East Kent Hospitals University NHS Foundation Trust

Mastoid obliteration

Information for patients provided by the Otology Department

What is mastoid obliteration?

You have been recommended for **mastoid cavity obliteration surgery** to eliminate a troublesome mastoid cavity. The most common reason for a troublesome mastoid cavity is recurrent or persistent infections.

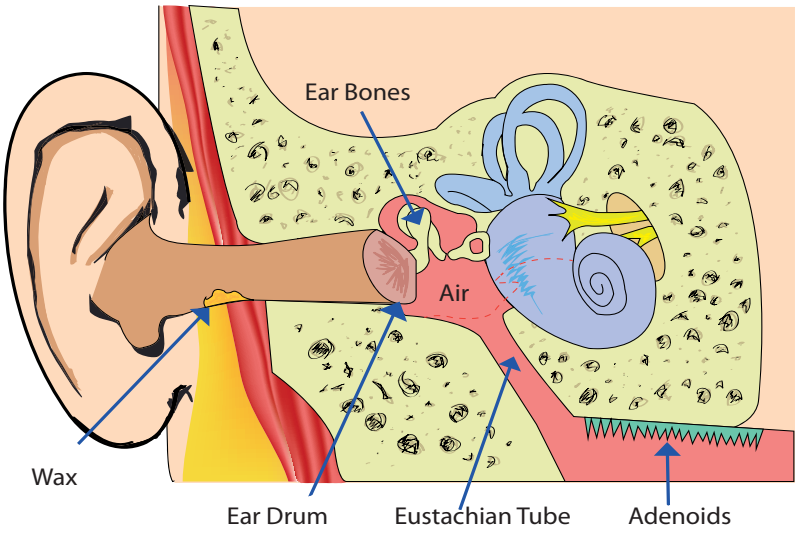
Here we explain some of the aims, benefits, risks, and alternatives to the proposed operation. The operation itself will also be explained.

We want you to be informed about your choices so that you can be fully involved in making any decisions about your operation. Please ask about anything you do not fully understand or wish to have explained in more detail.

How does the ear work?

The ear consists of the outer, middle, and inner ear. Sound travels through the outer ear and reaches the eardrum, causing it to vibrate. The vibration is then transmitted through three tiny bones, called the ossicles, in the middle ear.

The vibration then enters the inner ear, which is a snail-shaped bony structure filled with fluid. The nerve cells within the inner ear are stimulated to produce signals which are carried to the brain, where they are interpreted as sound.



We care

What is the mastoid bone?

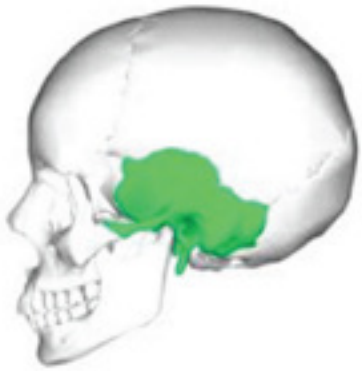


Diagram showing the mastoid bone

The mastoid bone is the bony prominence that can be felt just behind the ear (see diagram).

It contains a number of air spaces, the largest of which is called the antrum, and connects with air space in the middle ear.

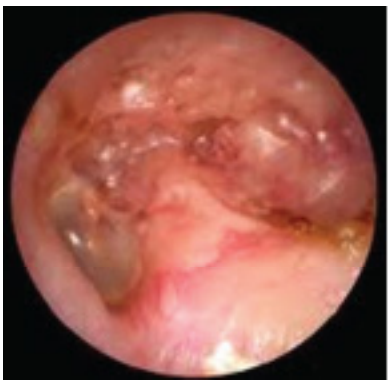
Ear diseases in the middle ear can extend into the mastoid bone.

Why have I been referred for mastoid cavity obliteration?

