ENT Crash Course

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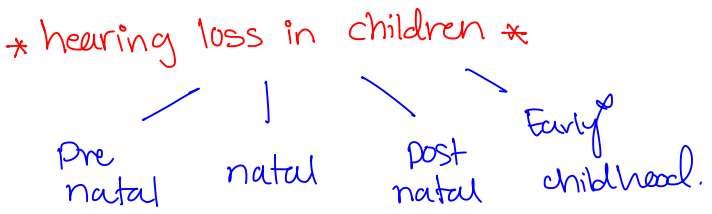
Ear

Hearing Loss



- The most common form of sensorineural hearing loss is due to cochlear pathology (sensory hearing loss).
- Causes of hearing loss in children:

Prenatal → maternal infections, radiation, ototoxic drug use

Natal → hypoxia, mechanical ventilation, low birth weight, prematurity, hyperbilirubinemia

Note: A baby in the NICU treated with aminoglycosides + hyperbilirubinemia carries the highest risk for hearing loss.)

think of them as a key word

Postnatal + early childhood → craniofacial syndromes, infections (meningitis), head trauma, neurodegenerative disorders, parental suspicion of hearing loss, speech delay

Note: Meningitis is the most common acquired cause of SNHL in children. Otitis Media with Effusion (OME) is the most common cause of hearing loss in children aged 3-5 years.

Hearing Tests in Children

Q: What is the most appropriate test?

A.
B.
C.
D.

- Cannot give a response → ABR / OAE
- Can give response → PTA, play audiometry, visual reinforcement audiometry

Pass
Fail

- OAE: sounds by outer hair cells in cochlea, screening tool, 80-90% specificity + sensitivity, cannot detect auditory neuropathy

Otoacoustic Emission

- ABR: can detect auditory neuropathy

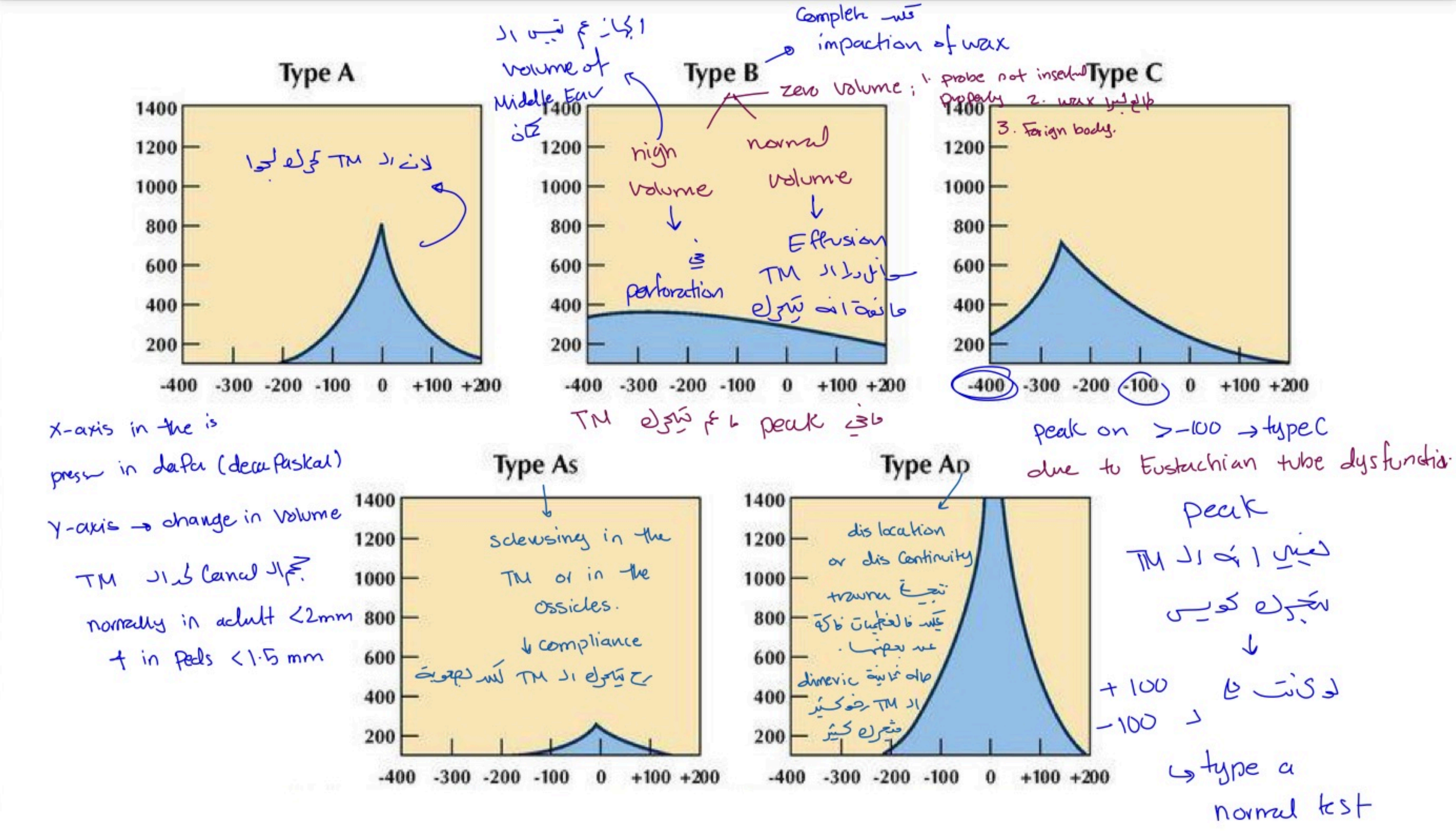
Auditory Brain Stem Response

EEG

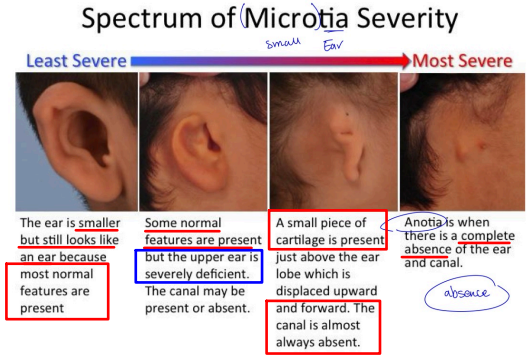
* if OAE is normal while ABR is not → think of neuropathy.

* 1 year old baby → hearing test cannot be done → Do ABR & OAE

* 7 years old baby → hearing test can be done
[Mental age ≥ 4-5 years] → can Give Response
- Pure tone audiometry
- play audiometry
- Visual Reinforcement


Type A
Type B
Type C
Type As
Type Ad
1400
1200
1000
800
600
400
200
-400 -300 -200 -100 0 +100 +200
لانه ال TM تحركه لحوا
Complete impaction of wax
الجهاز عم يقيس ال volume of Middle Ear كله
zero volume ; 1. probe not inserted properly 2. wax طالع ايرا 3. Forign body.
high volume → في perforation
normal volume → Effusion حائل دل ال TM مانعة انه يتحرك
ما في peak ما عم يتحرك TM
peak on >-100 → type C due to Eustachian tube dysfunction
x-axis in the is press in dapa (deca Paskal)
y-axis → change in volume
TM حجم ال Canal كل ال
normally in adult <2mm + in Peds <1.5 mm
sclerosing in the TM or in the ossicles. ↓ compliance رح يتحرك ال TM لكن بصعوبة
dis location or dis Continuity نتيجة trauma عكس فالعظيمات فاكة عن بعضها.
حالة ثانية dimeric ال TM رخو كثير متحرك كثير
peak يعني انه ال TM يتحرك كويس ↓ لو كانت ع +100 -100 ل ↳ type a normal test

Hearing Loss Causes



4 Exostosis / Osteoma are benign bony growths in the Ear canal.

- External ear causes: microtia, atresia, infections, tumors, exostosis, osteoma, wax impaction, tympanosclerosis → on tympanometry shows type As
- Middle ear causes: congenital, infections, TM perforation, tumors, otosclerosis, eustachian tube dysfunction → Due to adenoid for Ex.
- Inner ear causes: congenital, presbycusis (Characterized by bilateral high-frequency sensorineural hearing loss with a sloping pattern on an audiogram.) , infection, meniere, noise induced trauma, tumors (vestibular schwannoma), ototoxicity, neurogenic, iatrogenic

↓size

absent or underdeveloped ossicles

↓hearing due to aging

↳ Ex: Glomus tympanicum

* is the most important & frequently be asked about

Most common drugs :

1. Aminoglycosides . Gentamicin / streptomycin / Amikacin
2. Platinum-based chemotherapy : Cisplatin
3. Aspirin
4. Loop diuretics → furosemide / Ethacrynic acid

* Most Common Cause of Congenital sensorineural hearing loss [non-Genetic] : is CMV → hereditary cause.

Tinnitus

Q: all of The following are treatment choices for tinnitus, Except:

- Subjective: trauma, meniere, presbycusis, ototoxicity, idiopathic, otosclerosis, acoustic neuroma, systemic disease, middle ear effusion, chronic otitis media, psychogenic, labyrinthitis, perilympahatic fisulta
- Objective: palatal myoclonus, vascular, acute middle ear infection

- Treatment: treat underlying cause, tinnitus retraining therapy, hearing aids for hearing loss, tinnitus maskers (white noise) is the 1st line tx ,vsurgery (labyrinthectomy)

Acute Otitis Media

الأعلى صغيرة

- Disease of children / acute, suppurative infectious process of middle ear space lasting ≤ 3 wks
- Most common causative organism → Strep pneumonia, [redacted]. Bullous myringitis is typically caused by a viral infection.
- Other causes: H influenzae, Moraxella catarrhalis, Staphylococcus aureus, Group A streptococcus, Mycoplasma pneumoniae
- Factors influencing AOM: Eustachian tube dysfunction, immune dysfunction, ineffective mucociliary clearance due to ciliary dyskinesia

Q: all of the following theories Explaining ! pathophysiologies of AOM, Except :

* AOM is Bacterial infection !

