PROCEDURE

Mastoidectomy

Mastoidectomy is surgery to remove infected or damaged air cells from the bone behind the ear.

PURPOSE
Remove diseased mastoid air cells and control ear disease

PROCEDURE TYPE
Therapeutic surgery through an incision behind the ear

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General

HOW LONG IT TAKES
Usually one to three hours; complex surgery may take longer

PREPARATION
Fasting and medication changes as instructed by your facility

RECOVERY
Same day or overnight; no driving for at least 24 hours

MAIN RISKS
Hearing change, dizziness, infection, facial nerve injury

RESULTS
Findings immediately; pathology in days, hearing over weeks

Overview

A mastoidectomy is an operation on the mastoid bone, the part of the skull just behind your ear. This bone contains small, connected air spaces that communicate with the middle ear.

The surgeon removes infected, damaged, or abnormal tissue from these air spaces. Mastoidectomy is often used to treat a cholesteatoma, which is a collection of skin cells growing in the wrong place inside the ear. It may also be used for persistent infection or complications affecting the mastoid bone.

The operation may be combined with repair of the eardrum, called tympanoplasty, or reconstruction of the tiny hearing bones, called ossiculoplasty.

Why the procedure is performed

The main goal is to create a safe, dry ear and stop disease from damaging nearby structures. Your healthcare team may recommend mastoidectomy for:

A cholesteatoma can continue to grow and erode nearby bone. Surgery removes the abnormal tissue, but follow-up remains important because some disease may persist or return.

- A cholesteatoma that cannot be safely controlled without surgery
- Long-term middle-ear or mastoid infection that has not improved with other treatment
- An abscess or another complication of ear infection
- Disease affecting the eardrum or small hearing bones
- Removal of an infected or previously implanted hearing device
- Access for another ear operation, such as cochlear implant surgery

Who should and should not have it

Mastoidectomy may be appropriate when the expected benefit of removing disease is greater than the risks of surgery. The decision is based on your symptoms, ear examination, hearing tests, scans, previous treatment, general health, and personal priorities.

It may not be the right operation if the problem is limited to an area that can be treated with ear cleaning, medicines, a smaller procedure, or observation. Surgery may also be delayed if you have a temporary illness, such as a significant respiratory infection, that makes general anaesthesia less safe.

Bleeding disorders, medicines that affect clotting, poorly controlled medical conditions, or previous ear operations may change how surgery is planned. They do not always prevent mastoidectomy. Do not stop a prescribed blood thinner like warfarin or apixaban unless the surgical team gives you specific instructions.

Some severe infections require urgent surgery even when other health risks are present. Your team should explain why surgery is being offered, how urgent it is, and what may happen without it.

How to prepare

Your treating facility's own instructions take priority because fasting and medication rules can

differ.

You will usually have an ear examination and a hearing test before surgery. A CT scan may be used to show the mastoid bone, middle ear, and extent of disease. Tell the team about previous ear surgery, hearing devices, allergies, pregnancy, and all medicines or supplements you take.

You will receive instructions about:

Arrange for an adult to take you home. You should also arrange help for the first night if you are discharged on the day of surgery.

Your team may ask you to wash your hair beforehand. Only a small amount of hair, if any, is usually removed.

- When to stop eating and drinking before general anaesthesia
- Which regular medicines to take on the day
- Whether any medicine affecting bleeding needs adjustment
- When to arrive and whether an overnight stay is expected

What happens during the procedure

You will be asleep under general anaesthesia and will not feel the operation.

The surgeon usually reaches the mastoid through a curved incision behind the ear. In some cases, part of the operation can be performed through the ear canal. Using a microscope and a surgical drill, the surgeon opens the mastoid air cells and removes infected bone, cholesteatoma, or other diseased tissue.

The exact operation reflects where the disease is located. In a canal-wall-up mastoidectomy, the back wall of the ear canal is kept in place. In a canal-wall-down operation, part of this wall is removed to create a larger space that can be examined and cleaned through the ear canal. The second approach may make disease easier to monitor but can require ongoing ear cleaning and water precautions.

If needed, the surgeon may repair the eardrum or reconstruct the hearing bones during the same operation. Tissue may be sent to a laboratory for examination.

Packing is commonly placed inside the ear canal. The incision is closed, and a padded dressing may be wrapped around your head.

Recovery and what to expect afterward

Mild to moderate pain, pressure, or soreness around the ear is expected at first. Use pain relief as directed. Contact your team if pain is getting worse rather than gradually improving.

You can usually drink and eat once you are awake and nausea has settled. Starting with light food may feel more comfortable after anaesthesia.