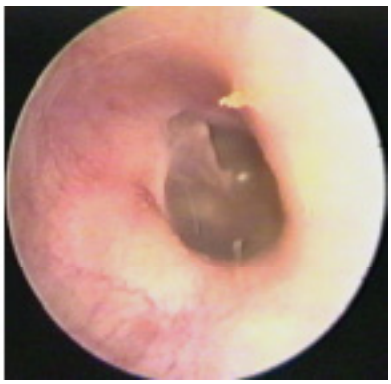
Following your previous surgery, one or more of the structures in your ear (such as your ear drum, ossicles, and part of your mastoid bone) have been removed, resulting in a mastoid cavity.

You have been recommended for mastoid obliteration surgery as your mastoid cavity is continually discharging or accumulating dead skin, and it has not improved with regular cleaning and antibiotic drops.

The purpose of this surgery is to remove the disease from your ear, whether it is infected tissue or cholesteatoma (dead skin that collects in your ear and can destroy the structures around it), and then to reconstruct your ear.



Ear canal with mastoid cavity



Ear canal without mastoid cavity

What are the intended benefits of mastoid cavity obliteration?

- The main benefit of this procedure is to give you a dry, waterproof, and trouble-free ear.

- Sometimes, if the hearing mechanism of your inner ear is still working, it may be possible to improve your hearing in the affected ear. Your surgeon will be able to advise and discuss this with you. It is not always possible to improve hearing, even when the hearing function of your inner ear still works.

How successful is this procedure?

About 85 in every 100 patients will have a dry, trouble-free ear after this operation. We also hope to improve your hearing. The success rate of improving your hearing is in the region of 60 in 100 patients. If your hearing cannot be improved, a safe, dry waterproof ear may allow you to wear a hearing aid or your surgeon may recommend an alternative hearing solution after healing.

Who will perform my procedure?

An ear nose and throat (ENT) surgeon, with the appropriate experience, will perform your procedure.

What will happen before my procedure?

- Most patients attend a pre-admission clinic led by a nurse, some days or weeks before their surgery.

- At this clinic, we will ask you for details of your medical history and carry out any necessary clinical examinations and investigations such as checking your blood pressure, pulse, and weight. This is a good opportunity for you to ask us any questions about your procedure, but please feel free to discuss any concerns at any time.

- You will be asked if you are taking any tablets or other types of medication, these might be ones prescribed by a doctor or bought over the counter in a pharmacy. It helps us if you bring with you details of any medications or supplements you are taking.

- Stopping smoking helps you to heal quicker after your surgery, amongst other benefits. The Stop Smoking Service offers free support, so please ask if you would like a referral.

Will I have an anaesthetic?

Yes. This procedure involves the use of a general anaesthetic, which means you will be asleep for your procedure.

Will I have to stay in hospital overnight?

Most people who have this type of procedure can go home on the same day as their surgery. Sometimes we know before your surgery whether you will need to stay for longer than usual; your doctor will discuss this with you before you decide to have the operation.

Does some of my hair need to be removed before my procedure?

The healthcare team needs to see or reach the skin behind your ear for the operation. So they can do this, they will probably need to use an electric hair clipper (with a single-use disposable head) to remove some of your hair on the day of surgery. Please do not shave the hair yourself as this can increase the risk of skin infection.

You will be advised to shower and wash your hair either the night before or on the morning of your operation.

What happens during the operation?

The surgery is performed under general anaesthetic and may take up to five hours.

Once you are asleep, an incision (cut) is made behind your ear and the infected tissues in the mastoid, along with cholesteatoma (dead skin), are removed to reveal healthy bone. If the surgeon sees any residual (leftover) infection, the infected bone will be cleared by drilling it away.

At this point synthetic bone substitute, or your own bone dust or chips are used to fill the cavity. The filling material is then covered with cartilage and local soft tissue flaps to help create a healthy ear canal.

Your surgeon will often reconstruct your eardrum using cartilage, depending on what structures are still available and healthy in your ear. If there is a hope that your hearing can be improved, then the ossicular chain (bones of hearing) may be replaced with a prosthetic (artificial) ossicle made out of titanium. These prostheses are MRI compatible. This will be discussed with you in your clinic appointments, however it is often impossible to decide if this is an option until during the operation itself.

