To day's topic

Complications of Otitis media

(Extra cranial complications)

classifications:

A) Extra cranial :

- Acute mastoiditis
- Subperiosteal abscess
- Petrositic.
- Labyrinthitis.
- Facial nerve palsy.

B) Intra cranial:

- Extradural abscess
- Subdural abscess
- Brain abscess
- Meningitis
- Lateral sinus thrombophlebitis.
- Otitic hydrocephalus

Pathways of spread of infection:

- A) Direct bone erosion-
  - In acute infection, it is the process of hyperaemic decalcification.
  - In chronic infection, it may be osteitis, erosion by cholesteatoma or granulation tissue.
- B) Venous thrombophlebitis- infection from the mastoid bone can cause thrombophlebitis of venous sinuses and cortical vein thrombosis. This mode is common in acute infection.

C) Preformed pathways-

- Congenital dehiscences- bony facial canal, over the jugular bulb.
- Patent sutures- petrosquamous suture.
- Previous skull fractures- fructures site heal only by fibrous scar which permits infection
- Surgical defects- stapedectomy, fenestration and mastiodectomy.
- Oval and round windows.
- Infection from labyrinth can travel along internal acoustic meatus, aqueduct of the vestibule and that of the cochlea to the meninges.

Acute Mastoiditis

Acute Mastoiditis:

Acute inflammation of mucosal lining of antrum and mastoid air cell system.

It is a complication of otitis media.

Always accompaniment of AOM.

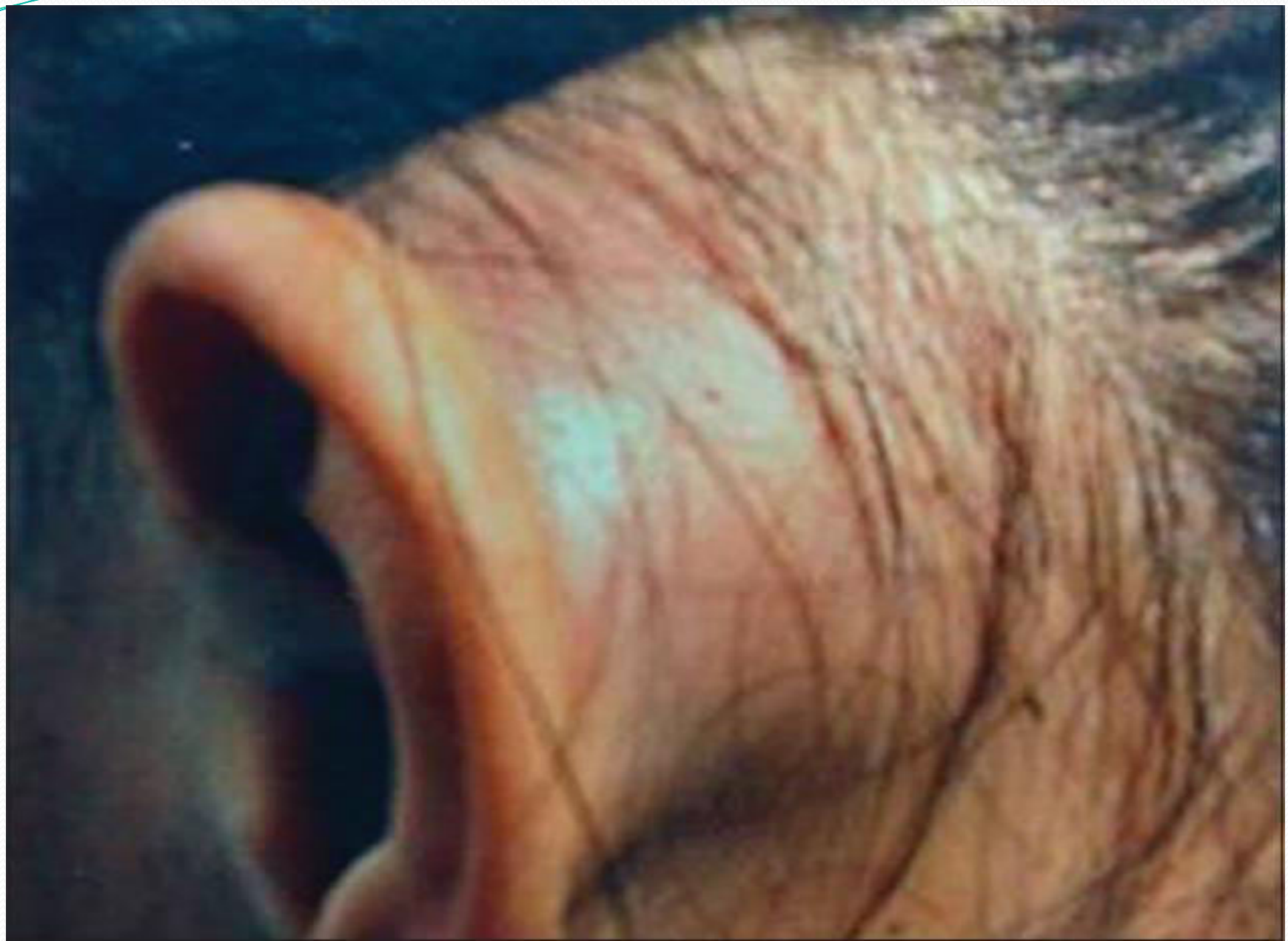
Aetiology:

- Following ASOM.
- Organisms are- strep. Pyogens, S. pneumonia, H. influenza, P. aeruginosa and anaerobes.

