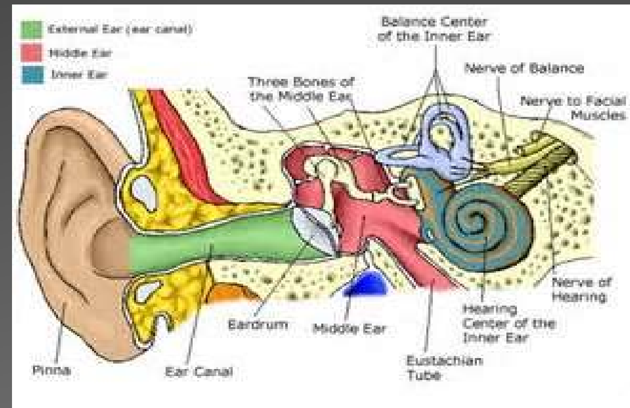
ACUTE SUPPURATIVE OTITIS MEDIA

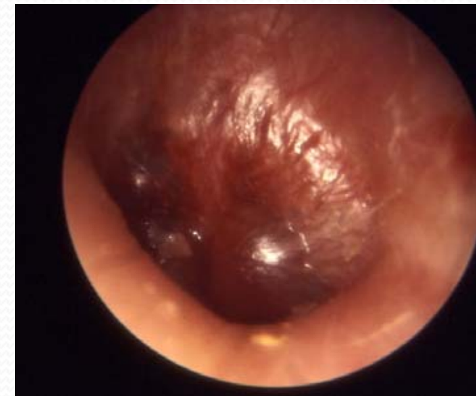


DR. ARJUN DASS
PROF. & HEAD
DEPARTMENT OF ENT

OTITIS MEDIA

Otitis Media

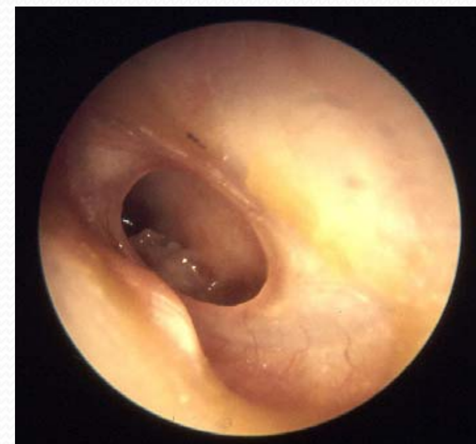
Inflammation of middle ear cleft



Classification:

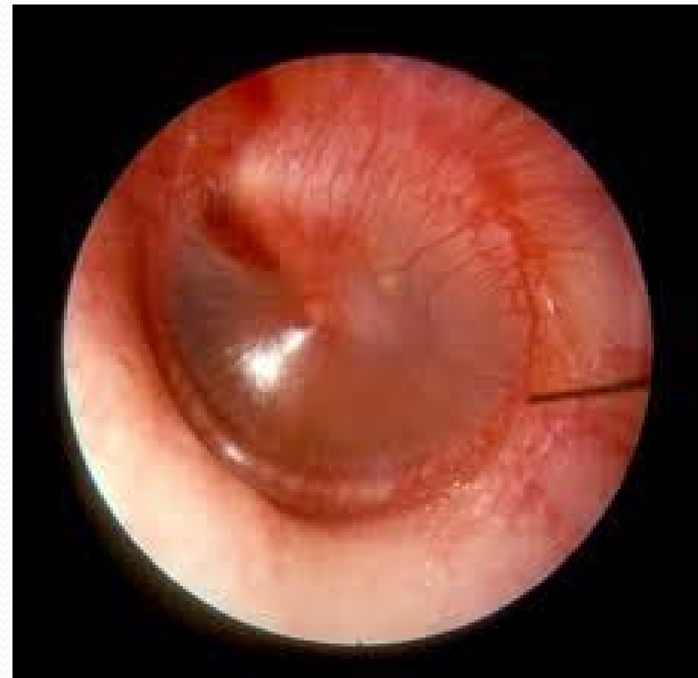
(on duration; Senturia,1980)

