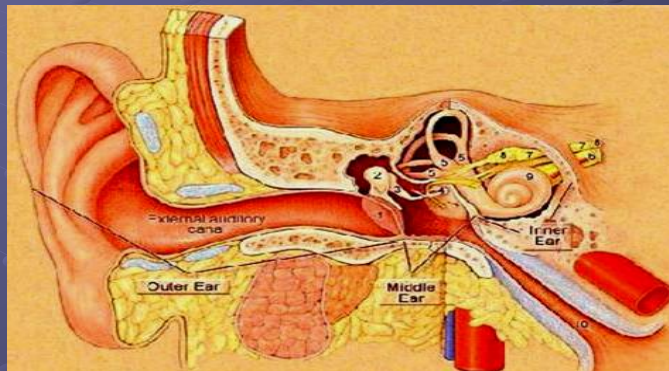


THE EXTERNAL EAR



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THE AURICLE

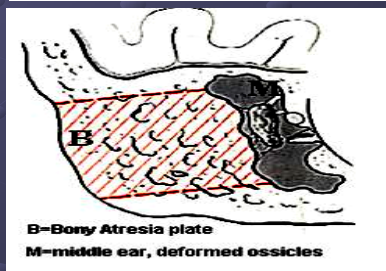
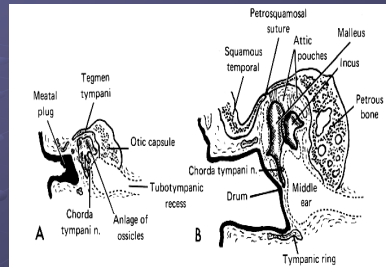


- *An infinite number of anomalies is theoretically possible, but only a few are clinically important*

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THE EXTERNAL AUDITORY MEATUS

- EAC reaches adult size at 9 years
- Atresia of the EAC may result from a failure of formation of a meatal epithelial plug or from a lack of its canalization
- Middle ear structures are not necessarily involved
- The 1st three months of pregnancy is a critical period



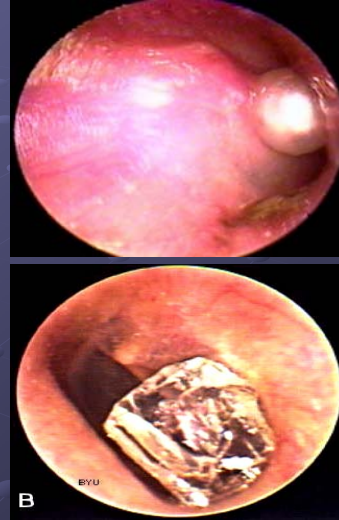
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TRAUMA TO EXTERNAL EAR & FOREIGN BODIES

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FOREIGN BODIES IN THE EAR

- Extremely common in young children but may be seen in any age group
- It consist of anything that is small enough to enter the canal
- Symptoms are hearing loss, pain, or discharge



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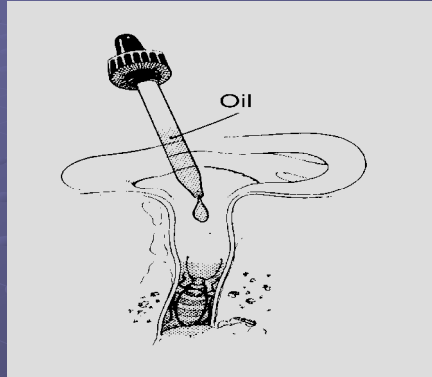
FOREIGN BODIES IN THE EAR



- Occasionally insects become trapped in the external canal & cause great distress by moving about trying to get out

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FOREIGN BODIES IN THE EAR

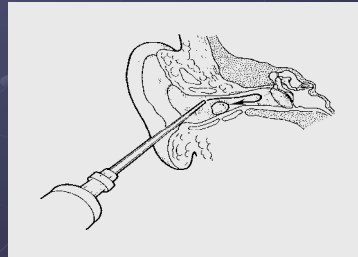
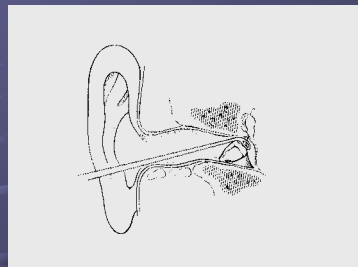


- *The ear should be filled with oil or even water, thus drowning the insect to be picked or syringed out*

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FOREIGN BODIES IN THE EAR

- *In adults gentle removal with a FB curette, suction, washing, or forceps with extreme gentleness*
- *In less cooperative patients, in children & in those patients in whom the FB is wedged into the canal, operative removal under anesthesia is indicated*



