

Otitis media with effusion

- Also known as **glue ear**, persistent build-up of fluid in the middle ear
- **History of recurrent OM**
- Issue stems from a dysfunction of the Eustachian tubes

Presentation

- Hearing diminished or lost (usually bilateral) → glue ear is the **commonest cause of CHL in childhood**
 - Listening to the TV at excessively high volumes
 - Needs things to be repeated
 - Lack of concentration
 - Withdrawal especially in school
- 2ry problems such as speech and language delay or behavioral problems
- **Rarely complains of ear pain**
- May have a prior history of infections (URTIs) or oversized adenoids
- Balance problems
- Peaks at 2 years of age

Signs (by otoscope)

- **Retracted** (more common) or **bulging** (less common) drum
- **Dull, grey, or yellow** tympanic membrane, there may be **bubbles** or a fluid level

Diagnosis

- **Audiograms** → conductive defects
- **Tympanometry** → assesses the ability of the eardrum to react to sound

Treatment

- <3 months → **Reassure and review in 3 months**
 - >3 months → **Surgery (insert grommets)**
 - If surgery is rejected → **Hearing aids**
- *An important risk factor for OME is “parental smoking” → Always encourage parents of patients to stop smoking*
- *The light reflex (cone of light) is seen as a cone-shaped reflection in **the anterior inferior quadrant** of the TM*
- *Absence of the cone of light indicates distortion of the shape of the TM such as bulging due to an increase of inner ear pressure seen in otitis media*

Acute otitis media in children

- Acute inflammation of the **middle ear** and may be caused by bacteria or viruses

Features

- Rapid onset of **pain** (younger children may pull at the ear)
- **Fever**
- **Irritability**
- **Coryza** (rhinitis)
- **Vomiting**
- Often **after a viral upper respiratory infection**
- A **red, yellow or cloudy tympanic membrane** or **bulging** of the tympanic membrane
- An **air-fluid level** behind the tympanic membrane
- **Discharge** in the auditory canal secondary to perforation of the tympanic membrane
- Perforation of the eardrum often **relieves** pain. This is because bulging of the tympanic membrane causes the pain

Treatment of perforated OM

- Amoxicillin (5-days course)
- If penicillin-allergic → Erythromycin or clarithromycin

| | Otitis _ _ media | Otitis externa |
|--------------|--|---|
| Risk factors | <ul style="list-style-type: none"> • Younger age | <ul style="list-style-type: none"> • Swimming • High environmental humidity |
| Features | <ul style="list-style-type: none"> • May be seen with a bulging tympanic membrane without discharge or purulent discharge with a ruptured tympanic membrane • Starts with pain in the ear followed by a popping sensation of the ear with complete resolution of pain. This is followed by discharge • Follows an upper respiratory tract infection | <ul style="list-style-type: none"> • Serous discharge • Starts with an itch followed by pain |
| Treatment | <ul style="list-style-type: none"> • Usually conservative as aetiology is usually viral • If bacterial aetiology is suspected, prescribe oral amoxicillin | <ul style="list-style-type: none"> • Combinations of topical acetic acid, topical aminoglycoside and topical corticosteroids |

- **Furuncles** can be found in diabetics or low immunity
- Also called “boils”
- They’re infected hair follicles
- MC organism → **Staph**
- Red, hard, tender
- Self-limiting or requires flucloxacillin

- *Tenderness in movement of the tragus* → **Otitis externa**
- *If you’re treating otitis externa but suspect there may be a **tympanic membrane perforation*** → aminoglycosides ear drops are **NOT** the best choice as it’s toxic → use **Ciprofloxacin drops**
- *Otitis externa with **Pseudomonas** (pus in the external canal)* → **topical gentamicin** only or with topical gentamicin with hydrocortisone (*Gentisate HC*)

Acoustic neuroma

- Also called “vestibular schwannomas”, accounts for 5% of intracranial tumors and 90% of cerebellopontine angle
- Bilateral acoustic neuromas are seen in **neurofibromatosis type II**

