

ACUTE OTITIS MEDIA

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DEFINITION:

Otitis media is any inflammation of the middle ear characterized by the accumulated of infected fluid in the middle ear, bulging of the eardrum, pain in the ear.

Classification:-

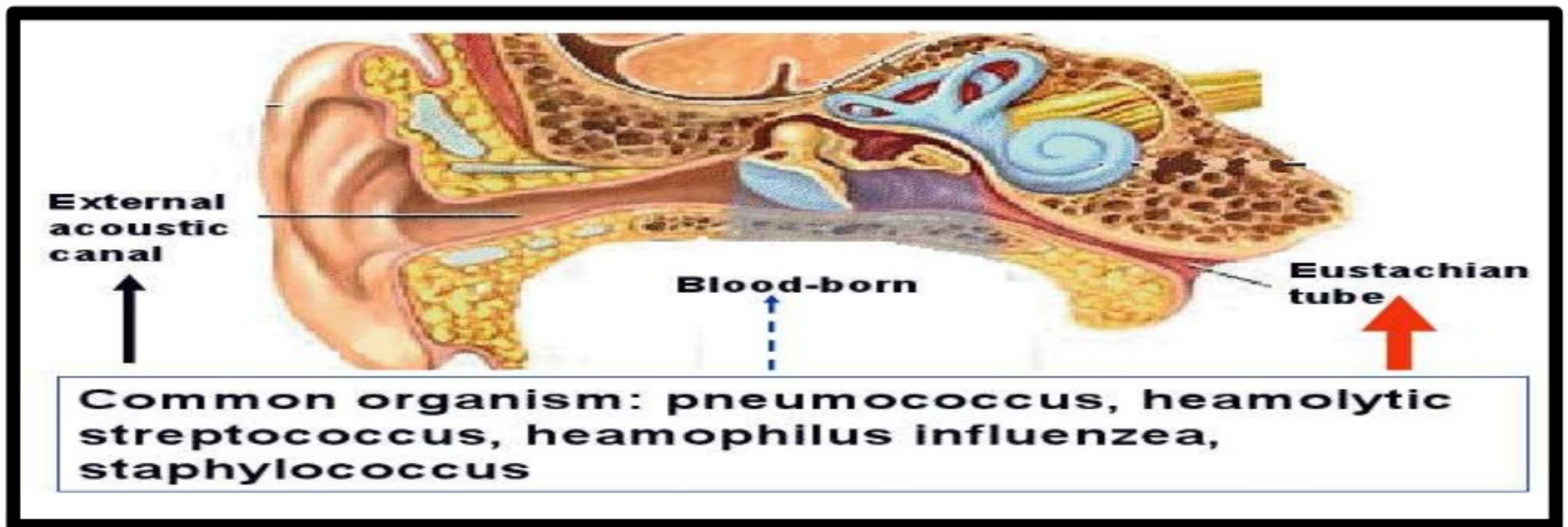
1. Acute otitis media
2. Chronic otitis media

Other-

- a. Serous otitis media
 - b. Secretory otitis media
 - c. Suppurative otitis media
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Routes of infection

- 1. Via Eustachian Tube - most common -inf. travels via lumen of tube peritubal lymphatic's
- 2. Via External Ear traumatic perforation of tympanic membrane
- 3. Blood Borne -uncommon



Infectious organisms

- Streptococcus pneumonia (30%)
- Haemophilus influenzae (20%)
- Moraxella catarrhalis (12%)
- Others: Streptococcus pyogenes, Staphylococcus aureus and Pseudomonas
- Fungal less common – aspergillus & candida
- Bacterial otitis media from super infection of viral also possible

Pathophysiology:-

Due to etiological factor (URTI, Bacteria)



