

(I) Congenital anomalies

Preauricular sinuses

Preauricular sinuses are common congenital malformations. It is commonly found at the anterior margin of the ascending limb of the helix. Anatomically, they are lateral and superior to the facial nerve and the parotid gland.

When the mouth of the fistula is closed, it gets filled with sebaceous material and forms a cyst. When it is infected and ruptures, granulation tissue peep out. In these cases the tract has to be excised otherwise it can be left alone.



Preauricular sinus

Preauricular cyst and sinus

Bat ear

Bat ear

Bat ear occurs due to underdevelopment of the antihelix. The condition is corrected surgically (otoplasty) by the age of 6 year (school age).

Microtia

Is excessively small auricle. Its extreme degree is anotia which is total absence of the auricle. It may be associated with atresia of the external auditory meatus or anomalies in the middle or inner ear. CT scanning and full audiologic assessment is mandatory before to assess the condition of the ear prior to correction.



Microtia



Anotia



External auditory canal atresia

(II) Traumatic conditions of the external ear

(1) Auricular haematoma

Definition:

Collection of blood between the auricular cartilage and the perichondrium.

Aetiology:

Blunt trauma (commonly in boxers)

Clinical picture:

The auricle has a painful, reddish, and cystic (if early i.e. blood is still fluid) swelling.

Complications:

- Cartilage necrosis, fibrosis, deformed auricle called cauliflower ear
- Secondary infection causing perichondritis

Treatment

- Antibiotics
- Aspiration (if early) or incision and drainage (if late) under aseptic conditions followed by firm dressing to prevent recollection of blood.



Auricular haematoma



Cauliflower ear.

(2) Lacerations

Aetiology:

Self inflicted: Scratching of the canal skin by an ear bud, ear grip,.....

Iatrogenic: unskilled ear wash or instrumentation

Symptoms:

Pain, serosanguinous discharge

Treatment:

Antibiotic ear drops

Avoid entering water into the ear canal

(3) Foreign body impaction

Foreign bodies mostly occur in children. Adults may introduce tooth picks while cleaning the ears.

Types:

1. Inorganic :

- Metallic beads (radio-opaque).
- Plastic beads (non-opaque) .

2. Organic :

- Animate e.g. mosquito,, fleas, flies.
- Inanimate:
 - a. Vegetable: e.g. beans, rice, piece of cotton.
 - b. Non-vegetable” e.g. piece of rubber.



Fig. FB in the ear

Effects:

1. Metallic and non-vegetable foreign bodies may remain for a long time without any harm.
2. Vegetable foreign bodies absorb water, swell and become impacted in the meatus, and lead to a secondary otitis externa.
3. Insects cause much discomfort when they remain alive and touch the drum.

Management:

Careful history and careful examination. If there is otitis externa, it needs appropriate treatment.

1. Syringeing should be tried in every case; it is usually successful. Animate foreign bodies, if alive are drowned in oil or water, then syringed out.
2. Vegetable foreign bodies if small (e.g. rice) can be washed and come out easily. If big (e.g. bean, maize) they imbibe water and become swollen and impacted; so washing is not advisable and are extracted by instruments.
3. Animate FB should be killed at first (by drowning with paraffin oil or olive oil) then removal by wash or instruments.
4. Extraction by instruments: A set of special fine aural instruments is used.
5. Impacted objects: When other measures fail, a postaural incision and even widening of the meatus may be needed.

Complications:

These usually arise from rough manipulations during attempts to remove the foreign body.

1. Traumatic rupture of the drum.
2. Disruption of the ossicles.
3. Pushing the foreign body in the middle ear, in this case a mastoid operation may be needed.
4. Otitis media.
5. External otitis.

(4) Traumatic rupture of the tympanic membrane

Aetiology:

I- Indirect pressure changes:

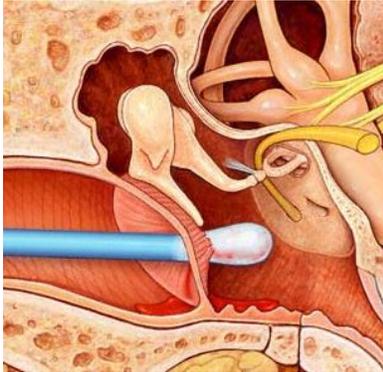
1. Blow on the ear.
2. Blast injuries (explosion of bombs).
3. Otitic barotrauma.

II- Direct trauma.

1. Foreign bodies in the external meatus and inexperienced attempts at their removal.
2. Too vigorous syringeing of the ear.
3. Self-inflicted injury.

III- Fracture of the temporal bone (Extending to the drum).

The tear is present in the pars flaccida.



