

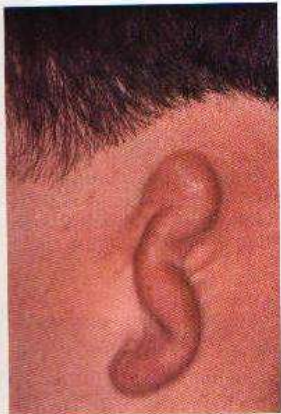


# Ear Conditions: Diagnosis and Management

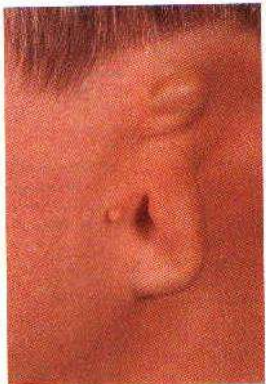
**BHPI**  
hearing for all 2024

# Pathologies of the External Ear

- Congenital Microtia and Anotia



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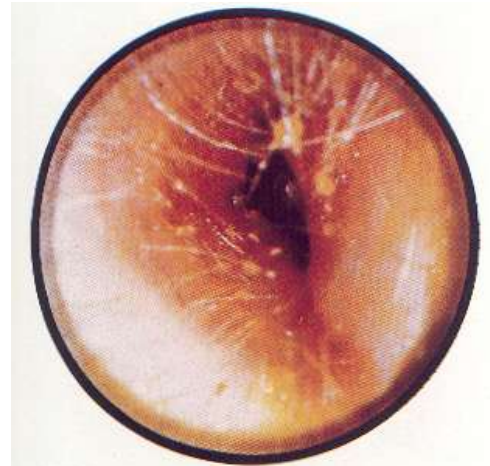
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*Microtia/atresia* varies in degree and may be associated with other regional anomalies, such as *preauricular appendages*, persistent branchial arch remnants, middle ear and facial anomalies, defects of the eye and cervical spine and hemifacial hypoplasia.

# Pathologies of the External Ear

- Otitis Externa

Inflammatory disease of the auricle and external auditory canal caused by either bacteria or fungus. Fungi produce many infections in tropical climates, whereas bacteria are the most common cause in temperate zones.



# Treatment of Otitis Externa

- clean out the ear canal with syringing, mopping or suction
- in case of bacterial OE antibiotic or antibiotic/steroid ear drops, qid 3 drops for a week.
- cases with otomycosis and severe cases of oedematous OE can be treated effectively with a single instillation of 1% silver nitrate gel, repeated after a couple of days PRN
- in case of pre-auricular cellulitis and /or lymphadenitis: Penicillin V for 5 days

# Pathologies of the External Ear

- Furunculosis

Localized otitis externa located in the outer half of the ear canal where there are gland and hair follicles that may become infected.



The patient complains of severe pain that is aggravated by manipulation of the auricle or movement of the condyle of the mandible.

# Treatment of Furunculosis

- apply antiseptic ointment daily, eg silversulfadiazine or povidon-iodine
- Cloxacillin for 5 days and Paracetamol or ibuprofen PRN
- open the abscess, when ripe

**Advise** the patients not to pick their ears with pins, tooth picks etc., to avoid dirty water entering the ear and to use clean towels. Sometimes it is difficult to clean out the ear canal, especially in case of fungus. Refer these patients to the ear nurse or ENT-specialist. External otitis can be secondary to a suppurative otitis media with a perforation. Check the state of the ear drum with the otoscope.

# Pathologies of the External Ear

- Otomycosis

Causes itching and at times pain of the external canal. *Aspergilla nigrans* produces a velvety grayish membrane of the external



canal. Some otologists feel that severe symptoms are due to a secondary bacterial infection.

# Pathologies of the External Ear

- Chondritis

Results from wound infections secondary to *Pseudomonas* infection. It frequently follows OE, trauma, or surgery.



# Pathologies of the External Ear

- Herpes Zoster Oticus
- Aural Polyps
- Eczematous Dermatitis
- Polychondritis



# Pathologies of the External Ear

- Foreign Bodies



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Commonly seen on the ear canal of children. Complications may include purulent otorrhea, inflammation and pain.