Acute mastoiditis

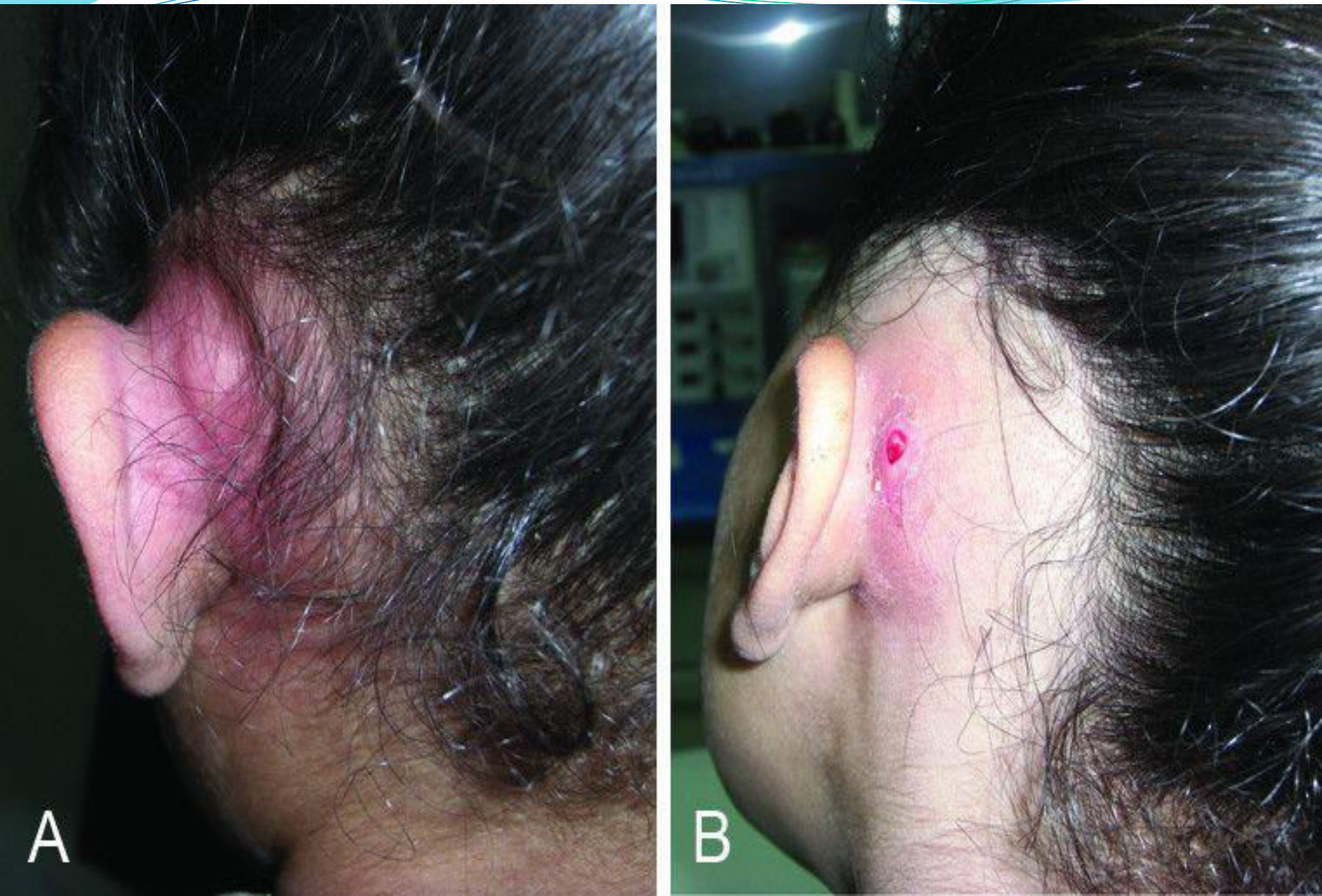
Clinical features:

- Pain behind the ear.
- Fever – persistent and recurrences of fever in ASOM in spite of adequate antibiotic therapy.
- Ear discharge- discharge becomes profuse and purulent.