Self inflicted perforation



Traumatic rupture of the tympanic membrane

Clinical Picture:

Immediately after the trauma, the patient feels something giving way in the ear, giddiness, vertigo, tinnitus, bleeding from the ear and diminution of hearing.

Examination:

Blood in the external meatus is noted and removed by dry mopping; washing is strictly contra-indicated.

The appearance of a traumatic tear is diagnostic: the edges are thin, irregular or serrated, congested and small blood clots may be found around. The tear may have different shapes triangular, lancet-shaped or pear-shaped. There is always at least one pointed end.

Differential Diagnosis:

1. From self-Inflicted Injury: These are pin-pointed in the postero-inferior quadrant of the drum, and hesitation marks may show on the external meatus.
2. From Otitis Media

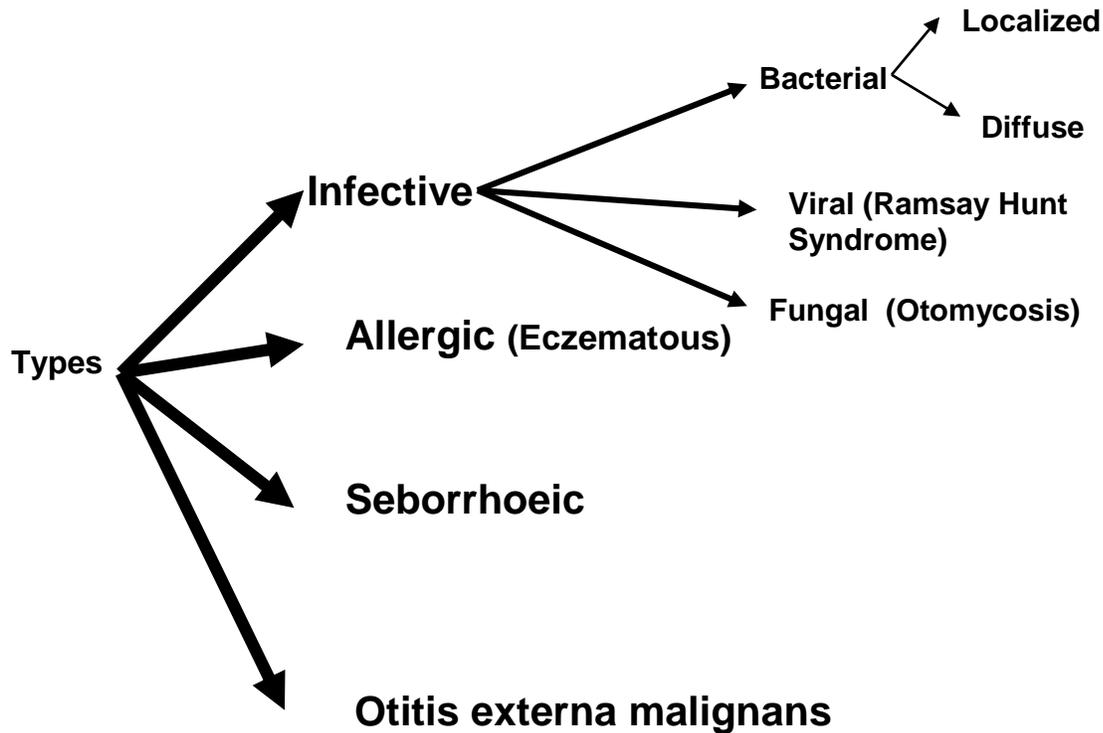
	OTITIS MEDIA	TRAUMATIC
History	Common cold	Trauma
Edges	Thicker, smooth	Thin, irregular
Drum	Congested	Normal

Around it	Pus	Blood clots
Shape	Rounded or kidney-shaped	Triangular, crescent or pear-shaped
Site	May be marginal, central or in the attic	Always central

Management:

1. In uncomplicated cases, the ear is protected by sterile gauze, and the patient is advised not to blow the nose forcibly. Spontaneous healing soon occurs in most cases in 3 – 8 weeks.
2. Infection is treated by antibiotics, ear and nasal drops. It usually clears up and healing follows.
3. If there is a persistent perforation after six months, myringoplasty is done

(III) Otitis externa



(A) Localized bacterial otitis externa (Furuncle)

This is a staphylococcal infection of a hair follicle or a ceruminous gland of the external meatus.

Symptoms

At first, there is a tender point with discomfort on mastication. Severe pain is then complained of and is out all proportions to the size of the furuncle. This is due to the tight attachment of the skin to the perichondrium, thus the inflammatory exudates is under tension and causes severe pain.

Signs

- Red small swelling which may obstruct the meatus and there may be more than one furuncle.
- There is tenderness on pressure on the tragus or on moving the auricle (tragus sign).
- Regional lymphadenitis is present, e.g. pre-auricular, parotid or mastoid glands
- according to the site of the furuncle.