# Foreign Body Removal

- Small seeds laying loosely in the ear canal can be syringed out. Impacted seeds should not be syringed, but removed with hooks or with a grasping micro-forceps. Sometimes in children general anaesthesia is necessary. All non-vegetable FB may be syringed out.
- Insects, buzzing in the ear canal, can as a home measure, be silenced with a few drops of clean vegetable oil and syringed out later.
- Do not try to remove round objects, like a bead, with a forceps. It will slip of the forceps and be propelled deeper into the ear canal. Remove this type of FB by syringing or with a hook. Handle carefully to avoid trauma to the ear canal skin and eardrum.
- Refer to the hospital, if you are unsuccessful after a few attempts, especially if the child does not sit still.

# Impacted Cerumen

## Syringing:

- The gentlest way of removing wax is by syringing with water. However, syringing wax in patients with a known or possible tympanic membrane perforation should not be done, because this action will push the wax into the middle ear and cause infection. In these patients the wax has to be removed by hooks or suction under good vision with a head-light or microscope.
- The water should be clean (best is freshly boiled water that has cooled down) and be at body temperature (37° C). Too hot or too cold water may cause a severe vertigo attack. Direct the tip of the syringe to the posterior wall of the ear canal and empty the syringe with some force. However, keep in control of your movements and avoid touching the ear canal skin with the tip. Be sure, that the tip is tightly fixed to the syringe or the tip can become a dangerous projectile.
- If a few attempts are unsuccessful, then it will be better to soften the wax.

# Impacted Cerumen

## Softening ear wax:

- Wax is soluble in water. Water with a detergent, e.g. soapy water is a very effective wax softener. Also a 5% sodium bicarbonate solution in distilled water is also recommended. Commercial ear wax solvents have no advantage and may cause an allergic skin reaction.
- Fill the ear canal with body-warm soapy water or bicarbonate solution, patient in a lying position or with the head tilted, so the water does not run out. Let the patient press the tragus repeatedly to squeeze the water into the ear canal. After 20 minutes try the syringing again. If still unsuccessful, have the patient repeat the procedure with soapy water at home for a couple of days before syringing again.
- Sometimes the ear canal is not filled with wax, but with whitish debris, keratin. This is very adherent to the skin, is not soluble in water and cannot be syringed out. This material needs instrumental removal under good illumination and vision.

# Pathologies of the Middle Ear

- Disorders of the Eustachian Tube
  - Patent ET
  - ET Obstruction
  - Cleft Palate

# Pathologies of the Middle Ear

- Serous Otitis Media (SOM)

Accumulation of sterile non-purulent middle ear fluid and is usually considered as noninfectious middle ear disease.



# Pathologies of the Middle Ear

- Acute Otitis Media (AOM)

It is a complication of serous OM, since the middle ear effusion serves as a fertile media for bacteria. On the other hand, its complication may be an *acute surgical mastoiditis*.



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# Pathologies of the Middle Ear

- Chronic Otitis Media (COM)



