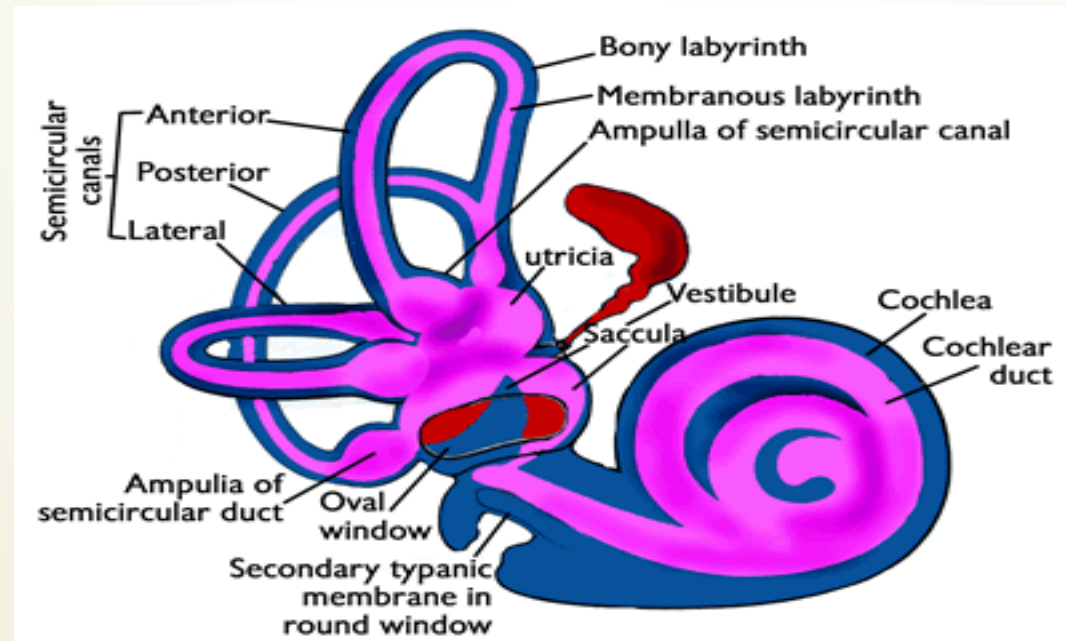


# LABYRINTHITIS

***An infection or inflammation that affecting either labyrinth or surroundings.***

2nd most common cause of acute vertigo, with an incidence of 170 cases per 100,000 people.





➤ ***Etiology:***

- **infection** include bacteria, fungus, viruses
- **autoimmune.**
- **Trauma.**
- **Systemic diseases, like diabetes .**

➤ There are three routes in which the infection can spread to the labyrinth:

➤ 1) **Tympanogenic labyrinthitis**

➤ The spread of infection or toxin or inflammation from the middle ear to the inner ear via either oval or round windows, round window is the much more significant in this pathologic process.

➤ **General symptoms:**

➤ 1-typically unilateral.

➤ 2-typically patients will have SNHL.

➤ 3-vertigo.

➤ Types of tympanogenic labyrinthitis :

➤ **1-Acute toxic form (serous labyrinthitis)**

- The labyrinth itself is **not** affected , it becomes inflamed by substances that are released in the ME (ex. Inflammatory mediators or bacterial toxins).
- it is probably involved in viral tympanogenic infections (ex. In bullous of otitis externa).
- SNHL may fluctuate and is less severe than that often seen in suppurative labyrinthitis.

## ➤ 2- Acute suppurative form

- A bacterial infection of the ME spreads to involve the labyrinth.
- When suppurative labyrinthitis occurs, it is almost always associated with **cholesteatoma**.
- Profound hearing loss, severe vertigo, ataxia, and nausea and vomiting are common symptoms of bacterial labyrinthitis, and often results in **permanent HL** and vestibular function.
- Also it can lead to **meningitis**.

### ▶ 3- Chronic labyrinthitis

- ▶ This may eventually be manifested as inner ear damage.
- ▶ Chronic otitis media is among the possible causes.

#### **Symptoms:**

- ▶ vertigo.
- ▶ After a period of gradual recovery that may last several weeks, some people are completely free of symptoms. Others have chronic dizziness if the virus has damaged the vestibular nerve.
- ▶ Many people with chronic labyrinthitis have difficulty describing their symptoms, and often become frustrated because although they may look healthy, they don't feel well. Without necessarily understanding the reason, they may observe that everyday activities are fatiguing or uncomfortable, such as walking around in a store, using a computer, being in a crowd, standing in the shower with their eyes closed, or turning their head to converse with another person at the dinner table.
- ▶ Some people find it difficult to work because of a persistent feeling of disorientation or "haziness," as well as difficulty with concentration and thinking.