Exudates & edema in middle ear



Decrease retraction of tympanic membrane



Serous exudates in middle ear



Pus formation




Tympanic membrane rupture



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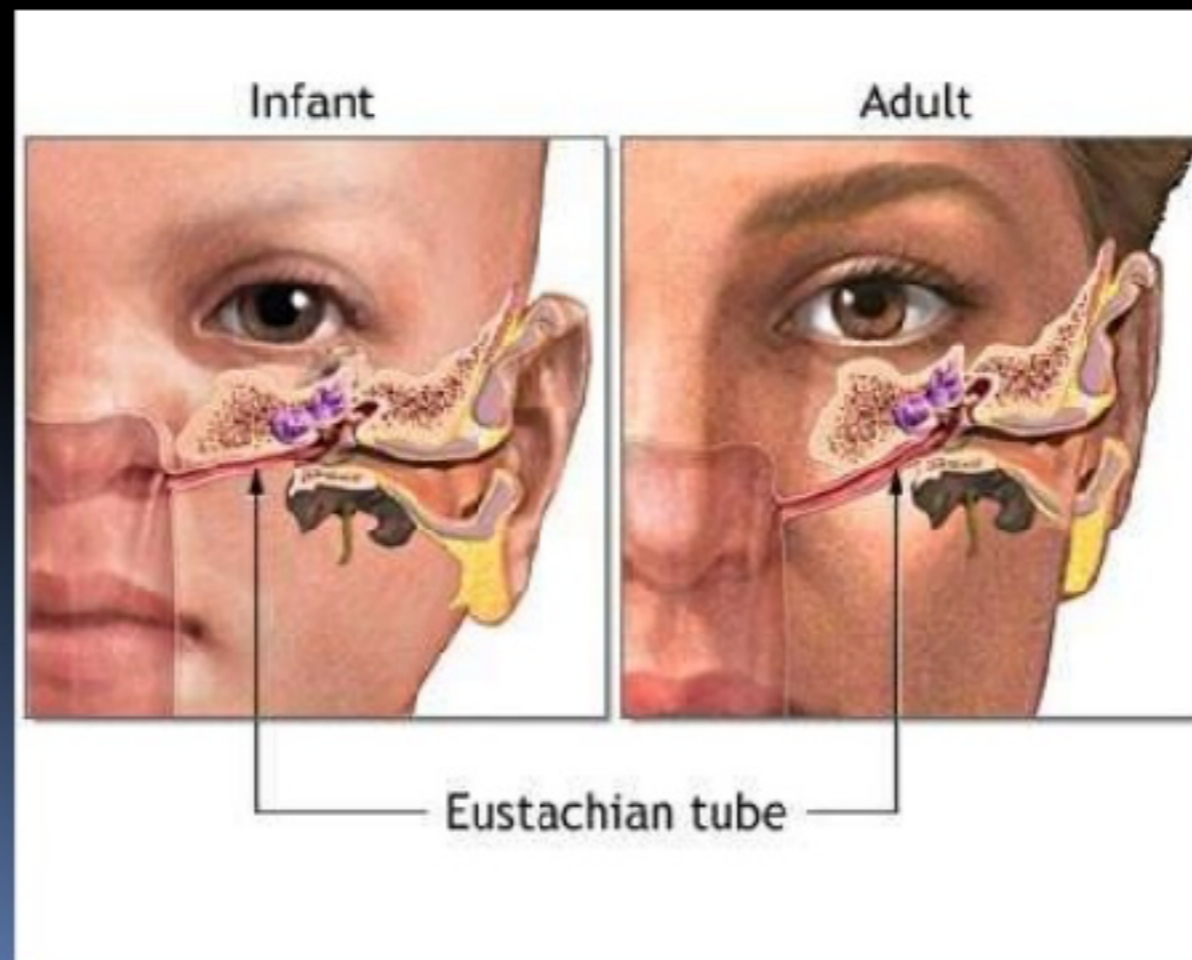
Clinical Manifestations:-


- ▶ Otorrhea
 - ▶ Otalgia
 - ▶ Fever
 - ▶ Rhinitis
 - ▶ Tympanic membrane erythema, may be perforated
 - ▶ Hearing loss
 - ▶ Irritability
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ACUTE SUPPURATIVE OTITIS MEDIA (ASOM)

