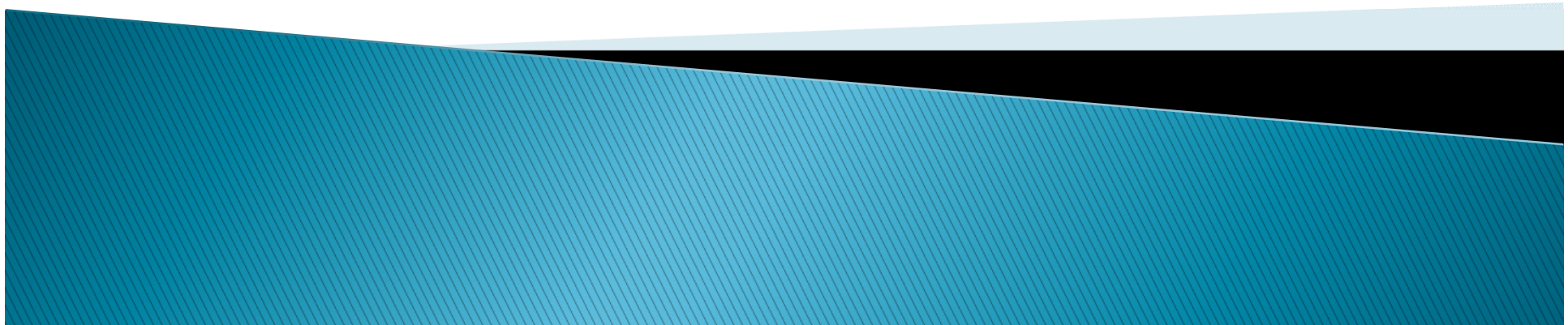
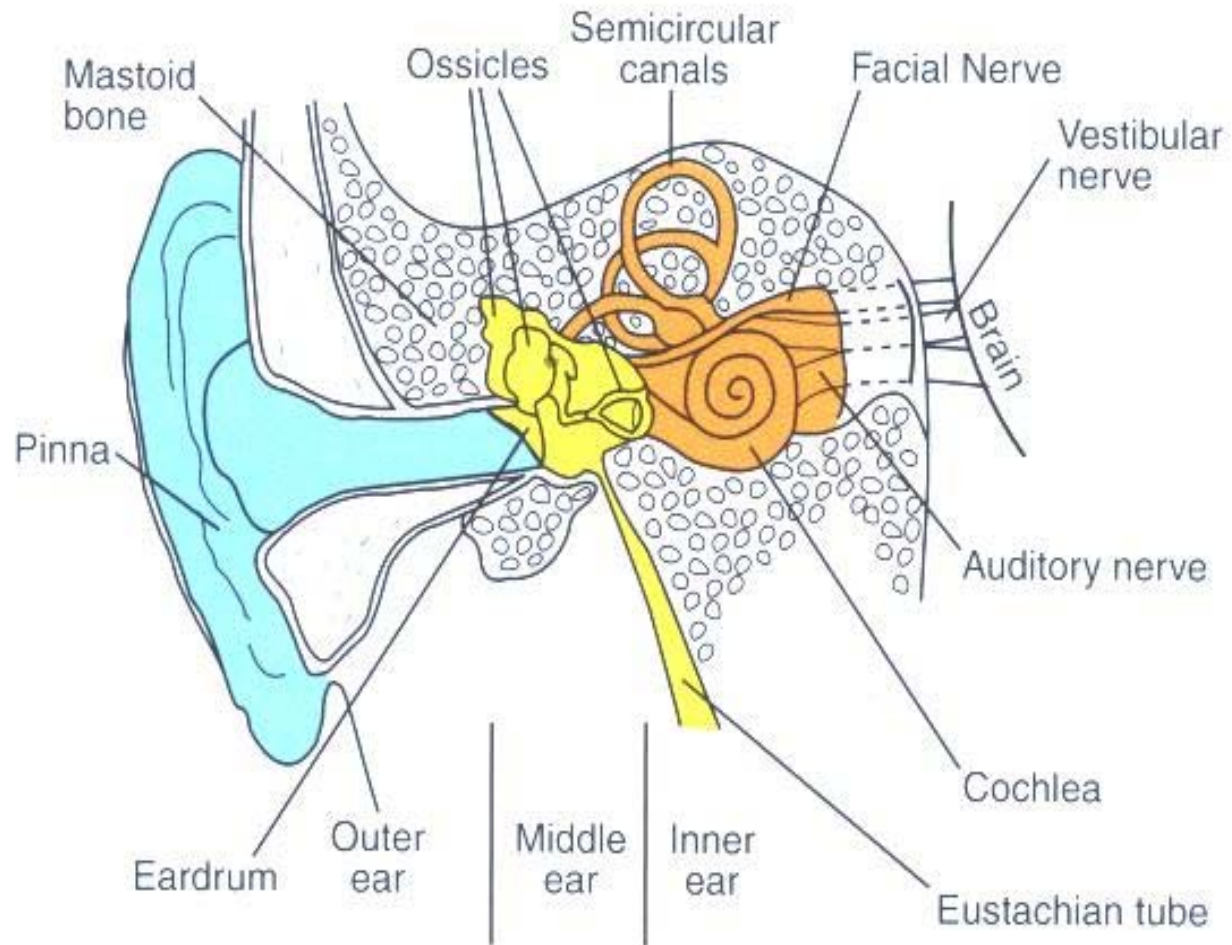


Diseases of external ear

Dr Hitesh Verma
Assistant Professor





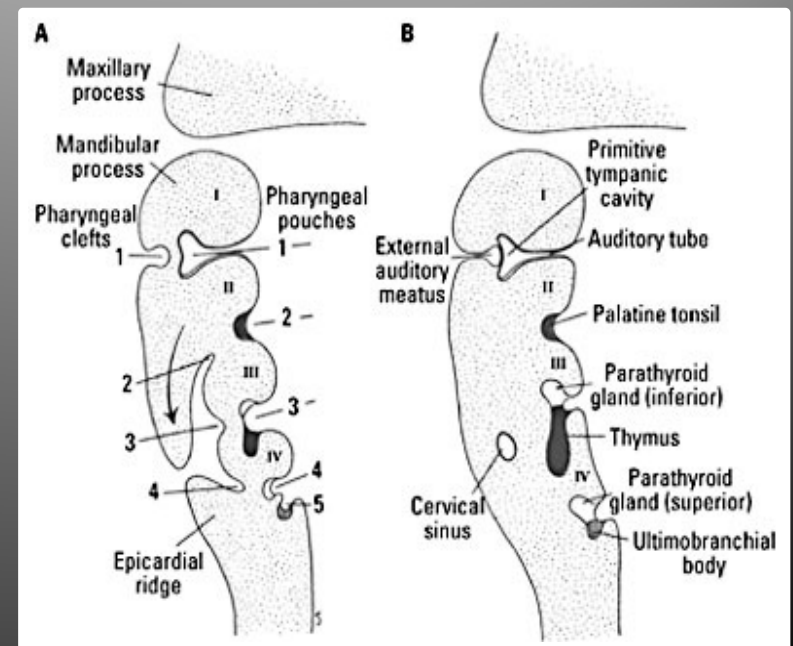
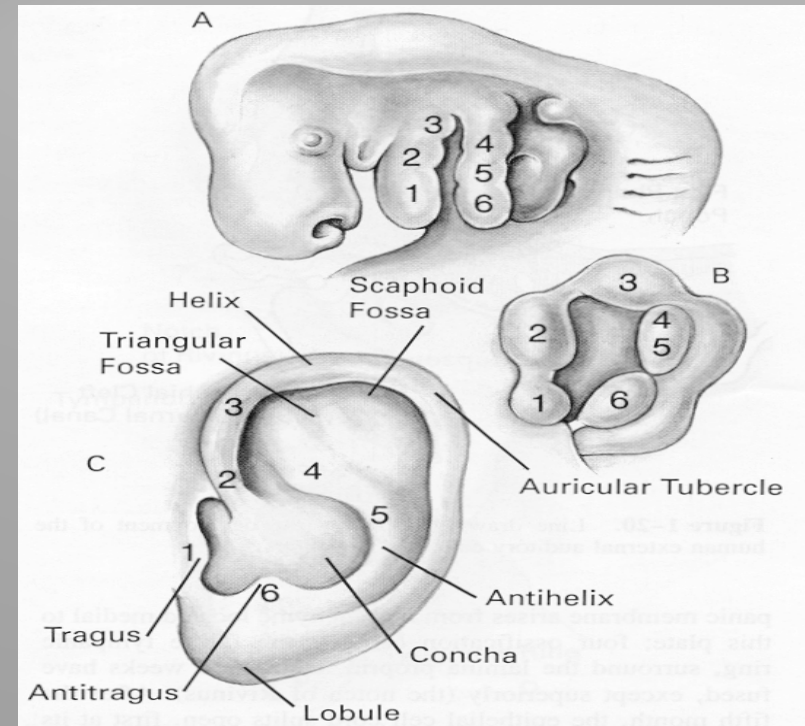
Embryology

Auricle

- ▶ First and second branchial arches.
- ▶ 5th wk – six auricular hillocks of His, three from the first arch and three from the second.
- ▶ 6th wk – hillocks have fused to form the auricle.

