngomalacia**

a. Needs surgery immediately
b. Appears as sigma sign
c. May need tracheostomy

❖**A child presenting with stridor due to mild to moderate tracheomalacia, best to be managed by**

a. Dilatation
b. High dose steroids
c. Careful observation
d. Intubation
e. Antibiotics

❖**Wrong about laryngomalacia**: 50% need surgery (90% resolves alone)

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

Vocal cord anatomy

سنوات (1) ❖All intrinsic muscles of the larynx are3 supplied by the recurrent laryngeal nerve except **cricothyroid muscle** is supplied by superior laryngeal nerve

سنوات (7) ❖**Abduction (opening) of the vocal cord**: Posterior cricoarytenoid

❖**Adduction of the vocal cord**: Lateral cricoarytenoid muscles and transverse arytenoid muscle

سنوات (1) ❖The water-shed area in the larynx is the rim of glottidis

سنوات (1) ❖The vocal cord contains no lymph nodes

Vocal cord palsy

Injured nerves	Position	Phonation	Respiration
Unilateral Recurrent laryngeal nerve	Adduction to medial side	Not affected	Normal respiration
Bilateral recurrent laryngeal nerves	Adduction	Slightly affected	Inspiratory stridor Distress & even suffocation
Unilateral superior and recurrent laryngeal nerves	Abduction, cadaveric paramedian position of ipsilateral side, contralateral side cross medline	Not affected	Normal respiration
Bilateral superior and recurrent laryngeal nerves	Bilateral (cadaveric) (abducted or widely separated position giving the appearance of bowing)	Completely lost	Normal respiration

Vocal cord palsy

- **The most common cause of vocal cord palsy is** سنوات (2)
  a. Total thyroidectomy
  b. Bronchogenic carcinoma
  c. Aneurysm of aorta
  d. Tubercular lymph nodes
  e. Vinca Alkaloids therapy
- **Cadaveric position of vocal cords**: paralyzed, abducted or widely separated position giving the appearance of bowing
- **Bilateral recurrent laryngeal nerve injury occurs in all the following**
  - Bilateral thyroid surgery, such as thyroidectomy
  - Severe trauma to the neck, such as fractures or penetrating injuries
  - Neurological disorders, such as brainstem lesions or tumors

Submucosal vocal lesions

- The best method to diagnose submucosal vocal lesions: سنوات (2)
  a. Indirect laryngoscopy
  b. Direct flexible laryngoscopy
  c. Direct rigid laryngoscopy
  d. Video stroboscopy

- Submucosal vocal lesions examples
  - Vocal cord nodules
  - Vocal cord polyps
  - Vocal cord cysts
  - Reinke's edema

Vocal fold polyp

- **Definition**: benign lesion that develops in response to vocal fold irritation in the anterior one-third of the vocal fold
- **Epidemiology**: Most common benign lesion of the vocal cords
  - Peak incidence between 30 and 50 years
  - ♂ > ♀
- **Etiology**
  - Voice overuse (e.g., teachers, professional singers)
  - Smoking, GERD
  - Anticoagulant use
- **Clinical features**: low-pitched, whispery voice; hoarseness
- **Diagnostics**: laryngoscopy
  - Unilateral spherical lesion
  - Located at the junction of the anterior one-third and posterior two-thirds of the vocal folds
- **Pathology**: fluid and fibrin filled lesion in the superficial lamina propria of the vocal fold
- **Management**: microsurgical removal

Vocal cord nodules 1

- **Definition**: benign lesion that are caused by frequent microtrauma (e.g., voice overuse) to the vocal cords, which leads to edematous swelling and development of fibrotic scars
- **Epidemiology**
  - Peak incidence between 20 and 50 years
  - Most common cause of persistent hoarseness in school-aged children
  - ♀ > ♂
- **Etiology**: voice overuse (e.g., teachers, professional singers) or abuse (e.g., children who scream/cry a lot)
- **Pathophysiology**: microtrauma to the vocal cords → edematous swelling → fibrotic scar (vocal fold nodule) of the superficial lamina propria
- **Clinical features**: low-pitched, whispery voice; hoarseness, altered vocal range

Vocal cord nodules 2

- **Diagnostics**: laryngoscopy
  - **Bilateral lesions** at the junction of the anterior one-third and posterior two-thirds of the vocal folds
  - Symmetric, pinhead-sized, pale nodules
  - Variable color, contour, and/or shape
- **Management**
  - Conservative management: treat underlying cause
    - Vocal rest and voice therapy
    - Treatment of GERD
    - Smoking cessation
  - Vocal fold steroid or botulinum toxin injection
  - Microsurgical removal in persistent or severe cases
- **Prognosis**: good prognosis (especially in children and adolescents) with appropriate treatment

Vocal cord nodules MCQs 1

❖ Correct about vocal cord nodules: سنوات (2)

a. Often require surgical therapy
b. Always result in dysphonia
c. Are congenital
d. Are usually unilateral
e. Usually respond to medical and behavioral therapy

❖ Vocal nodules, one false statement: سنوات (3)

- Are more common in females
- Treated with speech therapy
- Typically occur midway along the vocal cord
- Rarely treated with micro-laryngeal excision
- On laryngeal examination appear soft, red and do not occur unilaterally