- Acute upto 3 weeks
- Subacute 3 week to 3 months
- Chronic greater than 3 months



DEFINITION

Bacterial or viral infection which affects mucosal lining of the middle ear and mastoid air cell system



ETIOLOGY

- < 5yrs; 50% in 1st year
- Boys > girls
- Cold climate, follows URI
- Nurseries/ overcrowding
- High number of siblings
- Parental smoking
- Non breast fed

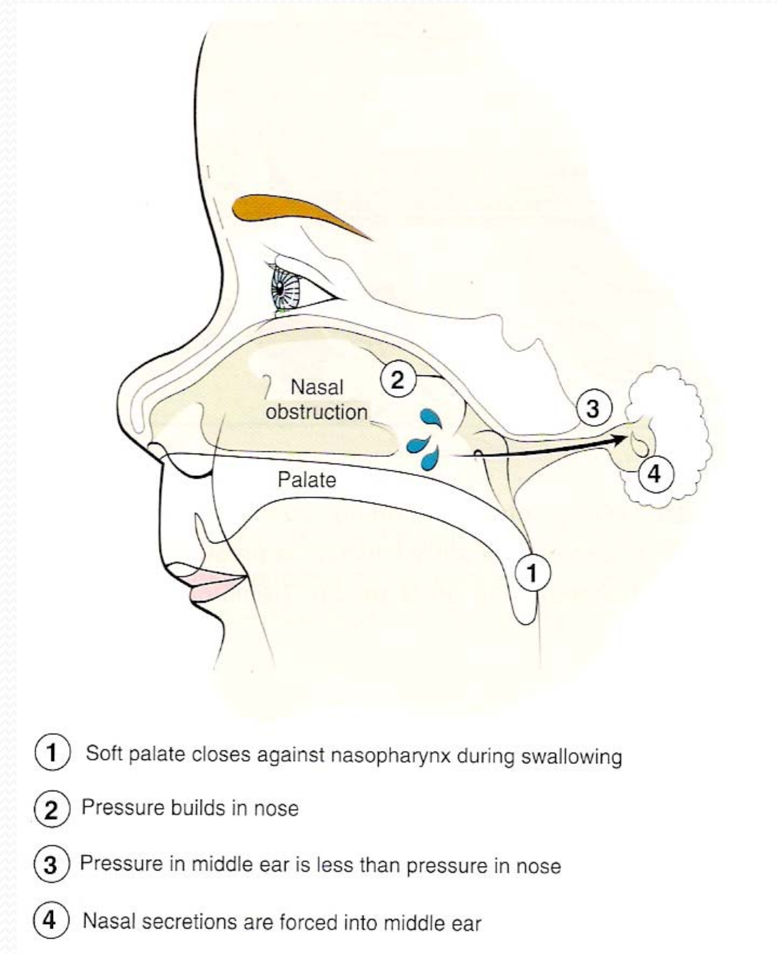
ROUTES OF INFECTION:

