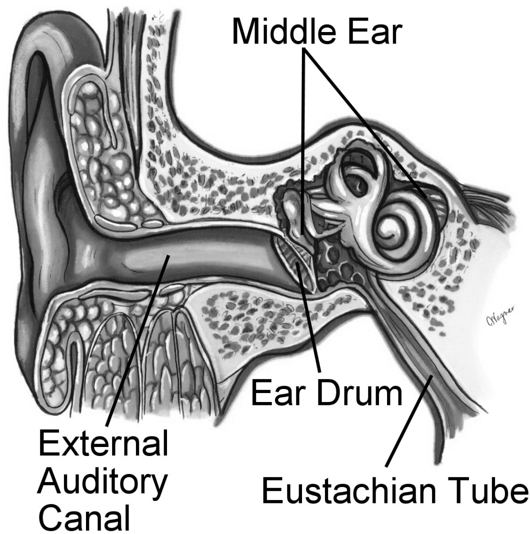
Mastoidectomy



Normally, skin migrates from the center of the ear drum out toward the outer ear taking wax and debris with it. If a person has repeated middle ear infections, Eustachian tube dysfunction and negative pressure within the middle ear, the ear drum may be sucked in. A retraction pocket may form and skin may be unable to migrate out of the ear, instead becoming trapped to form a *cholesteotoma*. A *cholesteotoma* is a type of skin cyst or sac located in the middle ear. This can also occur secondary to a perforation (hole) in the ear drum. Rarely, children may be born with such a cyst in their middle ear. Cholesteotomas are benign (NOT cancerous) but can become infected or erode into surrounding structures and result in serious problems. Early on, the ear may discharge and hearing may be impaired. In more advanced cases, the cholesteotoma may erode into the inner ear causing irreversible sensorineural (nerve) hearing loss, dizziness, facial nerve weakness or even meningitis or a brain abscess.

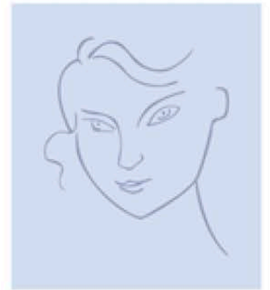
In most cases, surgery is required to remove the cholesteotoma. The aim of the first surgery would be to remove the cholesteotoma and make the ear safe. This usually requires removal of the *mastoid* bone from behind the ear ("mastoidectomy") and may require permanent enlargement of the ear canal to remove the skin cyst. Even with the best surgery, the cholesteotoma may recur (come back) so a "second look" surgery is routinely recommended for most people 6-12 months after the first surgery to check for this. If there is no disease at the second surgery, the hearing mechanism may be reconstructed using titanium "bones".

A hearing test and CT scan is generally recommended as workup for this condition.

RISKS OF SURGERY

Surgery on the middle ear is extremely delicate and performed under the microscope with micro-instruments. The surgery usually takes 3 or more hours and you will have a cut behind your ear and in your ear canal. Lining of the muscle above your ear (fascia) is taken from under the skin to create a new ear drum. This must heal into place over 6-8 weeks. There is usually not much pain (you will be given panadeine forte but often panadol alone will suffice). Patients can often go home the morning after surgery. You will awake with a large bandage over your head and this comes off before you go home. There are absorbable sutures behind your ear. You should try to keep the whole ear dry for 1 week and leave the steristrips on until they begin to peal off. After the first week, you will only need to keep the ear canal dry for a further 4 weeks after surgery.

Risks of surgery are of damage to structures around the middle ear include the facial nerve (moving muscles of smiling and blinking on that side of the face), the middle



North Melbourne ENT
ABN 28 582 450 307

100/30 Wreckyn Street
North Melbourne VIC 3051
T 03 9078 8074
F 03 9078 8105
northmelbourne@nment.com.au
www.nment.com.au

Also located at:
Williamstown ENT

54 Electra Street
Williamstown VIC 3016
T 03 9397 5507
F 03 9397 6914
williamstown@nment.com.au

A/Prof Tim Iseli
MBBS (hons.), FRACS
ENT Surgeon
Provider No. 231248MT (N)
Provider No. 231248NB (W)

Dr Claire Iseli
MBBS (hons.), FRACS, MS
ENT Surgeon
Provider No. 246559JX (N)
Provider No. 246559PB (W)

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ear bones (which often are involved in the disease and must be removed), the inner ear (responsible for balance and hearing) and the lining of the brain (dura).