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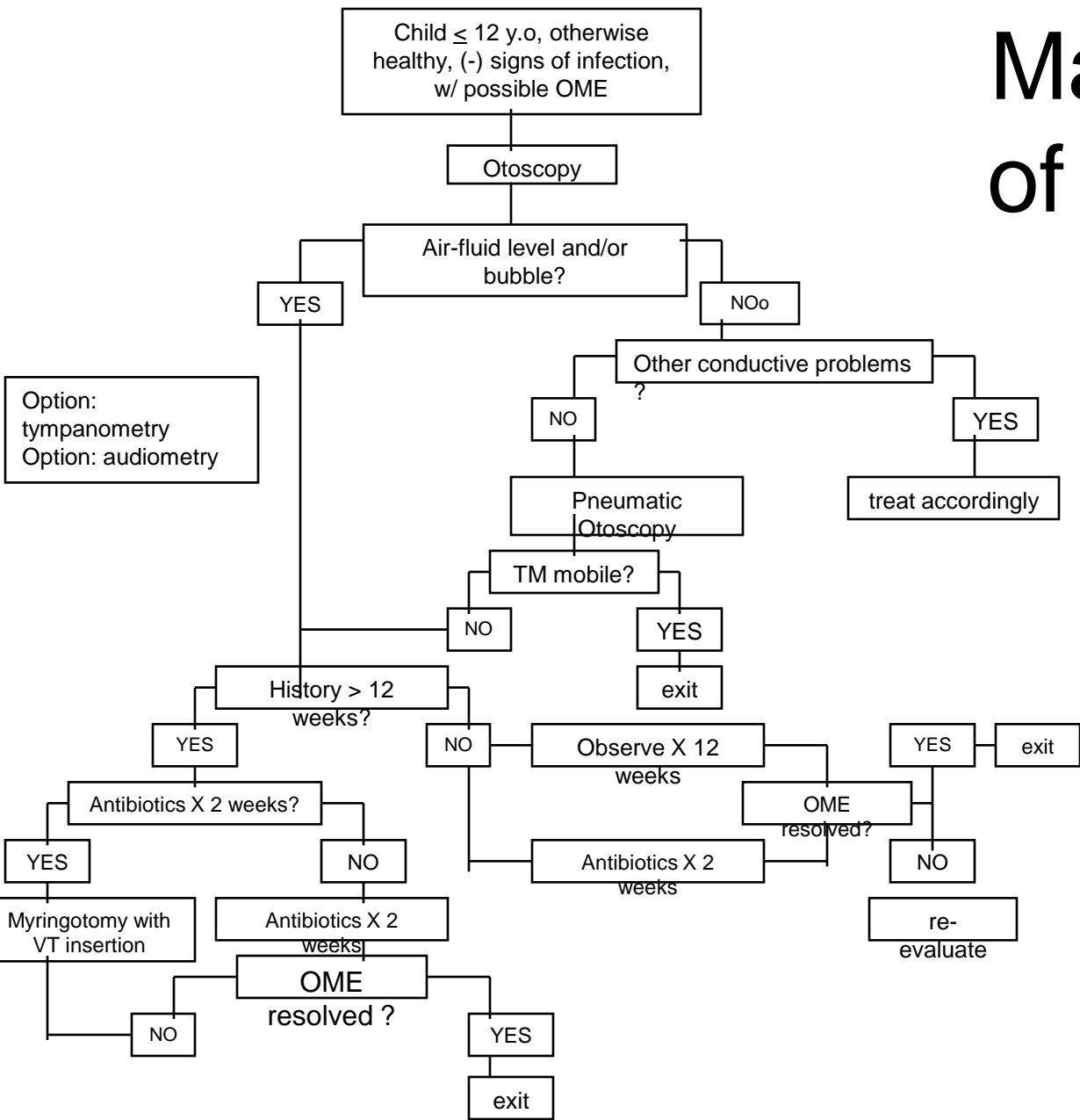


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# Pathologies of the Middle Ear