***Via Eustachian Tube*-**

Most common route

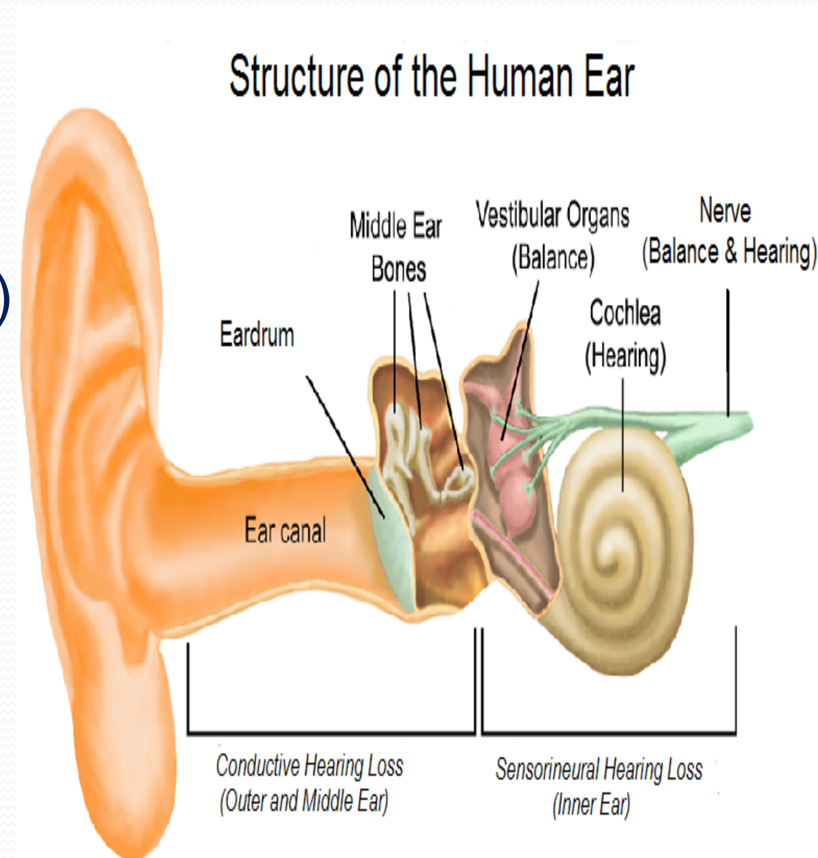
Causes of tubal obstruction:

- Upper respiratory infections
- Allergic sinusitis
- Nasal polyps
- DNS
- Adenoid hypertrophy
- Nasopharyngeal carcinoma
- Cleft palate
- Submucous cleft palate
- Down syndrome
- Barotrauma



ROUTES OF INFECTION

- Acute tubal blockage
- Absorption of ME gases
- Negative pressure in middle ear
- Retraction of TM
- Transudate/haemorrhage (AOM)



