

MASTOID EXPLORATION (MASTOID SURGERY) AND MASTOIDECTOMY

This information leaflet is to support your decision with your Specialist.

This leaflet will explain about the ear and what surgery can be offered for conditions affecting it. Before you agree to any treatment, you will always have an opportunity to discuss your procedure and raise any concerns or questions.

HOW DOES THE EAR WORK?

The ear consists of the outer, middle and inner ear. The outer part of the ear is covered by skin which forms the covering to the ear canal and the eardrum. The middle ear is covered by a mucus producing membrane (mucosa) which produces a secretion. The inner ear is encased in a bony covering which is very hard (the hardest bone in the body) which contains the sensitive mechanisms for hearing and balance and these structures are both linked.

Sound travels through the outer ear and reaches the eardrum causing it to move or vibrate. This vibration is then transmitted through the smallest bones of the body (the ossicles) which are found in the middle ear cavity. The vibration passes through these small bones being amplified and then passes to the inner ear structures where nerve cells are stimulated. These nerve cells then send signals through the nerve for hearing towards the brain where they are interpreted as sound.

The eardrum is a thin membrane which separates the middle and outer ear cavities. It forms part of the mechanism to amplify sound entry into the middle ear. In some people the eardrum can be perforated from an accident or infection. Most of these perforations heal by themselves but surgery may be required if they do not.

WHAT IS THE MASTOID BONE?

The mastoid bone is the bony prominence that can be felt just behind the ear. It contains a number of air spaces, the largest of which is called the antrum. This contains air usually and helps to connect the spaces of the middle ear to that of the mastoid bone. Any disease that affects the middle ear therefore can extend into the bone behind the ear (the mastoid bone) by travel through the antrum.

WHY IS MASTOID SURGERY DONE?

Surgery on the mastoid bone may be carried out for a number of reasons. Most commonly it is carried out when we are unable to clear long standing disease from the mastoid bone using antibiotics, ear drops and suction of the ear canal in the clinic. We can tell that there is disease in the middle ear if there is a continuous discharge from the ear and the hearing is affected.

Long standing ear discharge and disease can lead to the formation of cholesteatoma. This is a growth of skin of the ear drum into the middle ear. This

normally occurs in a pocket of skin growing from the outer ear into the middle ear. This is associated with infection, discharge and hearing loss. This pocket gets slowly larger, over a period of time causing erosion and damage to bone and other structures within the area. Damage to the smallest bones of the body (the ossicles) can result in hearing loss. It can also erode bone around the sensitive mechanism for hearing damaging hearing and balance. It can also extend towards the bone around the brain leading to infections in this area. If this disease cannot be treated in Outpatients by suction and antibiotics then a mastoid exploration is necessary to remove it.

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

HOW IS THE OPERATION DONE

The operation is done under a general anaesthetic so you will be asleep throughout the procedure. A cut is made either behind the ear or in front of the ear and this allows for the skin to be lifted away from the mastoid bone. The nature of the operation has varying titles from atticotomy, mastoidectomy or tympanomastoidectomy. The nature of the operation can be discussed with your surgeon. The time taken for the surgery varies depending on the disease and the extent of procedures being considered (from one to three hours).

The bone covering the infection within the diseased mastoid ear cells is removed. The resultant bony defect is called a 'mastoid cavity'. Sometimes the small bones of the middle ear may also be diseased and they may have to be removed. The eardrum can be seen from inside and can be repaired if it is perforated. This is called a tympanoplasty. The hole is patched over using a graft from the muscle lining in this area. After the affected bone has been removed the skin is usually closed with sutures (stitches). A small mastoid cavity may be left which allows for easier inspection of the area in the clinic. This defect is called the 'mastoid cavity' and may have an iodine or antiseptic dressing inserted after the surgery to allow for healing of this area.

AFTER THE OPERATION

There will be a bandage placed over the head, which helps to reduce swelling and bleeding. This is usually taken off later in the day or around twelve hours after the operation. The ear may feel sore and you will be given painkillers to help with this.

You are usually able to go home either the same day or if the operation is in the evening, the following morning. The stitches (sutures) may need to be removed in a week by the surgeon. The antiseptic pack that is placed in the ear canal and mastoid cavity is usually removed two to three weeks after the operation in the ENT Outpatients. You will need to be seen regularly in the ENT clinic to ensure that the ear is carefully monitored. The shape of the ear canal will change after this operation and wax can gradually block up the ear. This may require regular clearance in the ENT clinic.