EAC

- ▶ Dorsal part of 1st branchial cleft



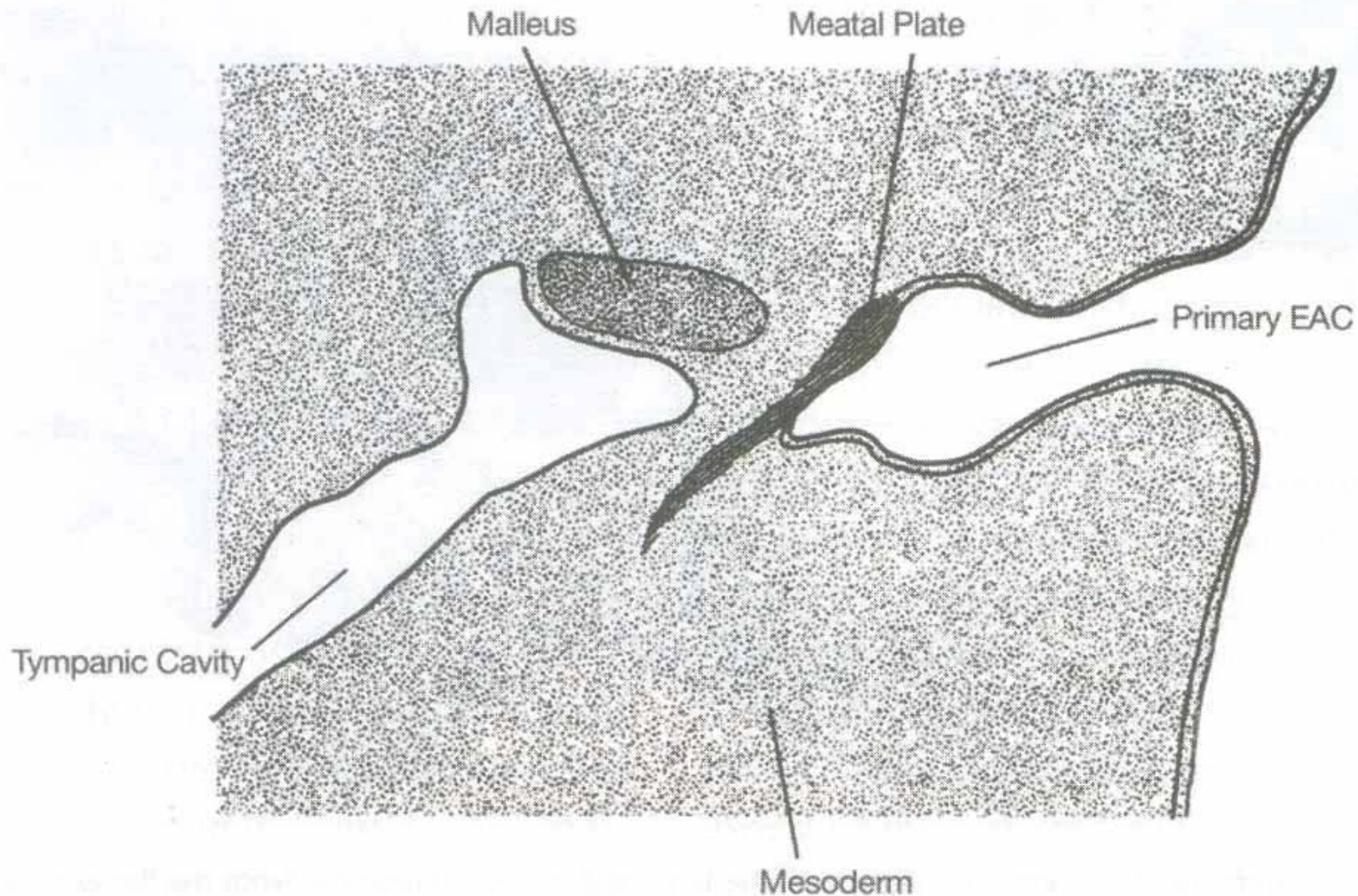
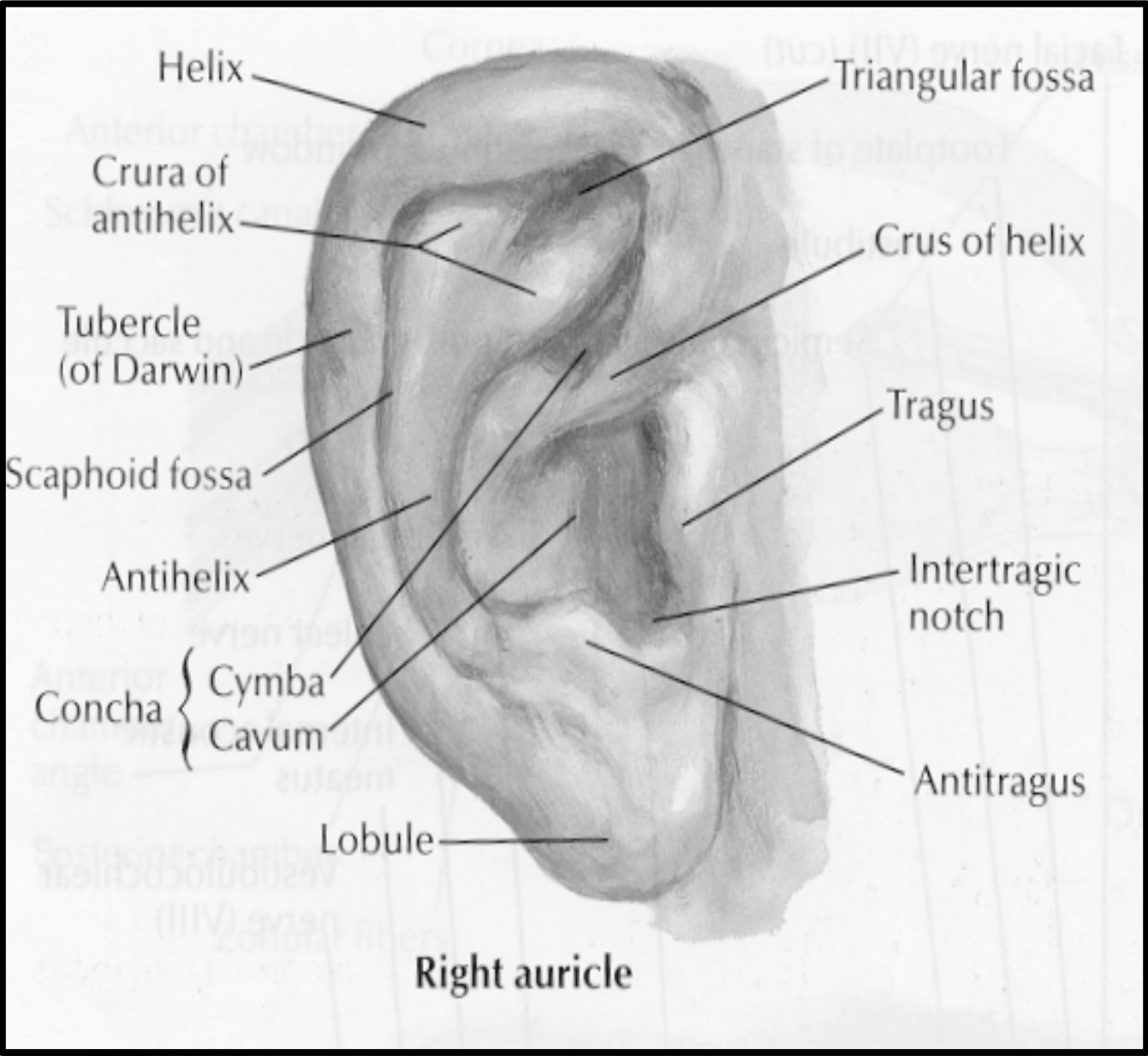


Figure 1-4 The primary external auditory canal (EAC) is formed at 9 weeks with deepening of the first branchial groove. The meatal plate develops as epithelial cells grow medially toward the tympanic cavity. After Anson and Donaldson.² Reproduced with permission from



CLASSIFICATION

- ▶ Congenital
- ▶ Trauma
- ▶ Inflammation and infection
- ▶ Tumor
- ▶ Miscellaneous condition



Congenital

Size



Macrotia



© Hodder Arnold / Scott-Brown 7E

Position



Shape

- ▶ Darwin's tubercle – small elevation on posterosuperior part of helix. Homologous with tip of mammalian ear & is inherited.

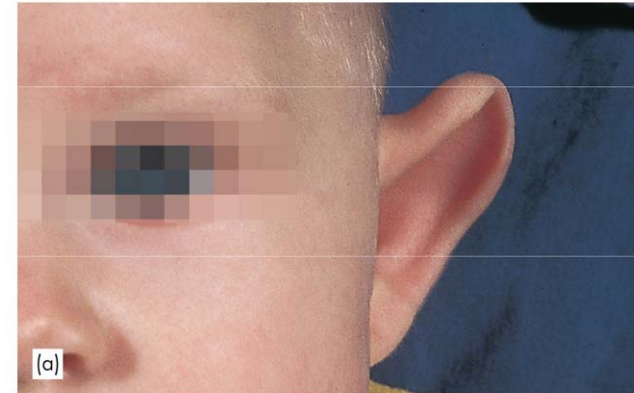


Darwin's Tubercle

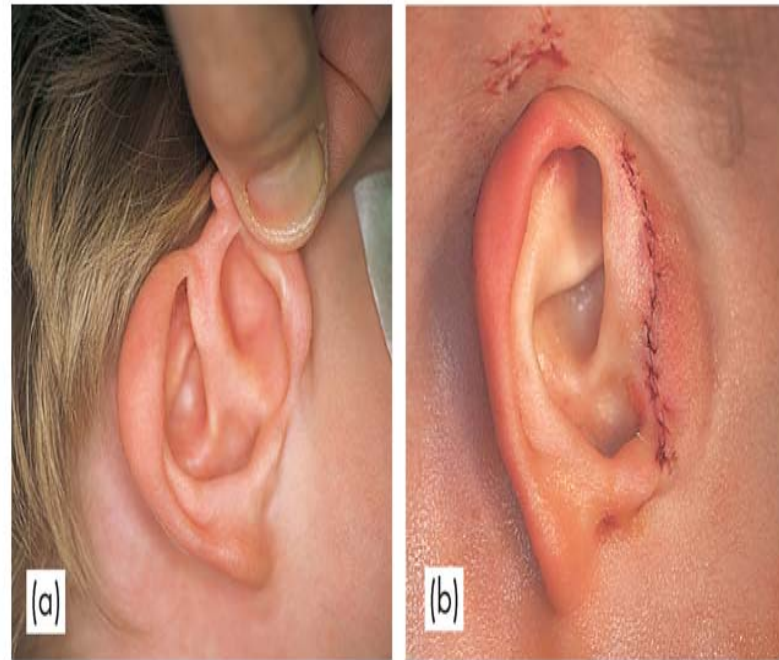


Protruding / bat ears

- ▶ Antihelix is poorly formed with an excess of conchal cartilage.