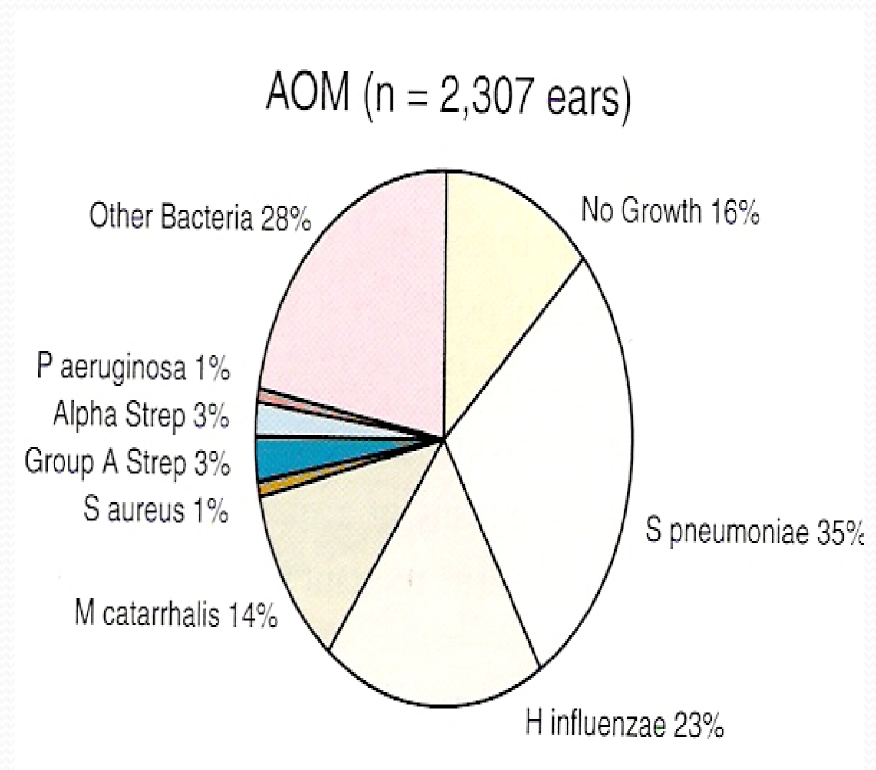
Via External Ear-

*P*erforated tympanic membrane

Via Blood Borne- uncommon route

MICROBIOLOGY

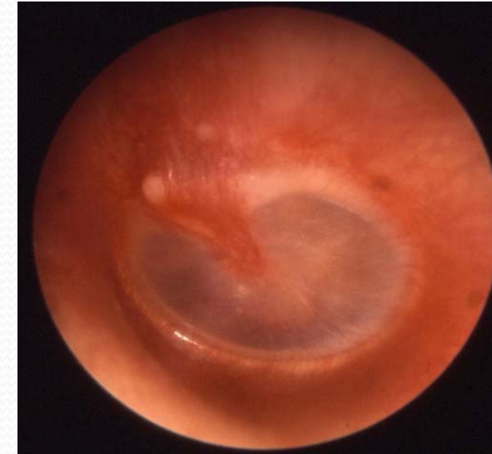
- Viral (*RSV, rhino, influenza*)
- *S. pneumoniae* -(< 3 months)
- *H. influenzae* -(>1 year)
- *M. catarrhalis*
- S. *pyogenes*
- *S. aureus*



PATHOLOGY & CLINICAL FEATURES:

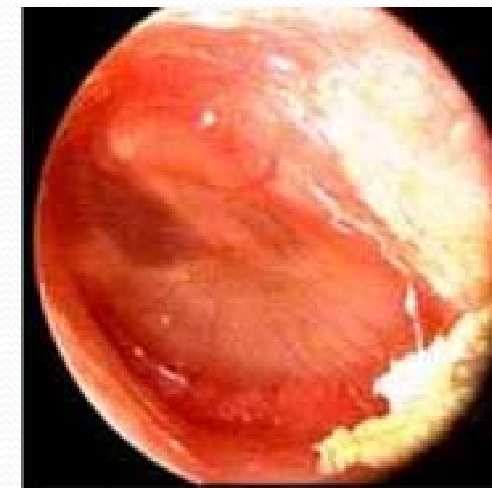
a) <u>STAGE OF HYPERAEMIA</u>

- Prolonged tubal obstruction
- Negative middle ear pressure
- Retraction of TM
- Vasodilation of submucosal tissues
- Hyperaemia and edema of mucosa



<u>SYMPTOMS</u>

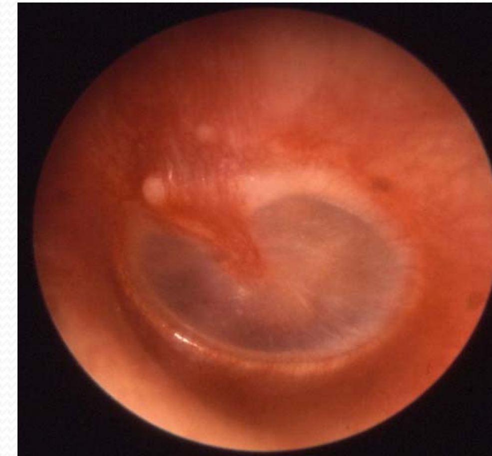
- Fever,
- Ear pain/ fullness
- With or without hearing loss

