

OTOSCLEROSIS

[Otosclerosis](#) is a development of bone formation in the middle ear, sited at the base of the stapes - the third tiny hearing bone. The problem is not a tumour, but rather a genetically determined thickening of immature bone, the type of bone that develops around fractures. The condition is generally inherited, with an identifiable family history, although some cases are evidently spontaneous mutations. The thickening of bone fixes the stapes, preventing sound transmission and therefore deafness.



Otosclerosis: Deafness, eminently correctable.

Characteristics

The peak time of development is delayed, with the majority of occurrences appearing around 20-30 years of age, although cases well before or after are common. Pregnancy commonly initiates or exacerbates the deafness. Ringing type tinnitus is commonly experienced, and gradual nerve deafness later in life is common. The latter is thought to be due to extension of the otosclerotic formation into the inner ear.

The condition typically demonstrates mechanical (conductive) deafness due to the fixation of the stapes, but with an otherwise normal eardrum. Audiometry shows a slight dip in the nerve levels at 2000 cycles per second, termed a "Carhart's notch" that is very suggestive of this condition.

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Other Locations

Beenleigh

Sunnybank

Mt Ommaney

Caboolture

Treatment

Although in general the deafness responds well to a hearing aid, surgery is the preferred management.

The operation is performed down the ear canal, usually under general anaesthetic. Removal of the fixed stapes (stapedectomy) ([Middle Ear Surgery](#)) and replacement by a tiny “piston” prosthesis is highly effective, with over 95% of cases achieving excellent results in expert hands. During the postoperative period, crackling, popping, echoing or hollow sounds are common and usually herald a good outcome. Some dizziness is common, but this fades in a few days; likewise, temporary ringing tinnitus may occur.

The results of surgery are durable over a lifetime in most cases. A small minority may require revision surgery that is normally successful. Complications include gradual bone erosion at the piston fixation site, or piston displacement by boisterous sneezing or nose blowing. Most of these are correctable. A very few cases suffer nerve damage as a result of the surgery itself, even in the most skilled hands.

If progressive nerve deafness intervenes due to involvement of the cochlea, hearing aids may become necessary later in life. Some cases develop nerve deafness severe enough to warrant cochlear implantation, but the implants are now sufficiently sophisticated to restore very good levels of communication. These may also be used in later life; age is not a contra-indication. Regrettably, a few cases suffer extensive otosclerotic bony occlusion of the cochlea, which renders the site inoperable.

More information

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