Vocal cord nodules MCQs 2

❖**Correct about vocal cord nodules** سنوات (2)

- Anterior commissure
- At the junction of the anterior 1/3 and posterior 2/3 of the cord
- Middle of the cord
- Anterior 2/3 & posterior 1/3 junction
- None of the above

❖**Vocal cord nodule (singer's node) one is true**

a. Associated with excessive alcohol drinking
b. Is a premalignant condition
c. Should be removed

Vocal fold cysts 1

- **Definition**: benign, sac-like structure in the lamina propria of the vocal cords due to obstruction of mucus-secreting glands
- **Epidemiology**: Occurs in all ages; often in children
- **Etiology**: obstruction of laryngeal mucus-secreting glands
  - Retention cysts: obstruction caused by inflammation due to high vocal stress (e.g., occupational)
  - Epidermoid cysts: obstruction caused by congenital anomaly or secondary to a vocal trauma
    - In children: typically a congenital anomaly
- **Classification**:
  - Retention or epidermoid cyst
  - Intracordal or saccular cyst

Vocal fold cysts 2

- **Clinical features**
  - Intracordal cyst: hoarseness
  - Saccular cyst: airway obstruction, voice change
- **Diagnostics**: laryngoscopy typically shows unilateral yellow-white lesion with distinct border
  - Saccular cyst: supraglottic mass
  - Intracordal cyst: middle third of the vocal cord associated with an area of hyperkeratosis on the opposite cord
- **Treatment**: microsurgical removal

Reinke's edema

- **Definition**: a benign buildup of fluid in the superficial lamina propria of the true vocal cords caused by chronic inflammation and irritation secondary to smoking

سنوات (1)

- **Epidemiology**: ♀ > ♂
- **Etiology**
  - **Major risk factor**: smoking
  - **Minor risk factors**: Voice overuse, Allergy, Chronic URIs, GERD
- **Clinical features**: hoarseness; low-pitched, rough voice; vocal fatigue
- **Diagnostics**: laryngoscopy shows bilateral swelling of the true vocal cords
- **Management**:
  - Controlling risk factors
  - Restoring normal voice function

Vocal cord notes

- What is the next step in recurrent laryngeal nerve palsy management after examination ?
  - Next 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

Stridor

- **Congenital stridor, one statement is false**
  - An inhaled foreign body should be excluded
  - A vocal cord paralysis may be present
  - If due to laryngomalacia, the prognosis is good
  - Expiratory stridor usually indicates supraglottic obstruction
  - In infant with a normal appearance of the larynx, an enlarged thymus may exist
- **Wrong about stridor**
  - In epiglottitis, x-ray reveals characteristic steeple's sign
  - There is no place for antibiotic treatment in croup
  - In laryngomalacia, there is characteristic omega shape epiglottis
- **life threating case in children**
  a. bilateral adductors muscle paralysis
  b. bilateral abductors muscle paralysis
  c. laryngeal nerve paralysis

Laryngeal papillomatosis 1

- **Definition**: benign tumor of the laryngeal epithelium caused by (HPV)
  Classification
  - Juvenile onset recurrent respiratory papillomatosis (JORRP): < 20 years of age
    - Peak onset < 5 years of age
  - Adult onset recurrent respiratory papillomatosis (AORRP)
- **Etiology**: HPV infection (especially HPV6 and HPV11; followed by HPV subtypes 16, 18, 31, and 33)
  - In children: usually due to vertical transmission during birth
  - In adults: potentially via sexual activity or reactivation of the dormant virus
- **Clinical features**: disease extent is highly variable
  - Hoarseness, dysphonia/aphonia
  - Stridor, chronic cough, dyspnea due to airway obstruction
  - Dysphagia in advanced disease

Laryngeal papillomatosis 2

- **Diagnostics**: laryngoscopy
  - Multiple raspberry-like swellings
  - Usually located on vocal cords
  - Can be unilateral or bilateral
- **Management**: no definitive cure, goal is to limit disease spread
  - Surgical removal (e.g., microdebridement, carbon dioxide lasers) of symptomatic lesions
  - Potentially adjuvant treatment with antivirals (e.g., acyclovir, ribavirin, cidofovir)
- **Complications**
  - Malignant transformation into squamous cell carcinoma in up to 4% of cases
  - Airway obstruction and life-threatening respiratory distress
- **Prognosis**
  - Frequently recurring
  - Often regresses spontaneously in puberty

Laryngeal papillomatosis 3

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

Laryngeal papillomatosis MCQs

❖**Which of the following is not a cause of snoring ?**

a. Adenoid
b. Antrochoanal polyp
c. Papillomatosis
d. Ethmoidal polyps
e. Angiofibroma