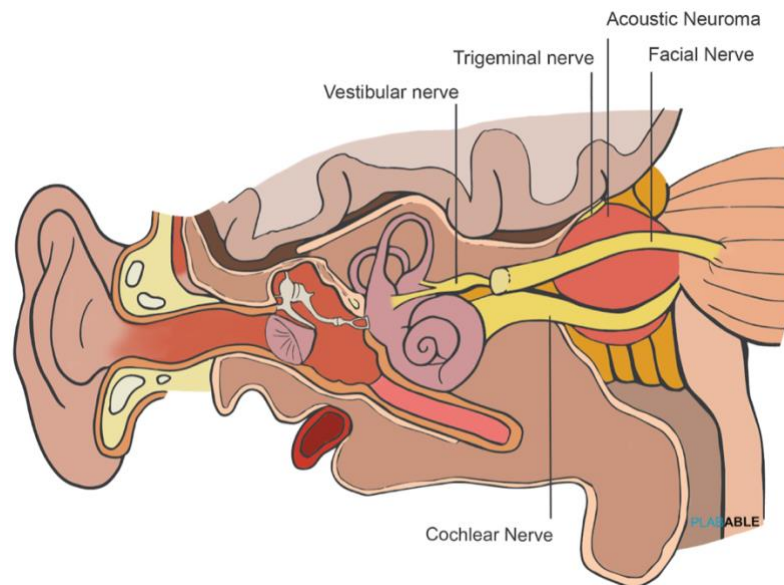
Features

- **Cranial nerve V** → Absent corneal reflex
- **Cranial nerve VII** → Facial palsy
- **Cranial nerve VIII** → SNHL, vertigo, tinnitus

- Unilateral SNHL should be considered as caused by an **acoustic neuroma** until proven otherwise

Investigation

- **MRI of the internal auditory meatus** → to view the cerebellopontine angle
- **MRI brain** → for further evaluation



DVT = Deafness, Vertigo, Tinnitus

DVT + CN palsy = Acoustic neuroma

DVT + aural heaviness = Meniere's disease

Meniere's disease

Presentation

- **Deafness, vertigo, tinnitus (DVT) + fullness in the ear** (could be experienced with AN)
- Note: **Vertigo** → is usually the prominent symptom
- Episodes last minutes to hours
- MRI is normal
- Usually a **female** → male; 20-60 years old
- Typically, symptoms are unilateral but bilateral symptoms may develop after a number of years

Treatment

- Acute attacks → **buccal or intramuscular prochlorperazine** or **cyclizine**
- Admission is sometimes required

Vestibular schwannoma → high frequency SNHL, MRI is diagnostic, will have CN involvement

Meniere's disease → low frequency SNHL

Otosclerosis → CHL + young age + patient reports better hearing in noisy places + precipitating factors like pregnancy

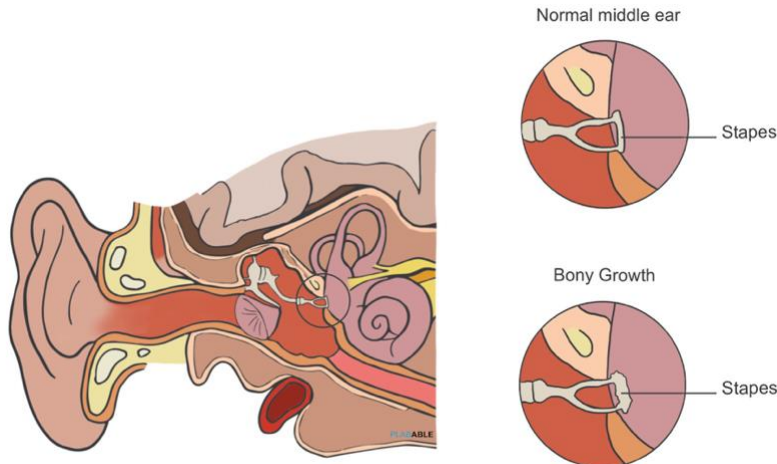
Otosclerosis

- Abnormal growth of bones of the middle ear preventing structures within the ear from working properly
- **Most common** cause of **progressive deafness in young adults (CHL)** (15-45 years)
- **Tinnitus** and **vertigo**
- Positive **family history** (50%)
- Usually **bilateral** (80%)
- **Women + pregnant**