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FOREIGN BODIES IN THE EAR

- *Vegetable FB e.g. dry beans swell & if neglected for a long time, it may require operative intervention*
- *Inexperienced attempts at removal have resulted in severe laceration of the canal, tympanic membrane perforations, ossicular disruption & facial nerve injury*



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OTITIS EXTERNA

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EXTERNAL OTITIS



- The skin of the EAC –as every where– has an outer layer of epithelium i.e. epidermis, overlying an inner layer of vascular connective tissue or corium i.e. dermis
- Hair follicles, sebaceous & ceruminous glands are found in the dermis of the cartilaginous portion only

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OTITIS EXTERNA

FACTORS PREDISPOSING FOR SKIN INFECTION



- Stress or localized neurodermatitis result in itching
- Itching results in mild inflammation which produces more itching i.e. a vicious cycle continuing until the skin is infected

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OTITIS EXTERNA

FACTORS PREDISPOSING FOR SKIN INFECTION

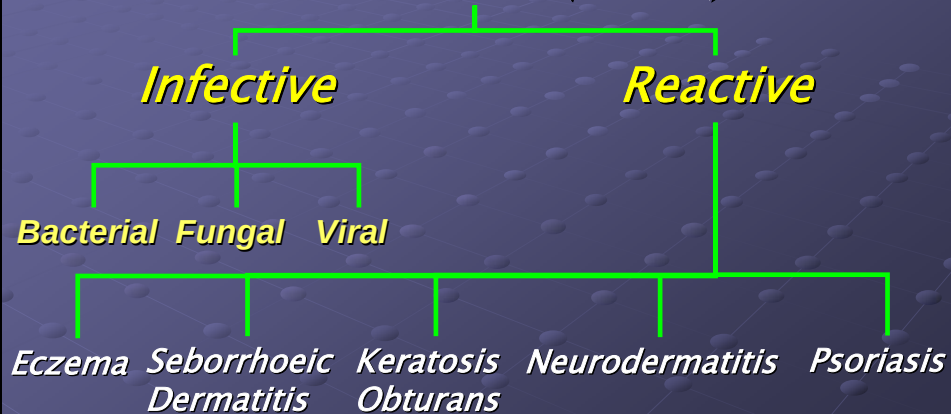
- *Systemic conditions such as anemia, vitamin deficiency & endocrine disorders i.e. diabetes & seborrhoeic dermatitis*
- *Skin allergy*



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Classification of External Otitis

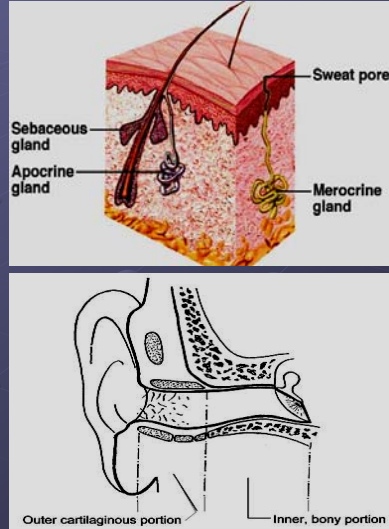
Mawson (1967)



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FURUNCULOSIS

- ❁ *Furunculosis is an infection of a pilosebaceous follicle*
- ❁ *It occurs only in the skin of the outer cartilaginous portion*
- ❁ *At junction of conchal & canal skin*
- ❁ *Due to staph. Aureus penetrating deeply into a hair follicle*



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FURUNCULOSIS

- ❁ *It shows as a red swelling*
- ❁ *Severe pain out of proportion to the size of the visible swelling as the skin is tightly adherent to the underlying cartilage*



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FURUNCULOSIS

✿ *Uncommonly* *conductive*

deafness may be present if the

swelling in addition to any

discharge or debris completely

occludes the external canal



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FURUNCULOSIS

TREATMENT

1) *Painkillers*

2) *Pack* for its splinting effect

3) Systemic *antibiotics* & Rifampicin is the best

4) When the pain fades, the *canal should be cleaned* carefully & the patient is given a sort of alcoholic or antibiotic containing *ear drops* to disinfect the skin & so preventing recurrence

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DIFFUSE EXTERNAL OTITIS

- *A diffuse bacterial infection of EAC*
- *Exciting factors are usually scratching e.g. by a dirty fingernail or swimming in contaminated water (swimmer's ear)*
- *Most prevalent in places where the relative humidity & temperature are high*



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DIFFUSE EXTERNAL OTITIS ***PREDISPOSING FACTORS***

- *Diabetes*
- *Immunosuppression*
- *Allergy*
- *Stress*
- *Frequent removal of skin lipids & absence of cerumen*
- *Active (discharging) otitis media*