HOW SUCCESSFUL IS THE SURGERY?

The chances of obtaining a dry, trouble free ear from this operation by an experienced surgeon are over 80%. It may be possible to improve hearing. You should enquire from the surgeon the likelihood of success with your surgery.

MASTOIDECTOMY – THE RISKS AND COMPLICATIONS OF SURGERY

There are some risks that you need to be aware of prior to giving consent for surgery. The potential complications are uncommon. Listed below are some of the problems associated with surgery, This is not a comprehensive list of the complications associated with surgery but does cover most problems including rare ones associated with this procedure. If you wish to discuss further specific issues, please do not hesitate to do so with your doctor.

Infection

Infection may arise post-operatively. This rarely can spread to the inner ear causing labyrinthitis. The symptoms of labyrinthitis include vertigo, deafness and tinnitus. This will require treatment with antibiotics.

Taste

Often a nerve supplying taste to the front half to one side of the tongue may be sacrificed deliberately to complete the surgery successfully. This would alter the taste on one side of the tongue. This may become less noticeable with time.

Hearing Loss

It may be necessary to compromise hearing to complete the surgery successfully. Where possible the surgeon will attempt to reconstruct the hearing although this may require further secondary surgery. In a small number of patients the hearing may be further impaired due to damage to the inner ear. If the disease has eroded into the inner ear there may be a total loss of hearing in that ear. This is very rare.

Vertigo and Dizziness

Dizziness is common for a few hours following mastoid surgery and may result in nausea and vomiting. On rare occasions this may be prolonged and severe.

Tinnitus

Sometimes patients may notice a noise in the ear in particular if the hearing loss worsens. Some of this may be eased when the dressing from the ear canal is removed.

Facial Nerve Damage and Weakness of the Face

The nerve that controls movements of the facial muscles runs in the ear and may be damaged during the operation but this is a very rare risk. Damage to this nerve will result in weakness of the muscles on one side of the face (the operated side) leading to difficulty in eye and mouth closure. The damage may be temporary or permanent.

Reaction to Ear Dressings and Allergy

Occasionally the ear may develop an allergic reaction to the dressings in the ear canal. If this happens the ear canal and outer ear (pinna) may become swollen and red. If this occurs then the dressings may need to be removed and you may require steroids and anti-histamine treatment to reduce the swelling. Other rare reactions include meningitis and complete deafness.

Discomfort following Mastoidectomy

You will have some discomfort around the ear following surgery due to the stitches in this area. The packing in the ear may stay in for up to three weeks and this will cause hearing to be muffled. The ear may also bleed. It is not uncommon after surgery and these symptoms usually settle down. You may also feel dizzy for a few days but once again, this is uncommon and usually settles down.

WHAT HAPPENS AFTER THE OPERATION?

You will go home the day after the operation or indeed on the same day if your operation has been earlier in the day. There is usually some dizziness but this settles quickly and your stitches will need to be removed one to two weeks after the operation.

There may be a small amount of discharge from the ear canal and this usually comes from the ear dressings.

Some of the packing may fall out but if this occurs there is no cause for concern. It is sensible to trim the loose end of packing with scissors and leave the rest in place. The remainder of the packing will be removed in the clinic two to three weeks after surgery.

You should keep your ear dry. Plug the ear with cotton wool coated with Vaseline when you are having a bath or a shower. If the ear becomes painful or swollen then you should consult the Ear Nose and Throat Department or your General Practitioner.

You will need to attend the ENT Department for follow-up of your ear for up to five years after the operation.

HOW LONG WILL I BE OFF WORK?

You may need to take one to two weeks off work.

IS THERE ANY ALTERNATIVE TREATMENT?

The only way to remove the infection completely is a mastoid operation. In patients who are unfit for surgery the only alternative is regular cleaning of the ear by a specialist and the use of antibiotic ear drops. This at best can only reduce the discharge. There is always a small risk that the disease will continue to grow and cause erosion and damage to bone, leading to other complications. The aim of surgery is to try and minimise these complications.

If you have any problems or queries, please do not hesitate to contact your specialist.