Acute Otitis Media

- Sequence: Hyperemia → Exudation → Suppuration → Resolution → [OME] → Otitis Media Effusion
- Or Hyperemia → Exudation → Suppuration → Complications → CSOM with perforation

Means: discharge = perforation

Chronic suppurative OM

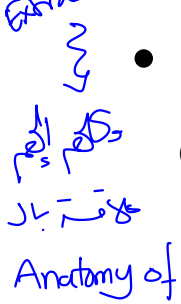
VS

Suppuration → discharge comes from somewhere of TM
Exudation → discharge behind the TM.

- Treatment: first line → amoxacillin+clavulanic acid, Do *not* use cold compressors on the legs during the hyperthermic phase
- Penicillin allergy → use macrolides or second line fluoroquinolones
- Complications: mastoiditis, chronic perforation, labyrinthitis, facial paralysis, persistent hearing loss, Petrositis, septic lateral sinus thrombosis, epidural/subdural/brain abscesses

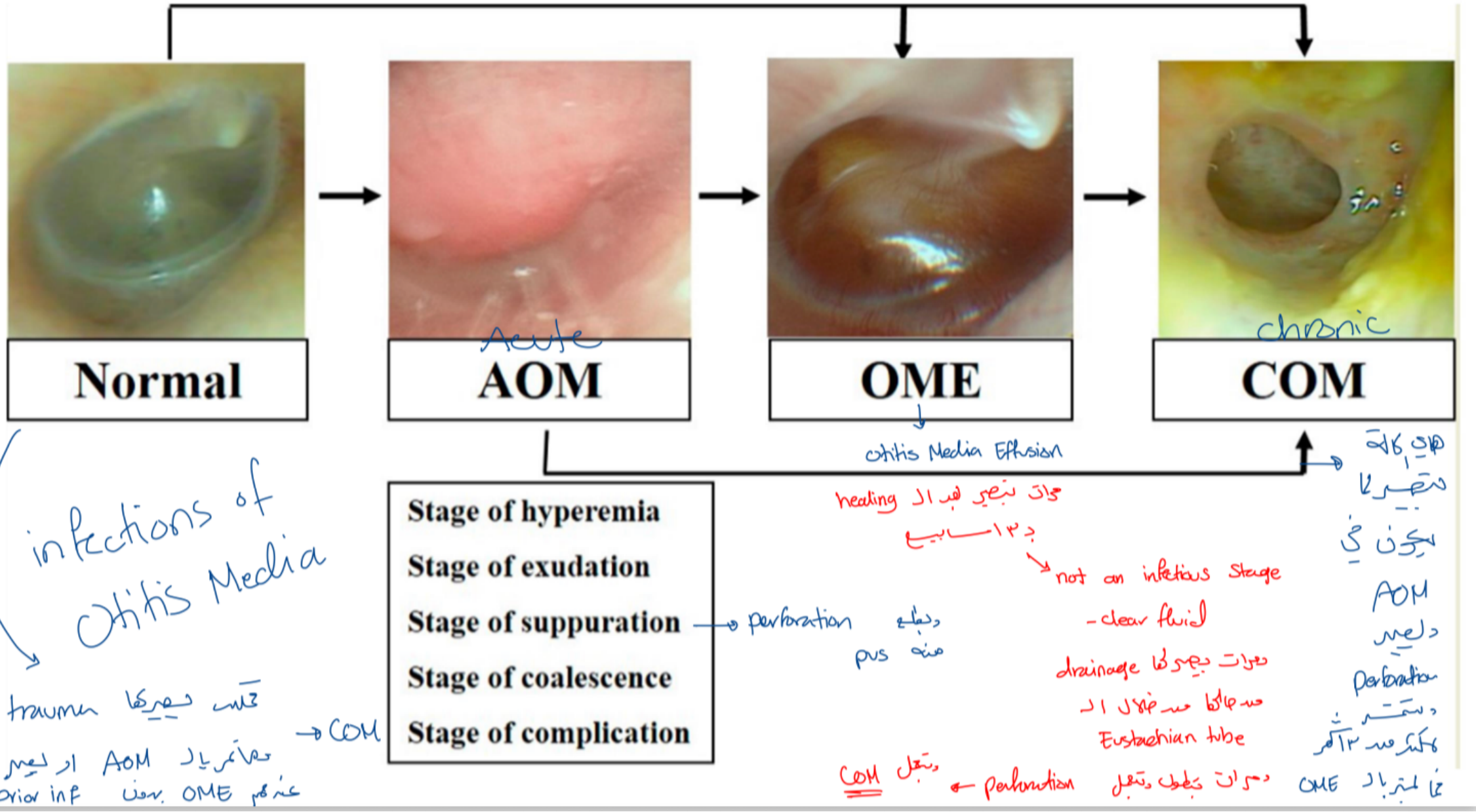
intracranial VS Extracranial

- Note: Intracranial complications occur primarily via *direct extension*. The earliest symptom of an intracranial complication is usually a headache.



Anatomy of Middle Ear.

Acute Otitis Media



Otitis Media with Effusion

Sterile collection of fluid in the Middle Ear

* No active infection

- Glue ear/secretory otitis media
- Causes: ETD or after AOM, Allergy is the most common cause of serous OM

  (Eustachian tube dysfun. / Resolution of)
- Children with palatal clefts are highly prone to secretory otitis media.
- Hearing loss/ear fullness/tinnitus
- On exam: normal/bulging/retracted TM, [bubbling behind TM]

  Even if the Question stated: Normal TM

  P.P

  & No Systemic Symptoms
- Management: watchful waiting for 3 months on nasal steroid spray and antihistamine, if not resolving or if there is speech delay then myringotomy with grommet tube insertion is done +/- adenoidectomy.
- Balloon dilation of the ET is also an option

Ear Pulling

Grommet tube = Ventillation tube

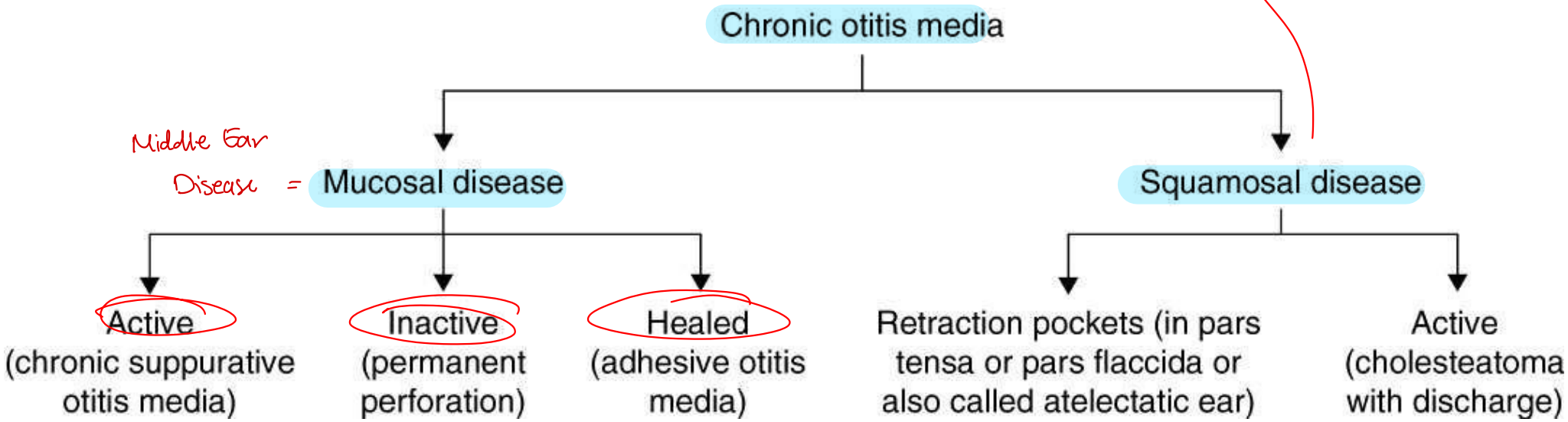
* OME is the Most Common Cause Conductive hearing loss in pediatrics.

& the M/C Cause of OME is Eustachian tube dysfun.

Chronic Otitis Media

Squamous Epithelium in the Middle Ear

Cholesteatoma: Definite diagnosis is done by Otoscopy.



Mucosal disease =	Tubotympanic or safe type	Atticoantral or unsafe type = cholesteatoma = squamosal disease
Discharge	Profuse, mucoid, odourless	Scanty, purulent, foul smelling
Perforation	Central	Attic or marginal
Granulations	Uncommon	Common
Polyp	Pale	Red and fleshy
Cholesteatoma	Absent	Present bcz cholesteatoma slowly invade
Complications	Rare	Common
Audiogram	Mild to moderate conductive deafness	Conductive or mixed deafness → if invasion.