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DIFFUSE EXTERNAL OTITIS

CLINICAL PICTURE



ACUTE STAGE

Due to Plugging of pilosebaceous follicles there are

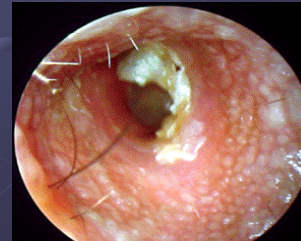
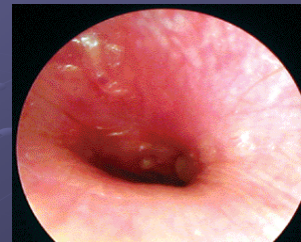
- *Fullness*
- *Irritation & discomfort & hot burning pain*
- *Itching with a scratching cycle*

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DIFFUSE EXTERNAL OTITIS

CLINICAL PICTURE

- *The discharge is at first is thin & serous*
- *Later it becomes purulent, grayish white or greenish & of a musty odor*

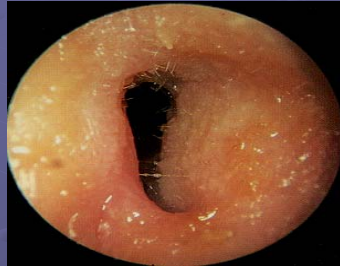


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DIFFUSE EXTERNAL OTITIS

CLINICAL PICTURE

CHRONIC STAGE



- *Thick skin*
- *Debris*
- *In the chronic stage, patients experience less pain but more profound itching & scanty discharge*

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DIFFUSE EXTERNAL OTITIS

TREATMENT

1. THE ACUTE PHASE :

- *Meticulous & gentle removal of all exudate & debris by mobbing or washing*
- *Drops of antibiotics combined with steroids (Tobradex) usually give excellent & quick results*



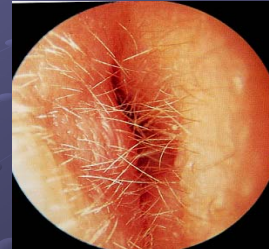
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DIFFUSE EXTERNAL OTITIS

TREATMENT

2. THE CHRONIC PHASE :

- Reduction of meatal swelling by packing with wicks soaked in 10% ichthammol in glycerin
- Once sufficient access obtained, thorough cleaning should be carried out



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DIFFUSE EXTERNAL OTITIS

TREATMENT

2. THE CHRONIC PHASE :

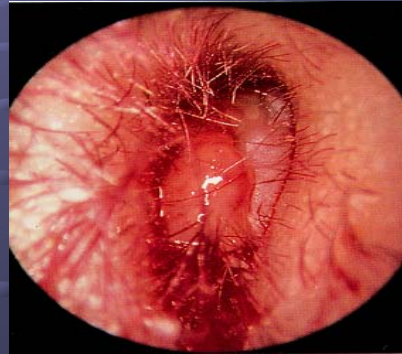
- Topical application of a cortisone derivative together with an antiseptic (rather than an antibiotic) in a water miscible base
- Failure of treatment may indicate secondary otomycosis



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MALIGNANT EXTERNAL OTITIS

- *Uncommon infection caused by Pseudomonas aeruginosa*
- *May result in high morbidity & mortality*
- *Usually occurs in patients with low resistance*
- *Typically in elderly uncontrolled diabetics*



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MALIGNANT EXTERNAL OTITIS

- *Infection begins in the external canal*
- *Usually in the floor at the junction between the cartilaginous & bony parts*
- *Spreads to the preauricular tissues, parotid & TMJ*



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MALIGNANT EXTERNAL OTITIS

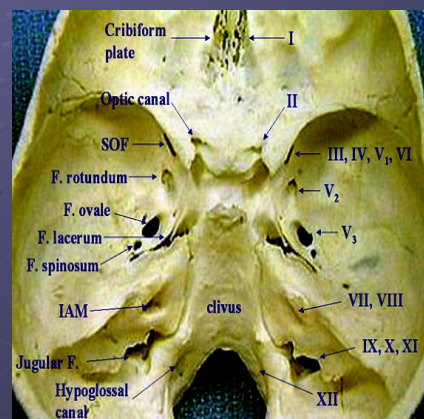


- Progresses along base of skull with paralysis of facial (75%) & 9th, 10th (70%) & 11th & 12th (55%)

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MALIGNANT EXTERNAL OTITIS

- Alternatively the infection may progress from the external canal through the tympanic membrane & throughout the mastoid cells
- Can reach the petrous apex, intracranial structures & brain stem