Polyotia or mirror ear



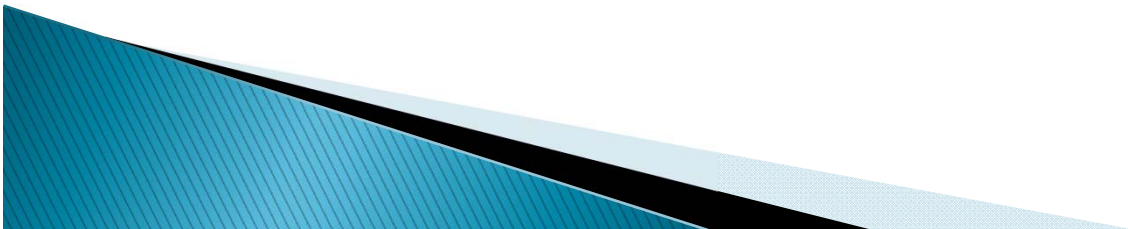
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Bumps and clefts

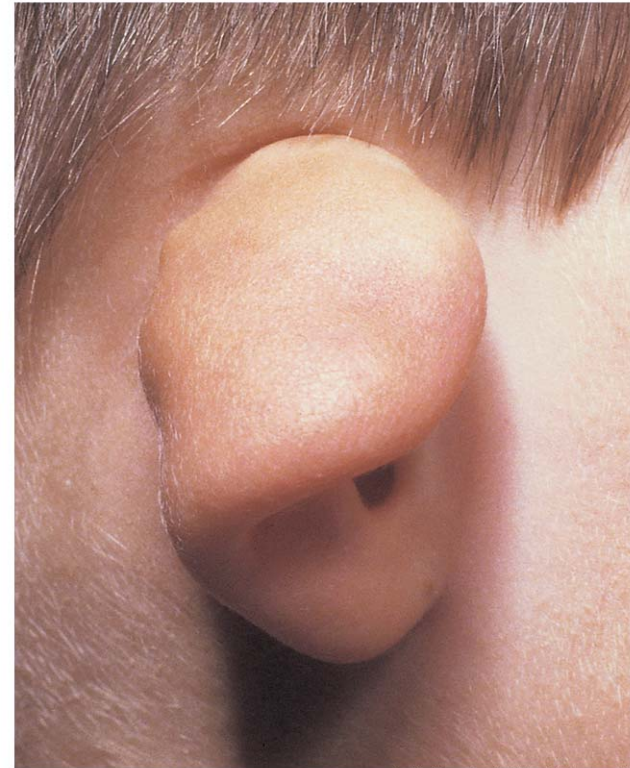


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Lop ears

- ▶ The external ear stands away from the head at a greater angle (Normal angle of the auricle to the median plane averages 25 degrees in boys and 18 degrees in girls).



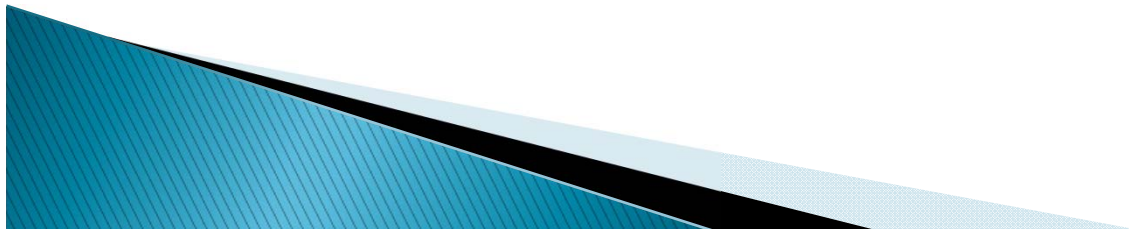
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Cryptotia (The hidden ear)

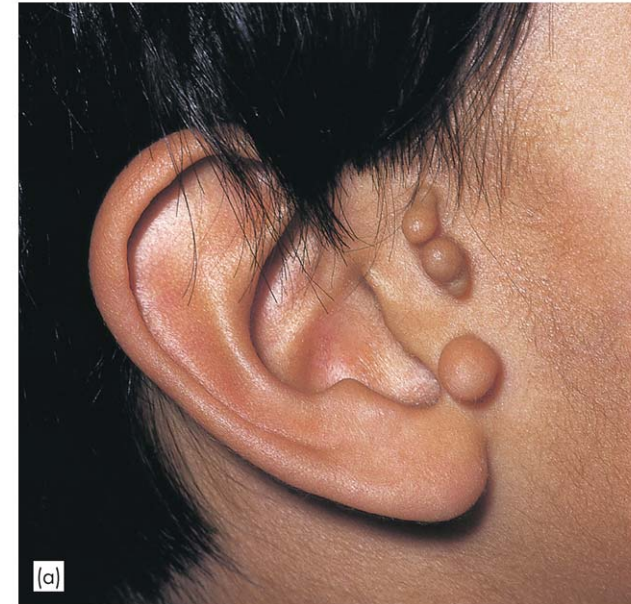


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Auricular appendages / accessory auricles

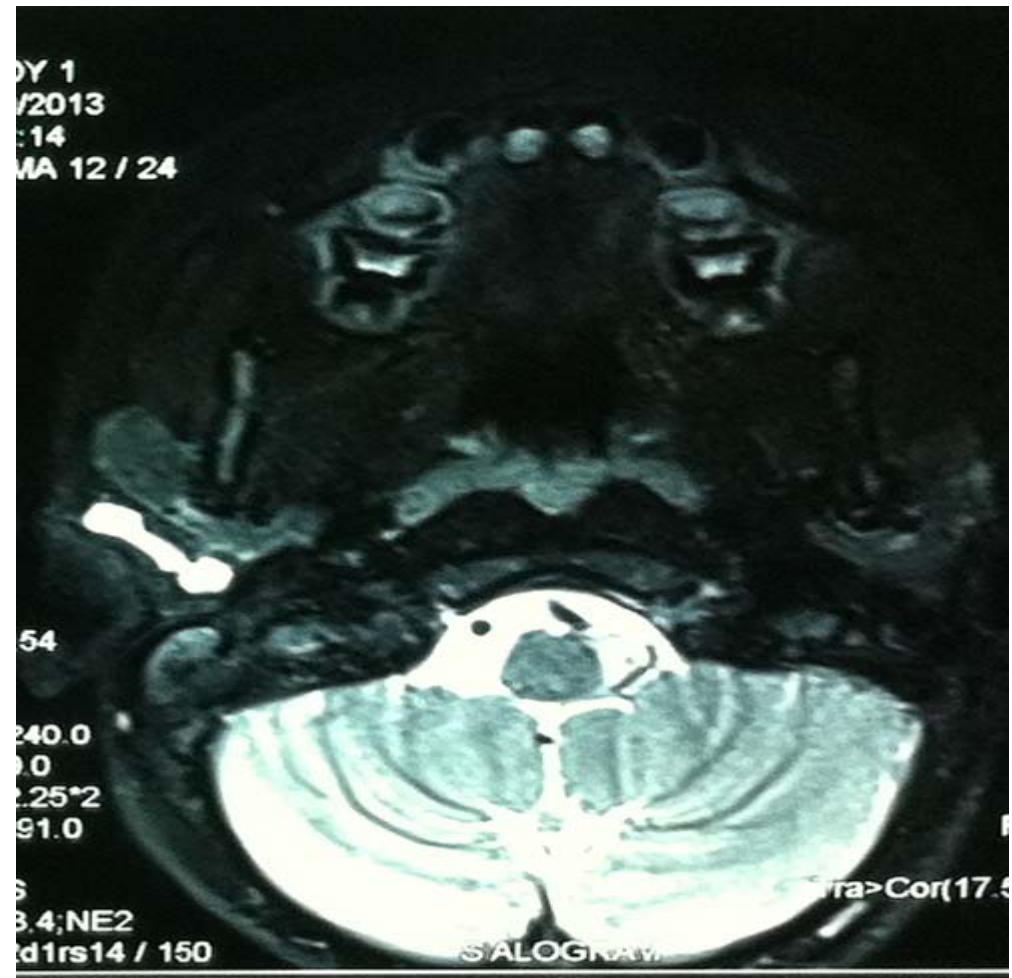
- ▶ Tags of skin with or without a cartilaginous base.
- ▶ May be sessile or pedunculated & single or multiple.
- ▶ Frequently located in the line of junction of the tragus & angle of mouth. MC seen just anterior to tragus or ascending crus of helix

