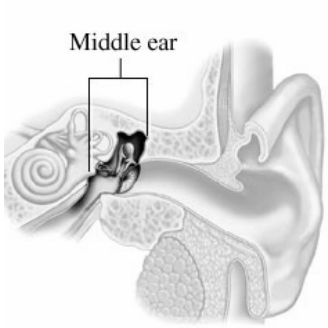
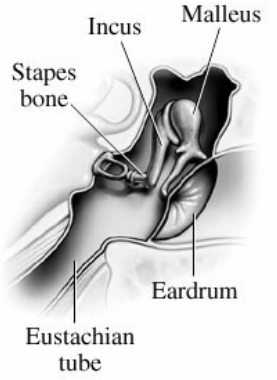
Otosclerosis



Human Ear



Middle Ear

WHAT IS OTOSCLEROSIS?

Otosclerosis is an inherited disorder of abnormal bone growth that dampens the vibrations of the stapes (a hearing bone) causing hearing loss. The hearing loss is called "conductive" because sound is not being conducted from the ear drum to the nerve of hearing. Hearing loss is generally slowly progressive as the abnormal bone spreads. Most (3/4) affected individuals will have hearing loss in both ears. Tinnitus (ringing) in the ears is not uncommon. Otosclerosis may also cause sensorineural (nerve) hearing loss in about 1 in 4 affected individuals and more uncommonly dizziness or balance problems.

WHAT CAUSES OTOSCLEROSIS?

Otosclerosis is inherited (genetic) but the abnormal bone development may be triggered by hormonal effects (especially pregnancy) or a viral infection.

DIAGNOSIS (HOW DO YOU TELL WHAT IS WRONG)

Examination of the ear allows Dr Iseli to exclude another cause of conductive hearing loss (eg fluid in the middle ear). Tuning fork tests suggest a conductive hearing loss. Hearing is more formally assessed with a test called an audiogram. An audiogram will usually show a typical pattern of conductive hearing loss, usually affecting both ears (although one ear may be worse). This allows a diagnosis of otosclerosis to be made with a high degree of certainty.

TREATMENT OPTIONS

Often otosclerosis is diagnosed when the degree of hearing loss is mild. In this circumstance, a period of observation with or without hearing aids is generally recommended. A hearing aid is highly effective at overcoming "conductive" hearing loss as the problem is amplification not the quality of sensorineural hearing. Hearing aids avoid any risks or surgery and should be tried.

SURGERY (STAPEDECTOMY)

Surgery can often (90%) result in significantly improved hearing for patients with otosclerosis. A small number (7%) will have little improvement in their hearing and, occasionally (2%) the hearing may be made worse or rarely (1%) be totally lost).

Surgery is generally performed as a 1 night hospital stay but some people may prefer to go home the same day. The surgery is performed entirely down the ear canal and part of the hardened stapes bone removed using a drill or laser. A prosthetic stapes bone is placed over the incus (middle ear bone) and down to the inner ear to allow

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sound conduction. Packing is placed in the ear canal to allow the prosthesis to heal into place.

RISKS OF SURGERY

The surgery is a general anesthetic and serious complications may occur (including 1/60,000 serious complications including death). Other risks include:

1. That your hearing be worse (2%) or permanently lost (1%)
2. Tinnitus (ringing in the ear) may be improved by surgery but occasionally is worse after surgery
3. Vertigo ie dizziness is usually mild and improves over the first few days. If severe dizziness occurs in the first 2 weeks after surgery you may have leakage of inner ear fluid (fistula) which requires urgent repair.
4. Change in taste (the taste nerve crosses the middle ear). Taste is often slightly metallic and usually improves with time but this may be a significant problem for someone who's work involves taste eg wine taster, chef.
5. Formation of a cholesteotoma (skin cyst) in the ear which may require surgery to remove it (rare).
6. Facial nerve weakness (rare).
7. Infection (in severe cases with fluid leak this may lead to meningitis).

PREPARING FOR SURGERY

Do not eat or drink after midnight before the surgery. If the surgery is in the afternoon, you may have a light breakfast before 0630 (eg toast and orange juice). Stop smoking at least 6 weeks before surgery as coughing may increase the risk of a poor hearing result.

AFTER SURGERY

- You can usually return to light work/ school two days after surgery.
- After surgery, you will usually be given drops (ciproxin) – use 3 drops in the operated ear three times per day for three days (or longer if directed).
- Do NOT blow your nose with your nostrils blocked until Dr Iseli advises you the ear drum is healed (6-8 weeks). If you need to sneeze, open your mouth to release the pressure.
- Do NOT lift more than 2 milk bottles (5kg) for 2 weeks.
- Keep your ear dry as this improves healing. While swimming protect the ear by using ear plugs and a head band. If the ear discharges, it is infected and you will require antibiotic drops (ciprofloxacin 0.3% 3 drops three times/ day for 7-10 days) and should avoid all swimming. When showering or bathing, placing a piece of cotton covered with petroleum jelly or Vaseline in the outer ear canal.
- For pain relief, paracetamol (Panadol®) may be used in recommended dosages. Stronger pain relief (panadeine forte) will be provided if required. Do NOT use aspirin, ibuprofen or other such pain killers which may increase the risk of bleeding.
- Air travel is should be delayed while the prosthesis is healing (ideally 6 weeks). Diving and sky diving is NEVER allowable after stapedectomy as high pressure changes may dislodge the prosthesis and cause severe dizziness and hearing loss.
- Ideally do not smoke cigarettes for 3 months after surgery as these have been shown to delay/ prevent healing.

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SEEK MEDICAL ATTENTION IF:

- There is bleeding or *purulent* (pus-like) material coming from your ear (you may have an infection)
- You have problems with balance, feel dizzy, or develop *nausea* (feeling sick to your stomach) and vomiting.
- You develop increased pain and/or an oral temperature above 38.5 degrees celcius which is not controlled by medications.
- Have sudden loss of your hearing which had seemed to be improved.

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