Furunculosis of the external ear spread via fissures of Santorini to the parotid region

Treatment:

- Sedatives and systemic antibiotics.
- Local heat and glycerine ichthyol drops (10%).
- Resolution follows or the furuncle ruptures, incision is avoided as much as possible.
- Recurrent furunculosis may direct the attention to diabetes.

(B) Diffuse bacterial otitis externa

Definition:

Diffuse inflammation of the skin lining of the external ear.

Predisposing factors:

Skin laceration: either self inflicted or iatrogenic

Skin maceration: either in humid atmosphere or by discharge in CSOM

Symptoms:

- Earache and hearing loss

Signs:

- Diffuse redness, edema and tenderness of skin of EAC
- Scanty purulent otorrhoea
- Tenderness on pulling the auricle or pressure on the tragus
- Preauricular and postauricular lymphadenitis



Treatment:

- Systemic antibiotics and analgesics
- Local treatment
- Aural toilet
- Packing the EAC with anti-inflammatory drops
- Avoid entering water to the ear

(C) Viral otitis externa (Herpes zoster oticus)

Symptoms

Severe earache

Serosanguinous discharge

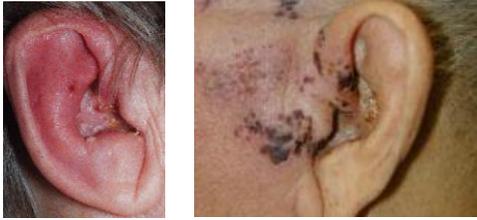
Signs

- Reddish bullae on the auricle and EAC
- After rupture of the bullae Serosanguinous discharge appears

Treatment

- Analgesics
- Antiviral drugs as acyclovir
- Steroids in severe cases with affection of the facial nerve

NB; sometimes the HZ affects the VII and VIII nerves causing LMNL facial, and SNHL and vertigo. This constitutes Ramsay Hunt syndrome



Ramsay Hunt syndrome

(D) Bullous Myringitis

Definition:

Viral infection of skin lining of the external canal and the outer skin layer of the tympanic membrane.

Aetiology

Influenza Virus.

Symptoms

1. Severe earache.
2. Sero-sanguinous otorrhoea => after rupture of the bullae.
3. No fever or hearing loss.

Signs

1. Reddish bullae on the tympanic membrane and deep part of EAC
2. After few days they rupture



Treatment

Analgesics.

(E) Otomycosis

Definition:

Fungal infection of the skin lining of the external canal.

Aetiology:

Causative organisms: *Aspergillus niger* (black) and *Candida albicans* (white)

Predisposing factor:

Prolonged use of local antibiotics ear drops.

Symptoms:

- Itching => the main symptom.
- Hearing loss => when the fungus mass occludes the external canal.

Signs:

Speculum examination: the lumen of the external canal contains a whitish mass with black spots which resembles a wet newspaper.



Treatment:

- Removal of the fungus mass => by suction or ear wash
- Anti-fungal ear drops and creams e.g. clotrimazole, nystatin or 2% salicylic acid (keratolytic) in alcohol (fungicidal)

(F) Allergic (Eczematous) otitis externa

Definition:

Allergic dermatitis of the skin lining of the external canal.

Aetiology:

Antibiotics ear drops and facial cosmetics.

Symptoms:

Itching --> the main symptom.

Signs:

Speculum examination => oedema & fissuring of the skin lining of the external canal



Treatment:

- Avoid the offending agent.
- Local corticosteroids ear drops and creams.

(G) Seborrhoeic Otitis Externa

Definition:

Abnormal quality and quantity of sebum produced by the skin lining of the external canal

Aetiology:

Secondary to scalp seborrhoea.

Symptoms:

Itching => the main symptom.

Signs:

Speculum examination => the external canal contains greasy scales.

Treatment:

Treatment of scalp seborrhoea.

(H) Malignant otitis externa

Definition

Invasive and potentially fatal bacterial infection of the skin lining of the EAC which extends to the skull base.

Incidence:

Rare. Most commonly old uncontrolled diabetic.

Causative organism:

Pseudomonas aeruginosa

Symptoms:

Starts as otitis externa that does not respond to medical treatment.

Signs:

1. Granulation tissues in the floor of the EAC.
2. Scanty, sanguinous discharge.
3. Tragal sign (pain on pressure on the tragus).
4. Pre and postauricular lymph node enlargement.