Etiology

- Age: Common among children due to shorter Eustachian tube



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- Adenoiditis, Tonsillitis, Rhinitis, Sinusitis, Pharyngitis & infections secondary to cleft palate
 - Trauma to the TM
 - Head injury
 - Barotrauma

Pathology

1. **Catarrhal stage:** is characterized by occlusion of Eustachian tube and congestion of middle ear.
2. **Stage of exudation:** Exudate collects in the middle ear and ear drum is pushed laterally. Initially the exudate is mucoid, later it becomes purulent.

Pathology

3. **Stage of suppuration:** Pus in the middle ear collects under tension, stretches the drum & perforates it by pressure necrosis & the exudate starts escaping into external auditory canal
4. **Stage of healing:** The infection starts resolving from any of the stages mentioned & usually clears up completely without leaving any sequelae.

Pathology

5. Stage of complications: Infection may spread to the mastoid antrum. Initially it causes Catarrhal mastoiditis [congestion of the mastoid mucosa], stage of Coalescent mastoiditis & later empyeme of the mastoid

Clinical manifestations: ASOM

1. Catarrhal stage (stage of congestion)

- Fullness or heaviness in the ear
- Severe ear pain at night
- Deafness
- Tinnitus (ringing or buzzing in the ear)
- Autophony (spoken words of patient echo in his ears)
- TM (ear drum) gets retracted
- Cart wheel appearance of ear drum
- Absence of light reflex