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MALIGNANT EXTERNAL OTITIS

DIAGNOSIS

1) *Refractory progressive otitis externa in an elderly diabetic or immunocompromised patient*

2) *Pain:*

- *Deep seated constant & boring*
- *Nocturnal*

3) *Granulations on the floor with bare & necrotic cartilage*

4) *Involvement of preauricular region*



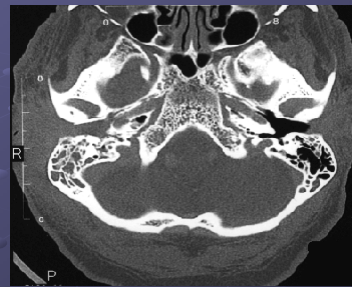
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MALIGNANT EXTERNAL OTITIS

✿ *Imaging modalities include*

- CT scanning
- Technetium Tc 99m
- Gallium citrate (Ga 67)

scintigraphy



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MALIGNANT EXTERNAL OTITIS

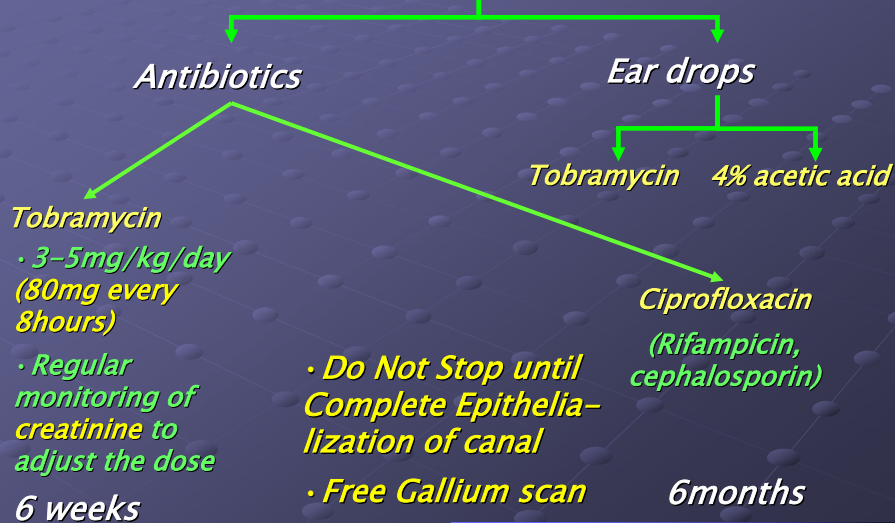
- Axial CT scan in a 65-year-old male
showing bony destruction of the
right temporal bone
- Note the missing posterior wall of
the external auditory canal
- Mastoid air cells are secondarily
involved compared with the well-
aerated left side



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TREATMENT

I. Medical Control Diabetes



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TREATMENT

III. Surgery

*Local
Debridment*

*Wide local
Excision*

Unresponding to antibiotics

Severe pain

Cranial nerve palsies

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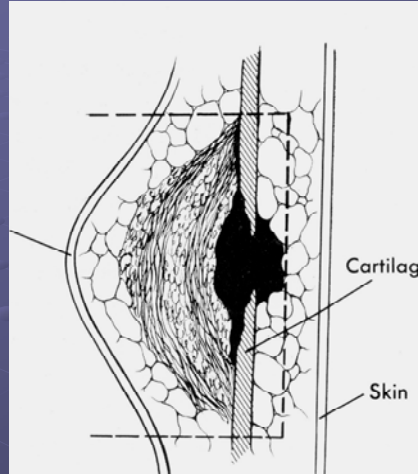
PERICHONDritis & CHONDritis

- *May complicate external otitis, trauma (accidental or surgical e.g. mastoid surgery)*
- *Pain & fever*
- *The auricle swells, becomes dusky in color & its normal contour is lost*
- *The swelling develops on both surfaces*
- *Necrosis of cartilage may occur & finally the auricle shrivels*



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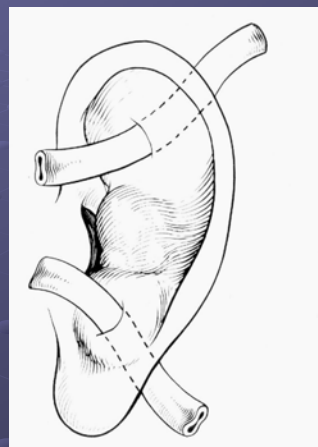
PERICHONDritis & CHONDritis