- Could be mixed hearing loss if cochlea is involved

Management

- **Stapedectomy** or stapedotomy, with the insertion of a prosthesis
- If surgery is rejected → **Hearing aids**

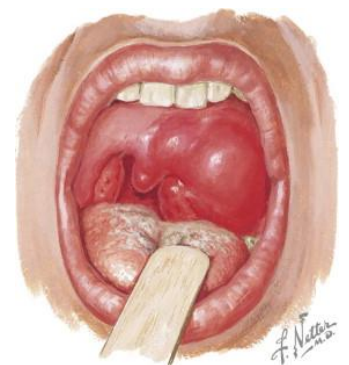


Peritonsillar abscess (Quinsy)

- Swelling of the soft palate and tissues lateral to the tonsils
- It's a complication of **acute tonsillitis**
- Pus is trapped between the **tonsillar capsule** and the **lateral pharyngeal wall**
- Typically preceded by a sore throat for several days

Presentation

- Sore throat
- Dysphagia
- Pain localized to one side of the throat
- Peritonsillar bulge
- **Uvular deviation** (bulging tonsils push the uvula away from the affected side)
- Fever
- **Trismus** (difficulty opening the mouth)
- **Fetor**
- **Drooling**
- Altered voice quality (**hot potato voice**) due to pharyngeal edema and trismus



Management

- Antibiotics → **IV benzylpenicillin**
- **Needle aspiration, incision and drainage**

Tonsillar carcinoma → **SCC**, Lump in the neck

- **RF:** smoking, regular alcohol intake and HPV infection
- **Direct spread** often involves **pharyngeal space** and **mandible**

Hearing screening

- It's offered to all babies within 4-5 weeks of birth
- Healthy born babies are normally given a hearing test before discharge otherwise it'll be done during this timeframe

2 types of tests

1. Automated otoacoustic emission (AOE)

- Soft-tipped earpiece is placed inside the ear to detect vibration of hair cells

2. Automated auditory brainstem response (AABR)

- Brain waves are measured by electrodes
- Can detect auditory neuropathy in children

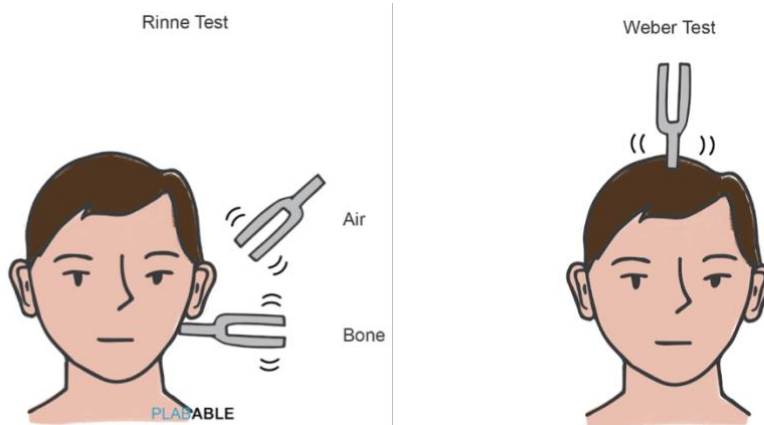
Below 6 months → AOE or AABR

6 months – 18 months → Distraction test

2 years – 5 years → Conditioned response audiometry OR Speech discrimination

>5 years → Pure tone audiogram

Rinne's and Weber's



Rinne's test

- A tuning fork is placed over the mastoid process until the sound is no longer heard, followed by repositioning just over external acoustic meatus
- AC is normally better than BC → *Positive Rinne's test (normal)*
- If BC > AC, then the patient has conductive deafness → *Negative Rinne's test (Abnormal Rinne's test)*




Weber's test [CSSO]

- A tuning fork is placed in the middle of the forehead equidistant from the patient's ears. The patient is then asked which side is loudest
- If sound is localized to the unaffected side → *Unilateral SNHL*
- If sound is localized to the affected side → *Unilateral CHL*
- *SNHL = localized to the normal ear*