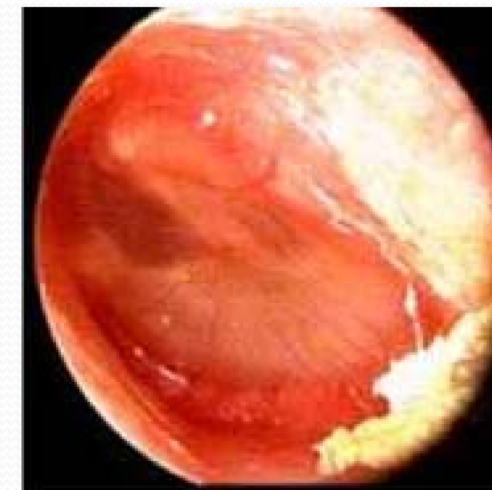


PATHOLOGY & CLINICAL FEATURES:

SIGNS

- Retracted and congested TM with leash of blood vessels along HOM and at periphery (*cart-wheel appearance*), landmarks preserved
- Tuning fork tests- CHL

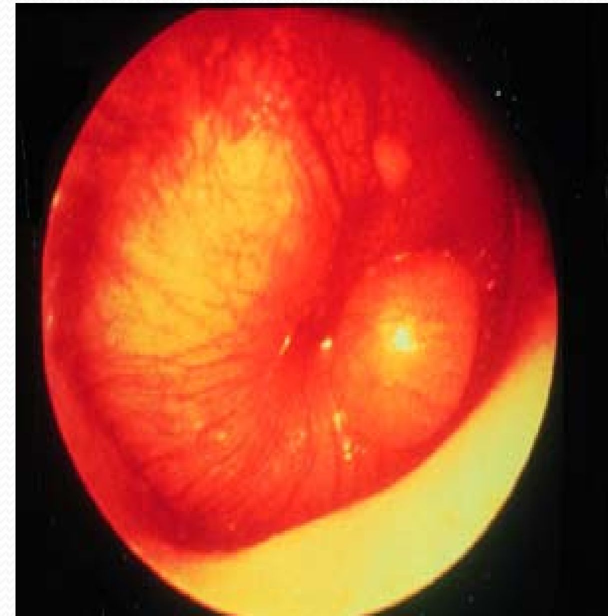




PATHOLOGY & CLINICAL FEATURES

b) <u>STAGE OF EXUDATION</u>

Escape of inflammatory exudate from dilated permeable capillaries- serum, fibrin, red cells and polymorhoneutrophils



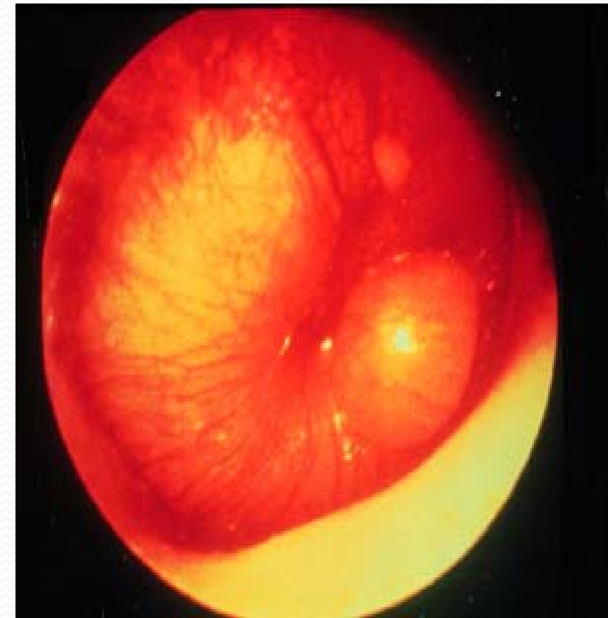
<u>SYMPTOMS</u>

- Marked earache(throbbing with disturbed sleep)
- Hearing loss,
- High grade fever in infants

PATHOLOGY & CLINICAL FEATURES:

SIGNS

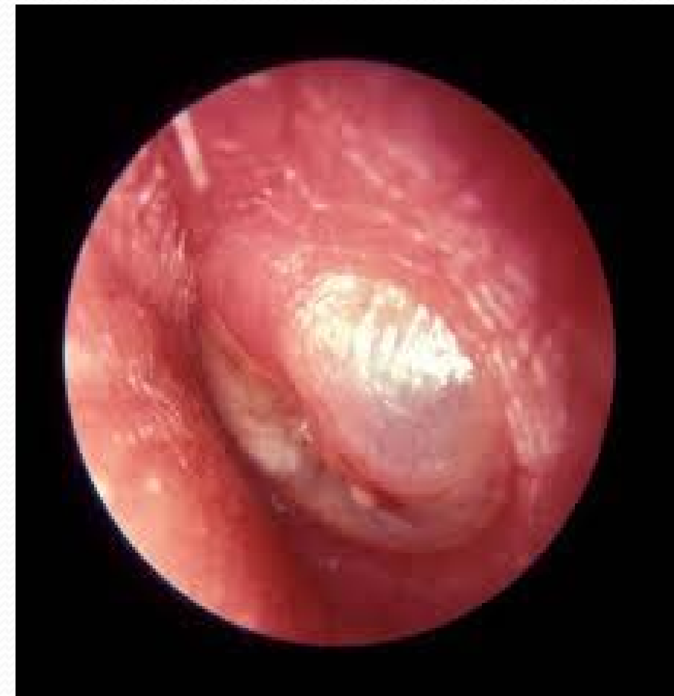
- TM thickened and landmarks obscured,
- Conductive hearing loss
- In infants- tenderness and edema over mastoid cortex.
- Radiologically, diffusely clouded air cells but without alterations of cell partitions



PATHOLOGY & CLINICAL FEATURES:

c) <u>STAGE OF SUPPURATION</u>

Formation of pus in middle ear and to some extent in mastoid air cells



<u>SYMPTOMS</u>

- Excruciating pain,
- Deafness increases,
- Fever, toxicity increases

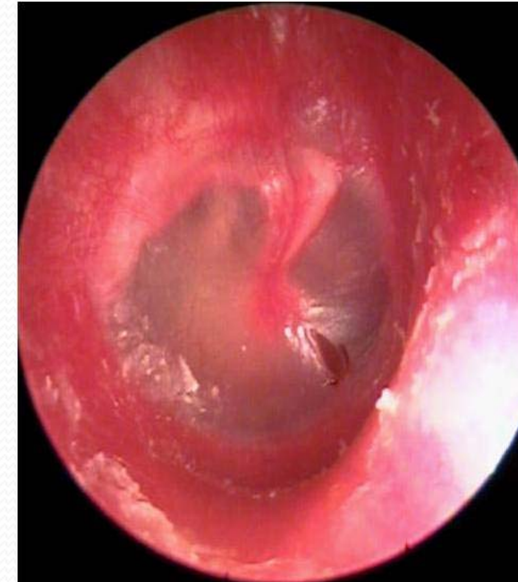
<u>SIGNS</u>

- TM is red and bulging to the point of rupture,
- Mastoid tenderness present.

PATHOLOGY & CLINICAL FEATURES

d) <u>STAGE OF RESOLUTION</u>

TM ruptures(30% cases) with release of pus and subsidence of symptoms. Inflammatory process begins to resolve. Resolution may even start without rupture of TM