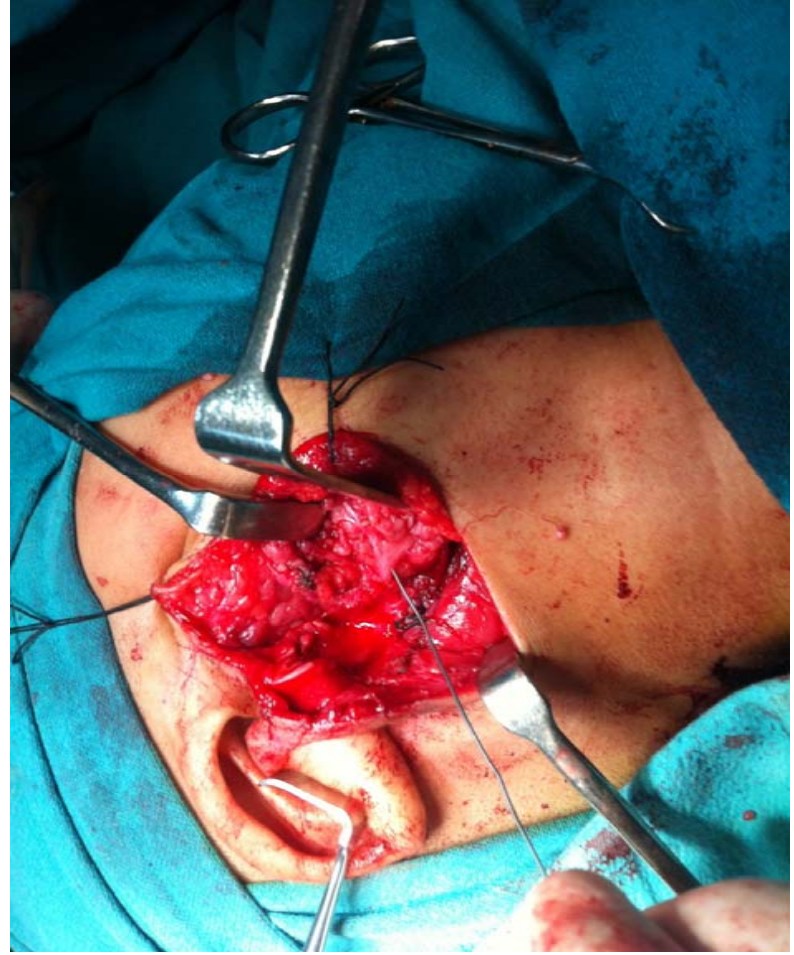
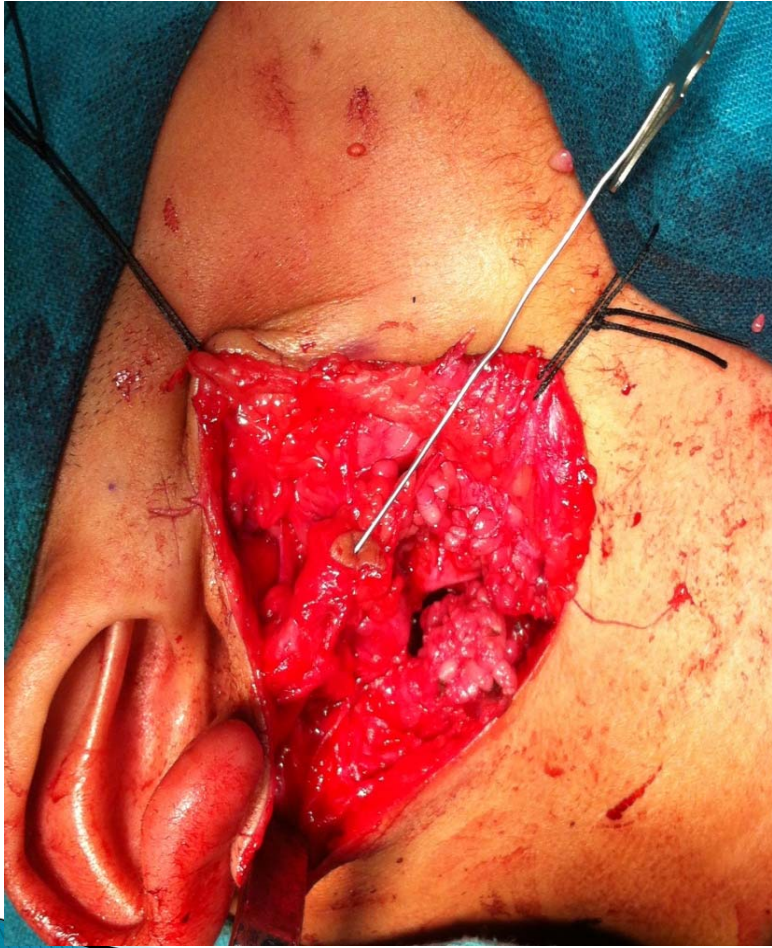


Preauricular sinus



Fistula




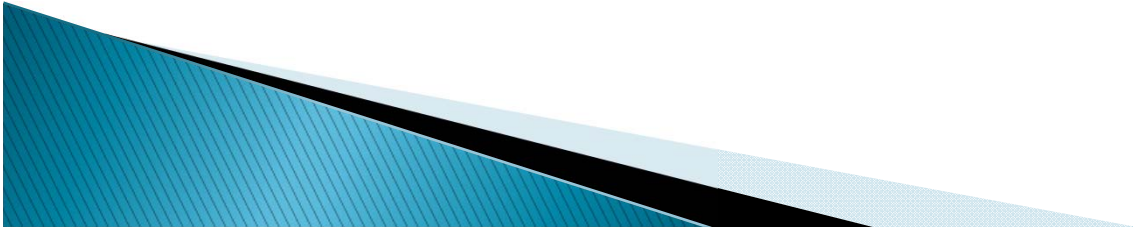


Atresia of external ear



Microtia repair

- ▶ Delayed upto 7 yrs – allows growth of rib cage
 - ▶ Autogenous cartilage is best, silastic implants have extrusion rate >50%
 - ▶ First Stage (Framework fabrication and insertion) – harvest, sculpture & implant contoured rib graft
 - ▶ Second Stage (Lobule transposition) – 3 to 6 m later
 - ▶ Third Stage (Atresia repair)
 - ▶ Fourth Stage (Tragal reconstruction)
 - ▶ Fifth Stage (Auricular elevation)
- 





Before



After 1st stage



TRAUMA

- ▶ Wrestlers, boxers & rugby football players
- ▶ Child abuse

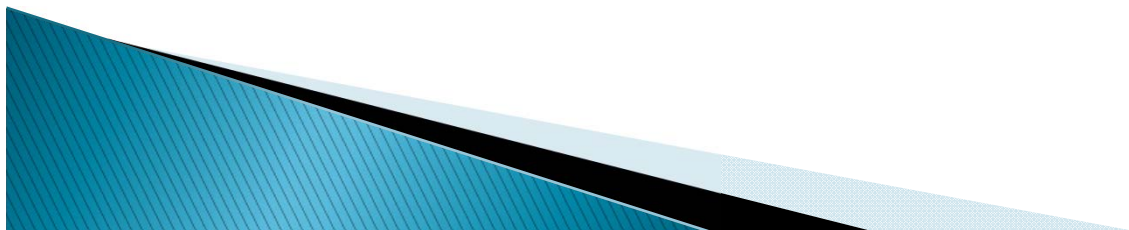
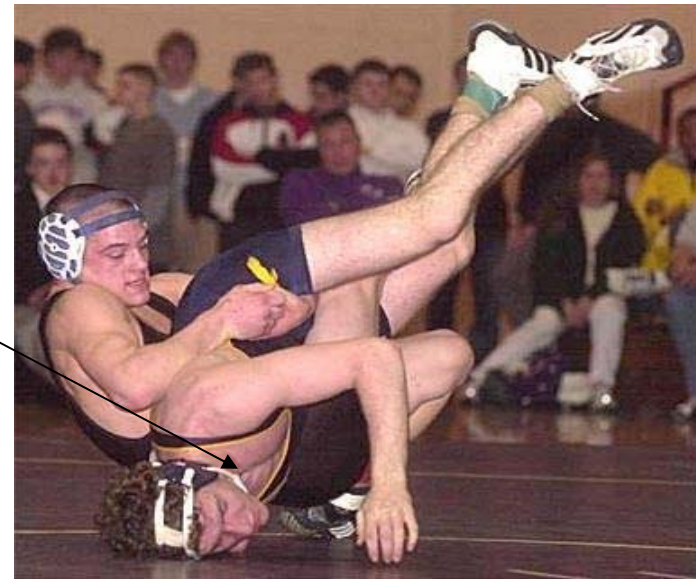
Treatment

- ▶ Deeper burns – debridement
- ▶ Simple lacerations – closure under aseptic condition



Hematoma of auricle

- ▶ Closed trauma – boxing, rugby football
- ▶ Extravasation of blood b/w cartilage & perichondrium – soft doughy swelling



Laceration



Haematoma



Impetigo



Erysipelas



Acute localised(circumscribed) OE or Furunculosis

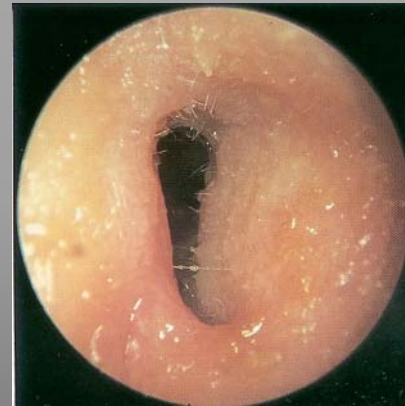
- ▶ Acute localized infection
- ▶ Symptoms –
- ▶ Signs –
- ▶ Treatment –