• Antibiotics & Incision & debridment of non-viable cartilage

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PERICHONDritis & CHONDritis



• Drainage

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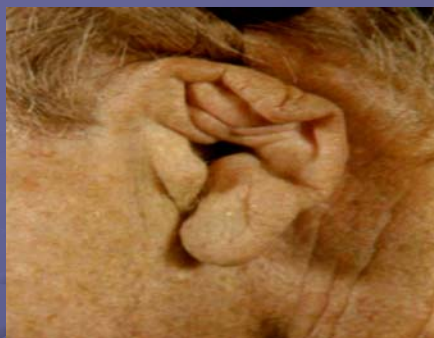
RELAPSING PERICHONDritis



- *Intermittent inflammatory destruction of cartilage*
(external ear, larynx, trachea, bronchi)
- *It is an autoimmune response to type II collagen*

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RELAPSING PERICHONDritis



- *Episodic fever, pain, redness, swelling*
- *Anemia & raised SR*
- *Steroids for episodes & indomethacin for chronic systemic manifestations*

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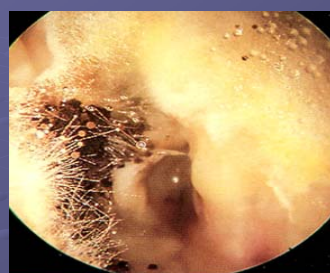
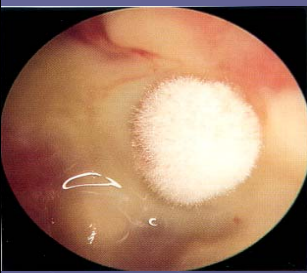
OTOMYCOSIS



- Suspected when there is an intractable otorrhoea in cases of external otitis or infected mastoid cavities
- Primary or on top of bacterial infection
- Increased use of topical antibiotics favors overgrowth of fungus

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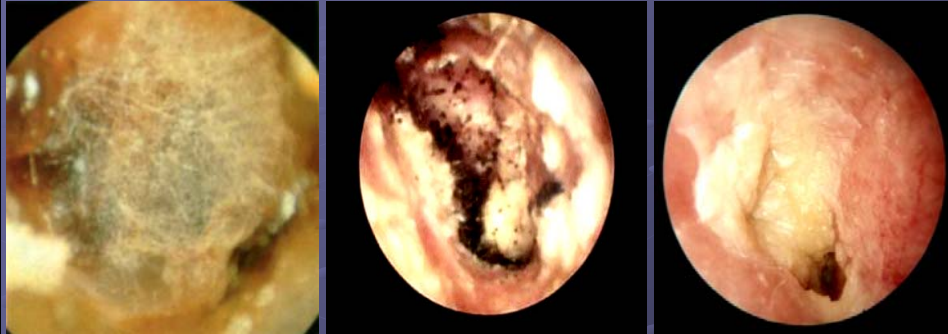
MYCOLOGY



- Most common are:
 - 1) Aspergillus fumigatus
 - 2) Aspergillus niger
 - 3) Candida albicans (monilia)
- They need a warm moist environment & epithelial debris

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DIAGNOSTIC POINTS

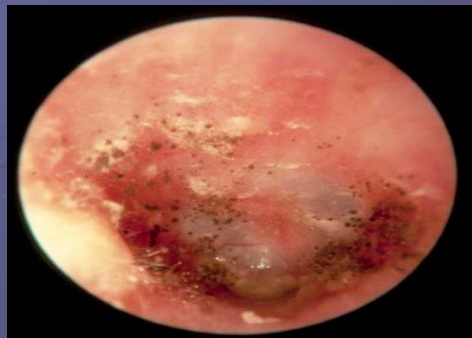


1) Unsuccessful treatment of external otitis with antibiotics

2) Otoscopic appearance

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DIAGNOSTIC POINTS



3) Itching & colorless discharge

4) Severe pain with ulceration on cleaning

5) Mycological laboratory techniques

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TREATMENT OF OTOMYCOSIS

- 1) Frequent dry mopping*
- 2) Application of an antifungal*
- 3) Treatment for at least a week after the condition clears*
- 4) Control of other infected sites in the body*

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VIRAL EXTERNAL OTITIS

1) HERPES SIMPLEX

- ✿ *Short living tense blisters*
- ✿ *Unilateral or bilateral*
- ✿ *Not associated with pain, facial palsy, deafness or vertigo*
- ✿ *Treated by application of Vioform hydrocortisone*