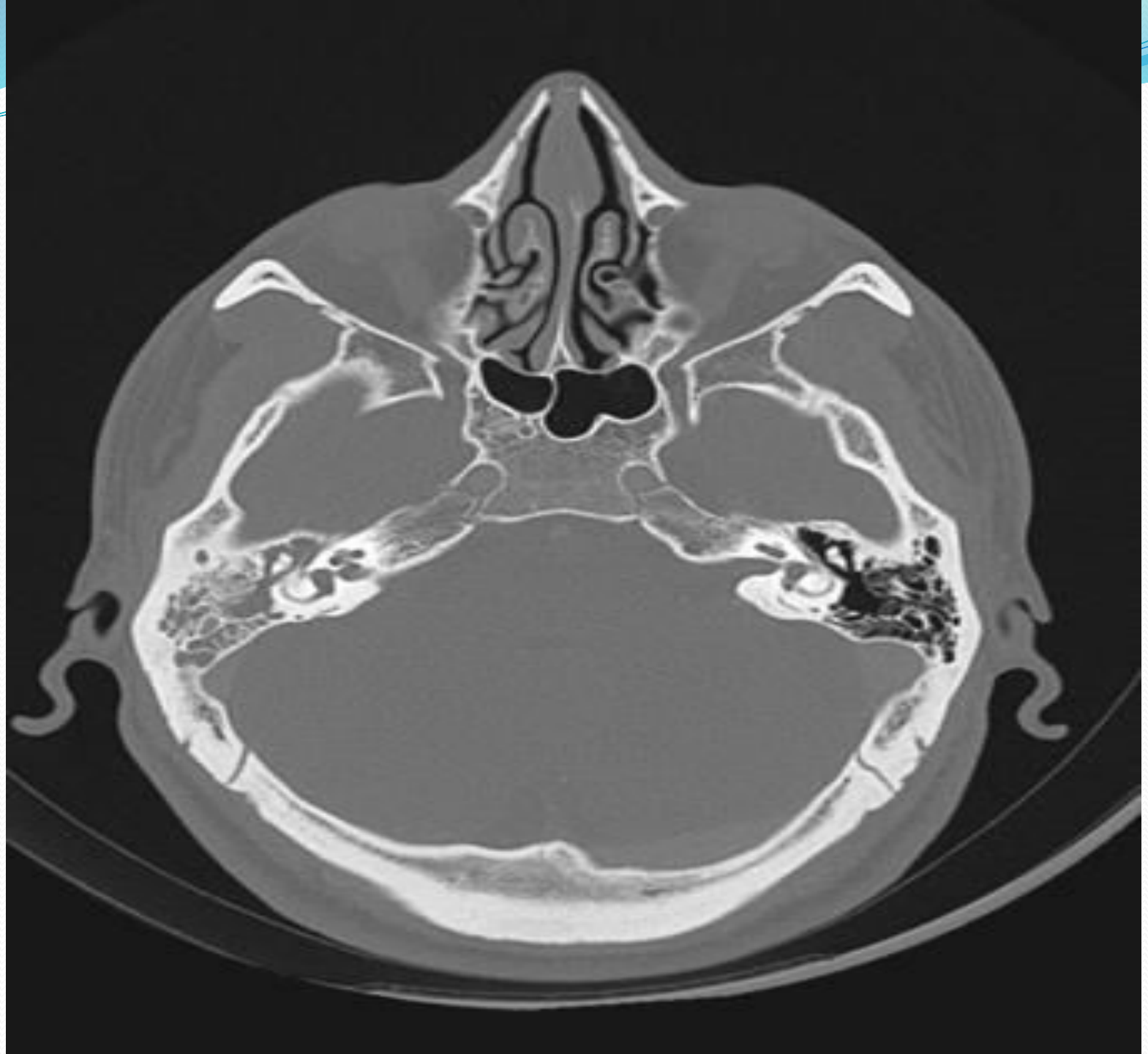
Sings:

- Mastoid tenderness- an important sings
- Ear discharge- mucopurulent or purulent discharge, often pulsatile.
- Sagging of posterosuperior meatal wall.
- Perforation of TM- central perforation
- Swelling over the mastoid
- Hearing loss- conductive
- General findings-Pts will be ill and toxic with low grade fever.


A
B

Investigations:

- Blood count-lucocytosis.
- ESR-raised
- X-mastoid- clouding of air cells due to collection of exudates.
- CT Scan- coalescence(mastoid abscess) or non coalescence.
- Ear swab- for c/s.



D/D

- Suppuration of mastoid lymph node.
- Furunculosis of meatus.
- Infected sebaceous cyst.