The ear is then packed with ribbon gauze, soaked with antiseptic paste, to keep the graft in place. The wound is stitched with dissolvable sutures and an adhesive dressing (steristrips) is applied to protect it. A cushioning bandage is applied and kept on overnight. Your surgeon will usually advise you to remove this at home.

Are there alternatives to this procedure?

The only way to guarantee that you will not have further problems, arising from your mastoid cavity, is by removing the cavity (obliteration). In patients who are unfit for this surgery, the only alternative is to have a specialist regularly clean the ear and for the patient to use antibiotic ear drops or creams. This, at best, could reduce the discharge.

Are there any significant, unavoidable, or frequently occurring risks of mastoid cavity obliteration surgery?

There are some risks that you must consider before giving consent to this treatment. You should speak to your surgeon about the chances of any complications in your case.

- **Scar**
  You will have a scar behind your ear. To start with, this will be a red/pink colour but will fade to a white colour with time and become less noticeable. This scar may be uncomfortable for some time after your operation, often many months. You may experience some numbness around the scar, which may or may not improve with time. Sometimes a scar may become larger than immediately after the operation (hypertrophic or keyloid), which may need a further procedure at a later date.

- **Bleeding**
  You may experience some bloodstained discharge from your ear in the weeks following your operation. If the bleeding does not settle, please contact Rotary Ward on the number at the end of this leaflet and ask to speak to the ENT doctor on-call.

- **Loss of hearing**
  In a small number of patients, the hearing may be made worse due to damage to the inner ear. It is possible that the hearing in the ear being operated on may be lost completely and permanently (sometimes called a dead ear).

- **Dizziness**
  Dizziness is common for a few hours following mastoid cavity obliteration surgery and may result in nausea (feeling sick) and vomiting. On rare occasions, dizziness can be significant and persistent, needing a longer stay in hospital and specialist physiotherapy.

- **Tinnitus**
  Sometimes a patient may notice noise in their ear, particularly if their hearing loss gets worse. This noise is known as tinnitus and can be temporary or permanent.

- **Weakness of one side of the face**
  The nerve that controls movement of the muscles of the face runs inside the ear and may be damaged during your operation. If this happens, your face may lose its movement on the side of the operation, but it is usually temporary. A facial nerve monitor is used during your procedure to help reduce the risk of nerve damage. There is a very small risk of permanent paralysis of one side of the face.

- **Taste disturbance**
  The taste nerve runs close to the eardrum and may occasionally be damaged. This can cause an abnormal taste on one side of your tongue. This is usually temporary but it can be permanent in about one in 10 of patients affected.

- **Cerebrospinal fluid leak**
  The brain lies on top of the mastoid bone, surrounded by a fluid called cerebrospinal fluid or CSF. On rare occasions, the ear disease may erode into the bone that separates the mastoid from the brain, or the bone can be breached during surgery. If a CSF leak is seen during surgery it is repaired at the time. Sometimes the leak appears later on and another operation will be needed.

- **Reaction to ear dressings**
  Occasionally, your ear may develop an allergic reaction to the dressings we use in your ear canal. If this happens, the pinna (outer ear) may become swollen, red, and itchy. If this happens, you should speak to your surgeon so that they can remove the dressing from your ear. The allergic reaction should settle down after a few days.

- **Change in shape of the ear**
  Cartilage used to obliterate the cavity will be taken from your ear during surgery. This is done in a way that, in most cases, is not noticeable. There is a small risk however that the shape of your ear may change slightly as a result of removing some of this cartilage.

- **Haematoma formation**
  A haematoma is a collection of blood under the skin. If this happens on or around your ear, then it may need removing with a further small procedure to avoid deformity of your ear or development of an infection.

There are general risks to all major operations, due to having a general anaesthetic. You can discuss these with your anaesthetist before your surgery.