# Meningeal Labyrinthitis

- ▶ The labyrinth may be infected bilaterally ( often with streptococcus pneumonia) from the intracranial space, possibly through a patent cochlear aqueduct.
- ▶ Accompanying feature of meningitis.
- ▶ Often occurring in infants and small children, but also occurring in adults.
- ▶ Lead to complete deafness and calcification of the labyrinth.



# Hematogenous Labyrinthitis

- ▶ Viruses and bacteria (rare) infection.
- ▶ Resulting in hearing loss and disequilibrium.
- ▶ Causes:
  - 1-Mumps
  - 2-Measles
  - 3-Human immunodeficiency virus(HIV)
  - 4-Cytomegalovirus
  - 5-Spirochetes( syphilis, )



- 
- ▶ Audiometry shows signs of SNHL with tympanogenic labyrinthitis .

High resolution CT scan of the temporal bone

- ▶ Cerebrospinal fluids sampling should be performed if there is the least suspicion of meningitis.



# Symptoms

- \_Hearing loss
- \_Tinnitus which is characterized by a ringing or buzzing in your ear
- \_nausea and vomiting
- \_dizziness marked by the sensation that you're moving
- \_Vestibular symptoms (vertigo, nystagmus, disequilibrium)



# WARNING SIGN!!!

If a patient with otitis media show up vestibular symptoms ,this is an indication of labyrinthitis.

An immediate otologic work up and appropriate treatment is essentially required.



# Prognosis

Some recovery of inner ear function is possible , but most patient are left with permanent residual damage.

Recovery from severe functional deficits is rare.



# Treatment:

1- Tympanogenic labyrinthitis (in acute otitis media):

- ➔ careful decompression of the ME
- ➔ myringotomy tube
- ➔ either alone or with mastoidectomy

2-labyrinthine fistula:

- ➔ immediate surgical

Bacterial:

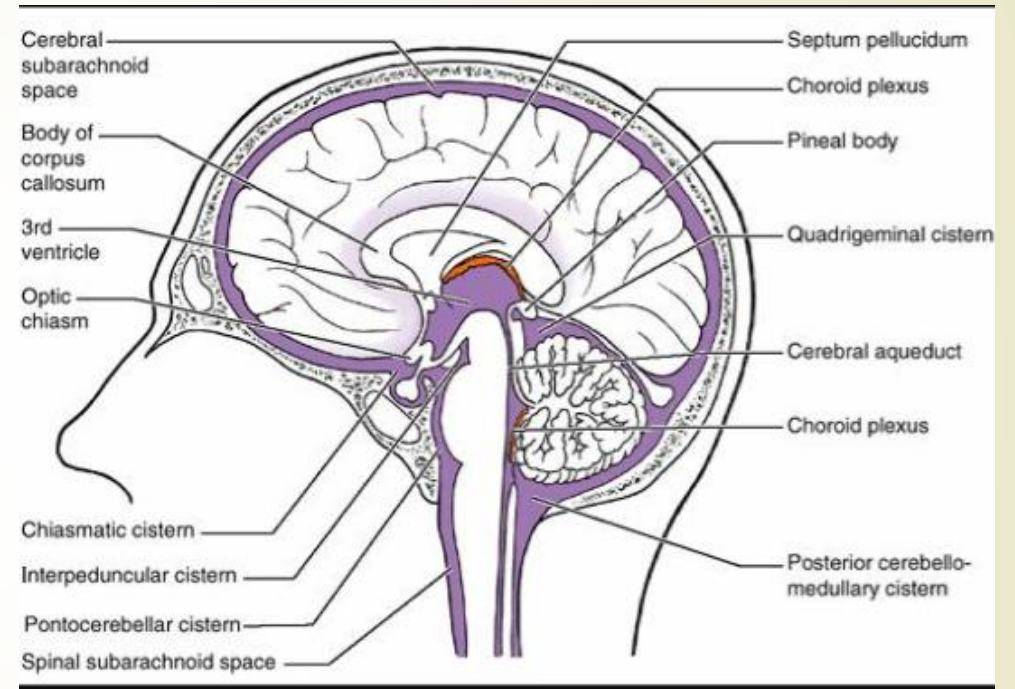
Antibiotics

usually administered intravenously

enter  subarachnoid space

Viral or toxic etiology:

corticosteroids





**END**