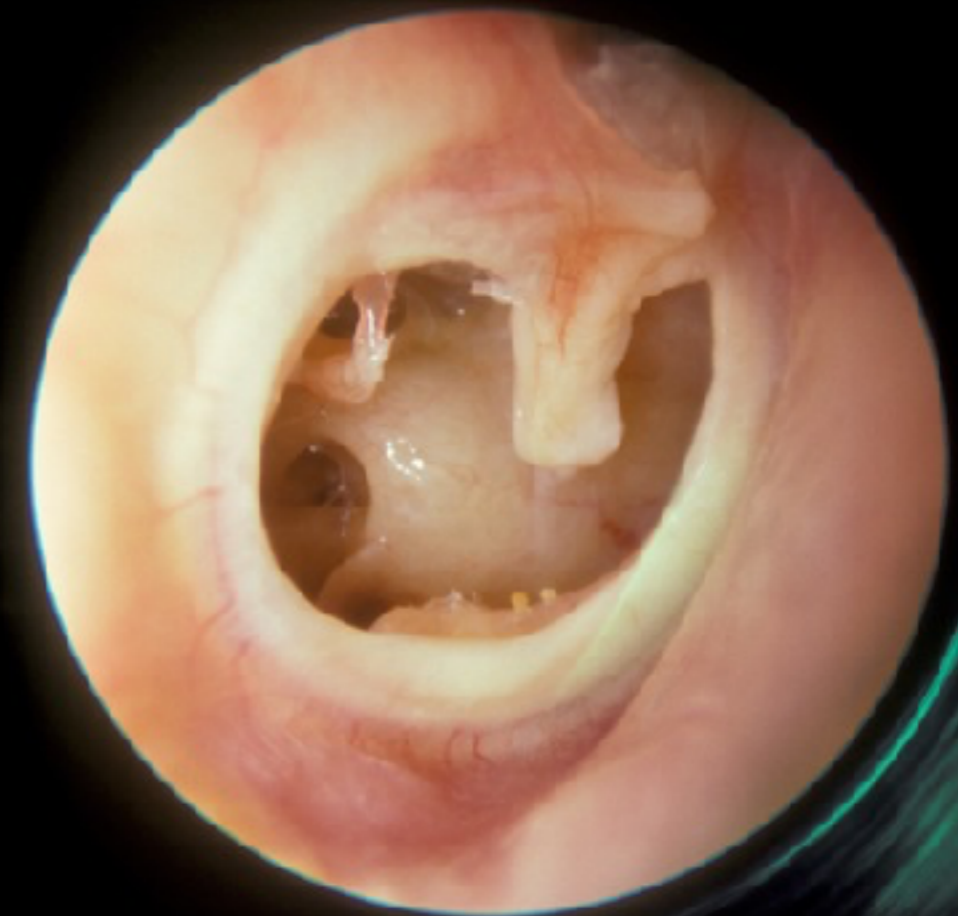
Cart wheel appearance

2. Stage of exudation

- All symptoms becomes more severe.

3. Stage of suppuration


- Perforation of Ear drum
- Otorrhoea with mucoid purulent discharge
- Pulsatile discharge (ear discharge with each arterial dilation)
[Lighthouse sign]





4. Stage of healing

- Healing starts in this stage



5. Stage of complication

- Spread of infection to mastoid
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Diagnosis

- Tuning fork test and audiometry
- Radiography
- Bacteriological examination of the ear discharge
- Pneumatic otoscopy is gold standard

Antibacterial therapy

- Amoxicilin 750-1500mg/day **50-100 mg/kg/day**
(has not received amoxicilin in past 30 days and has no allergy to penicilin)
- Amoxicillin-clavulanate 875/125mg/day
90/6.4 mg/kg/day
(alternative for amoxicilin)
- Ceftriaxone 1-2g/day **50mg/kg/day** or
Cefuroxim 500mg/day **30mg/kg/day**
- Azithromycin, clarithromycin, erythromycin in case of allergy to penicilin
- 5-7-**10** days

Treatment - AOM

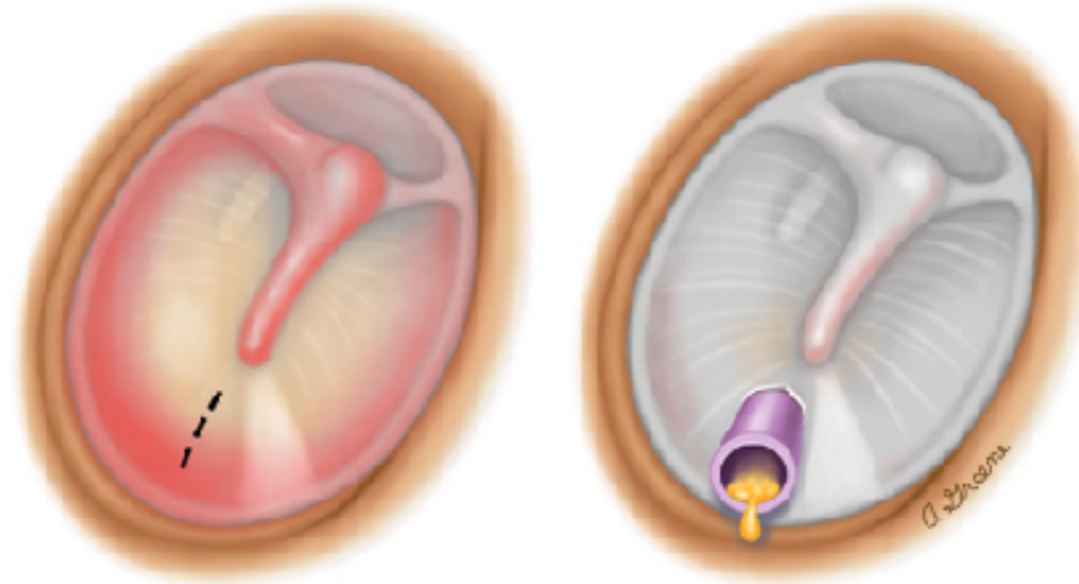
- Systemic
 - Antibiotics: Tetracycline, erythromycin, ampicillin or penicillin for 6 days
 - Systemic decongestants: Phenylephrine HCl
- Local
 - Glycerine carbolic ear drops or warm olive oil reduces pain before perforation of TM.
 - Antibiotic drops : Chloramphenicol, spirit boric drops is used after perforation of TM.