Example

If Weber's test localizes to the right side. It can either be right CHL or left SNHL, a Rinne's test would be able to confirm if it's a right CHL

Candida vs LP vs Leukoplakia

| Oral ___ Candidiasis | Oral Lichen Planus | Leukoplakia |
|---|---|--|
|  |  |  |
| <p>History of immunosuppression or smoking e.g. taking oral/inhaled steroids</p> <p>Thick white marks</p> <p>Treatment If using inhaled steroids, good inhaler technique, spacer device, rinse mouth with water after use.</p> <p>Stop smoking</p> <p>Oral fluconazole 50 mg/day for 7 days.</p> | <p>Lace like appearance</p> <p>Also with purple, pruritic, papular, polygonal rash on flexor surfaces</p> | <p>Also history of smoking</p> <p>Raised edges/ bright white patches and sharply defined and cannot be rubbed out like a candida patch.</p> <p>Treatment Stop smoking</p> |

Leukoplakia should be biopsied as it's premalignant

Leukoplakia occurs primarily in HIV-positive individuals

For oral candidiasis → Nystatin suspension can be used

*Leukoplakia may present with **dysplasia of the vocal cords***

- White patches over the vocal cord + hoarseness of voice
- Management → cessation of smoking and observation, as it might turn malignant

Difference between oral thrush (oral candidiasis) and Leukoplakia → Leukoplakia CANNOT be removed by rubbing

Ludwig's angina

- Severe cellulitis involving the floor of the mouth
- Early, the floor of the mouth is raised and there's difficulty swallowing saliva which might be drooling
- Usually following a dental infection

*Dysphagia + Odynophagia + radiates to the back → **Esophageal candidiasis**, caused by candida albicans*

Cholesteatoma

- Destructive and expanding growth consisting of keratinizing squamous epithelium in the **middle ear** and/or **mastoid process**
- Uncommon abnormal collection of skin in the ear that left untreated can continue to grow and damage the bones of the middle ear (ossicles)
- Small lesions → **CHL**, Large lesions → **CHL + vertigo + headache + facial nerve palsy**

Acquired

- Following **repeated ear infections**, they're usually **responsive to antibiotics**
- Frequent **painless otorrhea** which may be **foul-smelling**
- **Progressive, unilateral CHL**
- **TM perforation** (90%) or **retracted** tympanum
- Otoscopy:
 - Retraction pocket in attic or posterosuperior quadrant of TM
 - Granular tissue
 - White mass behind eardrum
 - Purulent drainage

Congenital

- Present **6 months – 5 years**, sometimes later in adulthood
- Often NO history of recurrent suppurative ear disease, previous ear surgery or TM perforation
- May be incidental finding on routine otoscopy of an **asymptomatic** child
- Otoscopy → **Spherical pearly white mass** behind **intact** membrane

Vestibular neuritis

- Inflammation of the vestibulocochlear nerve (CN VIII), but the etiology is thought to be a vestibular neuropathy

Features

- **Abrupt** onset
- **Recurrent vertigo** (lasting hours-days)
- Unsteadiness, **nausea** and **vomiting** (feel as if the room is rotating)
- Symptoms are aggravated by **head movement**
- **History of viral infection** (runny nose, cough, fever)

Vestibular neuritis → commonly present with a history of viral infection + lasts hours-days

BPPV → lasts seconds

Labyrinthitis

- Vestibular nerve and labyrinth are affected
- Same as vestibular neuritis + Hearing loss (SNHL) ± tinnitus

Vertebrobasilar insufficiency (VBI)

- Very old male
- Most common cause → atherosclerosis
- RF: DM, HTN, smoking and dyslipidemia

Temporomandibular disorders (TMDs)

- A group of disorders affecting temporomandibular joint (TMJ), masticatory muscles and associated structures
- Associated with muscle overactivity which include **bruxism** (grinding of teeth)
- Symptoms → **Facial pain, restricted jaw function and joint noise**
- Pain is around the temporomandibular joint but is often referred to the head, neck and ear
- Managed by ice packs, NSAIDs, dental splints or Botox injections