Chronic Otitis Media

Eustachian tube obstruction

↓

Persistent negative pressure in middle ear

↓

Attic or posterosuperior retraction pocket

↓

Metaplasia of middle ear mucosa → **Primary acquired cholesteatoma** ← Proliferation of basal layer

↑ Subclinical infections of middle ear ↑

Repeated infection through perforation

↓

Metaplasia of middle ear mucosa

Acute necrotizing otitis media

↓

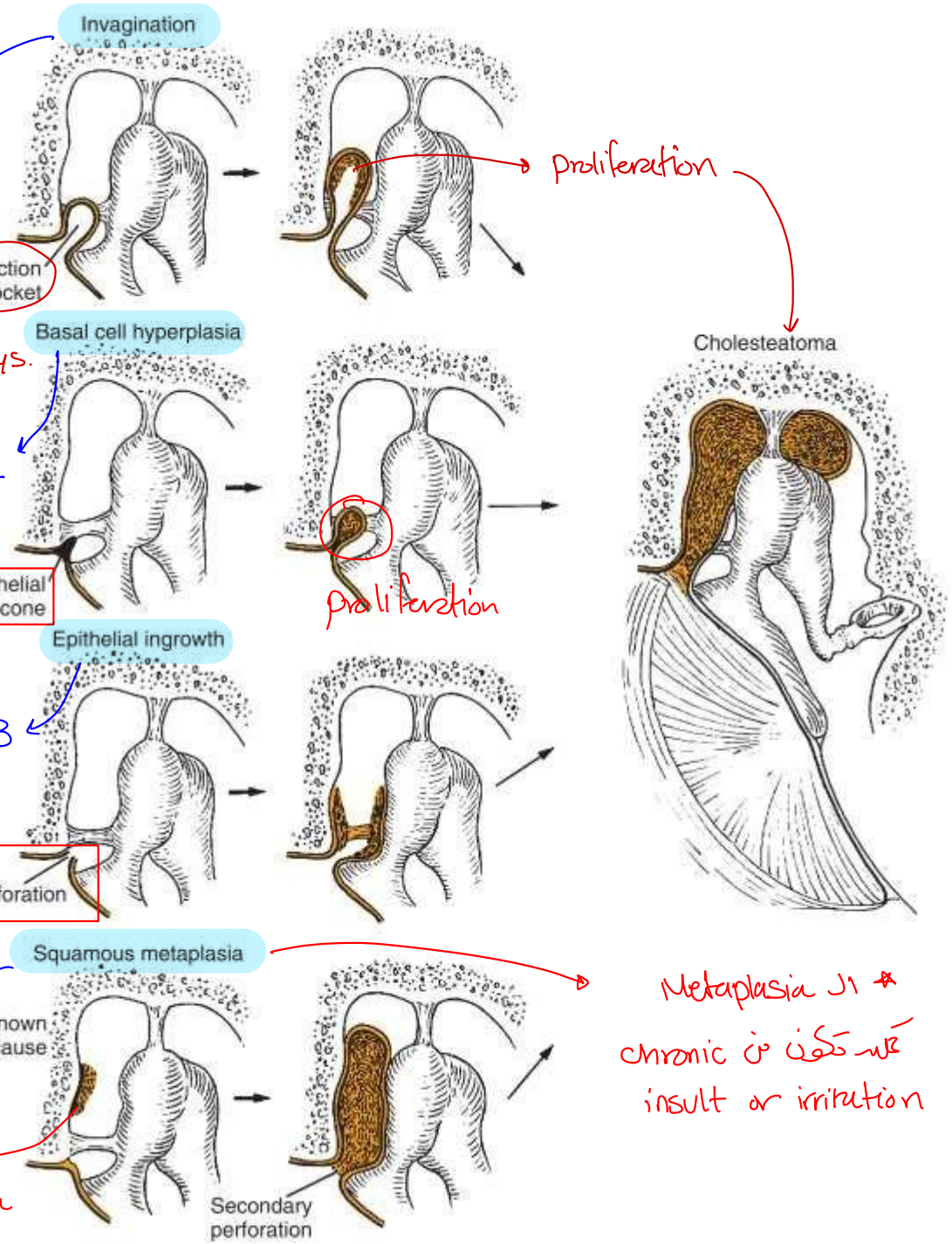
Large central or marginal perforation

↓

Epithelial migration through perforation

→ **Secondary acquired cholesteatoma** ←

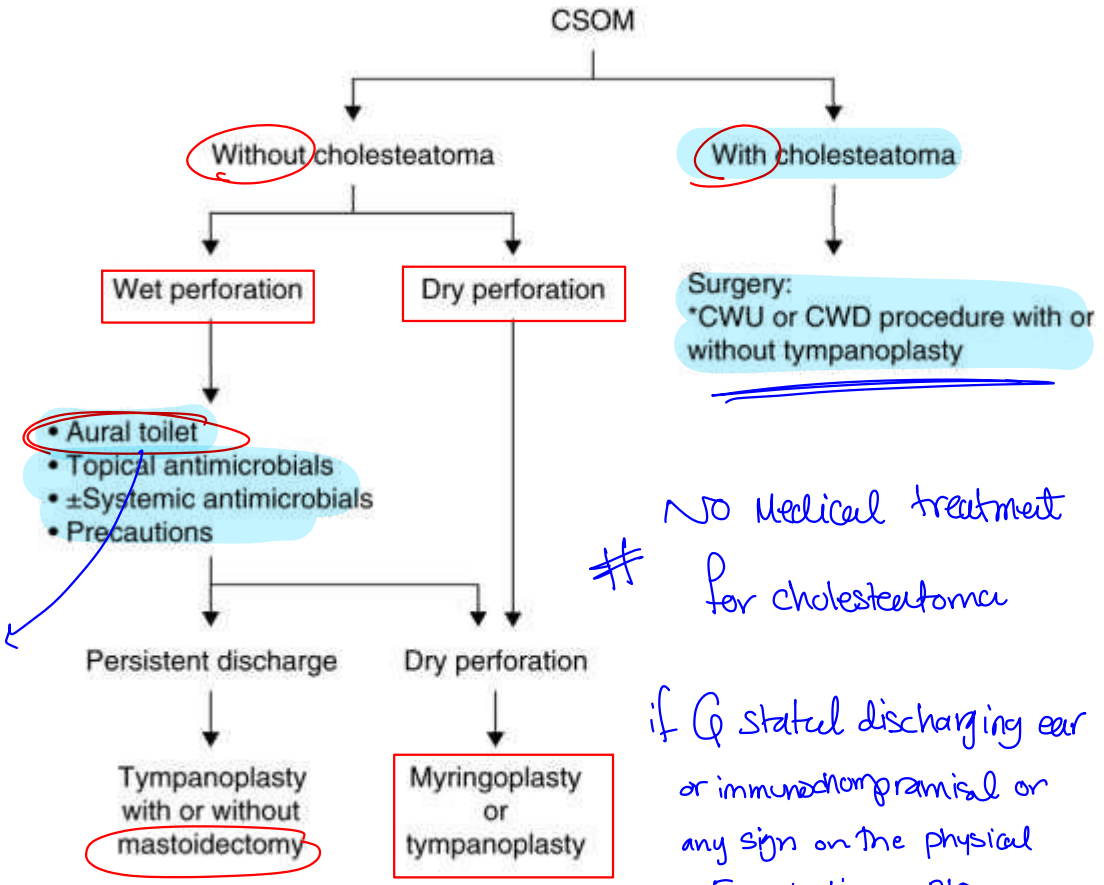
perforation لأول مرة Metaplasia



COM

Traumatic TM perforation: The management of a recent dry, traumatic rupture is watchful observation and protecting the ear against water (no immediate antibiotics or repair).

•**Complications:** Intracranial complications can occur through vascular channels, local osteomyelitis, or skull fractures, but NOT from congenital defects.



No Medical treatment for cholesteatoma

if G stated discharging ear or immunocompromised or any sign on the physical Examination → R/O cholesteatoma

* Cholesteatoma is a clinical diagnosis we do an Imaging - temporal Bone CT with high Resultion & tx: is Srgical

	Canal wall up procedure	Canal wall down procedure
Meatus	Normal appearance	Widely open meatus communicating with mastoid
Dependence	Does not require routine cleaning	Dependence on doctor for cleaning mastoid cavity once or twice a year
Recurrence or residual disease	High rate of recurrent or residual cholesteatoma	Low rate of recurrence or residual disease and thus a safe procedure
Second look surgery	Requires second look surgery after 6 months or so to rule out cholesteatoma	Not required
Patients limitations	No limitation. Patient allowed swimming	Swimming can lead to infection of mastoid cavity and it is thus curtailed
Auditory rehabilitation	Easy to wear a hearing aid if needed	Problems in fitting a hearing aid due to large meatus and mastoid cavity which sometimes gets infected

* COM & NO unsafe features → Myringoplasty

* COM & Wet perforation → Tympanoplasty without Mastoidectomy if persistant discharge
  → Mainly toileting & topical antimicrobial

Chronic Otitis Media

triad: Ear discharge, Periorbital pain, Decrease hearing → trigeminal nerve

1. Intratemporal complications: Petrositis (Gradenigo syndrome), Facial paralysis, Labyrinthitis

* Dorello's canal where 6th nerve pass thrugh. (abducens)

2. Intracranial complications: Lateral sinus thrombosis, Meningitis, Intracranial abscess

↓

Cs: Severe otalgia & Ear discharge & Fever. Not Resolving with Antibiotics

* M/C intracranial Complication is Meningitis

External Ear Conditions

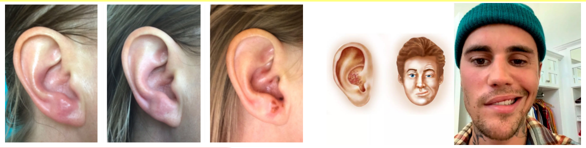
- Congenital disorders: Anotia, Microtia, Atresia of EAC, Accessory auricle, Auricular tags, Bat ears, Pre-auricular sinus/ cyst
- Acquired disorders: Auricular hematoma, Perichondritis, Cauliflower ear, Keloids, Herpes Zoster oticus, exostosis, osteoma, malignancy (squamous cell, basal cell, melanoma)

Most Common type
Bat Ears = protruded Ears
Complication of the hematoma
Ramsy hunt Syndrome
Benign Bony Growth

External Ear Infections

* General Rule
1. any infection with collection / abscess → Go with staph
2. cellulitis or skin inf. → strep pyogens.

