Stapedectomy

Otosclerosis is an inherited condition in which patients develop a gradual onset of conductive deafness. It is due to new bone growth around the Stapes (Stirrup bone) which stops it from vibrating and transmitting sound into the inner ear. New bone can also be laid down in the inner ear resulting in nerve deafness. The condition can affect one or both ears.

A Tympanotomy is an operation to lift up the eardrum in order to look into the middle ear and to confirm the diagnosis.

A Stapedectomy is an operation to correct the problem caused by Otosclerosis. Part of the fixed Stapes bone will be removed and replaced with an artificial piston which will restore movement to the chain of bones in the middle ear and hopefully restore hearing.

Treatment options vary. If the disease is present but the hearing loss is minor then surgery would usually not be recommended. Similarly, if the hearing loss is largely due to the inner ear (nerve) involvement surgery is unlikely to improve the hearing significantly. If the disease affects both ears, surgery is possible on both ears. Usually, the worst side is operated on first. The second side is then delayed for at least 12 months to make sure that the surgery has been successful.

Hearing aids will overcome the deafness completely and may be required even after successful surgery if there is an element of nerve damage.

What does the operation involve?
Before the operation:
Arrange for a couple of weeks off work.

Check that you have a friend or relative who can take you home after the operation.

You must not drive for at least 24 hours after a general anaesthetic.

Make sure that you have a supply of simple painkillers at home.

The day of the operation:
Admission is almost always on the day of surgery. The nurses will complete some routine paperwork and tests. You will be asked to change into a gown ready for theatre. The anaesthetist will come to see you and discuss the anaesthetic side of things. A member of the ENT team will also see you before your operation.

The anaesthetic:
The operation is usually performed under general anaesthetic. In adults, it may be possible to perform the operation under local anaesthetic.

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The operation itself:
The operation can be done via the ear canal but if this is too narrow then a cut may be made in front of or behind the ear to get sufficient access to the eardrum. There will be a separate very small cut in the back of the ear lobe in order to get some fat to plug any leaks around the piston. The procedure normally takes about 2hours but you may be asleep for longer.

If the operation is performed down the ear canal then you will have a simple dressing in the ear and no bandages around the head. The wound in the ear lobe will have a dissolving stitch in it. If you have a cut in front of or behind the ear, the skin wound is closed with some stitches and a pressure dressing is wrapped around the head to reduce any swelling or bruising around the ear over the next few hours. This dressing is removed prior to you going home.

The stitches used to close the skin may be buried and do not need to be removed as they will dissolve. If the stitches are not buried you will be given instructions on when to have them removed. Steristrips may be placed over the wound to protect it and these can be peeled off after 5 days.

After the operation:
The procedure is not normally painful but you may have some discomfort which will settle with simple painkillers.

Your discharge from hospital:
You may be able to go home from the hospital on the day of surgery (day case surgery). Following general anaesthesia, you will need to arrange for a responsible adult to pick you up from the hospital, take you home and stay with you for 24 hours after discharge. Depending on how fit and active you are before your operation, you may need to arrange for someone to stay with you for a few days.

What should I do when I leave the hospital?
Activity:
Be sure to keep the ear dry and do not go swimming. The best way to achieve this is with cotton wool and Vaseline to the outer ear canal. The wound behind the ear can get wet. Pat it dry with a towel but do not rub it as you might open up the wound.

Flying:
You should not fly until your surgeon is happy that the ear has healed. This is because changes in the ear pressure especially during take-off and landing can dislodge the piston and cause hearing loss and loss of balance which may be permanent. Healing can be confirmed by your surgeon in outpatients. This is usually at around 6 weeks after the surgery.

Driving:
You should not drive for at least 24 hours following your operation. You can then drive when you are able to perform an emergency stop safely.

Work:
You may feel rather tired for a week or so, but this will steadily improve. Returning to work will depend on your circumstances and type of work. You would normally need to be off work for 3-4 weeks. If your work requires heavy manual labour, then your surgeon may recommend that you have more time off to allow the ear to heal.

Wound care:
There is often some bloodstained ear discharge over the next few days from the packing in the ear. This is to be expected and can be dealt with by placing some cotton wool in the outer ear. Do not use any earbuds in the ears as you will cause damage. The cotton wool in the outer ear must be removed prior to putting in antibiotic drops if you were given some on discharge. A fresh piece of cotton wool can be put back in the ear if there is a lot of leaking. The operation is not usually particularly painful. There may be

some discomfort around the ear and in the jaw joint area on chewing, but this is usually controlled by simple painkillers.

Some patients will have Steri Strips (thin, sticky plasters) on the wound. These can be removed by yourself after a week.

Stitches are usually buried under the skin and will dissolve but if you have stitches that are visible on the surface, they need to be removed a week after the operation, usually at the GP's surgery. Mr Price will inform you which stitches you have.

Patients are asked to return to the E.N.T. clinic about 3 weeks after the operation for removal of the gauze dressing from the ear canal. This is normally a straightforward procedure. If a large piece of dressing was to fall out of the ear soon after the surgery please contact your surgeon for advice as a new dressing may be necessary.