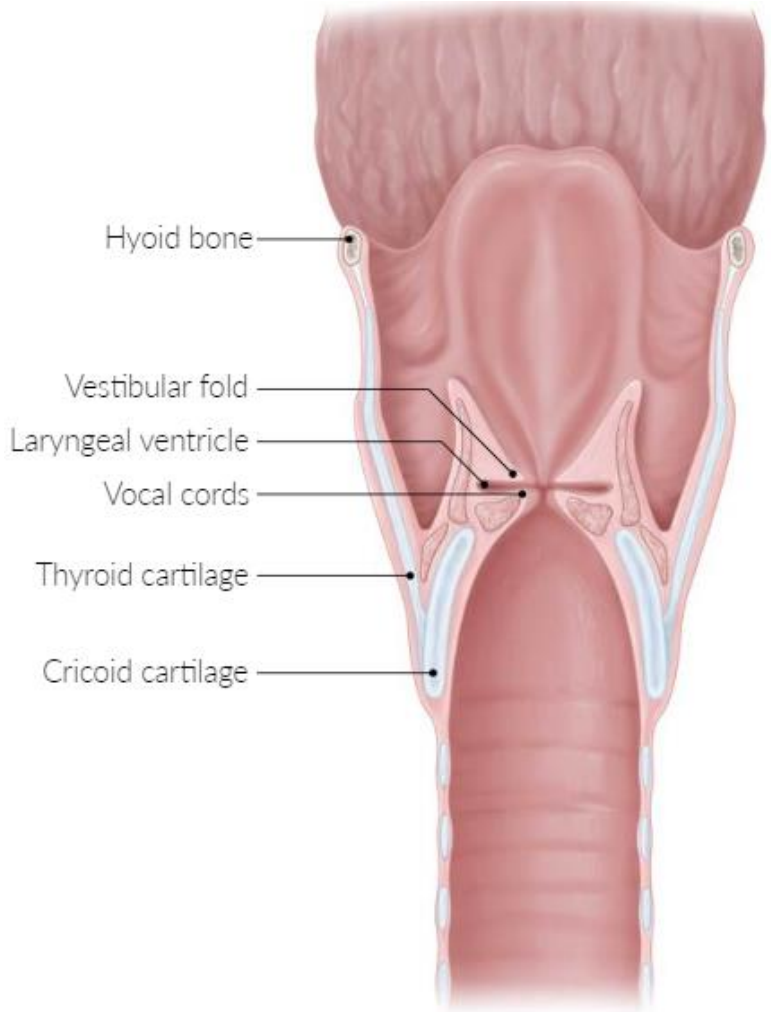
❖**Which subtypes of Human Papilloma Virus (HPV) are associated with most of juvenile onset recurrent respiratory papillomatosis cases ?**

a. 11 and 16
b. 6 and 16
c. 6 and 11
d. 16 and 18
e. 31 and 33

Laryngeal carcinoma

Anatomy review - مشان تفهم الهبد القادم

- The larynx is a hollow, tube-shaped organ continuous with the trachea below and the pharynx above in the anterior compartment of the neck
- Extends from C3–C6
- Regions of the laryngeal cavity
  - **Supraglottis**: from the inferior surface of the epiglottis to the false vocal cords (or vestibular folds)
  - **Glottis**: contains true vocal cords (or vocal folds)
  - **Subglottis**: from inferior border of the glottis to the inferior border of the cricoid cartilage



Laryngeal carcinoma 1

- **Epidemiology**: **Sex**: ♂ > ♀, **Age of onset**: 40–70 years
- **Risk factors**: Smoking, Alcohol use, HPV 16 and 18
- **Classification** (according to their location in relation to the glottis)
  - Glottic carcinoma/vocal cord carcinoma (most common form: approximately 59% of cases)
  - Supraglottic carcinoma (approximately 40% of cases)
  - Subglottic carcinoma (approximately 1% of cases)
- Laryngeal carcinomas are almost always squamous cell cancers (85-90%)
- **Clinical features**
  - Hoarseness/change in voice (Occurs early in glottic carcinomas but late in supraglottic and subglottic carcinomas)
  - Foreign body sensation
  - Dyspnea, Dysphagia, Stridor (due to airway narrowing)
  - ➢ Unexplained hoarseness for longer than 3 weeks should always be investigated by laryngoscopy

Laryngeal carcinoma 2

- **Diagnostics**
  - **Direct laryngoscopy** reveals irregular, nodular, or ulcerative lesions
  - **Microlaryngoscopic examination and tissue biopsy**: required to visualize very small tumors and to differentiate laryngeal cancer from benign laryngeal lesions (e.g., vocal nodules, vocal polyps)
  - **Stroboscopic examination**: assesses vocal cord mobility during phonation
  - **Imaging**: CT, MRI, and/or ultrasound of the neck to assess tumor size and spread to surrounding tissue (e.g., lymph nodes)
- **Treatment**
  - **Early stages**: radiotherapy or transoral endoscopic laser resection
  - **Advanced stages** (with lymph node and/or distant organ metastasis): laryngectomy
  - Voice rehabilitation after laryngectomy
- **Prognosis**: Glottic carcinomas have the best prognosis (5-year survival rates of approximately 90%)

Laryngeal carcinoma notes

- **Glottic carcinoma**:
  - Most common laryngeal CA
  - Good prognosis
  - **Early presentation** by Hoarseness, no lymph drainage, no mets., dysphagia
- **Supraglottic carcinoma**:
  - Bad prognosis, aggressive, early lymph node involvement (2) سنوات
  - **Delayed presentation** by dysphagia (2) سنوات
- **Granuloma (aka intubational granuloma)**: history is important
- **CA Larynx investigation**