- Perichondritis (trauma, ear piercing, IV abx, incision and drainage for abscess)
- Herpes zoster oticus (varicella zoster, Ramsay Hunt, acyclovir, steroids, corneal protection)
- Otitis Externa



if cellulitis & Erysiples → strep. pyogens

Acute Localized otitis externa (Furuncle): staph aureus, heat, analgesia, abx, incision and drainage, icthammol on glycerin wick

Acute diffuse otitis externa: humidity, pseudomonas, staph aureus, oral and topical abx with topical steroid

duration of treatment: 3 wks

Chronic otitis externa: >2 months, long term topical steroid/antibiotic cream, surgery as last resort

Otomycosis: aspergillus, candida, DM, immunosuppression, aural toileting, keep ears dry, topical antifungal

necrotizing Otitis Externa = Malignant otitis externa: pseudomonas, DM, immunocompromised, osteomyelitis, technicium 99m scan, gallium scan, CT, abx for 3-4 months, glucose and pain control

Malignant

Bony Erosion

Response

* Oral form of anti pseudomonal → fluroquinelones Eg: ciprofloxacin
* topical: Ciproxin drops / oflox

Vertigo

- Vestibular causes: BPPV, Vestibular neuritis, Meniere disease, Herpes zoster oticus (Ramsay Hunt), Labyrinthine concussion, Perilymphatic fistula, Semicircular canal dehiscence, Cogan's syndrome, Recurrent vestibulopathy, Acoustic neuroma, Drug induced (aminoglycosides), Otitis media, labyrinthitis, Cholesteatoma, Postsurgical
- Central causes: Migrainous vertigo, Brainstem ischemia, Cerebellar infarction and hemorrhage, Chiari malformation, Multiple sclerosis Episodic ataxia type 2
- Other causes of non specific dizziness: Cardiovascular, DM, hypothyroidisim, dyslipidemia, vitamin deficiencies, malnutrition, alcohol, psychogenic,…

Vertigo

- Positional test: Dix Hallpike for PSCC disorder or otolith
- Corrective maneuvers: Epley, Brandt Daroff, Semont
- Nystagmus:

Peripheral → latency period, fatiguable, less than 1 min

Central → no latency, non fatiguable, more than 1 min

- Nystagmus: fast phase is away from affected side in peripheral vertigo.
- Visual fixation (frenzel lenses): suppresses peripheral lesion nystagmus not central.

Dix-Hallpike maneuver for positional nystagmus

	Peripheral disorder	Central disorder
Latent period before onset of positional nystagmus	2 to 20 seconds	None
Duration of nystagmus	Less than 1 minute	Greater than 1 minute
Fatiguability	Fatiguing with repetition	Nonfatiguing
Direction of nystagmus	Only one type, usually horizontal/rotatory	May change direction with a given head position
Intensity of vertigo	Severe	Less severe, sometimes none

Nose

Acute Rhinosinusitis

- Definition: an inflammation of the mucosal lining of the nasal passage and paranasal sinuses
- Most common causative organism? Rhinovirus M/C Causative Organism !
- Other causes? Adenovirus, Strep pneumo, H. influenza, M. catarrhalis, Staph aureus
  ! Most Common Bacterial organism
  ترتيبهن مو الترتيب
- Which virus is associated with both Acute RS + conjunctivitis? Adenovirus
  ↳ Red Eyes & Excessive Lacrimation
- Sinuses most commonly involved in descending order? M>E>F>S → Sphenoid
  ↓ Maxillary ↓ Ethmoid ↘ Frontal

* AOM → strep. pneumonia
* Rhino Sinusitis → Rhino Virus.

Acute Rhinosinusitis

* 2 Major OR
* 1 Major with More than 1 Minor

- Major and minor criteria of symptoms of RS?
- Bacterial vs viral RS? 1. worsening symptoms after initial improvement 2. persistent symptoms >10days
  3. high grade fever
- Diagnosis is clinical

NO NEED for CT, Except for immunocompromized patients.

- Is surgery indicated? Only in cases of complications (orbital, intracranial, bony and chronic complications like blindness, abscess, decreased visual acuity)

اذا كان symptoms اكثر 4 wks ~ acute Rhinosinusitis & Complicated is indication for Sx.

Table 2. Conventional Criteria for the Diagnosis of Sinusitis Based on the Presence of at Least 2 Major or 1 Major and ≥2 Minor Symptoms

Major Symptoms	Minor Symptoms
• Purulent anterior nasal discharge	• Headache
• Purulent or discolored posterior nasal discharge	• Ear pain, pressure, or fullness
• Nasal congestion or obstruction	• Halitosis
• Facial congestion or fullness	• Dental pain
• Facial pain or pressure	• Cough
• Hyposmia or anosmia	• Fever (for subacute or chronic sinusitis)
• Fever (for acute sinusitis only)	• Fatigue

Modified from Meltzer et al [7].

in chronic sinusitis is Minor

* Persistant symptoms More than 10 days or Excerbated symptoms after initial improvement

Acute Rhinosinusitis

- Chandler Classification of Orbital Complications:

1. Preseptal cellulitis
2. Orbital cellulitis
3. Preseptal abscess
4. Orbital abscess
5. Cavernous sinus thrombosis: 80% fatal, ethmoiditis, coag +ve s aureus, spiking fever, CN 6 first affected followed by 2,3,4, treated with cephalosporin and metronidazole + anticoagulants

Less Severe

Severity

Most Severe

M/C cause of Cavernous Sinus thrombosis.

* Nerves Pass in Cavernous Sinus are CN 2,3,4, V1, V2, 6

الأضرب لهيك بتأثر أول واحد.

Acute Rhinosinusitis

- Most common intracranial complication: subdural abscess
- Other intracranial complications: intracerebral abscess, epidural-dural abscess, meningitis, cavernous sinus thrombosis, sagittal sinus thrombosis
- Most common source of brain abscess: frontal sinus

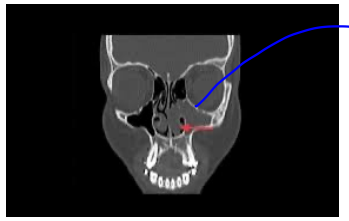
* Brain abcess → Frontal sinus

* Cavareneus sinus thrombosis → Ethmoid sinus

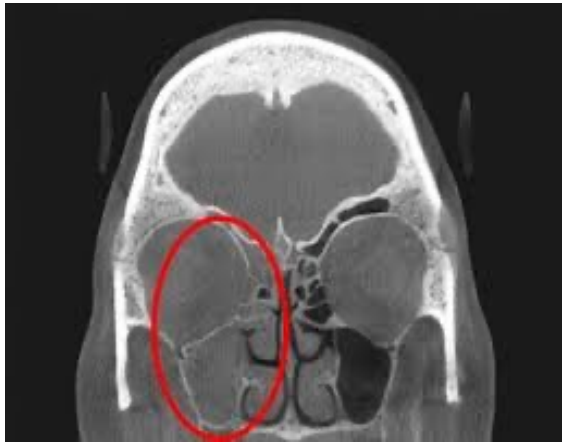
Chronic Rhinosinusitis

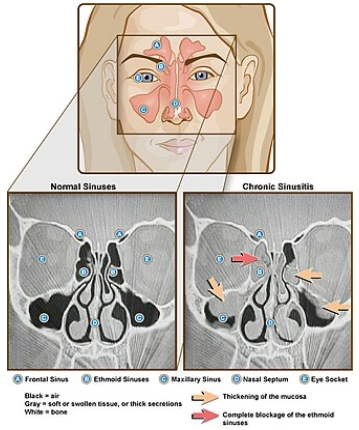
- An inflammatory condition involving the paranasal sinuses and linings of the nasal passages that lasts 12 weeks or longer.
- The diagnosis requires objective evidence of mucosal inflammation.
- CRS is a proliferative process with remarkable thickening of the mucosa and lamina propria
- 2/3 are without nasal polyposis (association with asthma+aspirin intolerance)
- 1/3 with nasal polyposis

* thickening of mucosa في CT ال ك 3D



antrochoanal poly is associated with chronic sinusitis & Allergy & obstruction of sinus drainage





Chronic Rhinosinusitis

- Infective and Non infective
- Infective (non specific → s. pneumonia, specific → TB, syphilis)
- Non infective:

= Not the typical micro organism seen in chronic Rhino Sinusitis.

chronic

Atrophic → females/klebsiella/trauma/iatrogenic/anosmia/nasal obstruction/ozena

Fouly smell from the patient's Nose.