Acute diffuse external otitis

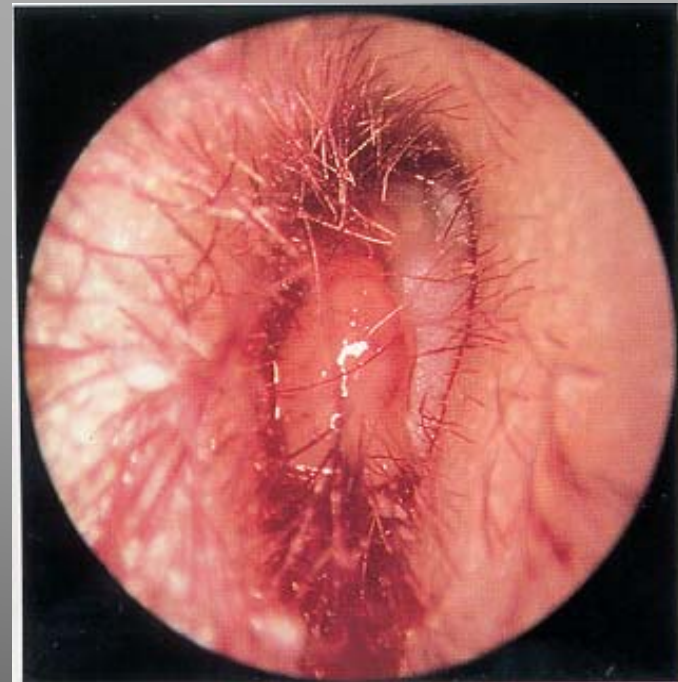
- ▶ Swimmer's ear,
- ▶ Pseudomonas aeruginosa, Staph aureus
- ▶ Staging
 - (1) Preinflammatory stage
 - (2) Acute inflammatory stage
 - Mild
 - Moderate
 - Severe
 - (3) chronic inflammatory

Treatment



Clinical features

- ▶ Otolgia (worse at night).
- ▶ Purulent fetid otorrhoea.
- ▶ Mild conductive hearing loss
- ▶ Neurological involvement – 40%
– 60%– dysphagia, hoarseness, facial dysfunction.




Otomycosis

- ▶ Fungal infection of the skin of the EAC
- ▶ Either primary pathogen or superimposed on bacterial infections

Etiology

- ▶ Aspergillus niger (80 to 90% of cases)
- ▶ Candida albicans

Risk Factors

- ▶ Extremely moist, hot environments
 - ▶ Chronic Bacterial Otitis Externa
 - ▶ Undergone open cavity mastoidectomy
 - ▶ Wear hearing aids with occlusive ear moulds
- 

Otomycosis contd....

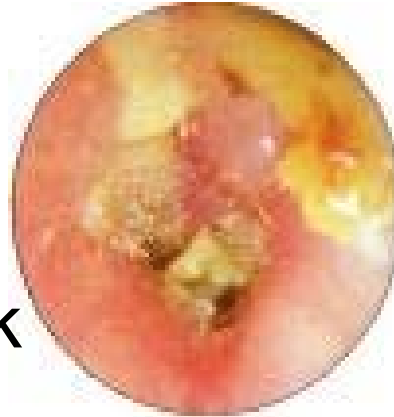
Symptoms

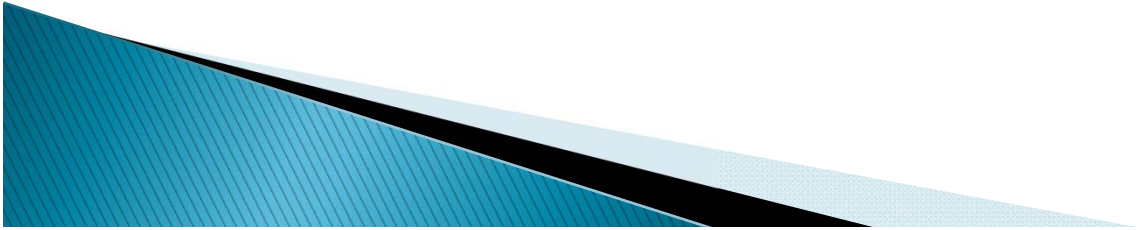
Signs

Aspergillus niger – black specks in debris

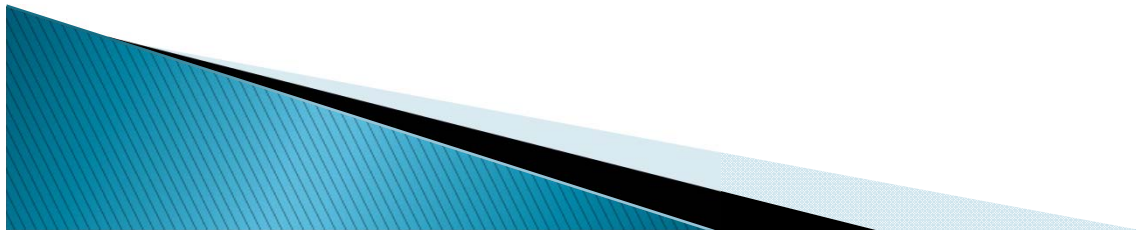
Diagnosis confirmed by microscopic examn of debris (10% KOH) or by culture