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

Laryngeal carcinoma Questions

- **Most common presentation of laryngeal tumors**: Hoarseness
- **First sign in laryngeal CA**: Voice change (Hoarseness) سنوات (2)
- **Wrong about symptom of laryngeal CA**: Wheeze

Laryngeal carcinoma MCQs

❖**Which one of the following neoplasm doesn't cause neck lymph nodes enlargement ?**

a. Hypopharyngeal
b. Glottic (They tend to remain localized to the vocal cords for a longer period before spreading to the surrounding structures or lymph nodes)
c. Subglottic
d. Tumors of base of tongue

❖**The earliest laryngeal cancer to be diagnosed is**

a. Supraglottic
b. Subglottic
c. Glottic
d. Transglottic
e. Postcricoid

Hoarseness/change in voice (Occurs early in glottic carcinomas but late in supraglottic and subglottic carcinomas)

Laryngeal carcinoma spread

- **Most common location of distal metastasis**: Lung
- **Most common site for distant lymphatic metastases**: Mediastinum
- **Incidence of distant metastases in**:
  - Glottic: 3.1% - 8.8%, Supraglottic: 3.7% - 15%, subglottic: 14.3%
- **Second primary tumor + laryngeal cancer occur in**: Esophagus

PRIMARY SITE	PART OF PRIMARY SITE	LOOK FOR INVOLVEMENT OF
SUPRAGLOTTIC	Epiglottis	Pre-epiglottic space
	Epiglottic petiole	Anterior commissure
	Intra-laryngeal mucosa, false cords	Paraglottic space
	All	Vocal fold
		Laryngeal Cartilage
GLOTTIS	Anterior Cord	Anterior commissure/contralateral cord
	Posterior Cord	Thyroid cartilage and cricothyroid membrane
	All	Arytenoid cartilage/cricoarytenoid joint/posterior commissure
		Paraglottic space
		Supraglottic/subglottic spread
SUBGLOTTIS		Trachea
		Thyroid Gland
		Cervical oesophagus

Laryngeal carcinoma – Staging

Supraglottis

T1	Tumor limited to one subsite of supraglottis with normal vocal cord mobility
T2	Tumor invades mucosa of more than one adjacent subsite of supraglottis or glottis or region outside the supraglottis without fixation of the larynx.
T3	Tumor limited to the larynx with vocal cord fixation and/or invades any of the following: postcricoid area, pre-epiglottic space, paraglottic space, and/or inner cortex of thyroid cartilage.
T4a	Moderately advanced local disease. Tumor invades through the thyroid cartilage and/or invades tissues beyond the larynx
T4b	Very advanced local disease. Tumor invades pre-vertebral space, encases carotid artery, or invades mediastinal structures

Laryngeal carcinoma – Staging

Glottis

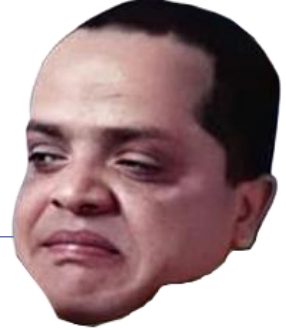
T1	Tumor limited to the vocal cord(s) with normal mobility
T1a	Tumor limited to one vocal cord
T1b	Tumor involves both vocal cords
T2	Tumor extends to supraglottis and/or glottis, and/or with impaired vocal cord mobility
T3	Tumor limited to the larynx with vocal cord fixation and/or invasion of the paraglottics space, and/or inner cortex of the thyroid cartilage
T4a	Moderately advanced local disease. Tumor invades through the outer cortex of the thyroid cartilage and/or invades tissues beyond the larynx
T4b	Very advanced local disease. Tumor invades pre-vertebral space, encases carotid artery, or invades mediastinal structures.

Laryngeal carcinoma – Staging

Subglottis

T1	Tumor limited to the subglottis
T2	Tumor extends to vocal cord(s) with normal or impaired mobility
T3	Tumor limited to the larynx with vocal cord fixation
T4a	Moderately advanced local disease. Tumor invades cricoid or thyroid cartilage and/or invades tissues beyond the larynx
T4b	Very advanced local disease. Tumor invades prevertebral space, encases carotid artery, or invades mediastinal structures.

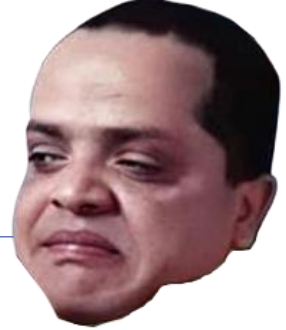
Laryngeal carcinoma – Staging



Regional Lymph Nodes (N)

NX	Regional lymph nodes cannot be assessed
N1	Metastasis in a single ipsilateral lymph node, 3cm or less in greatest dimension
N2	Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension; or in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension; or in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension
N2a	Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension
N2b	Metastasis in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension
N2c	Metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension
N3	Metastasis in a lymph node, more than 6 cm in greatest dimension

