Having a modified radical mastoidectomy

Information for patients
Ear Nose and Throat
How does the ear work?

The ear consists of the ear canal, the middle ear and the inner ear. The ear canal is one inch long and is closed at its end by the eardrum. On the other side of the eardrum is the middle ear. This is an air-filled space which contains three tiny bones (the ossicles). These transmit sound vibrations from the eardrum across the middle ear to the inner ear.

What is the mastoid bone?

The mastoid bone is the bony lump that can be felt just behind the ear. In structure, it is rather like a sponge, with large numbers of tiny air cells within the bone. These air cells communicate directly with the middle ear.

Due to the location and structure of the mastoid bone, diseases in the middle ear can extend into the mastoid very readily.

What is cholesteatoma?

A cholesteatoma is an abnormal collection of skin cells inside your ear.

Left untreated, it can continue to grow and damage the delicate structures deep inside your ear, such as the tiny bones and organs essential for hearing and balance.

What causes cholesteatoma?

A cholesteatoma can develop if part of the eardrum collapses because of problems equalising the pressure across it.

This occurs when the Eustachian tube is not working properly. This is a thin tube that runs from the middle ear to the back of the nose. One of its main functions is to help maintain normal air pressure within the ear.

Dead skin cells are normally passed out of the ear, but if the eardrum collapses, it may create a pocket where the dead skin cells can collect.
A cholesteatoma can also occur after the eardrum has been damaged through an injury or infection, or after any kind of ear surgery.

It is possible to be born with a cholesteatoma as a result of the structures within the ear developing abnormally, but this is rare.

**How is it treated?**

Cholesteatoma's or infected tissue can be removed by microscopic mastoid surgery. Surgery aims to resolve the problem of infection and discharge by removing the pocket of skin that has become trapped behind your eardrum.

**Is there any alternative treatment?**

It is generally agreed that there is no alternative to surgery, as medication or drops cannot alter the growth of skin within your ear. We would only recommend delaying surgery if you were very unwell or infirm.

**How successful is the operation?**

The chance of obtaining a dry, trouble-free ear after this operation is 80-85%. In 10-15% of cases the ear can remain wet and troublesome to some degree. Many of these wet ears may ultimately require further surgery (a revision mastoidectomy).

Cholesteatoma is not a rare condition. A busy surgeon will carry out perhaps thirty such procedures each year and there is much experience in the management of this problem. The great majority of patients have a straightforward operation with an entirely satisfactory outcome.
Will it affect my hearing?

Most patients with cholesteatoma are already deaf to some extent. In 60% of cases we deal with, the hearing remains unchanged. In 30% there is a noticeable improvement in hearing with occasionally normal hearing being obtained. However, in 10% the hearing is worse.

How is mastoid surgery done?

The operation is performed under general anaesthesia. There are several ways of doing the operation depending on the extent of the ear disease, these fall into two categories:

- **Modified radical mastoidectomy** - this involves widening the ear canal, removing the wall of the ear canal and creating a mastoid cavity (a greatly expanded ear canal)
- **Combined approach mastoidectomy** - this method leaves the canal wall intact and the surgeon works around the wall to clear the disease.

What can I expect if I have an open cavity?

The healing time is longer and the cavity may discharge as it is healing. You will also have a larger opening to your ear so that the cavity can be inspected. This larger opening may have the following consequences:

- Cold air/wind can cause feelings of imbalance
- Fitting of swim moulds and hearing aid moulds can be more challenging
- You will need to keep water out of your ear lifelong
- You will be at a higher risk of developing infection

How long does the procedure take?

The operation can take between 1-4 hours to complete.
What complications can occur?

As with any procedure there are risks which you will need to consider. It is important that you are aware of and understand the risks of mastoidectomy before giving consent for this treatment. The potential complications are rare but can include:

- **Loss of hearing** - As mentioned above, 10% of patients find their hearing is worse following the procedure, and in 2% of cases the hearing is very bad, including total loss of hearing. This is usually due to disease having already eroded into the inner ear.

- **Dizziness** - Dizziness is common for a few hours following mastoid surgery and may result in nausea and vomiting. On rare occasions dizziness may be prolonged but never permanent.

- **Weakness of the face** - The nerve that controls movement of the muscles in the face runs in the wall of the middle ear and may be damaged during the operation. This complication is rare and permanent damage even rarer. It usually takes the form of weakness or loss of movement on one side of the face on a temporary basis.

- **Tinnitus** - Tinnitus is simply one aspect of deafness and occurs quite unpredictably. It is possible, although unlikely, that tinnitus may occur or worsen following surgery, particularly if the hearing loss has been worsened.

- **Wound infection** - a small amount of non-offensive discharge is to be expected after surgery, however any offensive discharge, swelling or redness could mean an infection that needs to be reviewed by the ENT team.