Pleomorphic adenoma

- The **most common** tumor of the parotid gland
- They're **benign** tumors which appear as a lump just behind the angle of mandible
- Benign with the capacity to turn malignant

Features

- **Slow-growing** and **asymptomatic**
- **Firm**
- **Painless**
- **Mobile**

Management

- Superficial parotidectomy or enucleation
- *Tender and painful mass at the angle of the mandible, especially when eating* → **Parotiditis**
- *Mobile, soft, cystic and tender mass* → **Adenolymphoma (Warthin's tumor)**
- *Mandibular and tonsillar tumors are NOT mobile*



Sialadenitis

- Inflammation of salivary gland and may be acute or chronic, infective or autoimmune

Features

- **Unilateral** redness, swelling and pain
- May enlarge to reach a size of an orange
- Mild **odynophagia**, usually common before and during meals
- **Fluctuation test** positive if it's filled with swelling
- **Foul taste** in the mouth
- **Decreased mobility in the jaw**
- **Dry mouth**, skin changes, weight loss, shortness of breath, keratitis, dental pain, skin changes and lymphadenopathy
- Fever with rigors and chills along with malaise and generalized weakness as a result of septicemia
- In severe cases → **pus** can often be secreted from the duct by compressing the affected gland
- Duct orifice is reddened with reduced flow, there may be a visible or palpable **stone**

Acute sialadenitis

- Typically, present with **erythema** over the area, pain, tenderness on palpation and swelling
- Infection often occurs as a result of **dehydration** with overgrowth of oral flora (e.g. postoperative dehydration)
- Purulent material may be observed

Chronic sialadenitis

- Less painful + gland enlargement (often following meals) **WITHOUT** erythema
- Associated with **decreased salivary flow** due to **stones** rather than dehydration

Nasal polyps

- Lesions arising from the nasal mucosa, occurring at any site in the nasal cavity or paranasal sinuses
- Nasal polyps tend to be **bilateral**
- Associated with → *Asthma, Aspirin sensitivity* (Samter's triad)

Presentation [RAN]

- Rhinorrhea
- Anosmia (loss of smell)
- Nasal obstruction

Laryngeal cancer

Presentation

- **Progressive hoarseness of voice** → *most common early symptom*
- Later, **Stridor, dysphagia** and **odynophagia**
- If the pharynx is involved → **Hemoptysis** and **ear pain**

Risk factors

- Smoking → 1st
- Occupational exposures (asbestos, formaldehyde, nickel, isopropyl alcohol and sulphuric acid mist)
- Insufficient fruit and vegetables intake
- HPV 16

- **HPV** → RF for tonsillar, oropharyngeal and laryngeal cancer

Nasopharyngeal carcinoma

- **Painless swelling** or **lump** in the **upper neck**, often due to a swollen LN
- **Nasal obstruction, epistaxis** and **otitis media** from eustachian tube obstruction
- **Unilateral CHL + tinnitus**
- Other cranial nerves involvements

Risk factors

- Smoking, Alcohol
- Infection with EBV
- **South Asian, male**

EBV is associated with:

- Hodgkin's lymphoma
- Nasopharyngeal carcinoma

Nasopharyngeal carcinoma → *Ear symptoms*

Paranasal sinus tumors → *Prominent ocular symptoms (e.g. epiphora, double vision)*

Oropharyngeal cancer (tonsillar cancer)

- *At the base of tongue, tonsils, soft palate and walls of the pharynx*
- *Associated with ear pain*
- *Often involves pharyngeal space and mandible*

Malignant otitis externa

- *An aggressive infection rather than a malignancy*
- **CHL + foul-smelling purulent otorrhea + facial nerve palsy**
- Black skin around the ear
- *RF: DM, weakened immune system*
- *Urgent refer to an ENT specialist is usually needed*