Excessive Resection of the turbinates

Related to food : usually spicy food

Hypertrophic → Non-allergic rhinitis (rhinitis medicamentosa, gustatory rhinitis, hormonal rhinitis, senile rhinitis, vasomotor)

Excessive use of nasal decongestants (Alpha Blocke) More than the prescribed period (More than 1 week)

Related to aging

Most Common form of chronic Rhinosinusitis

Allergic rhinitis → IgE/Type 1 hypersensitivity/1st phase sensitization/2nd phase degranulation of mast cell with re-exposure/investigations (skin prick, RAST, IgE level, eosinophils, nasal challenge test)/ AR Tx / Desensitization

Most specific test & Gold standard (غالي وموثوق) & Risk of shock

Nasal steroid spray with anti histamine.

the Most Effective treatment but not always done

Chronic Rhinosinusitis

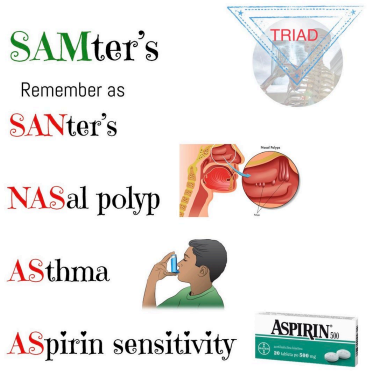
- Risk factors: Local (DNS,neoplasm, LPR, foreign body), systemic (AR, asthma, AERD, CF, Vasculitis), pollutants, rhinitis medicamentosa, infections
- Most common causative organisms: S. Aureus., S. Pneumonia., M. Catarhalis., H. Influenza., P. Aerogenosa
- Bacteria → Osteitis, biofilm, superantigen formation
- CRS with nasal polyps less prevalent than without nasal polyps but associated with asthma

infant / Baby with Nasal polyp → think of cystic fibrosis

Chronic Rhinosinusitis

- Polyps can be: **idiopathic** unilateral or bilateral, **antrochoanal** (noneosinophilic cyst like polyp from maxillary sinus), **eosinophilic polyps with asthma or AERD**, **systemic** (CF+ churg strauss syndrome)
- CRS diagnosis = 2 or more cardinal symptoms of RS + documentation of mucosal inflammation or mucopurulent discharge or nasal polyps +/- sinus CT findings suggestive of CRS (Mucosal thickening)
- Samter's triad: asthma/atopy , nasal polyps , aspirin sensitivity

= بكبو بيألوا عنه



Chronic Rhinosinusitis

- Medical treatment of CRS is as effective as endoscopic sinus surgery, combined with topical nasal steroids, both in polypoid & nonpolypoidal CRS
- Indications for corticosteroids in rhinosinusitis: Topical corticosteroid

Acute rhinosinusitis

Prophylactic treatment of acute recurrent rhinosinusitis

Chronic rhinosinusitis without NP

Chronic rhinosinusitis with NP

Postoperative treatment of chronic rhinosinusitis with or without NP.

Chronic Rhinosinusitis

- Med Tx for CRS → Nasal steroids, antihistamine, nasal irrigation, decongestant, oral steroid, antileukotrienes

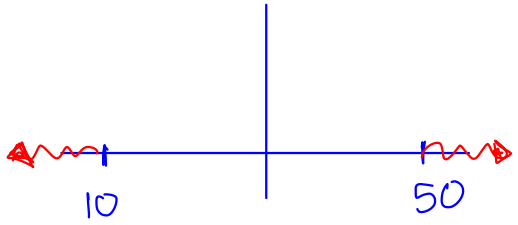
2 cases only

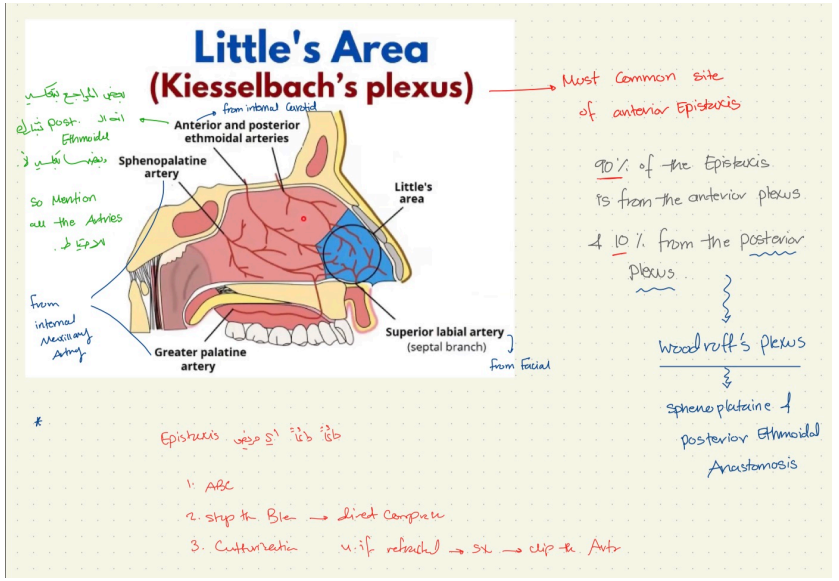
nasal polyp

Rhinitis Medicamentosa

- Complications → Mucoceles are chronic, slowly expanding lesions in any of the sinuses that may result in bony erosion and subsequent extension beyond the sinus. If the mucocele becomes secondarily infected and the contents purulent, it is described as a pyocoele.

Epistaxis





- 2 age peaks (less than 10 and more than 50)
- Benign, self limiting, spontaneous, or recurrent
- Blood supply of the septum → ICA and ECA
- ICA → Ophthalmic artery + anterior and posterior ethmoid arteries
- ECA → Internal maxillary (greater palatine and sphenopalatine) and facial artery
- (M/C) Little's area → Kiesselbach's plexus → septum anteriorly
- Woodruff's plexus → lateral nasal cavity wall

→ Ethmoidal artery & sphenopalatine & Greater palatine & superior labial artery from the facial artery

NOT the septum !!

ascending pharyngeal Artery

sphenopalatine artery

posterior Ethmoidal artery

Epistaxis

Most commonly from Sphenopalatine

- Anterior epistaxis → 90% / children / kiesselbach's plexus / bleeding from nostrils
- Posterior epistaxis → 10% / eldery / woodruff's plexus / bleeding into throat (hemoptysis/hematemesis) / aspiration / airway compromise
- Causes → idiopathic, local (trauma, inflammation, tumor, incorrect use of nasal sprays), systemic (coagulopathies, AVM, HTN, Cardiovasc)

+nasal picking

Bleeding into the throat → Risk of aspiration & Airway compromise

HHT → hereditary hemorrhagic telangiectasia

Hereditary Hemorrhagic Telangiectasia (HHT), or Osler-Weber-Rendu syndrome, is an autosomal dominant genetic disorder (1 in 5,000 people) causing abnormal blood vessel connections (arteriovenous malformations, or AVMs). The primary symptom is frequent nosebleeds (epistaxis), along with mucocutaneous telangiectases, which can lead to iron-deficiency anemia. National Institutes of Health (.gov) +5

Epistaxis Management

*if Pt is hemodynamically unstable → ABC & Resuscitation & IV fluid

1. Tamponade: pressure on septum for 10 min, ice packs, topical decongestant
2. If persistent and visible source of bleeding, cauterize with silver nitrate (chemical cautery) or electrocautery
3. If persistent and source of bleeding not clear, ballooning or foley's catheter posterior pack with anterior pack
4. If persistent after the above measures and removal of packs, surgery (ligation of arteries or surgery i.e. septodermoplasty)
5. If still intractable, embolization

**Hemodynamic stability and ABCs are first line in management.

AT HOME TREATMENT

* PINCH TIP of NOSE with TWO FINGERS for 15-20 MINS

* SIT UP
* SLIGHTLY LEAN FORWARD and TILT HEAD FORWARD

IF BLEEDING CONTINUES

TOPICAL NASAL SPRAYS

* VASOCONSTRICTIVE
* LOCAL ANESTHETICS

IN CASE of:
* RECURRENT EPISODES
* NON-STOP BLEEDING

HOSPITAL SETTING TREATMENT

NASAL PACKING

* INSERT GAUZE-LIKE MATERIAL or NASAL TAMPON in NASAL CAVITY

IF:
* MEDICATION doesn't WORK
* POSTERIOR EPISTAXIS

Managment :

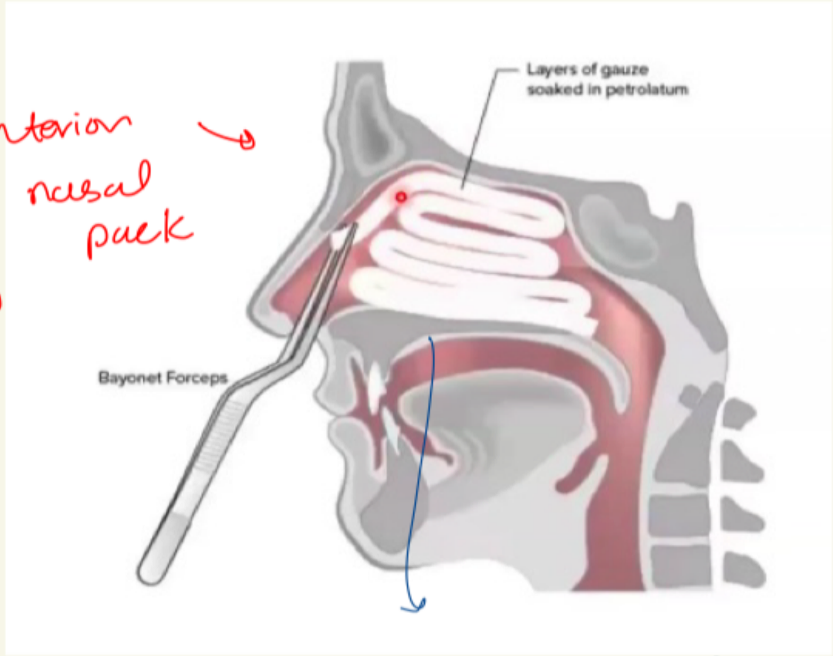
1. ABC
2. Compression on the soft part of the nose
3. if you see a Bleeding point you have to do cauterization using Silver nitrate ~> chemical Burn.

healing بصير بعدها

+ Fibrosed artery.

* Bi polar dithermy ~> coagulation using Electrical current

* في حالة ما شفت Bleeding point بعد، اعمل nasal packing باستخدام ribbon Gauze → مغطى بال petrolium مشان نعمل Mostinization → قاعدة



Anterior nasal pack →

if we Can't see Bleeding Point

* other types of pack

1. MERCCEL nasal pack (اسفنجة مضغوطة تنتفخ بس نرش عليها فورمال سلاين)

* in case the Bleeding goes posteriorly.