Treatment:

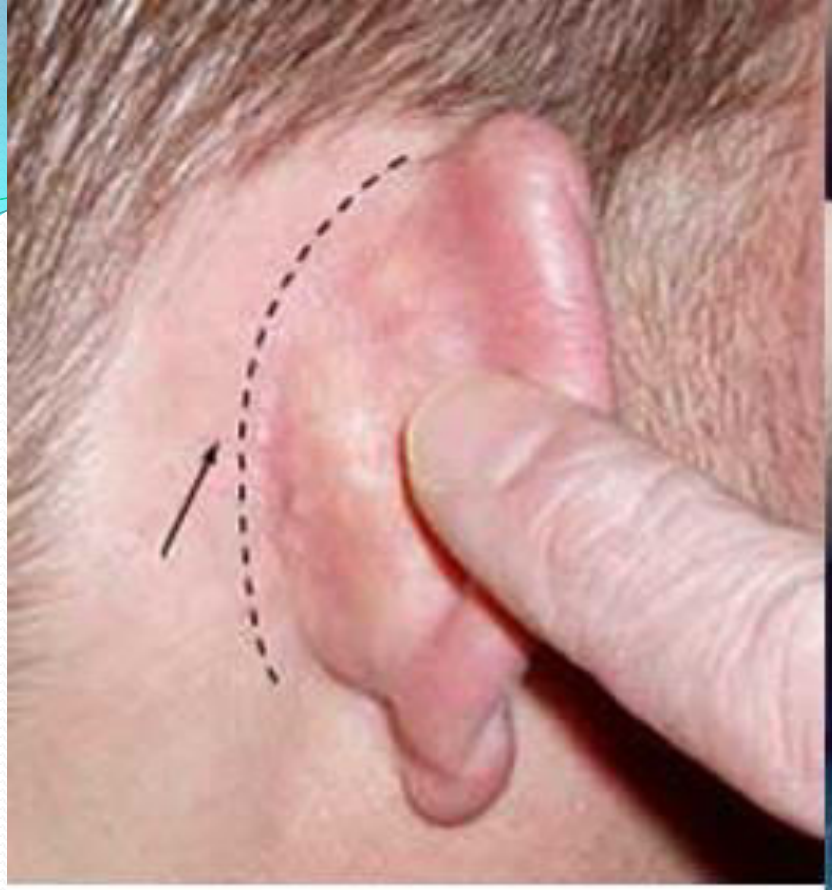
- Medical

1. Hospitalization
2. Antibiotics – ceftriaxone i/v
3. Analgesic

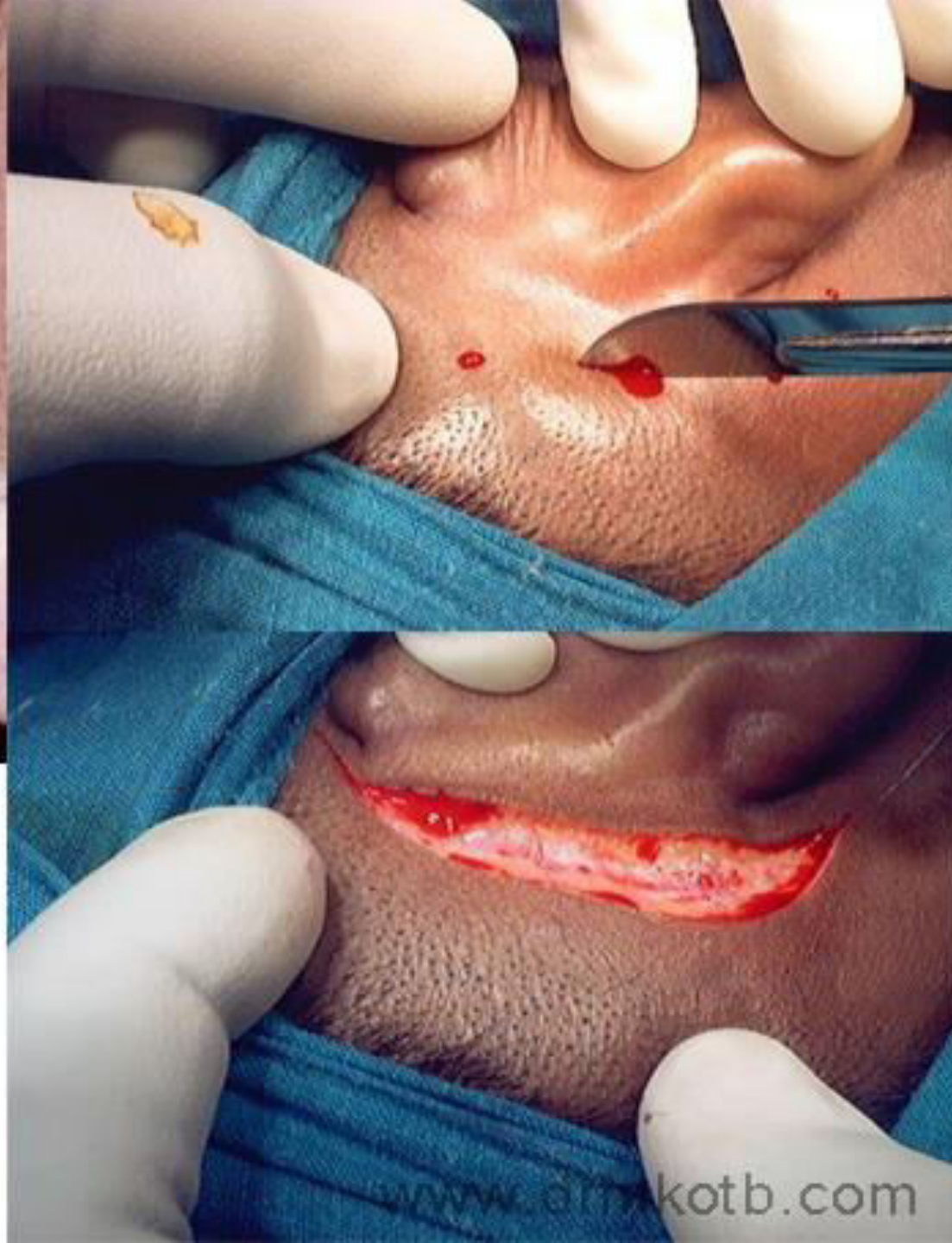
- Surgical treatment-

Cortical mastoidectomy.

If medical treatment fails.



Post-auricular incision for tympanoplasty



Indications of cortical mastoidectomy

- Continued pain and mastoid tenderness in spite of antibiotic therapy.
- Intracranial complications.
- Facial palsy.
- Progressive deafness.
- Sagging of the meatal wall.
- Increasing pain and pulse rate.

Abscess in relation to mastoidittis

- Post auricular abscess-
  - most common form presenting over mastoid.
  - It is to be differentiated from furunculossis of posterior meatal wall.
- Zygomatic abscess-
  - due to infection of zygomatic air cells.
  - Swelling appears in front of and above the pinna.
- Bezold's abscess- swelling is present in the upper part of the neck and it forms because of pus going through the tip of mastid into the sheath of sternomastiod muscle or via the digastrics muscle to the chin.

Abscess in relation to mastoiditis(Cont.)

- Citelli's abscess- abscess found in the digastrics triangle of neck, as pus goes through the inner table of mastoid tip posterior belly of digastric muscle.
- Meatal abscess
- Retromastoid abscess.