Laryngeal carcinoma – Staging



Anatomic Stage/Prognostic Groups

Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T3	N0	M0
	T1	N1	M0
	T2	N1	M0
	T3	N1	M0
Stage IVA	T4a	N0	M0
	T4a	N1	M0
	T1	N2	M0
	T2	N2	M0
	T3	N2	M0
	T4a	N2	M0
Stage IVB	T4b	Any N	M0
	Any T	N3	M0
Stage IVC	Any T	Any N	M1

Laryngeal carcinoma Staging – MCQs 1

- **A glottic tumor involving both cords with normal mobility and no extension to other sites is staged as**
  a. T1
  b. T1a
  c. T1b
  d. T2
  e. T3
- **What is the stage of glottis cancer involving both cords with no fixation and no spreading outside the cords ?**
  a. I
  b. Ia
  c. IB
  d. II
  e. III

Laryngeal carcinoma Staging – MCQs 2

❖**T3 N2 M0 (about glottis or supraglottis), which stage ?**

a. Stage I
b. Stage II
c. Stage III
d. Stage IV
e. Stage V

❖**The main management of Laryngeal tumors is**

a. Surgery
b. Radiotherapy
c. Chemotherapy
d. Radio-chemotherapy

Laryngeal carcinoma Staging – MCQs 3

❖ **Treatment of stage 1 laryngeal cancer**

a. Radiotherapy
b. Chemotherapy
c. Surgery
d. Radio-chemotherapy

❖ **All are true except**

a. The commonest manifestation of supraglottic carcinoma is hoarseness of voice
b. Glottis carcinoma never present with nodal metastasis
c. T1 supraglotic cancer, treatment of choice is radiotherapy
d. Tumor limited to the larynx with vocal cord fixation staged as T3
e. Leukoplakia is premalignant for laryngeal carcinoma

Laryngeal carcinoma Staging – MCQs 4

- 55-year-old patient, Smoker, he presented with hoarseness and dyspnea, he was found to have laryngeal tumor that invaded the pre-epiglottic space, vocal folds are fixed. According to TNM staging, his primary tumor stage is (3) سنوات

  a. T1
  b. T2
  c. T3
  d. T4a
  e. T4b

- **Laryngeal cancer with solitary LN above 3 cm**: N2A
- **Laryngeal tumor with M1**: stage IVc

Pharyngeal cancer

Pharynx Anatomy MCQs

- The velopharyngeal sphincter is composed of all the following except:
  a. Levator veli palatine
  b. Palatopharyngeus
  c. Superior pharyngeal constrictor
  d. Middle pharyngeal constrictor
  e. Muscularis uvulae
- **Fossa of Rosenmuller is located in**: Nasopharynx (2) سنوات
- **During Neck examination, all of the following groups of LN are included except**: (2) سنوات
  - Retropharyngeal LN

Pharyngeal cancer 1

- **Risk factors**: Tobacco consumption, Alcohol use, HPV infection
- **Associations**
  - Nasopharyngeal carcinoma: EBV infection
  - Oropharyngeal carcinoma and tonsillar cancer: human papillomavirus infection
- **Subtypes**:
  - Oropharyngeal cancer and hypopharyngeal cancer
  - Nasopharyngeal cancer
  - Tonsillar cancer
  - Adenoid cancer
- **Clinical features**
  - Pharyngeal cancer is usually asymptomatic for a long time
  - Often, the first manifestations are swollen cervical lymph nodes

Pharyngeal cancer 2

- **Clinical features**: Oropharyngeal cancer and hypopharyngeal cancer
  - Common early symptom: local lymph node metastases causing enlarged cervical lymph nodes
  - Foreign body sensation, dysphagia, sore throat, Muffled voice, Severe ear pain
- **Clinical features**: Nasopharyngeal cancer
  - 50% Unilateral huge neck mass
  - 30% Unilateral nasal discharge, nosebleeds, impaired nasal breathing (due to obstruction)
  - 20% Ear symptoms: Obstruction of the Eustachian tube: recurrent otitis media (may be accompanied by effusion); conductive hearing loss, tinnitus
  - **Trotters Triad of Nasopharyngeal tumors**: Ipsilateral conductive hearing loss + Ipsilateral ear pain & facial pain + Ipsilateral paralysis of soft palate

Pharyngeal cancer 3

❖ **Diagnostics**: 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 (confirmatory test)
8. Serology (Anti EBV antibodies)

❖ **Treatment**

- Grade 1, 2: Radiation
- Grade 3, 4: Chemotherapy, Radiotherapy, Surgery

❖ **Poor prognosis** since tumors are commonly discovered in late stages

Pharyngeal cancer MCQs

❖ **All the following are benign except**

a. Mucocele
b. Neuroblastoma
c. Papilloma

❖ **Lymphoma of the oropharynx, which of the following is true ?**

a. Most cases are Hodgkin's
b. The B- cell is the commonest cell of origin
c. Burkitt's lymphoma is associated with the herpes simplex virus
d. Investigations should include exploratory
e. Complete surgical excision is the treatment of choice

Nasopharyngeal carcinoma MCQs 1

❖ Most common cranial nerve palsy in nasopharyngeal carcinoma is:

a. VII nerve
b. V nerve
c. IV nerve
d. VI nerve
e. XII nerve

سنوات (2)

❖ Nasopharyngeal carcinoma, all following statement are true except:

a. More common in Chinese population. (consumption of Nitrosamine)
b. Cervical neck mass is the commonest presentation.
c. High index of suspicion is required for early diagnosis.
d. Surgery is the treatment of choice.
e. Biopsy is required for definitive diagnosis

"High index of suspicion" means being very alert and cautious about the possibility of a specific condition, even if the symptoms or signs are not definitive, to ensure timely diagnosis and appropriate management.