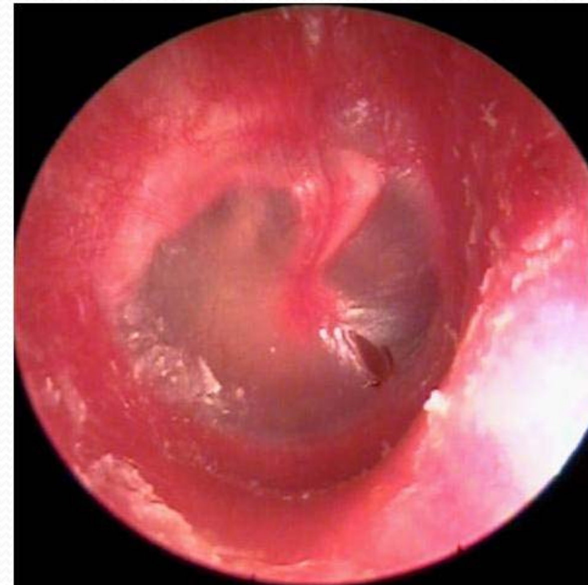
<u>SYMPTOMS</u>

- Earache relieved
- Fever subsides
- Ear discharge starts

PATHOLOGY & CLINICAL FEATURES

SIGNS

- Discharge in EAC (mucopurulent/bloodstained),
- Perforation of pars tensa



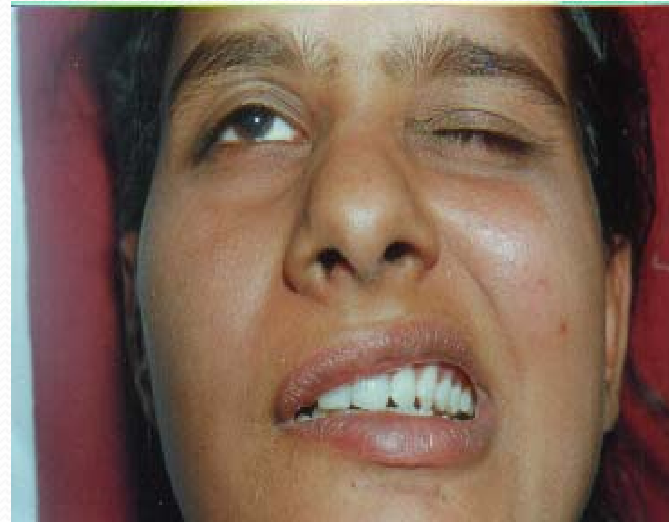
COMPLICATIONS

e) STAGE OF COMPLICATION

If virulence of organism is high, or resistance of patient is poor

i) EXTRACRANIAL

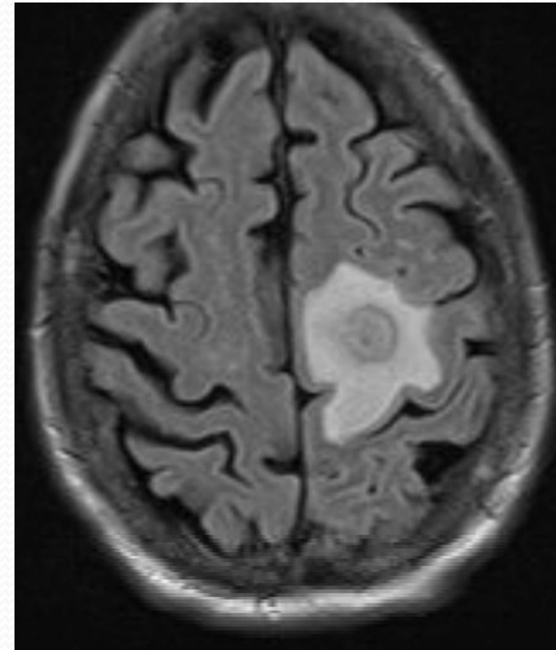
- Tympanic membrane perforation
- Acute mastoiditis
- Facial nerve paralysis
- Labyrinthitis
- Acute petrositis



COMPLICATIONS

ii INTRACRANIAL

- Meningitis
- Extradural abscess
- Subdural empyema
- Sigmoid sinus thrombosis
- Brain abscess
- Ottic hydrocephalus



DIAGNOSIS

- Otoscopy
  - Colour –
    - Opaque
    - Yellow
    - Blue
    - Red
    - Pink
  - Position
    - Bulging
    - Retracted