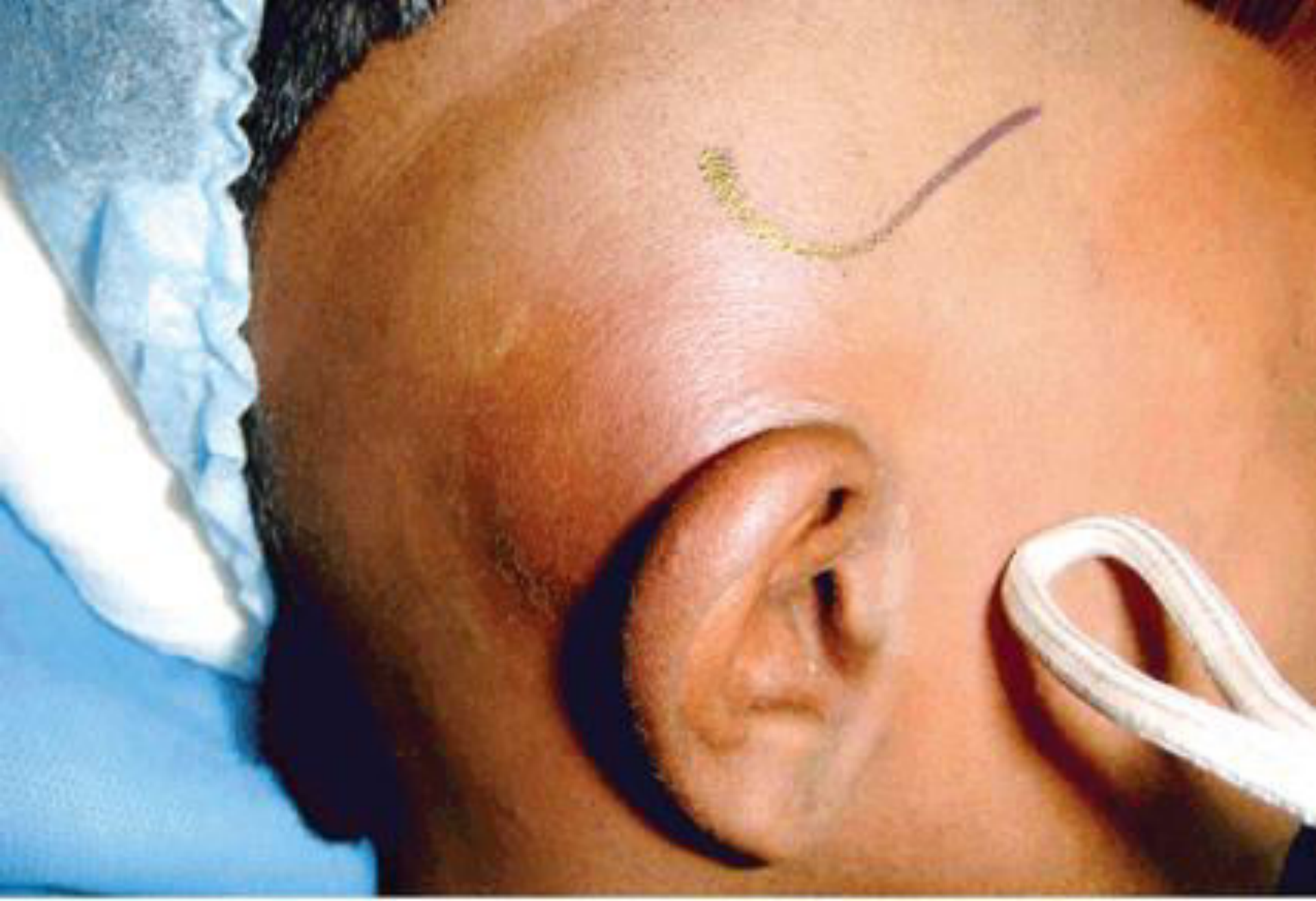
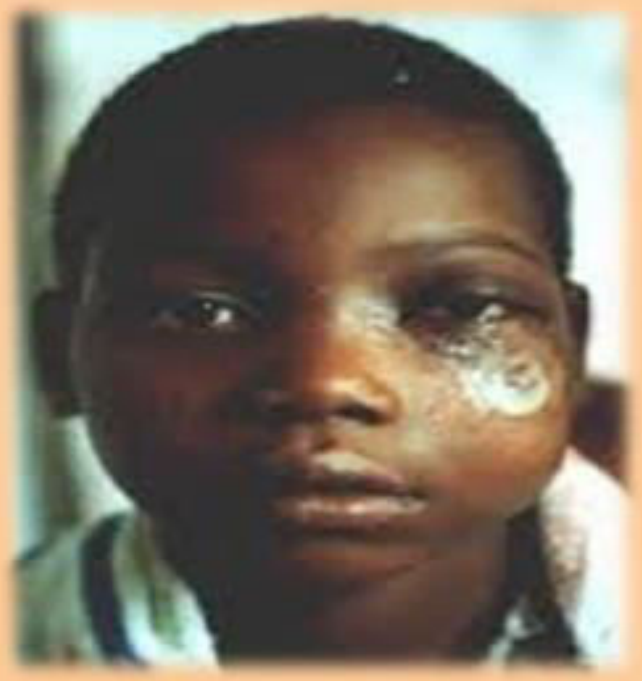