Nasopharyngeal carcinoma MCQs 2

- **Most common presentation in patients with nasopharyngeal carcinoma**: (4) سنوات
  a. Epistaxis
  b. Hoarseness of voice
  c. Nasal stuffiness and congestion
  d. Cervical lymphadenopathy (other similar answers: Neck mass)
  e. Ear pain
- **For confirmation of nasopharyngeal carcinoma (NPC)**: Biopsy
- **Main treatment of nasopharyngeal carcinoma is** Radiotherapy
- **Most common type of NPC is** SCCA (type 3: Undifferentiated)
- **Most common cancer metastasize to cervical L.N**: NPC

Nasopharyngeal carcinoma MCQs 3

❖**Which of the following is the most common neoplasm of tonsils ?**

a. Lymphoma
b. Metastatic carcinoma
c. Squamous cell carcinoma
d. Salivary neoplasm
e. Adenocarcinoma

❖**Which is not one of the most likely sites for occult primary tumor ?**

a. Nasopharynx
b. Tonsil
c. Base of tongue
d. Pyriform sinus
e. Buccal mucosa

Radiotherapy Complications MCQs

❖ **Complications of radiotherapy to the head and neck include all the following except** سنوات (2)

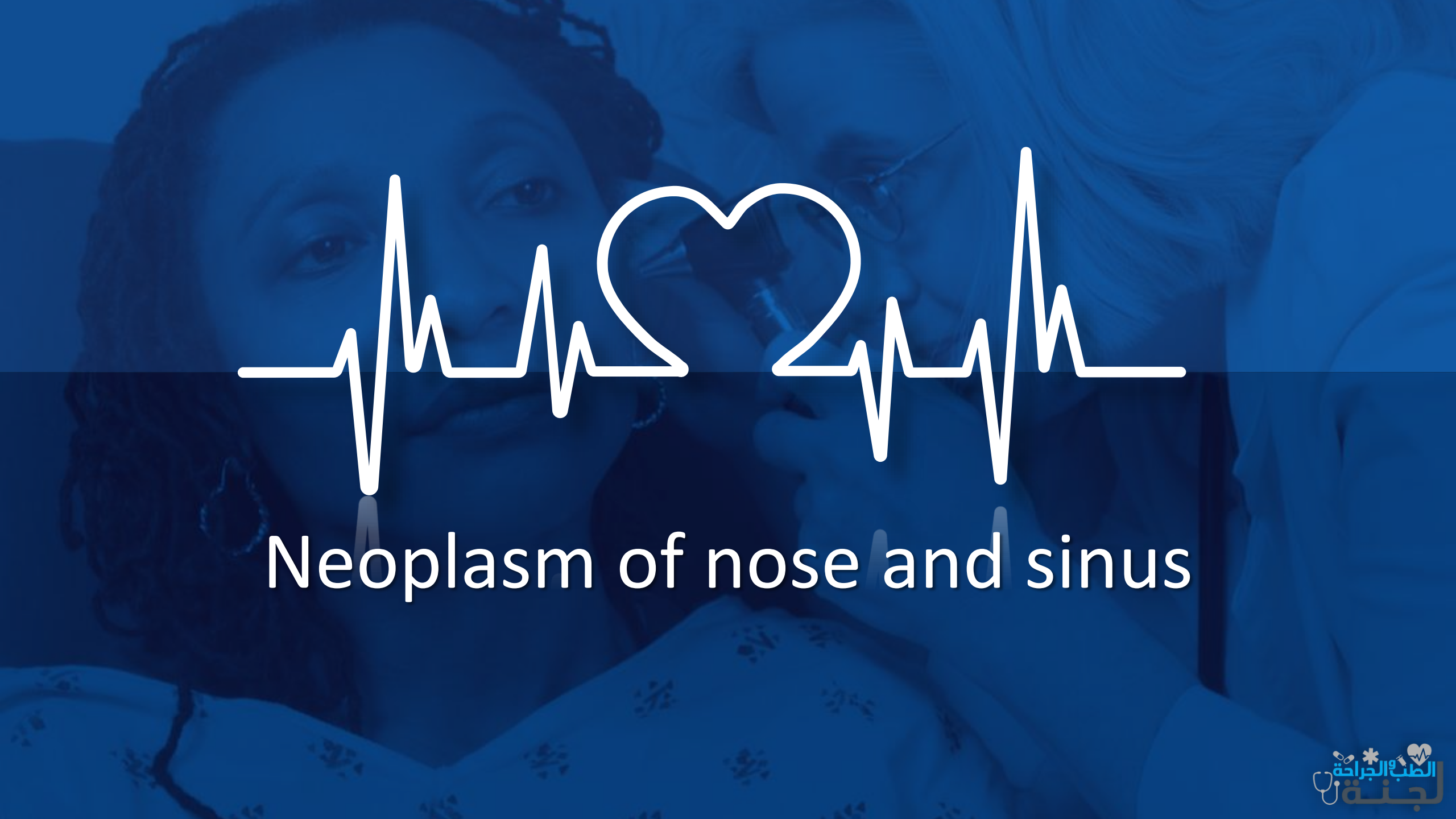
a. Xerostomia
b. Necrosis of bone
c. Hepatic dysfunction
d. Cataract formation
e. Thyroid cancer