DIAGNOSIS

- Mobility
  - Normal,
  - Hypomobile,
  - Negative pressure
- Associated pathology
  - Perforations,
  - Cholesteatoma,
  - Retraction pockets

- Head & Neck examination

DIAGNOSIS

- Audiogram
  - Document CHL/SNHL
- Impedance Audiometry
- Radiology
  - X-ray mastoid,
  - HRCT temporal bone

TREATMENT

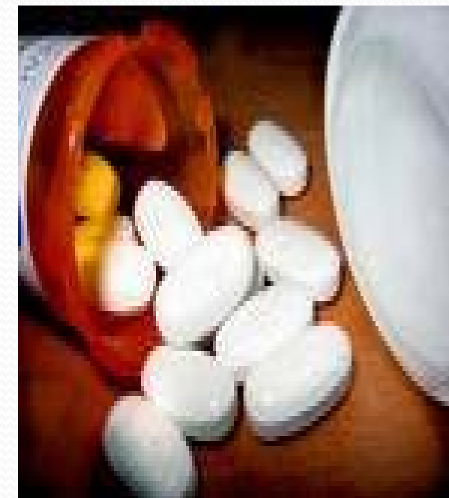
MEDICAL

- ***Bed rest***
- ***Antibacterial therapy***

  1st line- amoxycillin(40 mg/kg/d in divided doses for 10 days)

  2nd line- as amoxycillin and clavulanic acid

  Others 2nd generation cephalosporins - cefaclor, erythromycin, sulf/trimethoprim



TREATMENT

MEDICAL

- ***Decongestants(oral/nasal)***

  To relieve ET oedema and promote ventilation of middle ear

- ***Analgesics and antipyretics***
- ***Aural toilet***

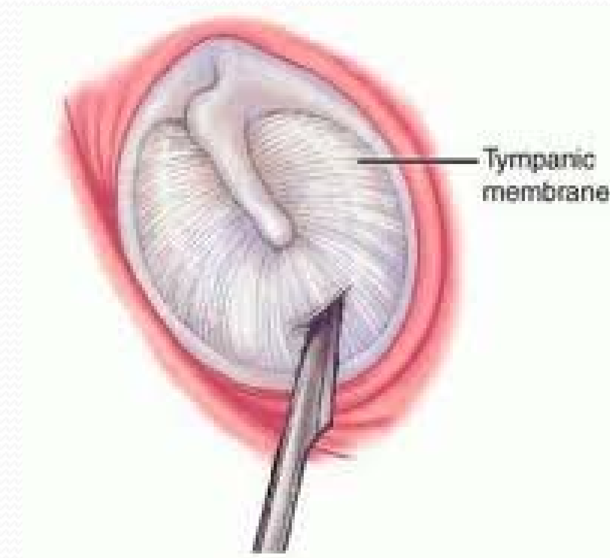
TREATMENT

SURGICAL

***Myringotomy*:**

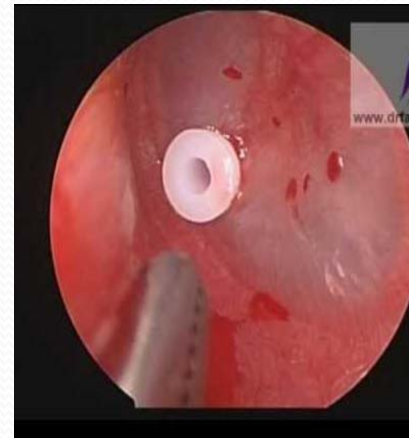
Indication:

- Unsatisfactory response to antimicrobials
- Patient in acute pain with bulging drum
- OM in immunodeficient, newborn
- Suppurative complication like: mastoiditis, labyrinthitis, facial paralysis, meningitis(as emergency procedure)



TREATMENT

SURGICAL



- ***Ventilation tube*** for recurrent OM

- ***Adenoidectomy*** decrease the frequency for recurrent OM

THANK YOU