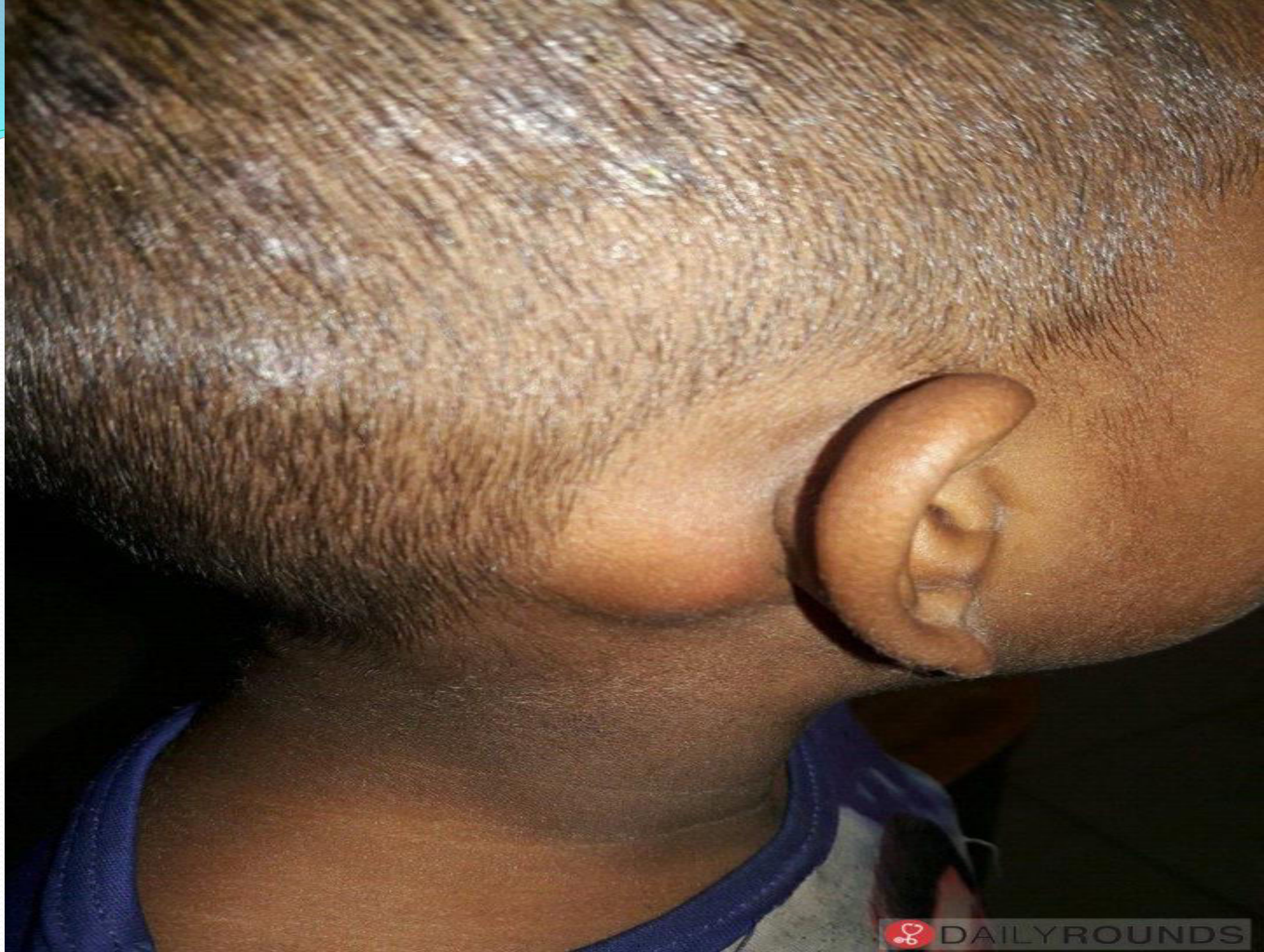