Generally, the risk to these structures is greater if the cholesteatoma is left untreated than if the surgery is done.

Possible risks of surgery are:

1. Facial nerve weakness (<1%)
2. Tinnitus (ringing in the ear) is common and is usually temporary but may be permanent
3. Hearing loss is expected as the middle ear bones ("ossicles") are partly removed and will not be replaced until the second surgery. Sensorineural hearing loss may not be reversible.
4. Vertigo ie dizziness (especially if the cholesteotoma is eroding into the inner ear). This is always temporary unless both ears are affected.
5. 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 whose work involves taste eg wine taster, chef.
6. Recurrence of the cholesteotoma may require further surgery.
7. Scar behind the ear (a small amount of hair behind the ear will need to be shaved). Generally the scar sits in the hairline but the lower end may be visible. Rarely, the scar is tender or painful to touch.
8. Leakage of CSF (brain fluid) may require a second surgery to repair. This may present with salty fluid in the back of the throat after surgery (very rare).
9. Infection (in severe cases with CSF leak this may lead to meningitis).

PREPARING FOR SURGERY

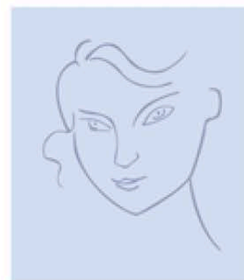
- Because the cholesteotoma is exposed to the outer ear, water in the ear canal may introduce infection. This may cause pain and discharge. Patients with cholesteotomas ideally should not get water into their ears- especially if the ear is draining. Earplugs should be worn in the bath and shower. It is important that children still learn to swim but should be encouraged to wear earplugs (Doc's proplugs are best) +/- a swim headband, and avoid diving deeply under water.

- If the ear becomes infected (drainage, pain, fevers) the initial treatment should be antibiotic ear drops (ciproxin). Tablet antibiotics are given only if the infection is not improving with drops.

- 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).

AFTER SURGERY

- You/ your child can usually return to light work/ school two days after surgery.
- After surgery, you will usually be given tablet antibiotics (liquid for children) to take for 5 days. You will then start ear drops 3 weeks after surgery (ciproxin) – use 3 drops in the operated ear three times per day a few weeks (or longer if directed).
- There is normally a small volume of brown/red drainage from the ears for up to 4 week after surgery. If it persists or turns yellow or green please contact Dr Iseli's office.



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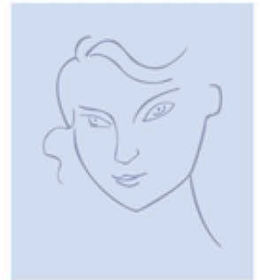
- Do NOT blow your nose with your nostrils blocked until Dr Iseli advises you the ear drum is healed (6-8 weeks). If you need to sneeze, open your mouth to release the pressure.
- Do NOT lift more than 2 milk bottles (5kg) for 4 weeks and if you do need to lift something the do this with your mouth open
- Keep your ear dry as this improves healing. Keep your whole ear completely dry for 1 week then after that it's important to keep just the ear canal dry until Dr Iseli advises you the new ear drum is healed (usually 4 weeks). It's best to do this with a disposable plug such as a cotton ball covered in Vaseline or BluTack for the first 4 weeks. After this, it may be possible to return to swimming if Dr Iseli says the ear drum has healed, but 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. A warm pack or heating pad may also be used for pain relief. Use this for twenty minutes three to four times per day, or as needed. **Do not sleep with a heating pad. They can cause severe burns.** If the pain is not controlled with simple pain killers then contact Dr Iseli, as this may be a sign of infection.
- Air travel is should be delayed if possible while the graft is healing (ideally 3 months). Diving is also not allowable until the ear drum is healed.
- Ideally do not smoke cigarettes for 3 months after surgery as these have been shown to delay/ prevent healing.

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.



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