Surgery

- **Myringotomy:** The TM is incised to drain the middle ear cavity.
- **Myringo-puncture:** Puncturing the ear drum with a long thick injection needle & aspirating the middle ear contents.

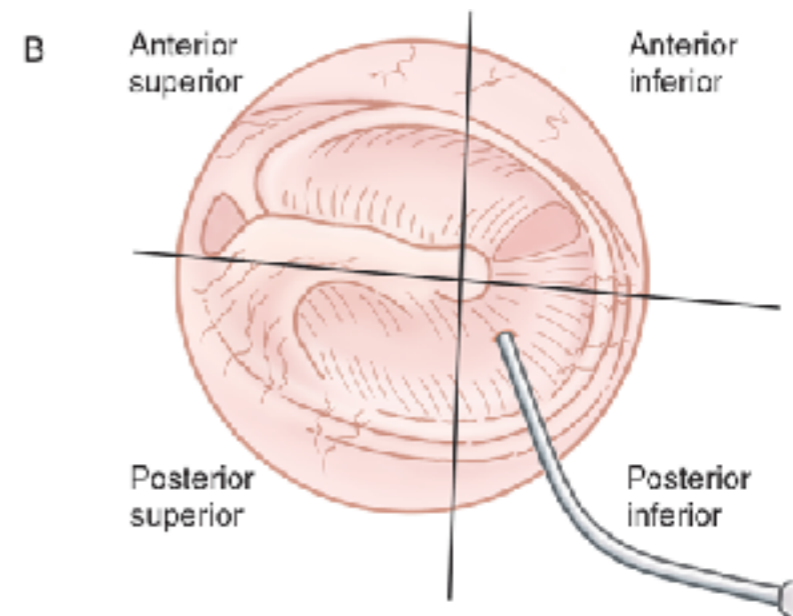
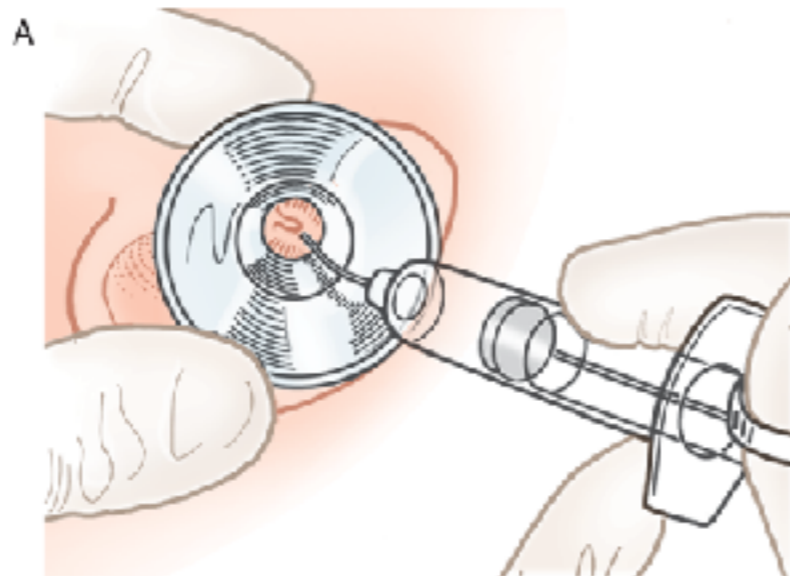
Myringotomy



Small cut made in eardrum for tympanostomy tube

Fluid from middle ear drains from tube

- **Myringo-puncture**



Complication

- Highly virulent organisms/ low immunity disease spreads beyond middle ear resulting in
- Acute mastoiditis
- Sub periosteal abscess
- Facial paralysis
- Labyrinthitis
- Petrostitis
- Meningitis
- Brain abscess