Rest during the first few days. Keep the ear and dressing dry, and do not remove packing unless instructed. Avoid swimming, heavy lifting, forceful nose blowing, and activities that sharply change ear pressure until your surgeon clears them. If you sneeze, keeping your mouth open may reduce pressure in the ear.

Do not drive for at least 24 hours after general anaesthesia. Wait longer if you are dizzy, taking medicines that make you drowsy, or unable to turn your head comfortably and react safely.

Many people return to desk-based work within several days to two weeks. More time may be needed after extensive surgery or for physical work. Your surgical team will give you a plan based on the operation.

Temporary muffled hearing is common because of swelling and ear packing. You may also notice popping, mild drainage, altered taste, or brief dizziness. Hearing cannot usually be judged accurately until healing has progressed.

Risks and possible complications

Every operation has risks. The risks of mastoidectomy are affected by the extent of disease and whether you have had previous ear surgery.

Possible complications include:

Facial nerve injury, profound hearing loss, and cerebrospinal fluid leakage are important but uncommon complications. Your surgeon can explain how the location of your ear disease affects your individual risk.

- Bleeding, wound infection, or slow healing
- Ongoing ear drainage or infection
- Temporary or permanent worsening of hearing
- Dizziness, imbalance, or ringing in the ear
- Altered taste or tongue sensation from irritation of a nearby taste nerve
- Injury to the facial nerve, which controls movement on that side of the face

- Leakage of fluid surrounding the brain, called cerebrospinal fluid
- Persistent or recurrent cholesteatoma
- Need for another operation

Results and follow up

The surgeon can usually explain what was found and removed soon after the operation. If tissue was sent to a laboratory, those results generally take several days or longer.

A follow-up visit is used to check the incision, remove or change packing, clean the ear, and look for infection. Do not miss routine visits even if you feel well.

A hearing test is usually performed after the ear has had time to heal. Hearing may improve, remain unchanged, or worsen. The primary goal may be disease control rather than hearing improvement.

After canal-wall-down surgery, regular professional cleaning may be needed long term. After canal-wall-up surgery for cholesteatoma, your team may recommend later imaging or another planned operation to check for hidden disease.

Alternatives

The realistic alternatives depend on why mastoidectomy has been offered.

Antibiotic tablets, antibiotic ear drops, and professional ear cleaning may control infection or drainage. They do not remove a cholesteatoma or repair bone already damaged by it.

Observation with examinations, hearing tests, and sometimes scans avoids immediate surgery. It may be reasonable for selected stable problems or when surgical risk is high. It accepts the possibility that disease could progress between checks.

A smaller operation through the ear canal may treat disease limited to the middle ear. It offers less access to disease extending deeply into the mastoid.

Tympanoplasty alone can repair an eardrum when there is no significant mastoid disease. It does not clear infection or cholesteatoma from the mastoid air cells.

Hearing aids may improve hearing but do not treat infection or remove abnormal tissue. Discuss whether delaying or declining surgery could affect hearing, balance, infection risk, or the complexity of later treatment.

When to call your healthcare team

For routine questions, contact your surgical team if you are unsure about dressings, ear packing, bathing, medicines, work, or follow-up appointments.

Call the team promptly for:

Seek emergency medical care for new facial weakness, difficulty waking, confusion, a severe headache with neck stiffness, fainting, trouble breathing, or continuous clear watery fluid from the ear or wound.

- Increasing pain, redness, warmth, or swelling around the wound
- Fever or feeling increasingly unwell
- Thick, foul-smelling, or increasing ear drainage
- Bleeding that does not settle
- Persistent vomiting or worsening dizziness
- A wound that opens
- New or worsening hearing loss

Common questions

Will I be asleep for a mastoidectomy?

Yes. Mastoidectomy is normally performed under general anaesthesia, so you will be unconscious and will not feel the surgery.

Can I drive home afterward?

No. Another adult must take you home. Do not drive for at least 24 hours, and wait longer if you have dizziness, restricted movement, or are taking sedating pain medicine.

How painful is mastoidectomy?

Most people have manageable soreness or pressure around the ear. Pain should gradually improve. Increasing or severe pain should be reported to your surgical team.

When will I know whether it worked?

The surgeon can discuss the surgical findings soon afterward. Healing and hearing outcomes take weeks or months to assess. Cholesteatoma control requires longer-term follow-up.

Will my hearing improve?

It may improve if the eardrum or hearing bones can be repaired, but improvement is not

guaranteed. In some cases, the main aim is to make the ear safe rather than restore hearing.

Will I need another operation?

Some people need staged reconstruction or another procedure to check for remaining cholesteatoma. The likelihood depends on the disease and the type of mastoidectomy performed.

Sources

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