Post nasal packing for Post Epistaxis

we use Folye's catheter → بنحطه بعدها بنفخ البالون بال pharynx * بحيث يصير Bag لحد ما تسكر ال quina ← الحاجة بين ال nasal cavity وال naso-pharynx

← عشان امنع ال Blood ينزل لحلق المريض ويبلعه.

* in case of refractory Epistaxis → surgical Managments

1. Ligation of the spheno palatine artery which participate in both Ant + post Artries.
2. ligation of the Ant Ethmoid Artery
3. Ligation of the Greater palatine Artery.

(S.P.A) → غالبًا ع الأغلب منه الـ Epistaxis راح ، لنك بتعمل ligation لـ Arteries كتير

* Managment of nasal trauma

1. ABC.
2. Manage the Epistaxis if presents
3. manage of septal hematoma

* septum
  - → Cartilage anteriorly → Covered by periChondrium
  - → Bone posteriorly.

So injury to the supplying Blood vessels

فـ بيجمع الدم بصير تحت الـ periChondrium

↓

Hematoma

→ if not treated directly → Complication : within few days (abcess) → within 1 week (perforation)

treatment of hematoma

↓

insicion + Drainage

Evacuation

آخر شي تفكر فيه هو شكل الأنف بعد الـ trauma

لو المريض اجا داير كت بوقت الـ trauma , ما كان صاير عنده

Swelling of the Nose & has External deviation of the Bone → nasal Bone Reduction

* مهم جداً الـ terminology *

نفرض انه المريض اجا within 1 day after the trauma (اكثر من ساعة - ساعتين من الـ trauma) ←

↓

ptn has Edema on the nose dorsum

Swollen والانف كله

وما رح اقدر اعمل Reduction

ولا full assessment

→ بستنى اسبوع كامل لحد ما تخف الـ Edema

بعدها بعمل nasal Bone Reduction

& ولو اجا بعد اكثر من اسبوع من الـ trauma

بستنى 6 اشهر لحد ما يصير Complete Recovery

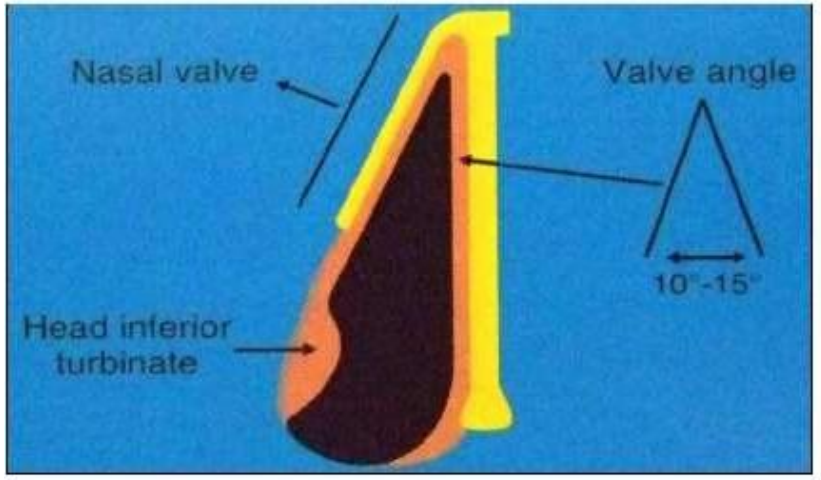
↓

بعمل Septo Rhino plasty.

Nasal Trauma

- Consequences: epistaxis, fracture of nasal bone, fracture and dislocation of septum, septal hematoma
- Types of fractures: 1) Only nasal bone 2) 2 bones due to lateral trauma 3) ethmoid, skull base, orbit, mandible
- Xray is enough
- CT if: 1) type 3 fracture 2) CSF leak 3) multiple facial fractures
- Trauma: reduce fracture within 1 hour of injury, or wait 1 week for edema to subside then fix fracture, or surgery (septorhinoplasty) if trauma was months ago
- Complications: septal dislocation + septal hematoma → septal abscess → septal perforation/saddle nose deformity

Foreign Bodies in Nose



→ Cannot be seen on xray

- Organic material → inflammatory reaction
- Inorganic/inert material → no inflammation
- FB in nose → risk of aspiration
- Common in children and usually visible on anterior rhinoscopy
- Presentation: parents witnessing insertion of FB, nasal discharge, foul odor, epistaxis, nasal obstruction, moutbreathing
- Magnets and disc batteries → septal perforation +/- saddle nose deformity +/- inferior turbinate necrosis +/- nasal meatal stenosis +/- collapse of alar cartilage

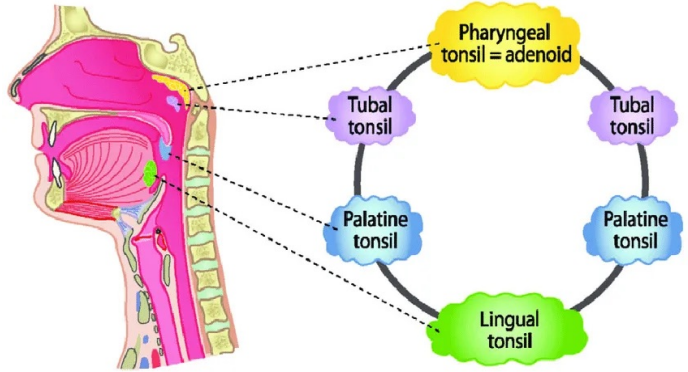
Must be Removed immediatly

Most Common Things

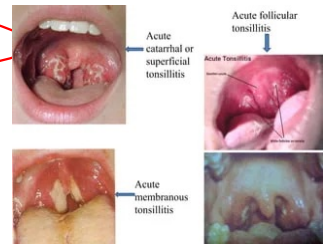
- Most **common** type of rhinosinusitis overall is Viral rhinosinusitis
- Most **common** cause of acute viral RS is rhinovirus
- Most **common** cause of acute bacterial rhinosinusitis is strep. Pneumonia
- Most **common** type of chronic rhinosinusitis is allergic rhinosinusitis
- Most **common** symptom of viral rhinosinusitis is watery discharge
- Most **important** part of the treatment of acute rhinosinusitis is PAINKILLERS
- Most **common** complication of rhinosinusitis is orbital complications
- Most **common** intra-cranial complication of rhinosinusitis is subdural abscess
- Most **specific** test for allergic rhinitis is nasal challenge test
- Most **effective** treatment for allergic rhinitis is desensitization

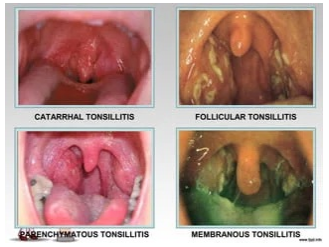
Throat

Tonsils and Adenoid



- Waldeyer's ring: Adenoid, tubal tonsil, palatine tonsils, lingual tonsils
- Pharyngitis: most common cause of sore throat
- Common causes are respiratory viruses rhinovirus, influenza, adenovirus, coronavirus, and parainfluenza
- Streptococcus is the most common bacterial cause.
- Tonsillitis causes are like pharyngitis
- Acute tonsillitis: follicular, membranous (EBV, doesn't improve with abx, infectious mononucleosis, rash, lymphadenopathy, hepatosplenomegaly, also scarlet fever, diptheria, Vincent angina), parenchymatous





Tonsillitis Complications

- Most common complication: Peritonsillar abscess (quinsy): high fever, trismus, drooling, hot potato, enlarged jugulodigastric node, incision and drainage, abx
- Airway obstruction.
- Otitis media.
- Parapharyngeal abscess (abx, drainage, thrombosis of internal jugular vein, carotid artery rupture, injury to CN 9-12, mediastinitis, septicemia)
- Retropharyngeal abscess.
- Rheumatic fever.
- Glomerulonephritis.

MainStay of treatment

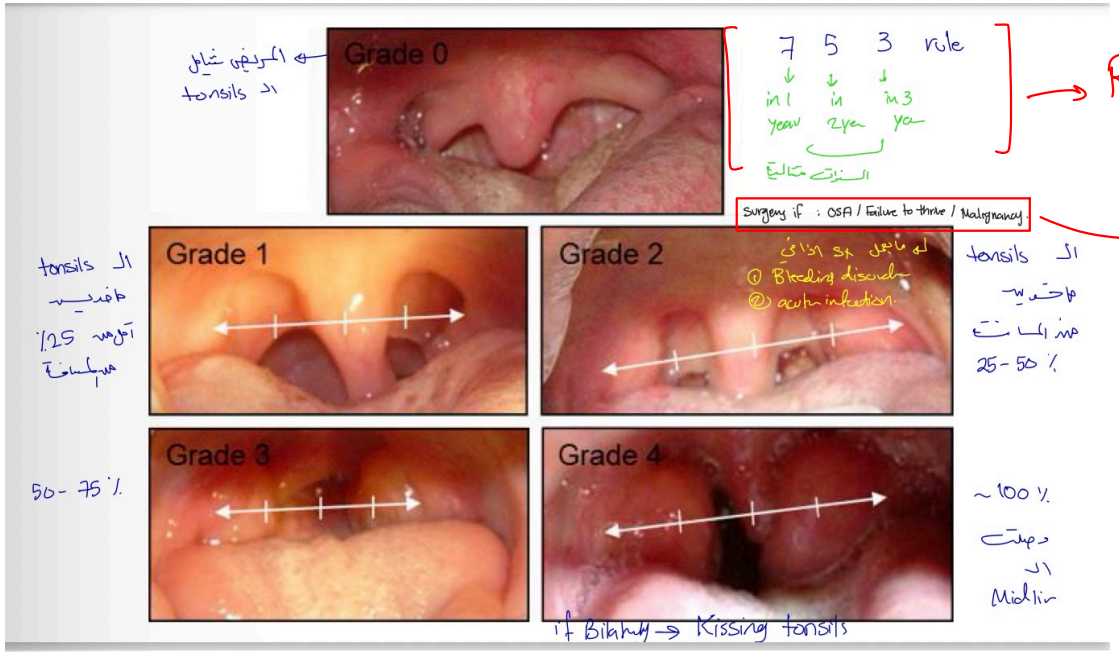
★ اذا شفتم بالسؤال وكان في Background of tonsilitis → think of Peritonsillar abcess

Tonsillectomy

- Indications: absolute → failure to thrive, OSA, malignancy

relative → 6 weeks after 2nd quinsy, recurrent tonsillitis, tonsillar hypertrophy, tonsilolith

- Complications: tonsillar remnants, bleeding, infection



Adenoid

- Size peaks at 6 yrs, then atrophies until 16 yrs.
- Obstruction of nasal airway and eustachian tube
- Treatment is nasal steroid, nasal irrigation, abx if needed, surgery if OSA or if chronic otitis media with effusion, CRS in children, recurrent AOM, or failure of medical therapy for adenoid hypertrophy)

* Most Definative tx of CRS in children is adenoidectomy.