Developing blood clots in your legs or lung are also general risks when having surgery. As part of your pre-admission checks you will be risk assessed for developing clots in your legs (deep vein thrombosis or DVT) or lungs (pulmonary embolism or PE) and options for minimising these risks will be discussed with you.

You may change your mind about your operation at any time, and signing a consent form does not mean that you have to have the operation.

If you would like to have a second opinion about your treatment, you can ask your specialist; they will not mind arranging this for you. You may wish to ask your own GP to arrange a second opinion with another specialist.

Will I be in pain after my procedure?

Your surgeon will use an injection around your ear, before your operation begins, to reduce your pain after surgery. Your ear may ache a little after your procedure, but this can be controlled with painkillers that we will ask you to buy, such as paracetamol and ibuprofen. More painkillers may be provided by the hospital before you are discharged.

When can I resume normal activities?

We will help you to move around as soon as possible after your procedure. This helps improve your recovery and reduces the risk of certain complications.

When can I return to work?

You may need to take two to four weeks off work or school after your operation.

When can I leave hospital?

You will usually go home the same day. You will have a head bandage that you can remove the next day, but you must leave the packing inside your ear. You should speak to your surgeon if you suddenly experience deafness, dizziness, or severe pain after you are sent home from the hospital.

How do I look after my wound following my procedure?

- There are usually no stitches to be removed. The stitches we use are beneath your skin and dissolve on their own over time.
- You may have some sticky strips over your wound that you can remove around seven days after your operation. If they peel off before this then this is nothing to worry about and they do not need replacing.
- There may be a small amount of discharge from your ear canal. This usually comes from the dressings and settles in three to four days. If the discharge continues, there is a lot of it, and it is smelly or you have any pain or itching, you should contact the hospital.
- Your ear canal will be full of dressing/packing that will be removed at your first follow-up appointment; usually four weeks after your operation. Because of this packing your hearing may well seem worse than before your operation. We will not be able to assess your hearing until this packing is removed from your ear. The final result regarding your hearing is only known three months after surgery, after all the healing has taken place.
- If some of the packing falls out, it is sensible to trim the loose end of packing with scissors and leave the rest in place.

- You should keep your ear dry for the first few weeks after surgey. Plug it with a cotton wool ball coated with Vaseline when you are having a shower. We recommend that you do not wash your hair until the ear packing is removed in clinic. Dry shampoo can be used instead.
- Avoid straining/lifting anything heavy for the first few weeks after surgery.
- Only blow your nose gently.
- Avoid air travel for two months.
- You are advised to avoid diving or flying when you have a cold, if possible.

Will I have a follow-up appointment?

You will receive an appointment to return to the clinic four weeks following your operation. This is mainly to remove the packing and check your ear.

We will see you again three months after your surgery, where we will check your ear and perform an audiogram; any further treatments you may need will be discussed then.

You will need to come to the ENT Department for your follow-up, for a minimum of five years after your operation. The appointments are usually every year and your surgeon may also order an MRI scan to check your ear, usually one year after your operation. Further MRI scans may be needed.

What if I have any problems or concerns?

Call the ENT team on-call at William Harvey Hospital via the hospital switchboard on 01233 63 33 31 or Rotary Ward on 01233 61 62 34. Ask to speak to either the on call ENT registrar or nurse practitioner for advice.

This leaflet has been produced with and for patients

If you would like this information in **another language, audio, Braille, Easy Read, or large print** please ask a member of staff. You can ask someone to contact us on your behalf.

Any complaints, comments, concerns, or compliments please speak to your doctor or nurse, or contact the Patient Advice and Liaison Service (PALS) on 01227 78 31 45, or email ekh-tr.pals@nhs.net

Patients should not bring in large sums of money or valuables into hospital. Please note that East Kent Hospitals accepts no responsibility for the loss or damage to personal property, unless the property had been handed in to Trust staff for safe-keeping.

Further patient leaflets are available via the East Kent Hospitals web site www.ekhuft.nhs.uk/patientinformation

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