- **Revision surgery** - despite the best efforts of your surgeon up to 25-20% of cases can continue to discharge. This is often treated medically and settles over time. Occasionally you may need further surgery.
• **Altered taste** - the nerve responsible for taste is often moved or cut during surgery leading to a metallic or salty taste that will settle in time. The other side will take over.

• **Cerebrospinal fluid leak** - occasionally disease or the surgery can expose the lining of the brain. If this is breached fluid that bathes the brain can leak out of the ear or drip out of the nose. If you notice a persistent and copious watery discharge from the ear or nose please inform the ENT Department.

**What should I expect next?**

• If you are fit and well you will be sent to pre-operative assessment on J floor to make sure that you are ready for a general anaesthetic. If you have medical problems one of the ENT Secretaries will contact you with a date for a face-to-face pre-operative assessment. Please make sure all your contact details are correct before leaving the ENT Department.

• You will also be contacted with a date for your surgery.

• Your surgeon will have given you a consent form describing the procedure and risks associated with it. Please bring this with you to all appointments related to the surgery.

• Your surgeon may also give you a prescription for ear drops to use leading up to surgery to reduce swelling and infection. Please try and remember to take these drops.

**What can I expect on the day of the surgery?**

• You will meet the surgeon and his team again who will check all the paper work and make sure you are ready for surgery.

• The surgeon will go through the risks again and mark your ear.

• You may need another hearing test.
Will I be able to go home?

Generally the surgery is performed as a day case and you should be able to go home as long as there is a responsible person with you to drive you back and look after you for 24 hours following surgery. If the surgery takes longer or there are complications you may need to stay in hospital.

How long do I need to take off work?

We recommend taking two weeks off work. A sick note will be provided. Any time beyond that needs a certificate from your GP.

What activities can I do?

- In the first 24 hours you should not drive or operate any dangerous machinery.
- During the first two weeks activities should be kept light.
- It is not advisable to go to the gym or undertake any strenuous exercise for two weeks.
- Flying should not be undertaken for the first 3 weeks after surgery.

Will it hurt?

The ear may ache a little but this can be controlled with painkillers provided on the ward.
What can I expect after surgery?

- When you wake up there will be a head bandage on. This needs to stay on for 24 hours, but if it comes off earlier, it is not a major problem.
- You will have a cut in front of, or behind the ear with stitches. These stay in for a week and an appointment will be arranged for you to have them removed at your GP surgery.
- Please keep the area dry using a shower cap or mug placed against the ear with Vaseline around the rim whilst the stitches are in place.
- If the cut is behind the ear, the ear will feel numb and stick out slightly. This will settle over the next few months.
- If the cut is behind the ear a rim of hair will have been shaven to prevent wound infections. This will grow back.
- There will be antispectic packing in the ear. This will be removed in three weeks and is usually painless. If it starts to come out trim it and gently using your finger push the remaining packing back into the ear.
- Some people can be allergic to the packing. If the ear turns bright red, swells and is itchy please contact the department to be seen and have the packing removed.
- It is normal in the first week to have a degree of non-smelly watery/bloody discharge from the ear. Please use fresh cotton wool applied to the opening of the ear to soak this up. If the discharge becomes smelly and the ear becomes red please contact the ENT Department.
- Please keep the ear dry until given permisiion to get water in the ear. This can be achieved by mixing cotton wool balls with Vaseline and inserting it gently into the entrance of the ear or using silicon ear plugs.
- You may notice slight bruising above your eyelid, cheek and side of mouth on the side of surgery. This is where the surgeon has
inserted fine needles to monitor your facial muscles whilst undertaking the surgery. This will fade over a few days.

- You may have an odd metallic or salty taste which will settle over a few weeks.
- You may have a stiff jaw as the covering of the muscle used for chewing may be used to line your ear and reconstruct the drum.

**What do I need to watch out for?**

If you notice any of the following symptoms you should contact the ENT Department for further advice:

- Excessive bleeding
- Dizziness
- Facial weakness
- Persistent watery discharge which has a salty taste from the nose or ear
- Any sign of infection in or around your wound site, this may include:
  - Redness or swelling
  - Offensive discharge
  - Temperature
  - Generally feeling unwell
How long will I need to continue to see my surgeon?

Follow up for chronic ear disease can be lifelong.

- You will be seen at three weeks to remove the packing and to check healing.
- If you have had to have an open cavity you may need regular appointments to clean the ear whilst it is healing.
- At 3 months a hearing test will be performed.
- At about 9 months another scan may be performed to check disease has not come back. At this time depending on your hearing further surgery may be offered to restore hearing or different types of hearing aids may be discussed.
- Up to 20% of ears may continue to discharge and further surgery may need to be performed.
- If the ear has healed and the hearing is adequate you will usually be seen on a yearly basis.

Who should I contact if I have any concerns?

If you have any concerns please feel free to discuss these with your consultant, the staff in the ENT Department at the Royal Hallamshire Hospital or your own GP.

Ward 11

- **0114 271 2504**

ENT Outpatient Department

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  Monday to Friday, 8.00am - 5.30pm