Are there any risks involved in this operation?
Although modern surgery and anaesthetics are considered to be safe, all medical procedures carry some risks. The surgeon will discuss all these risks with you.
Risks associated with the operation are:
• Hearing loss: The hearing may not be any better after the operation (8%), and may well be worse (2%). In a very small number of patients (1%) total deafness can occur. This may be accompanied by nausea and vomiting and loss of balance. This is usually due to complications arising during surgery but may also occur during the early or late postoperative period despite an uneventful operation. The balance will gradually improve but the hearing loss, in this case, is not curable even with a hearing aid.

• Dizziness (loss of balance): Dizziness is common for a few hours following surgery. On rare occasions, dizziness is prolonged. Dizziness with sudden head movements or changes in pressure may persist.

• Fistula formation: A small leak of inner ear fluid may arise from around the piston. It can occur immediately after the surgery or years later. This complication is rare and causes fluctuations in hearing and balance. A further operation may be needed to plug the leak.

• Tinnitus: If hearing improves, tinnitus may also improve. Sometimes the patient may notice noise (ringing or buzzing) for the first time in the ear. This is likely if the hearing loss worsens. This may be temporary or permanent and is more likely to be permanent if it was present before the surgery or there is total hearing loss.

• 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 the tongue. This is usually temporary but occasionally it can be permanent.

• Facial Paralysis: The nerve for the muscle of the face runs through the ear. Therefore, there is a slight chance of facial paralysis (<1 in 1000 patients). The facial paralysis affects the movement of the facial muscles for the closing of the eye, making a smile and raising the forehead. The paralysis could be partial or complete. It may occur immediately after surgery or have a delayed onset. Recovery can be complete or partial.

• Numbness of the ear. Temporary loss of sensation to the ear (pinna). This may last a few weeks until the nerves recover.

• Reaction to ear dressings: Occasionally the ear may develop an allergic reaction to the dressings in the ear canal. If this happens, the pinna (outer ear) may become swollen and red and you may experience intense itching and a profuse watery discharge from the ear. You should consult your surgeon immediately so that he can remove the dressing from your ear. The allergic reaction should settle down with treatment after a few days.

• Perforation of the eardrum. There is a risk that the eardrum may be perforated during the surgery. This will be grafted to repair it at the time of the surgery (Myringoplasty). A perforation may also develop after the surgery. A second operation may be needed.

• Abnormal scar tissue formation. This may result in a thickened, wide, red scar in front of or behind the ear. The same can occur in the ear canal and this would result in further blockage of the ear canal. This may require further surgery and can be very difficult to cure.

• Jaw pain: the jaw joint (temporomandibular joint) is immediately in front of the ear canal and may become inflamed due to drill vibrations or the opening of the mouth to insert the breathing tube for the general anaesthetic. This may cause spasm, pain and difficulty opening the mouth. This usually settles within a few days.

• Delayed healing of skin: this is possible especially if there has been chronic infection of the skin prior to surgery. This requires careful cleaning and application of drops or ointment to prevent infection.

• Flying or Diving: Sudden changes in pressure may cause sudden hearing loss associated with loss of balance. Please discuss these risks with your surgeon if you go snorkeling, scuba diving, parachuting or flying.

• Noise exposure: Patients working in noisy environments or exposed to sudden loud sounds may be at increased risk of noise-induced hearing loss. Adequate ear protection is advised.

• Meningitis: this is very rare and may result from a middle ear infection.

Risks associated with a general anaesthetic are rare and include:
• Infection can occur, requiring antibiotics and further treatment.

• Bleeding can occur and may require a return to theatre. Bleeding is more common if you are on blood-thinning drugs.

• Chest infection. Small areas of the lung can collapse, increasing the risks of chest infections. This may need antibiotics and physiotherapy.

• Blood clots in the legs (DVT) can cause pain and swelling of the legs. Rarely pieces of the clot can break off and can travel to the lungs (pulmonary embolism). This is a particular problem in obese patients. Patients may wear tight stockings and are advised to keep moving their legs to help the circulation. Blood-thinning injections are often given to prevent this.

• Heart attack or stroke could occur due to the strain on the heart.

• Increased risk in obese patients of wound infection, chest infection, heart and lung complications and thrombosis (DVT).

• Death as a result of a general anaesthetic/ this procedure is possible.

Are there any alternatives to this operation?
The alternative to surgery is to wear a hearing aid. Hearing aids will overcome the deafness caused by Otosclerosis. They do not have any of the risks associated with surgery and are therefore a very good alternative to surgery. Your surgeon is likely to have recommended a trial period with a hearing aid before even considering or recommending surgery.

If you would like a second opinion about the proposed surgery please ask your G.P or Surgeon to arrange this.

Are there any risks of not having this operation?

If you decide not to have surgery your symptoms may persist or worsen gradually over time.

Where can I find out more about the operation?
Royal Australian College of Surgeons
http://www.surgeons.org

Australasian Society of Otolaryngology and Head & Neck Surgery (ASOHNS)
http://www.asohns.org.au

Alternatively, visit the following websites:
ENT UK have a patient information leaflet:
https://entuk.org/docs/patient_info_leaflets

If you have any questions about general anaesthetics, the Royal College of Anaesthetists website has a lot of information:
http://www.rcoa.ac.uk/patientinfo

Further information and advice
If you experience sudden hearing loss or Vertigo with nausea and vomiting after the surgery please contact Mr Price's rooms or your GP or go to the Accident & Emergency Department.