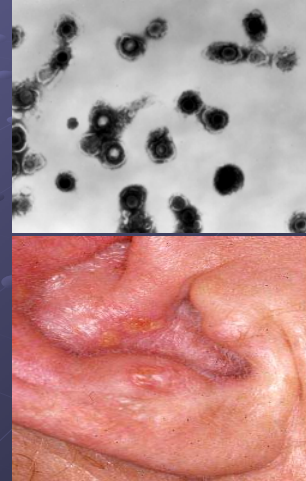


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VIRAL EXTERNAL OTITIS

2) HERPES ZOSTER OTICUS

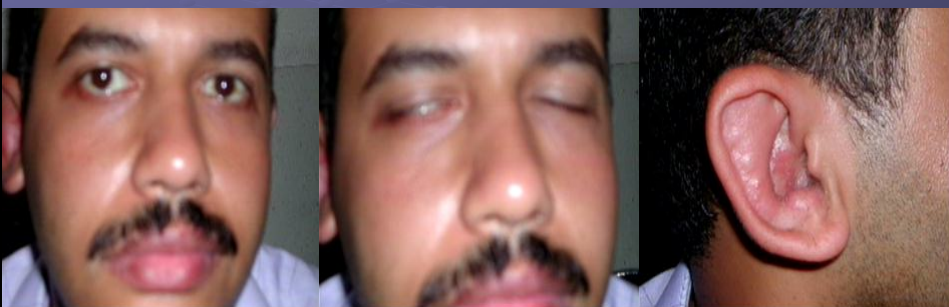
- *Initial infection with Varicella-zoster virus results in chickenpox*
- *Virus lies dormant in the dorsal root ganglia or their cranial analogues is reactivated to give herpes zoster oticus*



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VIRAL EXTERNAL OTITIS

2) HERPES ZOSTER OTICUS



- *When the ganglia of the facial & vestibular & cochlear ganglia are affected we get the RAMSEY HUNT SYNDROME*

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TREATMENT OF RAMSEY HUNT SYNDROME

1) Zovirax

2) Labyrinthine sedatives

3) Oral steroids 1m/kg/day for 2 weeks

4) Decompression if degeneration is more than 90% in 2 weeks



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Reactive External Otitis

Eczema

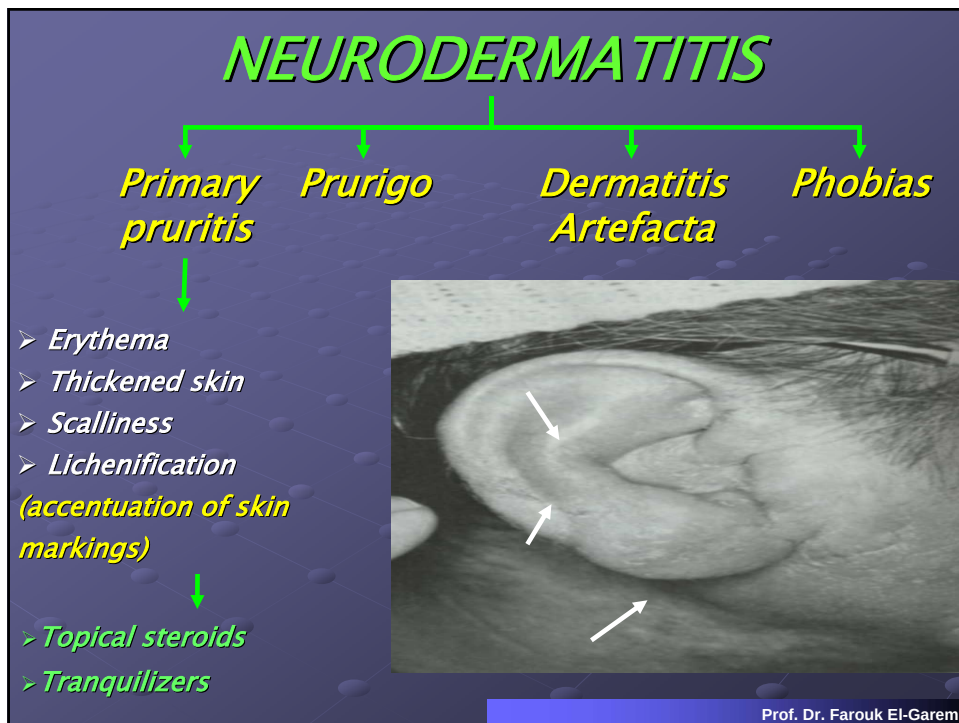
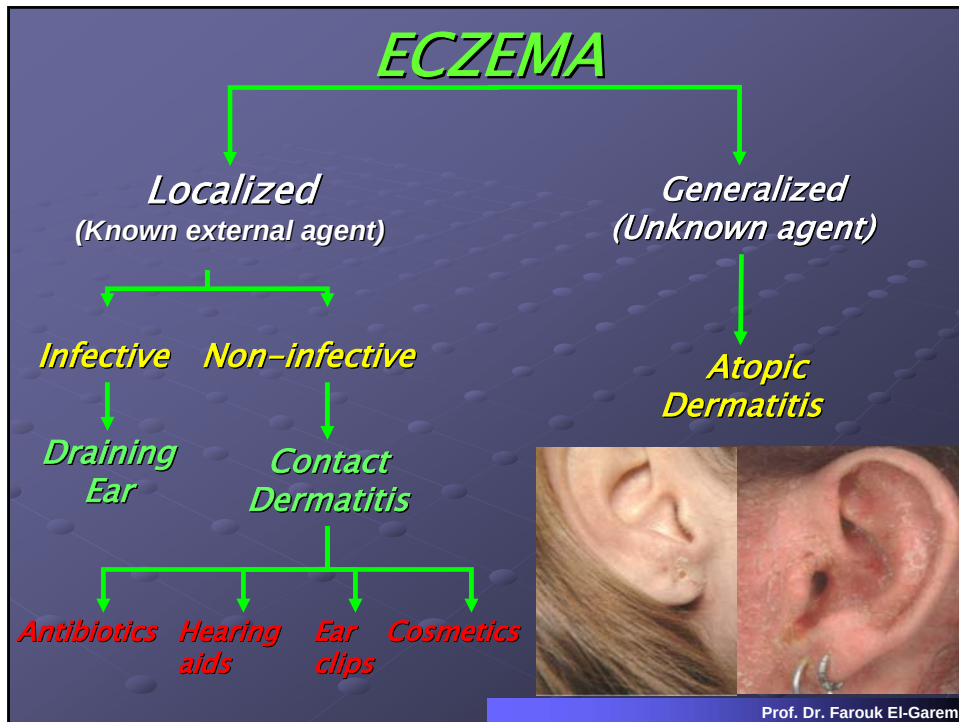
Neurodermatitis