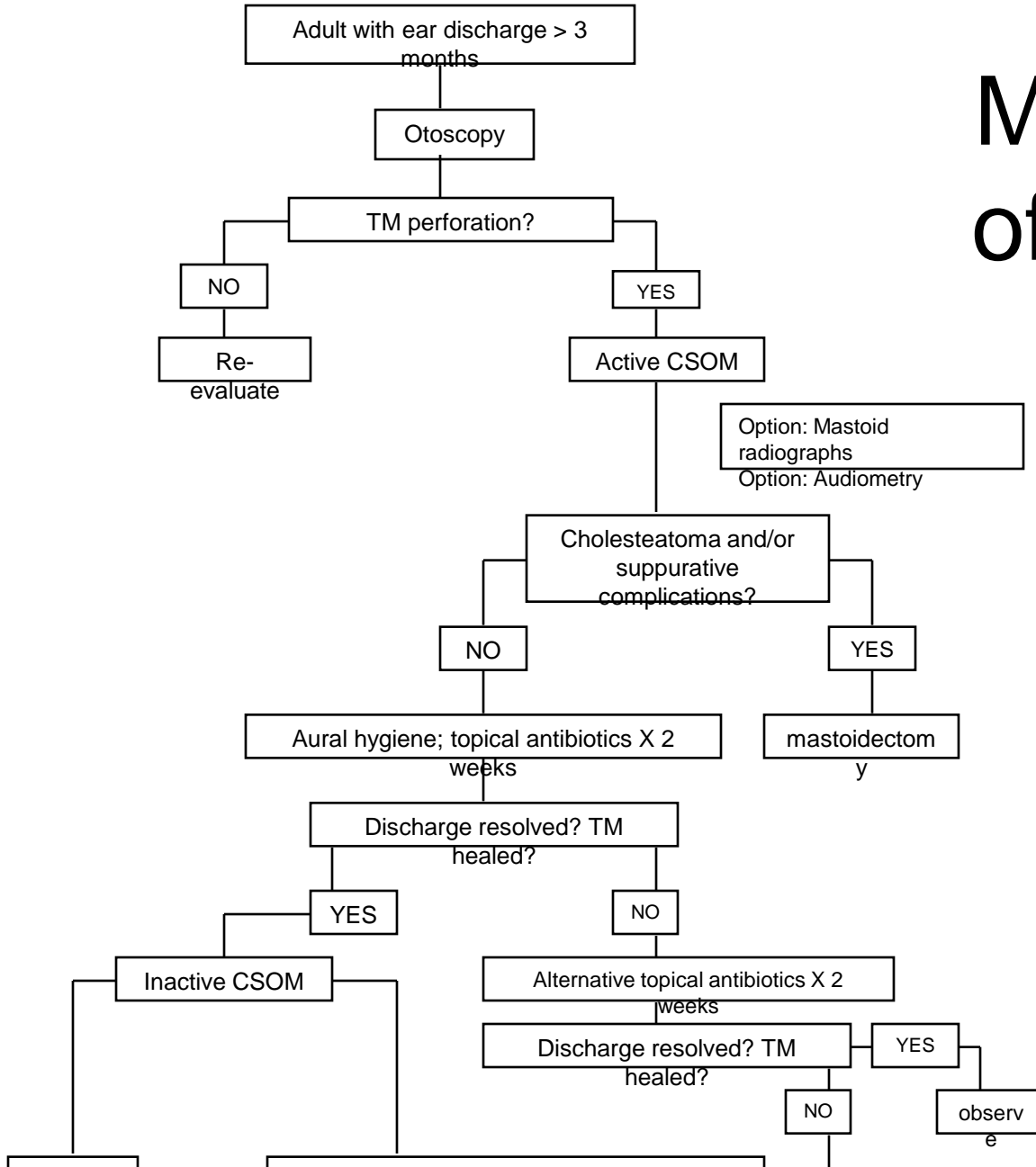
- Complications of Middle Ear Infection
  - Conductive Hearing Loss
  - Facial Paralysis
  - Labyrinthine Fistula
  - Meningitis
  - Otitis Hydrocephalus
  - Brain Abscess

# Management of Middle Ear Infection



**Algorithm for CSOM**

# Management of Middle Ear Infection



# Pathologies of the Inner Ear

- Congenital Deafness (Genetic Origin)
- Congenital Deafness (Non-Genetic)
- Delayed or Acquired Genetic Deafness
- Delayed or Acquired Non-genetic Deafness

# Pathologies of the Inner Ear

## Congenital

- Rubella/German Measles during first trimester of pregnancy
- Syphilis
- Ototoxic drugs taken during pregnancy
- Hypoxia
- Jaundice
- Prematurity

# Pathologies of the Inner Ear

Acquired:

- Age
- Ototoxicity (e.g. Tuberculosis and Malaria medications...)
- Viral illness like Mumps
- Prolonged exposure to loud noise
- Meniere's Disease
- Tumor
- Bacterial Meningitis