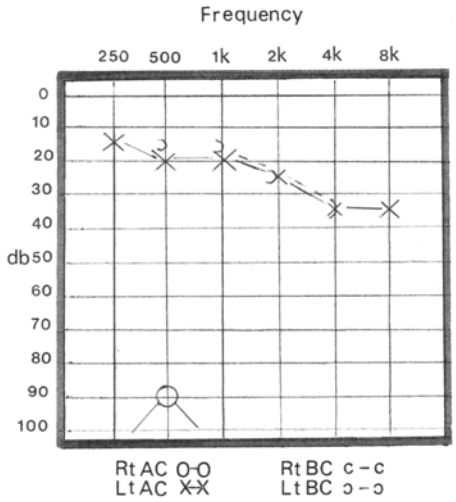
LABYRINTHITIS

The inner ear may become damaged in some circumstances, by either viral or bacterial infection, both of which may cause severe damage and symptoms. Viral infections may occur after common influenza viruses. In children the condition originates from childhood infections such as measles or mumps, fortunately rare after routine childhood vaccinations. Bacterial infections originate either from middle ear infections (acute or chronic), or from meningitis; the latter not uncommonly affects hearing in both ears.



Labyrinthitis: total hearing loss, vertigo, tinnitus.

Characteristics

Viral labyrinthitis in children may pass unnoticed amongst other concurrent illness, being identified after a considerable time lapse. In adults the problem is obvious from the symptoms. The damage from viral infections is confined to the hearing receptor cells.

Conversely, bacterial patterns tend to be associated with pain or discharge, bringing attention to the site more rapidly. Acute middle ear infection may affect the inner ear directly or via secondary meningitis. Chronic disease origins usually involve Cholesteatoma (Middle Ear Infections), an infected cyst of skin in the middle ear that erodes the surrounding bone, wearing a hole (fistula) into the bone that encases the inner ear mechanisms.

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Labyrinthitis rapidly produces an unhappy triplicate of symptoms: deafness, tinnitus and vertigo. Deafness maybe profound and is usually irreversible; tinnitus loud, often persistent and troublesome. The initial acute vertigo gradually regresses through a phase of unsteadiness on movement (dysequilibrium) over 6-8 weeks. Skilled physiotherapy may help in this respect.

Treatment

Any initiating bacterial origin will require medical and/or surgical management according to the clinical situation.

Management of the hearing loss will depend on several factors. Being due to nerve damage, surgery will not restore the original hearing ability. Lesser losses may respond to hearing aids. If this is ineffective, cochlear implantation is considered, especially in children, but also in selected adult cases, particularly the bilaterally afflicted.

Unlike viral disease, bacterial infection commonly causes scarring and bone formation within the inner ear (labyrinthitis ossificans) that may obliterate the hearing structures. This may prevent cochlear implantation. For this reason, meningitis is regarded as a hearing emergency, for careful monitoring of the hearing, as the obliterative changes may develop rapidly. Profoundly deafened cases are implanted early after diagnosis, when indicated.

For those with normal hearing in the unaffected ear, a CROS (contralateral routing of sound) hearing aid is available. This device has two parts: an aid-like receiver in the deaf ear, which picks up sound, and transmits this (Bluetooth) to a similar device in the better ear.

Alternatively, an active bone conduction implant in the deafened ear offers improved hearing. These devices (Med El Bonebridge, Cochlear BAHA) eliminate the “head shadow” deaf zone around the afflicted ear by stimulating the better cochlea, but direction finding, stereo effect and better all-round hearing are not normally achieved.

Hearing loss, tinnitus and an evident cause of deafness distinguish this condition from vestibular neuronitis, where imbalance alone is present.

More information

- Cholesteatoma

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