Acute tonsillitis

Symptoms

- Sore throat
- Pain referred to the ear

Signs

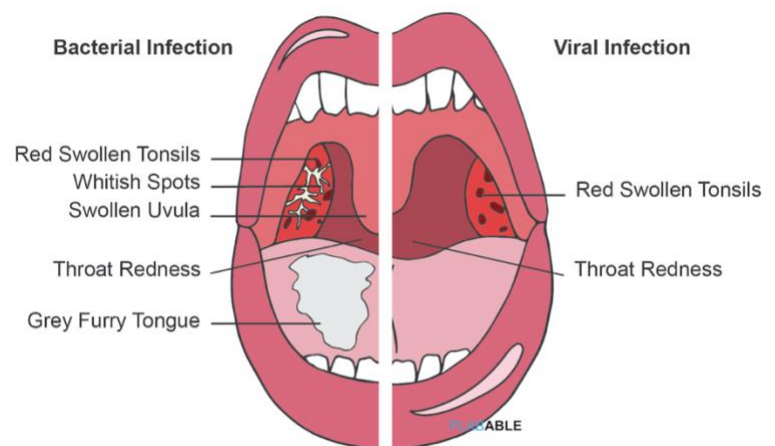
- Throat is reddened
- Tonsils are swollen and may be coated or have white flecks of pus on them
- Fever
- **Swollen regional LNs**
- Examination shows intense erythema of tonsils and pharynx, yellow exudate and tender, enlarged anterior cervical glands

3 or 4 of the Centor Criteria → **Bacterial tonsillitis** → Antibiotics (Penicillin V)

- Fever >38
- Tonsillar exudates
- No cough
- Tender anterior cervical lymphadenopathy

Infectious mononucleosis

- Affects teenagers more often
- Very large purulent tonsils and long-lasting lethargy
- Splenomegaly



Tonsillectomy

- **Aim** → Reducing the incidence if recurrent infections
- **Indications** → children with **no other explanation for recurrent symptoms + frequency of symptoms**
 - >7 episodes per year for one year
 - >5 episodes for 2 years
 - >3 episodes for 3 years
- **Complications**
 - Primary hemorrhage → may require a return to theatre
 - Secondary hemorrhage → antibiotics and antiseptic mouthwashes

Otherwise, tonsillitis is treated with **Analgesics** (paracetamol and ibuprofen)

If tonsillitis + exudates + cervical lymphadenopathy + fever >38 → **Antibiotics**

Presbycusis

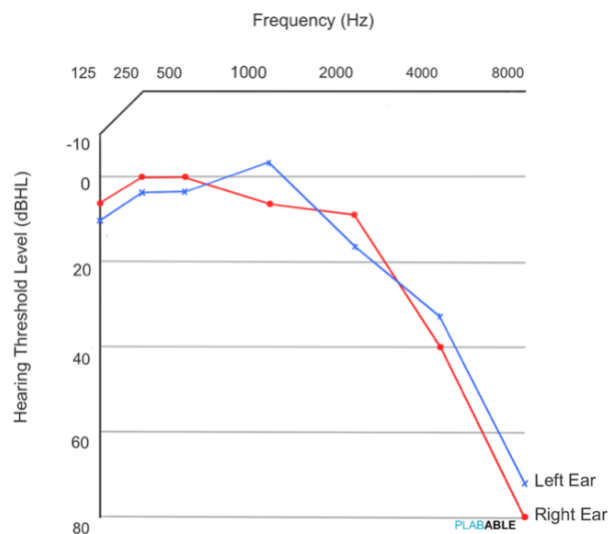
- Also known as **age-related SNHL** → *most common cause of hearing impairment in elderly patients*
- Etiology → degenerative changes in the inner ear (hair cells inside the cochlea)

Features

- Progressive **high-frequency** hearing loss
- **Bilateral**
- Usually occurs after age 50
- Difficulty understanding speech, especially in noisy environments
- Usually brought in by the family to clinics as the patient would not think his/her hearing is impaired

Management

- **Hearing aids**, to increase the high-frequency sound



The graph shows that hearing threshold level goes down as the frequency increases which is a feature seen in presbycusis

Functional dysphonia

- Disturbance of voice in the absence of any structural abnormality of the larynx or any cord paralysis
- Diagnosed by exclusion
- There may be various interacting causes such as **overuse** of the voice, poor vocal technique and **stress**
- May occur after treatment of acute respiratory **infection** (if prior ttt of infection → Laryngitis)