Treatment





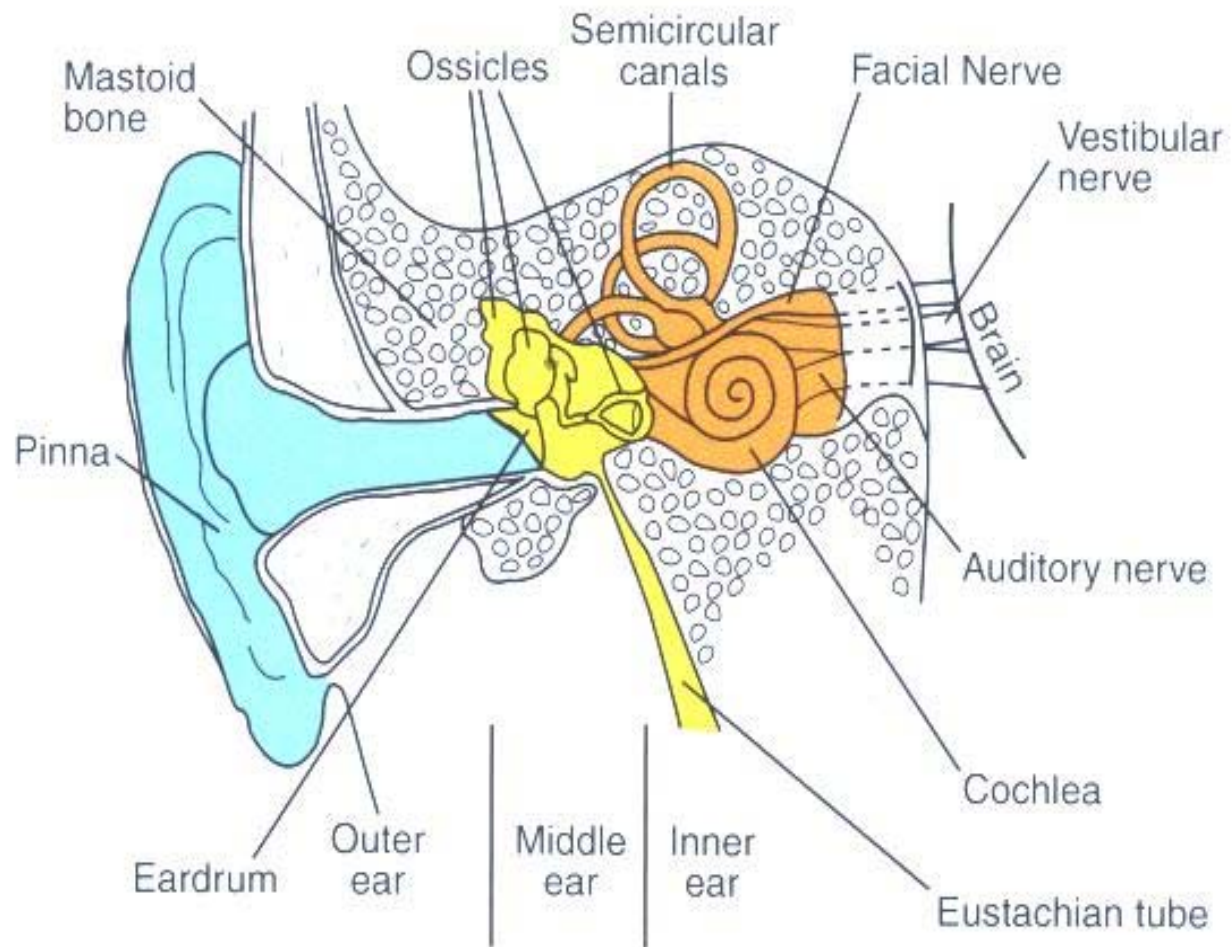




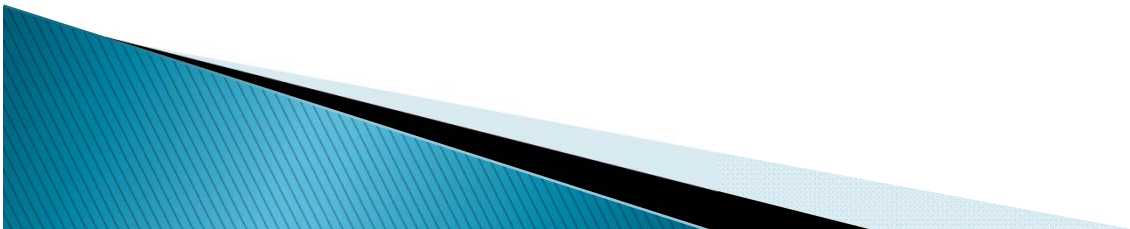
Questions

- ▶ Parts of External ear

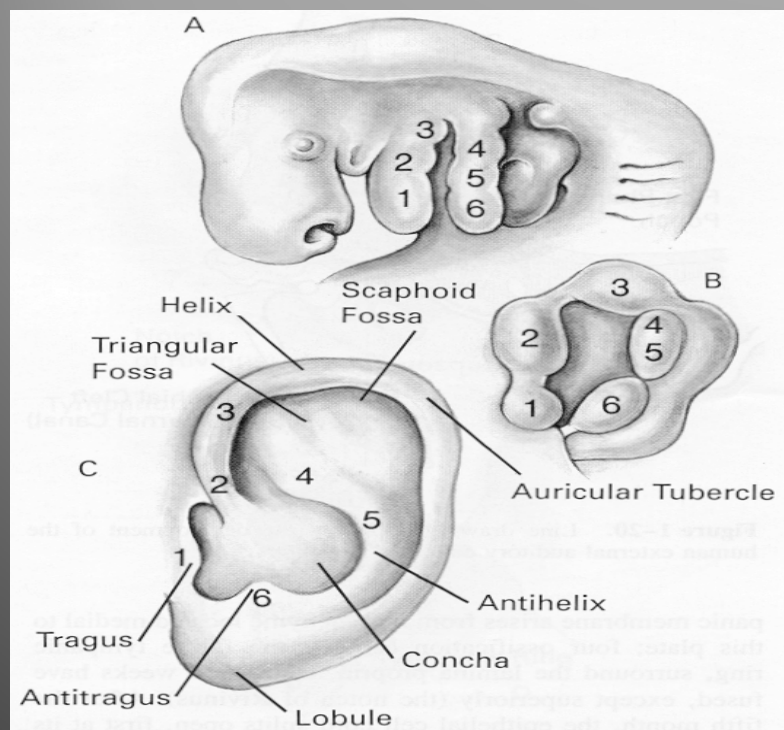




▶ Pinna develop from?



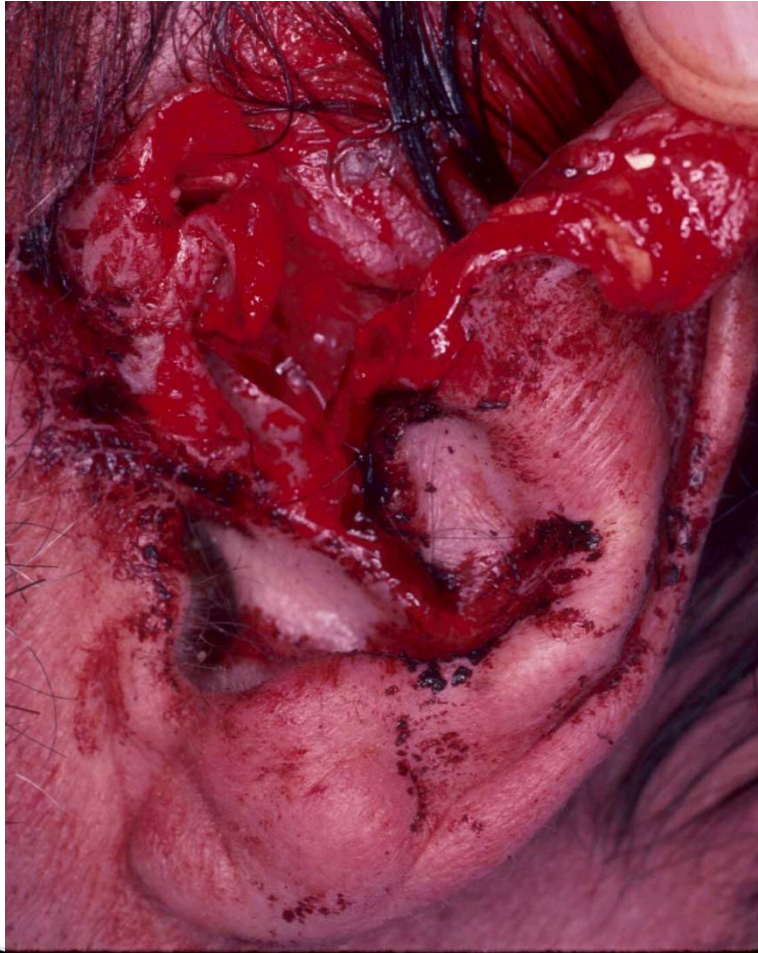
Embryology



- ▶ Hematoma of pinna if not drain ?



Laceration



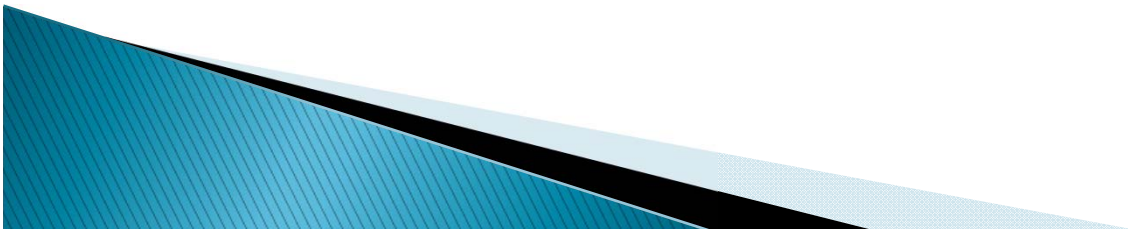
Haematoma



▶ Organism in otomycosis ?

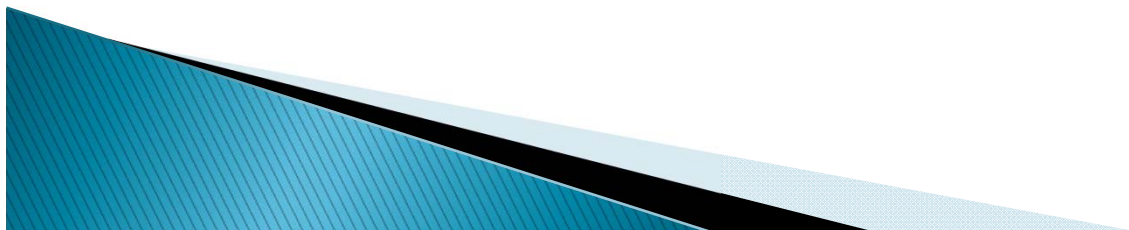


- ▶ Aspergillus niger (80 to 90% of cases)
- ▶ Candida albicans



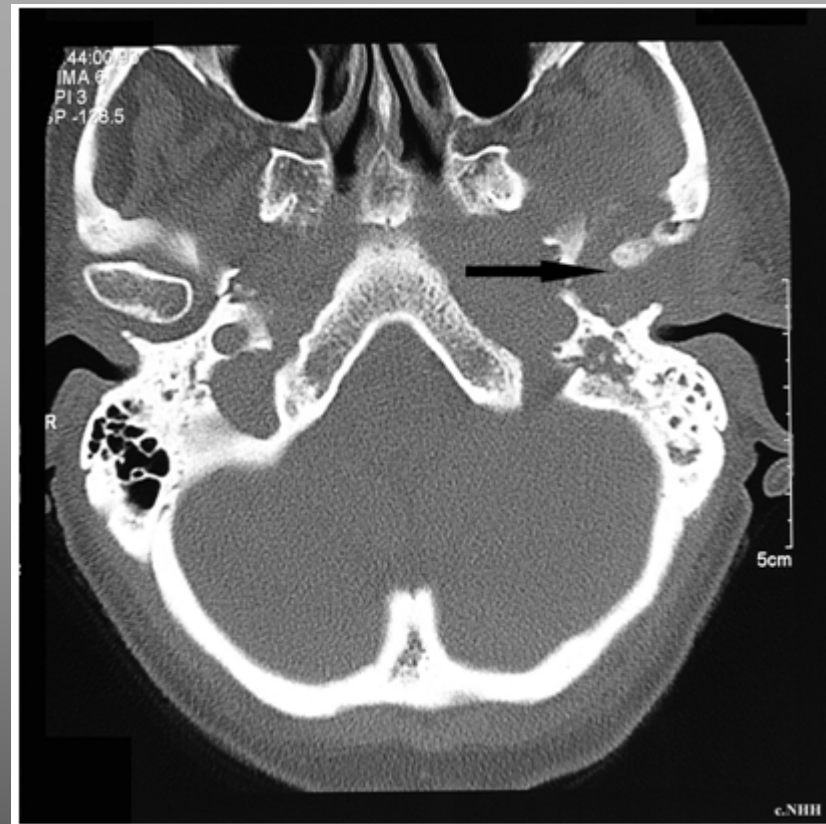
Malignant otitis externa

- ▶ Skull base osteomyelitis –
- ▶ Microorganism
 - P aeruginosa (95%) –
 - Aspergillus – begins in middle ear & mastoid as opposed to EAC
 - Proteus species
 - Staphylococcus aureus
 - Staphylococcus epidermidis
 - Salmonella
- ▶ Epidemiology
- ▶ Causes
 - Diabetes (90% of patients)
 - Immunodeficiencies, such as lymphoproliferative disorders or medication-related immunosuppression – chemotherapy & steroids
 - AIDS



Investigation

- ▶ Leukocyte count –
- ▶ Erythrocyte sedimentation rate –
- ▶ Serum chemistry –
- ▶ Culture and sensitivities from the EAC –
- ▶ Bx of granulation tissue – to exclude malignancy



Tc 99 scan
Gallium citrate Ga 67
scan



Figure : Coronal T2 weighted M.R.I. scan showing inflammation of the right skull base with enhancement of the overlying dura (arrow).