Fig. 1 : Post-aural subcutaneous abscess

- **Zygomatic Abscess:**
  - Occurs due to infection of zygomatic air cells.
  - Swelling appears infront and above the pinna.
  - Associated oedema of upper eyelid also present.
  - Pus collects either superficial or deep to the temporalis muscle.
- **Meatal Abscess(Luc's Abcess):**
  - Pus breaks through the bony wall between the antrum and external oseous meatus.
  - Swelling is seen in deep part of bony meatus.
  - Abscess may burst into the meatus.




DAILYROUNDS

Labyrinthitis

- Defined as inflammations of the labyrinthine from any cause which gives rise to symptoms of vertigo, deafness and tinnitus.

Causes/etiology

- As a complication of AOM, CSOM, TB OM.
- Viral infections- measles, mumps or influenza.
- Bacterial infections- blood born
- Traumatic-fractured temporal bone
- Meningitis.

Classification.

- Circumscribed labyrinthitis or paralabyrinththtis.
- Peri labyrinthitis.
- Serous labyrinthitis.
- Purulent / suppurative labyrinthitis.

Pathology

- Circums. Laby- almost due to labyrinthine fistula by cholesteatoma erosion of the bony capsule of labyrinth.
- Peri. Laby- caused by labyrinthine fistula after mastoid surgery in the presence of retained laby. Function.
- Serous laby- nonpurulent inflammation of the labyrinthine with fibrinous or serous exudates.
- Purulent laby- infiltration of the spaces by polymorphs, pus cells and destruction of the vestibular and cochlear structure.

Clinical features

- Cir. Labyrinthitis- initial bout of vertigo and deafness, then intermittent vertigo by sudden movement, cold water or air in the ear. Fistula sign is positive. There if mixed hearing loss.
- Serous. Labyrinthitis- vertigo associated with nausea and vomiting . deafness and tinnitus present. Nystagmus towards the diseased side, no pyrexia.
- Purulent lanyrinthitis- frequent and severe vertigo and vomiting. Nystagmus soon changes from the diseased ear to good ear. There is total deafness and no pyrexia.

Investigations

Diagnosis is made from-

- History
- Precipitating factors like CSOM.
- Exam. of ear.
- CT Scan or MRI findings.

Treatment

- Ear swab for c/s.
- IV antibiotics ceftriaxone or penicillin until ear swab report.
- Bed rest, no head movement.
- Vestibular sedatives- prochlorperazine/ promethazine
- IV fluid for vomiting.
- Myringotomy – if labyrinthitis due to ASOM and the drum is bulging.
- Mastoid exploration for CSOM, removal of cholesteatoma and grafting the fistula with tempo. Fascia, tempo. Muscle.
- Labyrinthectomy- in case of persistence of symptoms with evidence of intracranial irritation.

Facial paralysis

- Can occur as a complication of both acute and chronic otitis media.