Seborrhoeic dermatitis

Keratosis obturans



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SEBORRHOEIC DERMATITIS

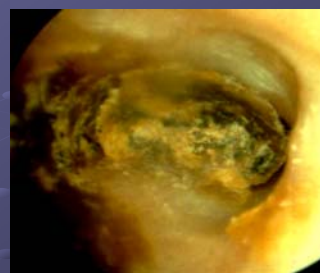


- *Patches of erythema & scalling (Dandruff)*
- *Affects scalp (hair margin) & face & ears*
- *Itching leads to secondary dermatitis*

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KERATOSIS OBTURANS

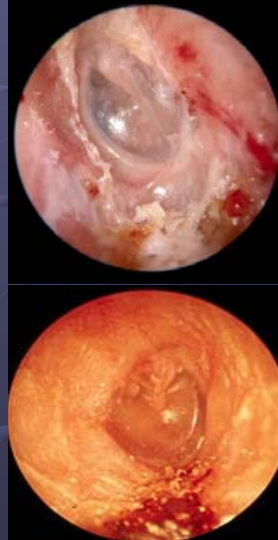
- *The self cleansing mechanism of the external ear canal is nonfunctional*
- *There is an increased rate of desquamation within the deep canal & a failure of normal outward migration*
- *The canal is occluded by a plug of white keratin debris which contains a small amount of normal appearing brown cerumen*



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KERATOSIS OBTURANS

- The keratin exerting pressure on the walls & producing a widened bony canal
- A case showing the inferior wall has been resorbed & the fibrous annulus appears "suspended." A small granulation can be seen in the five o'clock position
- The canal is lined by inflamed hyperemic epithelium due to a FB reaction



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BENIGN TUMORS OF EXTERNAL CANAL

EXOSTOSIS

- Commonest type of benign tumors encountered in the meatus
- It occurs either as multiple exostosis composed of ivory bone or as a single osteoma of cancellus structure

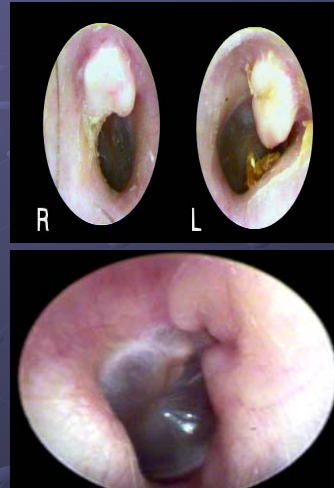


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BENIGN TUMORS OF EXTERNAL CANAL

1. MULTIPLE EXOSTOSIS :

- Arise as rounded swellings, or as a flat area of thickening of a part of the meatal wall i.e. hyperostosis
- Slowly growing & more common in men than in women