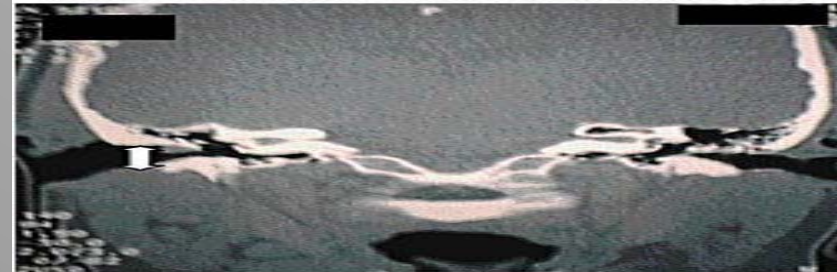


Figure 2: Coronal C.T. scan showing erosion of both the bony and cartilaginous external ear canal on the right side (arrow).



Figure 3: Fascia Lata Graft

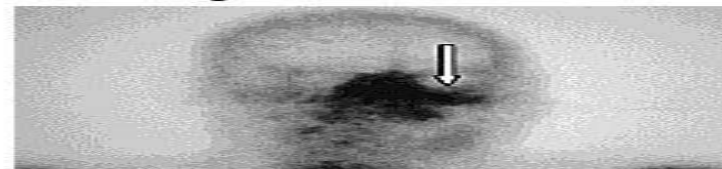


Figure 4: A Technetium99 bone scan showing a hot spot at the left skull base.

Treatment

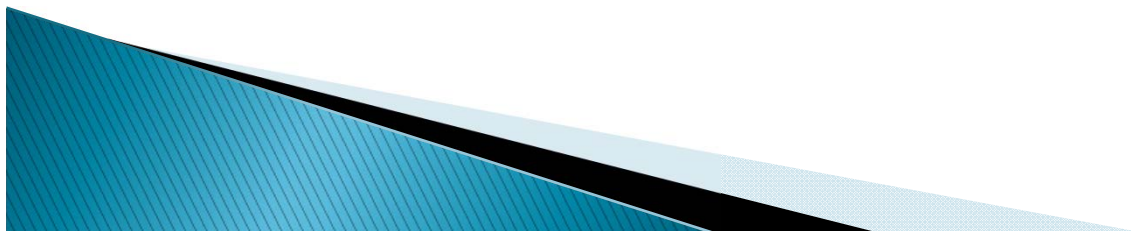
- ▶ Control of blood sugar
- ▶ Pain control
- ▶ Daily aural irrigations
- ▶ Topical antimicrobial agents – controversial
- ▶ Systemic antibiotics

– **Duration** – 6–8 wks, objective parameter, unanimous agreement still lacking.

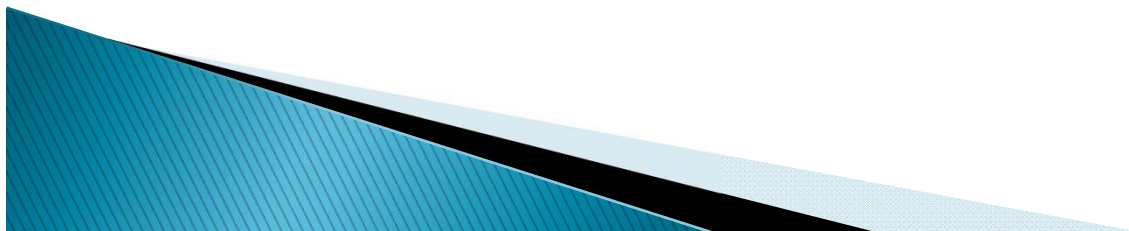
Proposed criteria –

1. Healing of EAC skin.
2. –ve ear secretion culture.
3. Return to normal ESR– most reliable.
4. Continue therapy for 1wk after Ga-67

Surgical Care



Bullous Myringitis (Otitis Externa Haemorrhagica)



Herpes Zoster Oticus

- ▶ J. Ramsay Hunt described in 1907
 - ▶ Viral infection affecting geniculate ganglion of facial nerve
 - ▶ Caused by varicella zoster
- Symptoms –
- ▶ Early
 - ▶ Late (3 to 7 days): vesicles on concha or pinna, facial paralysis
 - ▶ Vesicles dry up leaving crusts which persist for 7 to 10 days
 - ▶ Hearing loss, tinnitus, vertigo

Treatment



Ear Wax (Cerumen)

- ▶ Mixture of secretions from ceruminous & pilosebaceous glands, together with squames of epithelium, dust & other foreign debris.

Two types.

- Dry wax –rice-bran wax, grey granular & brittle.
- Wet wax –honey wax

Function

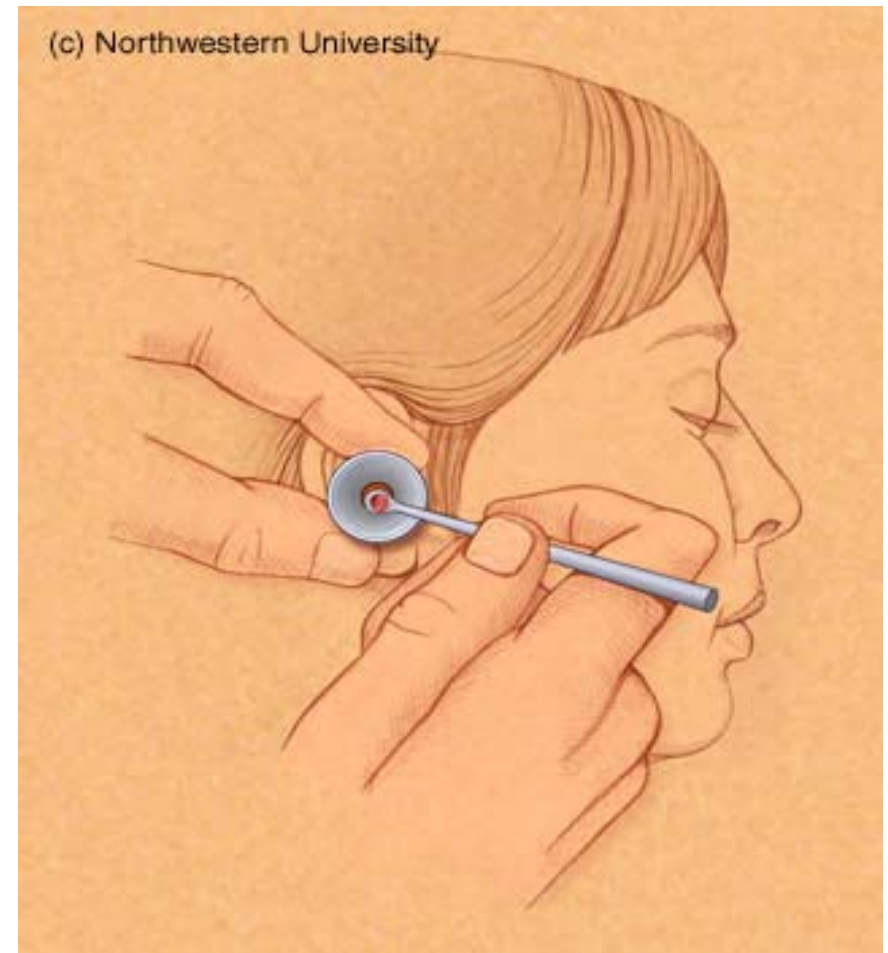
- antibacterial properties
- protective fn of cerumen is waterproofing effect on EAC

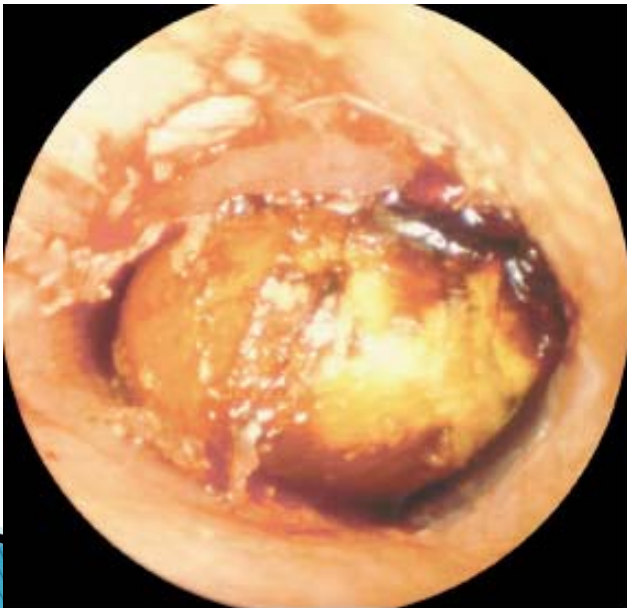


copyright Michael Hawke MD

How is ear wax treated ?