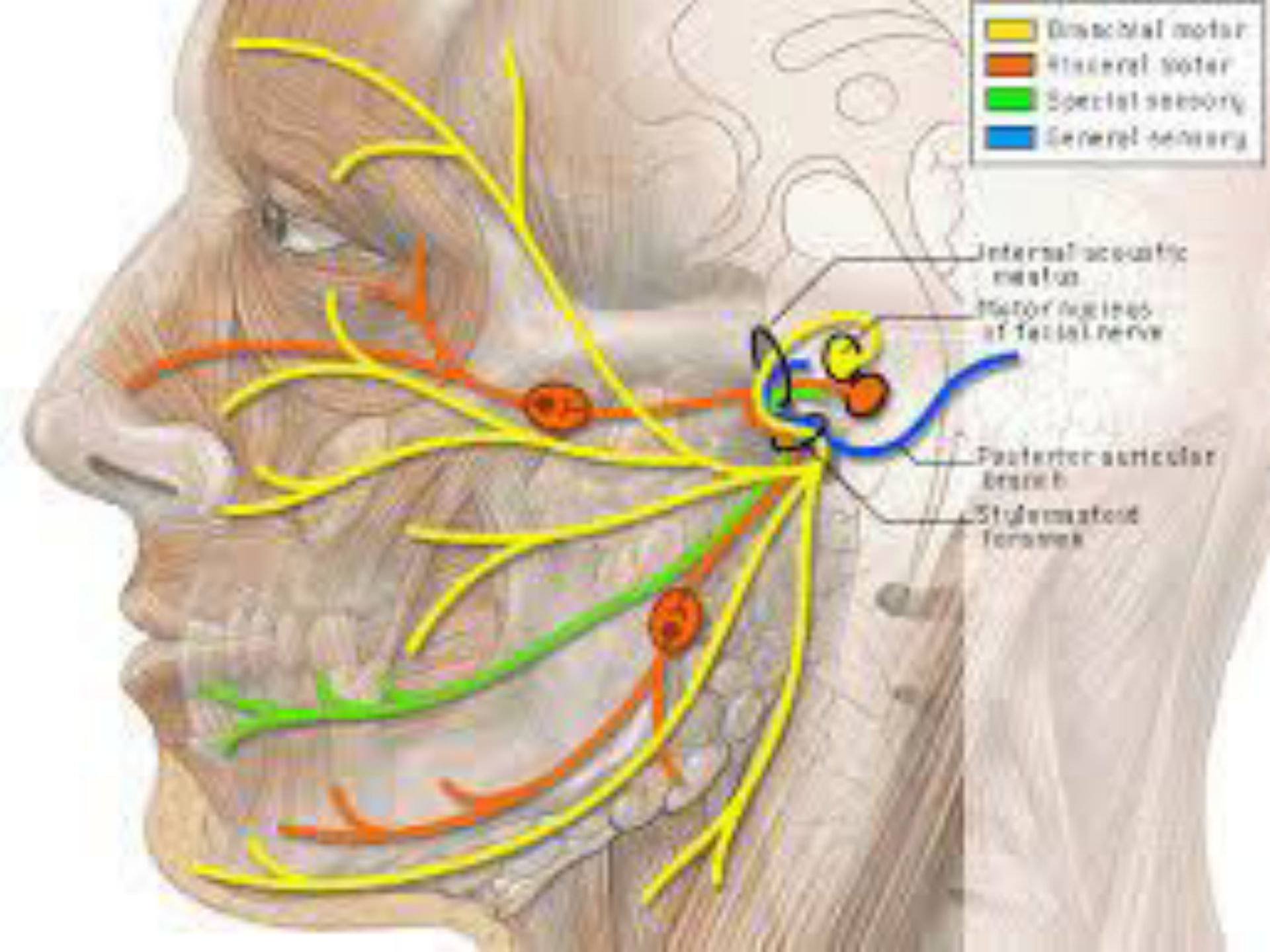
Acuta otitis media

- Facial nerve is normally well protected in its bony canal.
- Sometimes, the bony dehiscent and the n lies just under the middle ear mucosa, in this cases , inflammation of middle ear spreads to epi- and peri-neurium, causing facial paralysis.

- otitis media is controlled with sys, antibiotics.
- Myringotomy or cortical mastoidectomy may required sometimes.

Chronic otitis media

- Facial paralysis in CSOM either results from cholesteatoma or from penetrating granulation tissue.
- Cholesteatoma destroys bony canal and then causes pressure on the nerve, also oedema of associated inflammatory process.
- Facial paralysis is insidious but slowly progressive.
- Treatment – urgent exploration of the middle ear and mastoid, removal of cholesteatoma and granulation tissue.


Branchial motor
Visceral motor
Special sensory
General sensory
Internal acoustic meatus
Motor nucleus of facial nerve
Posterior auricular branch
Stylomastoid foramen

Crease up the forehead

Keep eyes closed against resistance

Reveal the teeth

Puff out the cheeks

Thank you all