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BENIGN TUMORS OF EXTERNAL CANAL

1. MULTIPLE EXOSTOSIS :

- Seldom causes symptoms unless the lumen of the meatus is obstructed by accumulation of wax or epithelial debris & then the patient complains of deafness
- Multiple osteomas, which are not giving rise to symptoms, require no treatment, when symptoms are present, removal is necessary

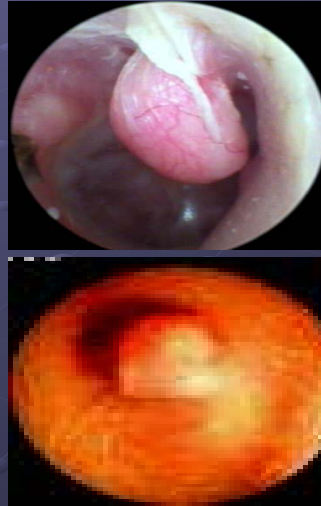


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BENIGN TUMORS OF EXTERNAL CANAL

2. SINGLE CANCELLUS OSTEOMA:

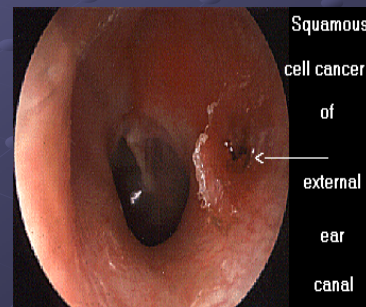
- ✿ *Is less common than the multiple variety*
- ✿ *Usually attached to the posterior wall of the osseous meatus by a narrow base*
- ✿ *Appears as a smooth, rounded body, which may completely fill the canal*



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MALIGNANT TUMORS OF EXTERNAL CANAL

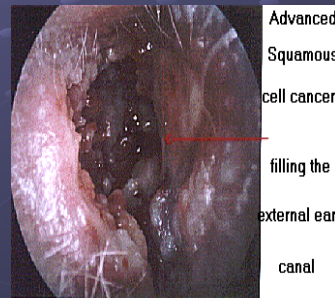
- ✿ *Basal cell & squamous cell carcinoma can involve the external canal*
- ✿ *Squamous cell carcinoma can arise primarily in the external canal, or it extends to the canal from the middle ear*



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MALIGNANT TUMORS OF EXTERNAL CANAL

- *Neoplasia should be suspected when otitis externa is refractory to therapy*
- *Persistent granular or necrotic tissue, which bleeds easily & accompanied by pain, should be biopsied to establish the diagnosis*
- *Radical surgery is usually required*



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IMPACTED WAX

- *The accumulated wax may form a solid, often hard, mass giving rise to deafness & discomfort in the ear*
- *Tinnitus & disturbance of balance may occur from pressure of the wax on the drumhead*
- *A cough reflex due to stimulation of the auricular branch of the vagus*

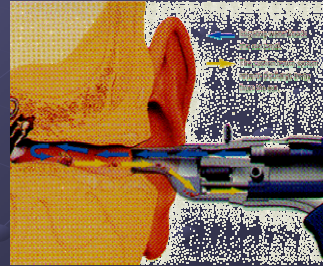
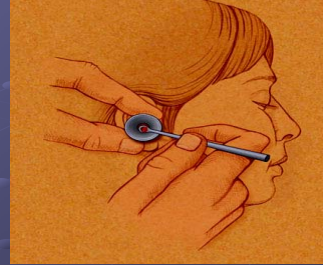


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IMPACTED WAX

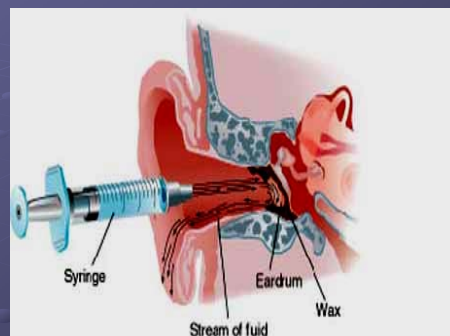
Wax is removed either by instrumental manipulation, suction or by syringing

Syringing is by sterile saline solution, warmed to body temperature



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IMPACTED WAX



The auricle is pulled upward & backward to straighten out the meatus & the fluid is injected gently along the upper wall of the meatus

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IMPACTED WAX

- ✿ *Severe lancinating pain occurs if the drum head is ruptured & this may be accompanied by intense vertigo while the retaining fluid is tinged with blood*
- ✿ *If the solution is too hot or too cold a caloric response may be induced & vertigo experienced by the patient*



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Thank You

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