- ▶ The best way: removal under direct vision by a doctor
- ▶ Irrigation: saline at 37C
ceruminolytics





Sebaceous cyst

Keloid



Benign tumors of EAC

- ▶ Lipoma, fibroma, myoma, chondroma, angioma
- ▶ Papilloma
- ▶ Adenoma
 - Sebaceous adenoma



Hyperostosis

- ▶ Growth of cortical bone in EAC
- ▶ Two forms
 - Exostosis
 - Single osteoma

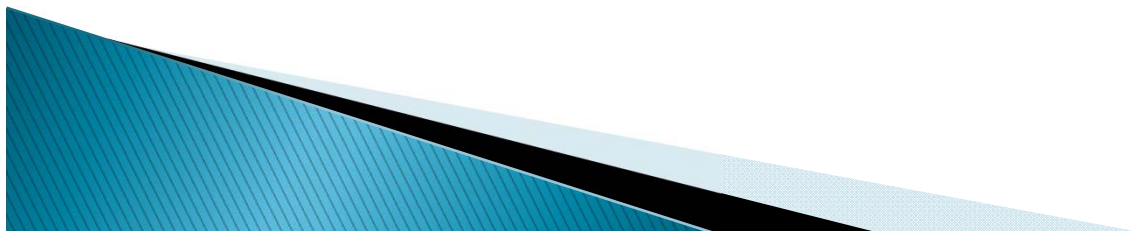


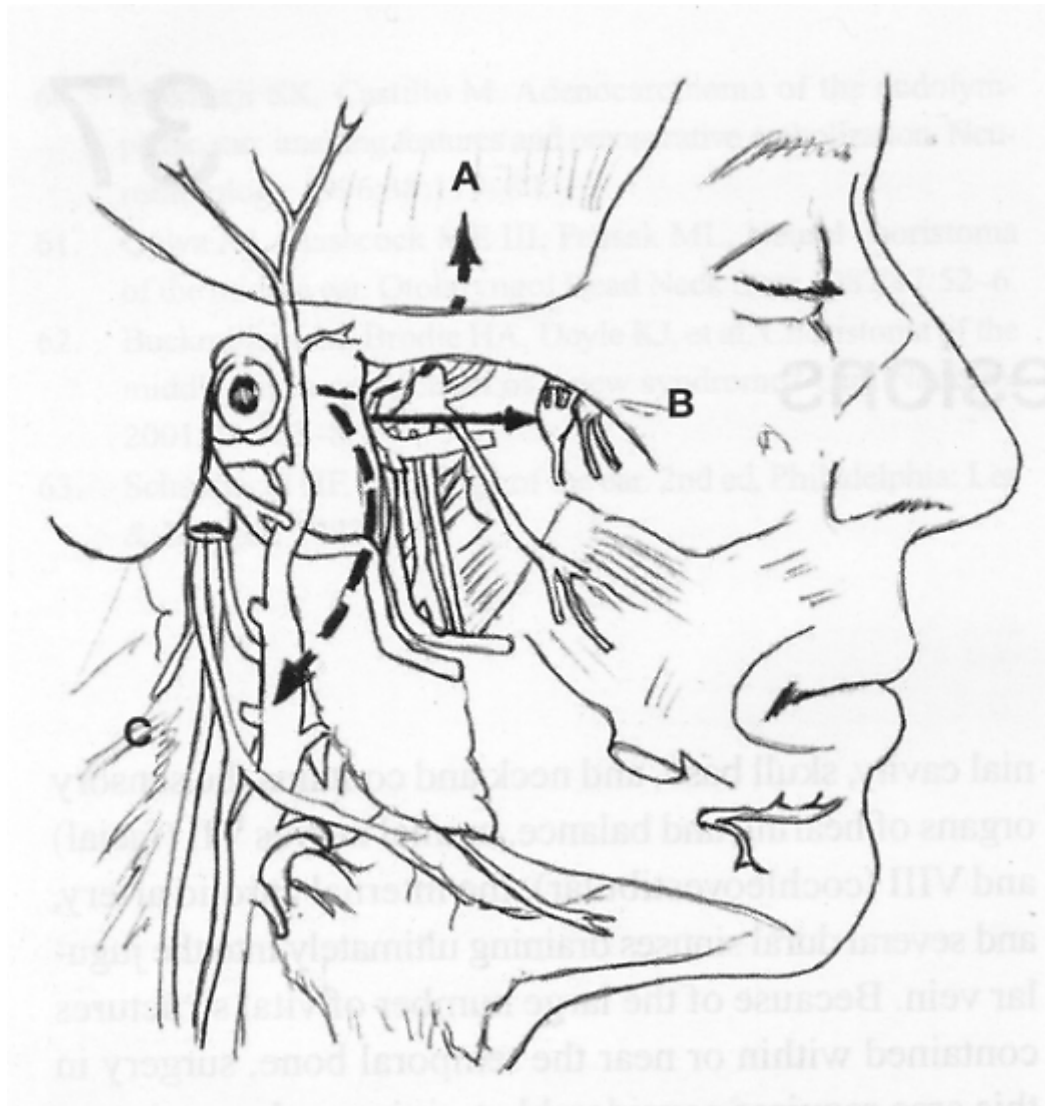
Table 37-1 MALIGNANCIES OF THE TEMPORAL BONE

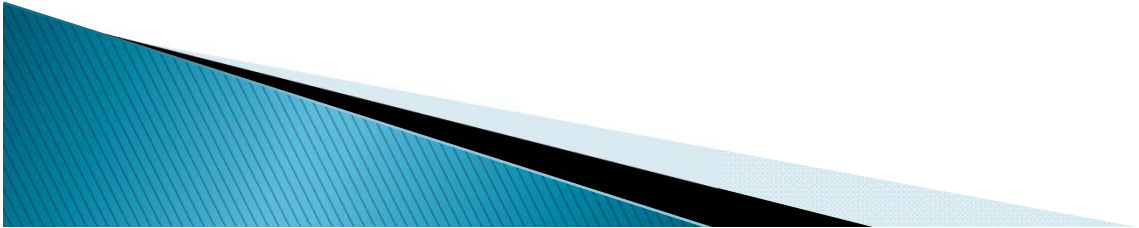
Type	Number (%)
Epidermal	538 (82)
Squamous cell carcinoma	452 (69.2)
Basal cell carcinoma	74 (11)
Melanoma	12 (1.8)
Glandular	69 (10.6)
Adenocarcinoma*	28 (4.3)
Adenoid cystic carcinoma	25 (3.8)
Other†	16 (2.5)
Sarcomas	23 (3.5)
Rhabdomyosarcoma	9 (1.4)
Other‡	14 (2.1)
Other malignancies§	23 (3.5)
Total	653

RISK FACTORS

- ▶ Long standing CSOM
- ▶ Chronic otitis externa
- ▶ Radiation exposure
- ▶ Human papilloma virus
- ▶ Aflatoxin B produced by aspergillus flavus
- ▶ Xeroderma pigmentosa, psoriasis
- ▶ Actinic rays, trauma, frost bite



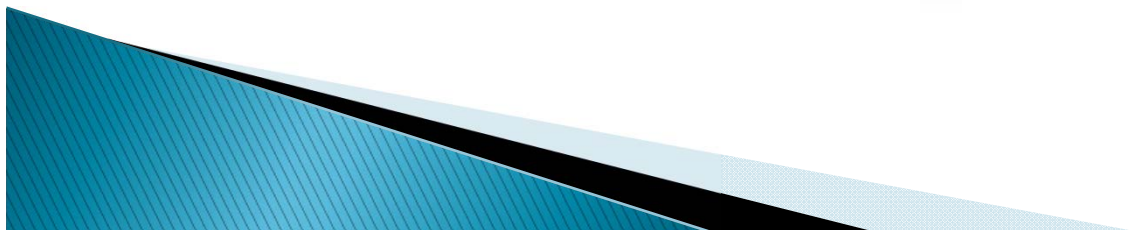




**Vesicular rash
on external ear**

**Lower motor
neuron paralysis
of facial nerve**

**Loss of taste
sensation over
anterior 2/3 of tongue**





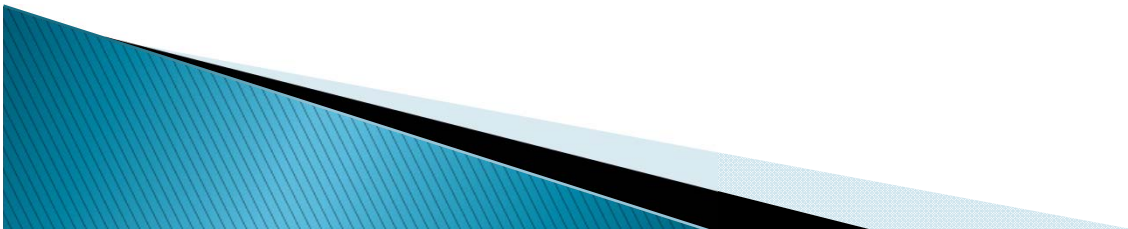




- ▶ Other name of malignant otitis externa ?
- ▶ Causes of malignant otitis externa ?
- ▶ Investigation of choice



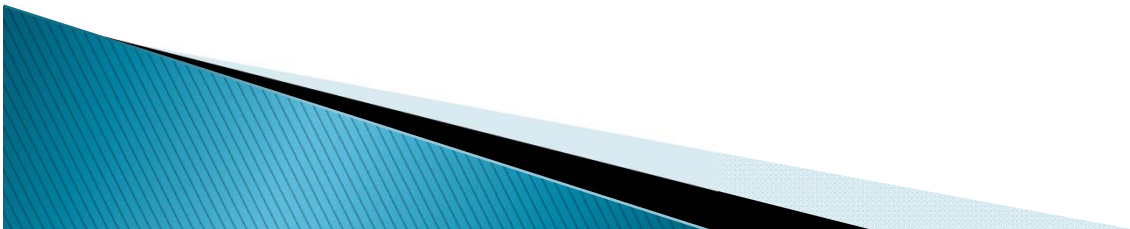
- ▶ Skull base osteomyelitis
- ▶ Immunocompromised
- ▶ Tc 99 scan



▶ Herpes zoster caused by ?



- ▶ Activation of virus in geniculate ganglion



THANK YOU