Malignant otitis externa complicated by perichondritis of the auricle

Investigations:

1. CT of the temporal bone and skull base
2. Radioisotop studies (Gallium and Technetium)
3. Biopsy to exclude malignancy
4. Culture and sensitivity

Complications

1. Osteomyelitis of the temporal bone
2. Cranial nerves palsy; VII,IX,X,XI

Treatment:

1. Control of diabetes
2. Massive antibiotics and analgesics
3. Aural toilet and local ear drops
4. Surgical treatment and debridement of necrotic tissue

(IV) Cerumen or Wax

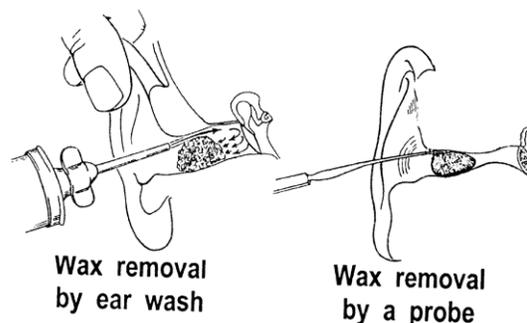
Cerumen is the secretion of the ceruminous glands which are present in the skin of the cartilaginous portion of the meatus. Normally the cerumen is thrown off by the exfoliation of the epidermis. Sometimes ceruminous plugs are formed, obstructing the canal.

Aetiology:

1. Excessive secretion due to hyperemia of the skin.
2. Obstructive lesions of the canal.
3. Dust, sand or small foreign bodies which may form the nucleus of ceruminous plugs.
4. Improper methods of cleaning the ears.

Symptoms:

Water may happen to get into one's ears while swimming or bathing and the patient feels sudden deafness and tinnitus.



Treatment:

The best way to remove the ceruminous plug is by washing the ear. If the wax is hard, it may be softened by instillation of glycerine-sodium bicarbonate solution or hydrogen peroxide before washing. Removal of hard wax by probe can be done

(V) Washing of the ear

Indications:

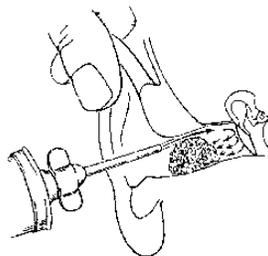
1. Wax.
2. Foreign body .
3. Otomycosis to remove the debris.
4. As a test of the vestibular function .
5. Profuse purulent discharge in case, of chronic suppurative otitis media.

Contraindications:

1. Traumatic rupture of the drum.
2. Dry perforation.
3. Vegetable foreign bodies.
4. Chronic suppurative otitis media.
5. C.S.O.M. which positive fistula test.

Complications:

1. Rupture of the drum: How to know that rupture had occurred?
 - A feeling of severe pain in the ear.
 - Sensation of fluid in the throat.
 - Tinnitus and diminution of hearing.
 - Blood comes from the meatus.
2. Laceration of the external ear
3. Vasovagal attack: from stimulation of the Arnold nerve
4. Caloric stimulation: if too cold or too hot water is used for wash
5. Infection: otitis externa



(VI) Tumors of the external ear

(A) Exostosis

Incidence:

Rare. More common in swimmers

Symptoms:

- Usually asymptomatic
- Hearing loss when large and occlude the external canal.
- May impede ear washing.

Signs:

Multiple bilateral smooth bony swellings in the bony part of the external canal.



Treatment:

If symptomatic excision is indicated.

(B) Squamous cell carcinoma

Incidence

Rare, commonly above 50 years males,

Clinical picture:

- Deep seated otalgia
- Blood-stained ear discharge
- Gradual progressive hearing loss
- Fleshy friable mass in the external auditory canal.
- Cranial nerve paralysis (VII, IX, X, XI, XII).
- Enlarged preauricular, postauricular and upper deep cervical lymph node.

Investigations:

- CT and MRI
- Biopsy
- Metastatic work up.

Treatment:

Temporal bone resection with postoperative radiotherapy.

Pearls in bullets

- The tract of preauricular sinuses may be branched and related to the extracranial part of the facial nerve. Injection of the tract with methylene blue helps its identification and excision. This injection should not be under pressure and allow the dye to diffuse only by capillarity to avoid diffusion to the surrounding tissues.
- Always search for other branchial arch anomalies with in cases of external ear anomalies.
- If auricular haematoma is not treated properly auricular deformity (cauliflower ear) results.
- Vegetable foreign bodies if small (e.g. rice) can be washed and come out easily. If big (e.g. bean, maize) they imbibe water and become swollen and impacted; so washing is not advisable and are extracted by instruments. Animate FB should be killed at first (by drowning with paraffin oil or olive oil) then removal by wash or instruments.
- Traumatic perforation usually heals in 6-8 weeks spontaneously. If persists for more than six months, myringoplasty is indicated.
- Tender tragus is diagnostic of bacterial otitis externa.
- Causative organism of malignant otitis externa is *Pseudomonas aeruginosa*.
- Management of malignant otitis externa is hospitalization, control of diabetes and local and systemic antibiotics active against gram negative organisms.