Features

- **Vocal fatigue** (voice becoming worse with use) and laryngeal discomfort

Noise-induced hearing loss (NIHL)

- Hearing impairment resulting from exposure to loud sound
 - Usually **bilateral** high frequency **SNHL**
- *Acoustic trauma* such as gun shooting or bomb explosion and barotrauma (such as sudden changes in pressure like driving) → TM perforation → **CHL**
 - *Acoustic trauma* → Sudden
 - **NIHL** → Chronic

Management of ear wax buildup

1. **Ear wax softeners**
 - Sodium bicarbonate, sodium chloride, olive oil can be used
 - Prescribe for 2-3 days initially
2. If symptoms persist → **Ear irrigation**
3. If irrigation is unsuccessful
 - **Ear drops** are advised for further 3-4 days and then return for further irrigation
 - Instill water into the ear, after 15 mins → irrigate the ear
 - Refer to ENT specialist

Management of epistaxis

1. Lean forward, open mouth, press soft nose for 10-15 minutes
2. Nasal cautery with silver nitrate
3. Nasal packing

After stopping the bleeding, if unstable → transfer to A&E

Notes

- An insect buzzing and stuck in the external ear → **2% Lidocaine**, to kill it then remove it by **Olive oil**
- Soft objects, organic matter or seeds stuck in the ear → **Suction with a small catheter**
- Large clearly visible foreign bodies in adults or older children → **Bayonet forceps**
- Styrofoam or chewing gum → **Acetone**
- Superglue → **Manual removal**, in 1-2days after desquamation, or **referral** to the ENT specialist
- Batteries → **Urgent ENT referral**, removed within 24h
- Ear wax → **Olive oil**, to loosen the hard wax
- Any spherical object → **Hook, can't be grasped by forceps**
- An intellectually-disabled patient with a foreign object in the ear → **Removal under general anesthesia**
- Indications for ENT referral:
 - Uncooperative patient
 - Requiring sedation
 - Perforated ear drum
 - An adhesive in contact with the eardrum
 - Difficulty removing the foreign body
- Ear trauma with bleeding, tinnitus and CHL, possible nausea and vomiting initial investigation → **Otoscopy**
- RTA with bleeding and CSF leakage from the ear (a possible basilar fracture) → **CT scan**
- Small perforation the TM → **Reassure**
- Large perforation of the TM → **Refer to a specialist**
- Flamingo pink (Schwartz sign) → **Otosclerosis**
- Cartwheel appearance of the TM → **Acute suppurative otitis media**
- Chalky white patches on the TM → **Tympanosclerosis**
- Sudden vertigo + vomiting + preceding URTI → **Labyrinthitis**
- Difficulty hearing in noisy environment → **Presbycusis**
- Difficulty hearing in quiet environment → **Otosclerosis**
- Form of acute OM where vesicles develop on the TM, pain occurs suddenly and persists for 24h-48h, hearing loss and fever suggest a bacterial origin → **Myringitis**
- Any salivary gland mass for more than 1 month → **FNAC**
- Paget's disease + OI → **Mixed hearing loss**
- Headache worsens when bending forward + NO nausea or vomiting → **Chronic sinusitis**
- Headache worsens when bending forward + nausea, vomiting, photosensitivity → **Migraine**
- Swelling that moves up on swallowing → **Goiter**
- Moves up on swallowing and tongue protrusion → **Thyroglossal cyst**
- Fluctuant and transilluminant → **Cystic hygroma, a fluid-filled sac due to a blockage in the lymphatic system**
- Pain at the cheeks preceded by URTIs + upper jaw pain/toothache → **Maxillary sinusitis**
- Same but pain at the nose bridge → **Ethmoidal sinusitis**
- Same but pain above the orbit → **Frontal sinusitis**
- Causes of SNHL:
 - **Acoustic neuroma**
 - **Meniere's disease**
 - **Presbycusis** → **Bilateral**
 - **Labyrinthitis**
- Blunt trauma to the ear pinna with only redness → **Oral analgesia**
- Blunt trauma to the pinna with hematoma (bluish discoloration) → **Incision and drainage + Oral antibiotics**
- If left untreated, it will lead to → **Cauliflower ear**