Stridor

- Congenital: Laryngomalacia(most common cause of inspiratory sounds in infants in general), Vocal cord paralysis, Subglottic stenosis, Laryngeal webs, Hemangiomas and Lymphangiomas, Vascular causes, e.g. double aortic arch, Laryngeal Cysts.
- Acquired: Neoplastic, inflammation, trauma
- Laryngomalacia → self limiting, resolves in 1 year of age
- VC paralysis → CNS abnormality, biphasic stridor, improves with lying on affected side down if unilateral
- Subglottic stenosis → congenital, idiopathic, autoimmune, trauma, prolonged intubation, GERD
- Laryngeal web → biphasic stridor,

Stridor

- Acute epiglottitis → sorethroat, drooling of saliva, hot potato voice, thumb print sign, IV abx, IV steroids, nebulizer with adrenaline
- Acute tracheolaryngobronchitis → 6m-2yrs, parainfluenza virus, steeple sign
- Acute laryngitis → self limiting, viral, URTI, less than 12 yr

- Tracheostomy → elective, 2nd-3rd tracheal rings, long term
- Cricothyroidotomy → emergent, cricothyroid membrane, short term

Most Common Things

مهم جدًا !!

↳ Ear fullness May be asign of.
Especially if old age & smoker

- Most common site of nasopharyngeal CA → Fossa of rossenmuller
- Most common site of hypopharyngeal CA → pyriform fossa
- Most common site of laryngeal cancer → glottis
- Most common symptom at time of diagnosis of nasopharyngeal CA → neck lump

Neck Masses & Head/Neck Oncology

•**Neck Masses:** The Thyroglossal duct cyst is the most common congenital neck mass (located midline). Dermoid cysts are also midline, rubbery, and movable from side to side. Carotid body tumors are highly vascular; do NOT biopsy them—diagnosis is by angiography.

•**Specific Tumors:** For the Parotid gland, Mucoepidermoid carcinoma has the best prognosis. Angiofibromas present as recurrent intractable epistaxis in adolescent males, are diagnosed by angiography, and treated with surgery.

•**Nasopharyngeal Carcinoma (NPC):** First/most common presentation is a neck mass (cervical lymphadenopathy). It can cause unilateral OME in adults. The most common cranial nerve palsy is the Abducens nerve (CN VI).

•**Laryngeal Cancer:** Vocal cord tumors have the best prognosis. Earliest sign of glottic tumors is hoarseness. Earliest sign of supraglottic/pyriform tumors is dysphagia and referred otalgia. T1b staging involves both vocal cords; T2 extends to the subglottic area.

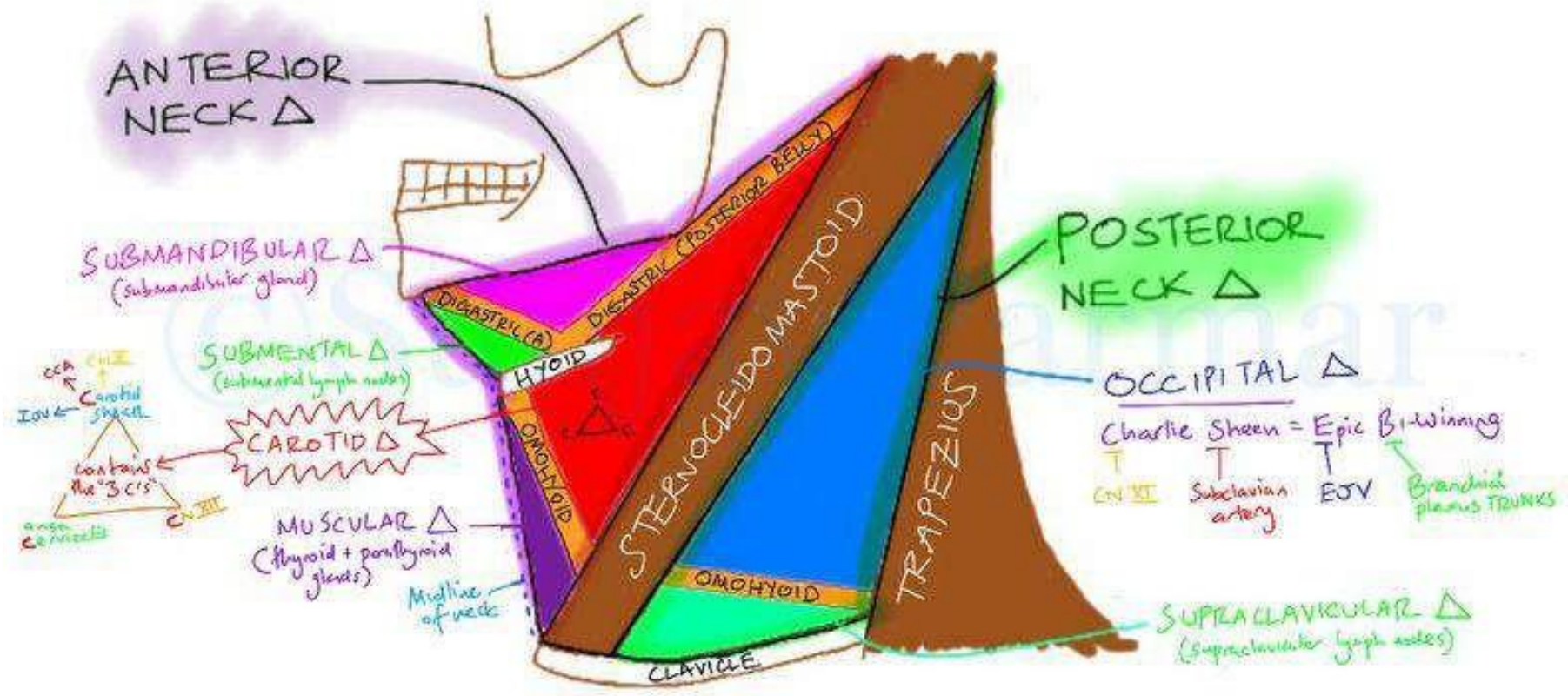
•**Squamous Cell Carcinoma (SCC) Hidden Primaries:** If an FNA of a neck mass shows metastatic SCC, hidden primary sites include the tonsils, base of tongue, and pyriform fossa (Vocal cords are NOT considered "hidden" because they present early). The next step is pan-endoscopy. (Note: FNA is preferred over open biopsy for neck masses due to safety).

•**Esophageal Issues:** Fish bones are the most common esophageal foreign body, and mediastinitis is the most fatal complication. GERD affects the *posterior* larynx (not anterior) and is a risk factor for laryngeal carcinoma.

* ادرسوهم جيل الامتحان فقط. :)

Neck Triangles

- Anterior: submental, submandibular, carotid, muscular triangle
- Posterior: supraclavicular, occipital



Lymph Node Groups in the Neck

Are the 1st drainage of tonsilitis.