❖ **Radiotherapy to the head and neck region complications, including**:

1. Mucositis
2. Xerostomia
3. Radiation dermatitis
4. Dysphagia
5. Radiation-induced fibrosis
6. Osteoradionecrosis
7. Hypothyroidism
8. Thyroid cancer
9. Hearing loss
10. Radiation-induced secondary malignancies
11. Cataract formation
12. Necrosis of bone

Other MCQs

- Which of the following masses present as midline neck masses?
  a. Branchial cyst and carotid body tumor
  b. Branchial cyst and thyroglossal duct cysts
  c. Thyroglossal duct cysts and dermoid cysts
  d. Pharyngoceles and laryngoceles
  e. Lymphangioma



Neoplasm of nose and sinus

Nasal papilloma

- **Definition**: benign epithelial tumors of the nasal cavity mucosa, which can be locally aggressive, have malignant potential, and a high propensity for recurrence if incompletely excised
- **Epidemiology**: Sex: ♂ > ♀ (5:1), Age: 40–60 years
- **Clinical features**: Unilateral nasal obstruction (most common symptom), Epistaxis, Unilateral nasal discharge
- **Possible predisposing factors**: Viral infections (HPV), Cigarette smoking, Air pollution
- **Treatment**: Complete surgical excision
- **Complications**
  - Chronic sinusitis
  - Malignant deterioration (mostly squamous cell carcinoma)
  - Intracranial extension (rare)

Nasal papilloma classification

Types	Frequency	Site of attachment	Gross appearance	Histology
Inverted papilloma	Most common	Lateral nasal wall or paranasal sinuses	Dull pink/gray opaque masses with an irregular surface	• **Epithelium**: nonkeratinizing cylindrical (transitional) cells with intracellular mucin • Endophytic growth
Fungiform papilloma	Uncommon	Nasal septum	Exophytic, warty appearance; sessile	• Stratified squamous epithelium • Papillary fronds present on the surface • Fibrovascular core • Exophytic growth
Oncocytic papilloma (cylindrical cell papilloma)	Rare	• Lateral nasal wall • Paranasal sinuses (maxillary or ethmoid)	Similar to inverted papilloma	• **Oncocytic epithelium**: columnar cells with dark nuclei • Mixed (exo- and endophytic) pattern of growth

Nasal papilloma MCQs

❖**All the following are true regarding inverted papilloma, except**

a. Usually metastasizes
b. Arises from lateral nose
c. Treated surgically
d. Unilateral

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**
  - 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

Paranasal sinuses carcinoma MCQs 1

❖ **Wrong answer paranasal sinus tumors ?**

- Usually there is no need for biopsy as radiology is almost diagnostic
- Involvement of the retropharyngeal and cervical lymph nodes is uncommon

❖ **Preferred treatment for carcinoma maxillary sinus is** سنوات (2)

a. Surgery
b. Radiotherapy
c. Radiotherapy followed by surgery
d. Surgery followed by radiotherapy
e. Chemotherapy

Paranasal sinuses carcinoma MCQs 2

❖**Malignant tumors of the paranasal sinuses, all true except**

a. CT or MRI scanning is essential to determine the extent of the tumor.
b. Biopsy is usually unnecessary as the diagnosis can be made radiologically.
c. Adenocarcinoma is associated with woodworkers in the furniture industry
d. Retropharyngeal and cervical lymph node metastases are uncommon.
e. Squamous cell carcinoma is the commonest type

❖**Treatment of maxillary cancer**:

- maxillectomy followed by radiation (not sure)

❖**Common site for Malignancy**: Maxillary sinus (2) سنوات

❖**most common neoplasm of maxillary antrum is** squamous cell carcinoma

❖Ethmoid sinus tumor is :

a. Neoplastic in origin
b. Infective in origin

Paranasal sinuses osteomas MCQs

❖ **Most common site of bony osteomas among paranasal sinuses is:** سنوات (3)

- Maxillary
- Frontal
- Ethmoid
- Sphenoid
- Maxillary and ethmoid

❖ **Osteoma in fontal bone**

a. Slow progression
b. Maybe asymptomatic
c. Can progress to deformity
d. All the above

Oral cavity tumors

Oral cavity tumors MCQs

- **The most common type of tongue cancer is**
  - Squamous cell carcinoma
- **The most common site of tongue cancer is**
  - lateral border of the tongue
- **The most common oral cavity tumor location**
  a. Valuculum
  b. Tonsils
  c. Base of tongue
  d. Lateral border of the tongue

Salivary glands tumors MCQs

❖**Which of the salivary glands tumors has perineural propensity?**

سنوات (4)

a. Pleomorphic adenoma
b. Acinic cell tumor
c. Mucoepidermoid carcinoma
d. Adenoid cystic carcinoma
e. Warthin's tumor

❖**One of the following is false:** سنوات (2)

- Uvula papilloma usually associated with submucous cleft
- Bifid uvula may be a sign for submucous cleft
- Uvula deviation usually seen with peritonsillar abscess
- Tonsillar exudates usually seen with follicular tonsillitis
- Follicular tonsillitis could be managed by antibiotics and analgesics

Foreign bodies

Fantastic Bodies And Where To Find Them

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).