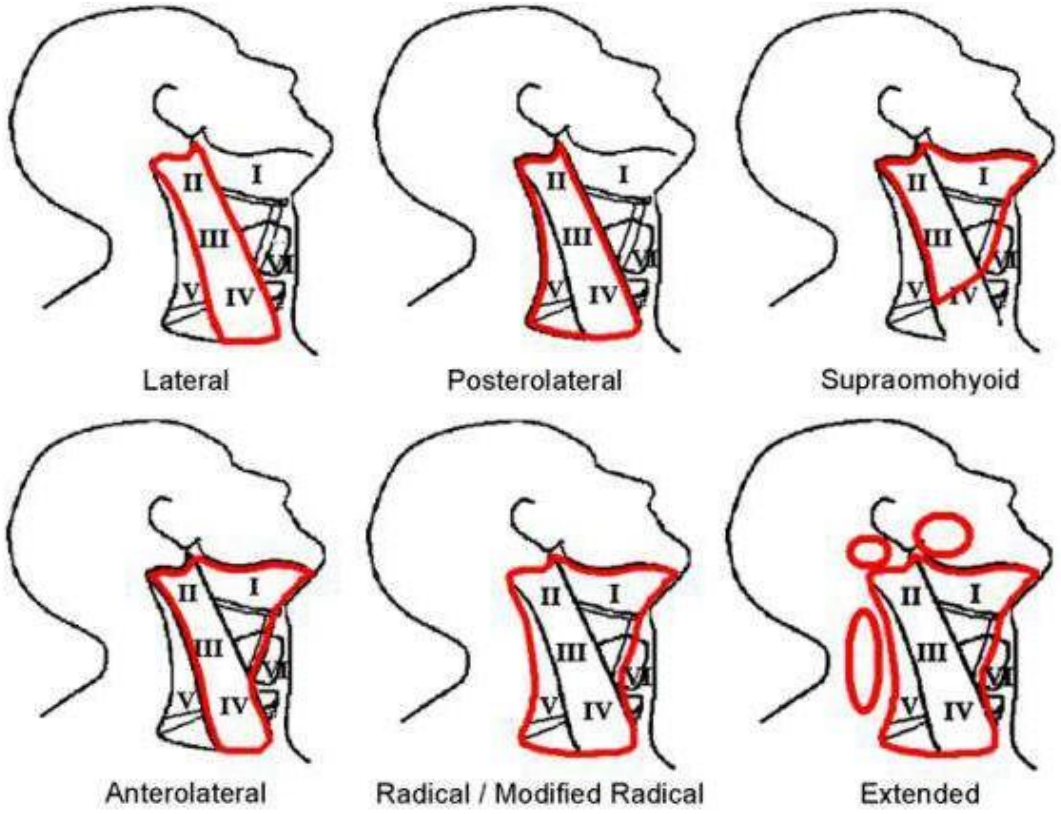
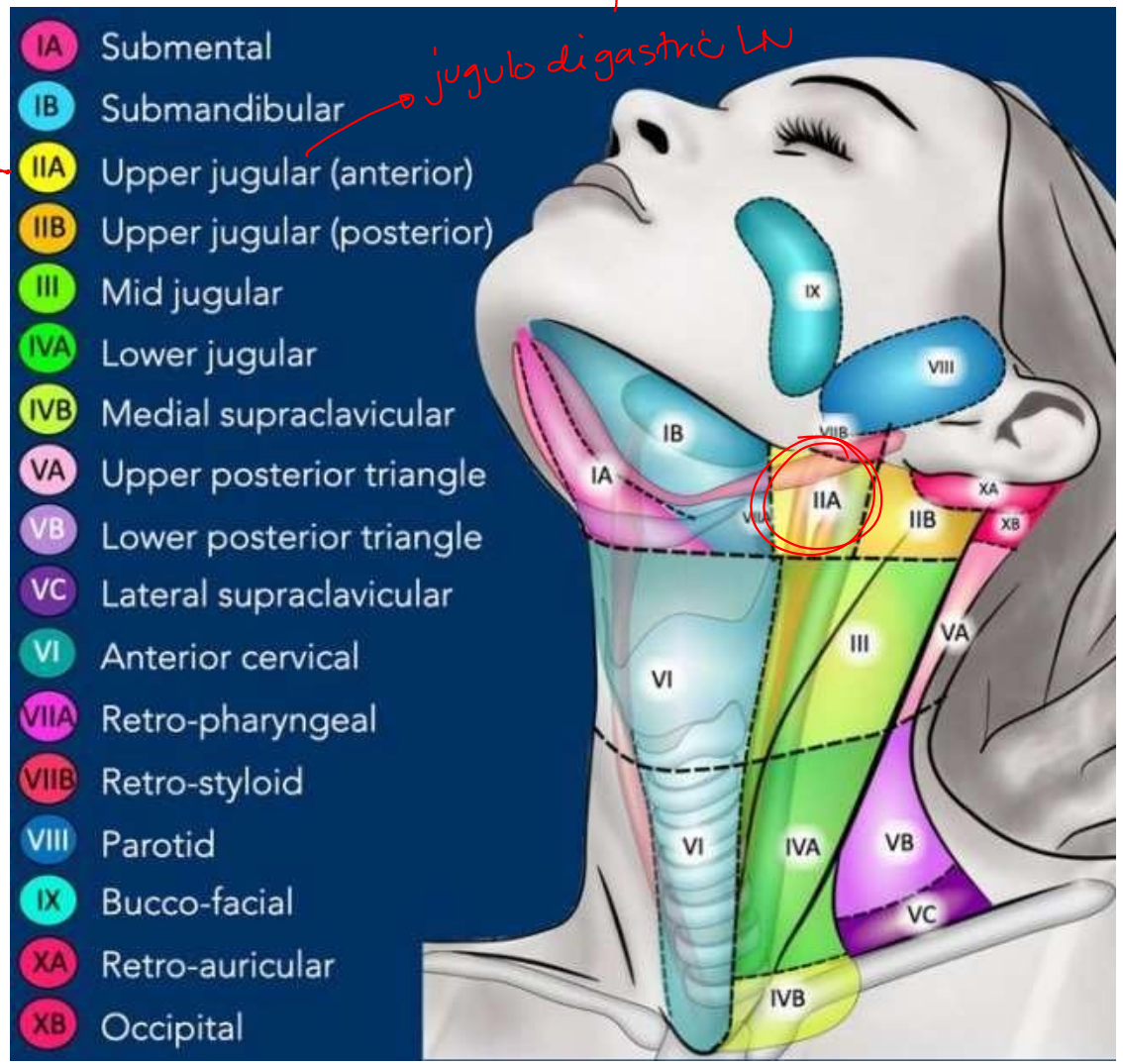


Figure 2: Common types of neck dissection



Revision MCQ

Question 1

<3 Months → Observe
≥3 Months → Grommet

- 5 year old patient with a history of URTI 2 weeks ago presented to the clinic with his parents complaining of decreased hearing. Examination is unremarkable other than some bubbling noted behind the tympanic membrane. What is expected tympanogram type and what is the the most appropriate next step?

ONE type B

A. Type B, myringotomy with grommet tube insertion
B. Type B, give nasal treatment and observe
C. Type C, myringotomy with grommet tube insertion
D. Type C, give nasal treatment and observe
E. None of the above

Question 2

- What is the most common causative agent of acute rhinosinusitis?

A. Strep pneumoniae
B. Staph aureus
C. H. Influenza
D. Rhinovirus
E. Adenovirus

if Q asked about the M/C Bacterial than the ans. A

Question 3

- Choose the correct order of the classification of orbital complications in ascending order according to severity

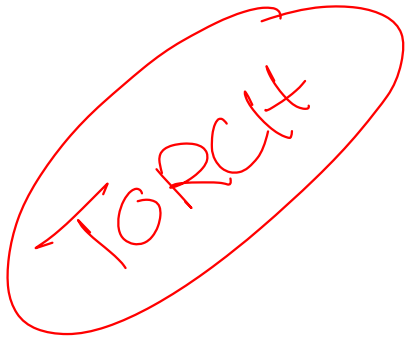
1: Orbital cellulitis
2: Subperiosteal abscess
3: Cavernous sinus thrombosis
4: Preseptal cellulitis
5: Orbital Abscess

A. 1,2,3,4,5
B. 2,3,4,5,1
C. 4,1,3,5,2
D. 4,1,2,5,3
E. 5,1,2,4,3

Question 4

- Which of the following viral infections may result in SNHL?

A. Measles
B. Mumps
C. Rubella
D. HIV
E. All of the above



MOST Common Cause of SNHL → CMV

Question 5

- Which of the following viral infections may result in CHL?

A. Measles
B. Mumps
C. Rubella
D. HIV
E. All of the above

↓
Conductive Hearing Loss

★ Measles → Otosclerosis → Conductive HL

Question 6

- 1 month old was brought to the clinic for hearing tests due to family history of hearing loss so a battery of tests was done. OAE test was unremarkable, but ABR was abnormal. What is most likely affected?

A. External ear
B. Middle ear
C. Cochlea
D. Brainstem and cortex
E. More than one of the above

* OAE → Outer cells of cochlea

Exclude C

* ABR → Neural problem

Question 7

* tympanogram doesn't assess hearing.

- 35 year old patient presented to the clinic complaining of hearing loss. Examination of the ear is unremarkable, tympanogram is unremarkable, PTA is abnormal, OAE is normal, ABR is normal. What is the most likely type of hearing loss?

A. Conductive hearing loss
↳ tympanogram unlikly to be normal
B. Sensorineural hearing loss
↳ ABR Normal
C. Mixed hearing loss
D. Non organic hearing loss
E. Central hearing loss
↳ ABR Normal

Question 8

- What is the most common causative organism of furunculosis?

A. Strep pneumonia
B. H influenza
C. Moraxella catarrhalis
D. Staph aureus
E. None of the above

Question 9

- What is the best and most effective treatment of allergic rhinitis?

A. Allergen avoidance
B. Topical steroid
C. Oral steroid
D. Antihistamine
E. None of the above

Question 10

- 25 year old male patient presented to the ER with epistaxis, all of the following are part of the blood supply of the anterior septum EXCEPT:

A. Anterior ethmoid artery
B. Superior labial artery
C. Greater palatine artery
D. Sphenopalatine artery
E. None of the above

Question 11

ABC

- 51 year old female patient presented to the ER with epistaxis. On exam, the patient is hypotensive and tachycardic and there is no visible point of bleeding on the septum of the nose. What is the most appropriate next step?

A. Vaseline nasal pack

B. Posterior balloon with anterior packing

C. Ligation of sphenopalatine artery

D. Embolization

E. IV fluids and compression of the nose

Question 12

AOM

- 12 year old complains of right ear pain and fever since 3 days. Patient was given antibiotic and analgesia as well as nasal sprays for his runny nose by another doctor but he presented to your clinic complaining of severe pain not improving with analgesia, what is an appropriate form of analgesia for his otalgia?

A. Cold compresses → Fever
B. Dry heat
C. Olive oil drops → for wax
D. Oral steroid X not Given for OM
E. More than one of the above

! interested info. :- Dry heat in OM may work as pain killer

* Stage 1 OR 2 OM & intact TM
No Rule of topical Abx

* topical Abx & steroid May help in Case of Stage 3 OR 4

Question 13

- 10 year old female patient complains of spiking fever, neck pain, severe otalgia, dizziness and ear discharge since 5 days not improving on antibiotics. What is the most probable diagnosis?

= complicated

A. Mastoiditis
B. Meningitis
C. Lateral Sinus Thrombosis
D. Epidural Abscess
E. None of the above


Thank you