Foreign bodies MCQs

❖**Unilateral foul-smelling nasal discharge in a child, one should exclude:** سنوات (5)

a. Rhinolith
b. Foreign body
c. Choanal atresia
d. Adenoid hypertrophy
e. Antrochoanal polyp

❖**Case**: 3-year-old was brought to your clinic with his mother complaining of metallic in his ear, you are the resident there, You are going to

a. GA + removal
b. Send him home and wait for 48 hours then remove it under GA
c. None of the above
   - What I will do: Call for help, I am not an ENT resident

Foreign bodies – True or False

- **Round foreign bodies are removed by forceps**
  - False, Suction is used for easily visualized, spherical or smooth foreign
- **Vegetable materials are removed by syringing**
  - False, Soft objects, organic matter, or seeds, which may swell if exposed to water
- **Insects are removed by forceps**
  - True, removed by suction or instrumentation after being killed
- **Retro-orbital incision is needed sometimes**
  - False, retro-orbital is not a common approach for foreign body removal. Retro-orbital incisions are typically performed for specific eye-related procedures and are not routinely used for foreign body removal
- **Foreign bodies are commonest in adults**
  - False, foreign bodies are commonest in pediatrics

Foreign bodies – True or False

- **Live insects should be removed with forceps**
  - False, they should be killed first
- **Postaural incision may be required for removal in some cases**
  - True, a postaural incision is a surgical incision made behind the ear and is not a common approach for simple foreign body removal.
- **Epistaxis is the commonest clinical feature of foreign bodies in the nose**
  - False, unilateral purulent rhinorrhea is the commonest presentation
- **Nonorganic materials cause more tissue destruction than organic**
  - False, vise versa
- **A bead should be removed with non-tooth dissecting forceps**
  - False, by suction
- **General anesthetic is often required in children**
  - True, مشان ما يطلع عينك

Tracheostomy

شاملة دوسيه د. حرازنة بشكل مختصر

Tracheostomy 1

- **Write 3 procedures to enter the trachea**
  - Percutaneous tracheostomy
  - Surgical tracheostomy
  - Cricothyroidotomy
- **Mention the types of tracheostomy**
  - Temporary
  - Permanent
- **Preformed at which level**
  - **Pediatrics**: between 2nd and 3rd tracheal interspace
  - **Adults**: between 3rd and 4th tracheal interspace
- Tracheostomy decrease dead space by **30-50%** سنوات (1)

Tracheostomy 2

❖ Indications of tracheostomy (3) سنوات

- **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
  5. Elective

Tracheostomy 3

❖Complications

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

❖Contraindications

1. Anemia
2. Unstable patient

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

2. Surgical tracheostomy notes

- Cuffed tube (low-pressure, high-volume cuff) → 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

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

All the following, except questions are not complete, thus I collected them in this way

Tracheostomy – True or False

- **Tracheostomy tube cuff is a high-pressure low volume cuff**:
  - False, low-pressure, high-volume cuff
- **The tube must be deflated frequently**:
  - True, to avoid trauma and prevent stenosis
- **There are no contraindications for percutaneous tracheostomy**:
  - False, Unstable cervical spine, Obese, thick neck, and Refractory coagulopathy are some of the contraindications
- **The thyroid isthmus can be either ligated or retracted**
  - True
- **Removal of tracheal rings is only in adults**
  - True, in pediatrics there is no excision of anterior all of trachea
- **Long standing tracheostomy needs closure in theatre**
  - True, a surgery is needed to widen opening to facilitate removal of the tube

Tracheostomy MCQs

❖ **Tracheostomy, which of the following is wrong ?**

a. Humidified by wet gauge
b. Suction regularly
c. Inflated cub
d. POP (refers to "passy-muir valve" or "PMV.")
e. Don’t change tube first days

Cricothyroidotomy

- Emergency incision between 1st thyroid cartilage and cricoid cartilage
- 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

Cricothyroidotomy MCQs

- **Incision btw 1st thyroid cartilage and cricoid cartilage → One of the following is true**
  a. Good procedure
  b. Complicated as laryngeal stenosis
  c. Cricothyroidotomy
  d. All the above
  e. Non of the above
- **Tracheostomy, which of the following is correct ?**
  a. Should be done in inferior
  b. Not in emergency (often performed in emergency)
  c. From complication stenosis, pneumothorax
  d. Vertical incision (horizontal incision vs tracheostomy which is vertical)