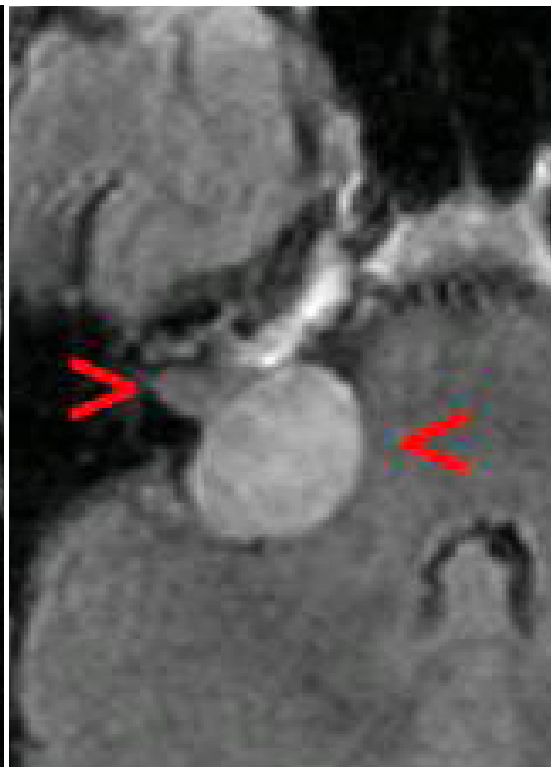


Surgery for acoustic neuroma



Turnberg Building
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Introduction

This booklet will offer advice and information to you in preparation for your surgery to remove your acoustic neuroma.

It should be read in conjunction with the booklet "**Acoustic Neuroma**".

It is important that you are given as much information as possible to prepare you for your surgery. We have developed this booklet to help you understand the necessary investigations and appointments you will need before surgery, what the surgery entails and how the majority of patients will recover afterwards.

Preparing for surgery

Most patients will be sent for a balance function test prior to surgery. This is to see if there is any balance function remaining as usually the acoustic neuroma will have caused some loss of function in the balance nerve.

If this is only a partial loss, you can still experience significant imbalance, dizziness and nausea following the surgery. However, if we remove all balance function prior to surgery, it can significantly help your recovery.

Residual balance function is removed with a series of injections of gentamycin (an antibiotic) through the eardrum which are performed in the weeks running up to surgery.

This means that you get moving again quicker after the surgery and have a shorter stay in hospital. Please read the leaflet on "Intratympanic Therapy" for more information, or discuss this with the skull base specialist nurses.

Prior to surgery you will be seen in the pre-op clinic. Here you will have any investigations needed prior to surgery such as ECG (a tracing of your heart's electrical activity), blood tests and, if needed, any x-rays that the anaesthetist may request. We ask that you bring along any medication that you are taking.

You will have an opportunity to see the skull base specialist nurse on the day of your pre-op assessment who will give you information on your surgery and answer any questions you may have.

We ask that if you take any medication to thin your blood, i.e., aspirin, warfarin, heparin, clopidogrel, persantin, asasantin, you discuss this with the specialist nurse.

Admission

Day of Surgery



The theatre staff will take you to theatre between 8 and 9 am, though this is dependant on the order of the theatre list.

In theatre you will be anaesthetised before entering the main theatre. The anaesthetist will stay with you and monitor you throughout the surgery.

Surgery can be lengthy, dependant on the size, location and access required to your tumour and it is not uncommon to be away from the ward for a large part of the day. This does not mean that there is something wrong. The Skull Base surgeons are happy to phone the next of kin or carer when surgery is finished.

What does the surgery entail?

Surgery for acoustic neuroma aims to safely remove the tumour whilst preserving the function of all the important nerves nearby. Complete tumour removal is usually possible, particularly with small tumours, but not always so. On occasion, your surgeon may decide to leave tiny fragments of tumour if it is felt that complete removal is likely to result in permanent damage of the nearby nerves.

There are 2 main approaches for surgery. Your surgeon will have determined the most appropriate approach for you based on your tumour size, location and your hearing function. Your surgeon will shave your hair around where the incision will be made. Most patients will require a small fat graft which will be taken from your tummy. This will be discussed in more detail in clinic.

Other aspects of surgery

In all cases the function of the facial nerve is tested with electrical monitoring throughout the operation. There is a risk of facial nerve damage with all approaches of surgery.

This can leave you with weakness, loss of movement and inability to close your eye on the affected side.

It is important that eye care is maintained and may include use of eye drops to ensure the eye does not become dry, eye taping or eye patches and review by an eye specialist.

There are differing degrees of function loss dependant on the amount of damage to the nerve. With small tumours the risk of permanent facial weakness is low.

However, as tumour size increases, the risk to the facial nerve increases such that very large tumours have a higher risk of permanent facial weakness. Your specific risk will be discussed with you in clinic.

A higher proportion may have temporary weakness which usually resolves spontaneously in the months after surgery. Apart from removing the tumour, the surgeons priority is to maintain facial function and they do all they can to achieve this goal. Occasionally, they may leave a small piece of tumour on the nerve if removing it will put the nerve at higher risk. There are various options to aid facial function recovery which the team will discuss with you if you do have a facial weakness.

Your hearing nerve, the cochlear division of the 8th nerve that your tumour is growing on, is likely to be damaged prior to surgery due to the tumour pressing on this portion of the nerve and the interruption of blood supply.

In the majority of people having this surgery there would be little benefit to attempting preservation of the hearing nerve due to this damage and

the potential for further damage during surgery.

The translabyrinthine approach will not preserve any hearing and you will wake from the surgery with complete deafness on the affected side. There will be no change to the hearing on the opposite side to the tumour.

You may find yourself imbalanced after this operation due to the loss of function of the vestibular nerve. Most patients compensate well for this and dizziness and imbalance should subside. There are also ways to improve your balance if you find it troubles you.

Patients who have lost their balance before surgery, either through tumour growth or having the gentamycin injections, often find they manage better with regards to balance and mobilising in the days and weeks after surgery. The majority of patients will, in time, find the balance corrects itself.

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There are smaller risks of other nerves being affected by the surgery. The 5th cranial nerve, the trigeminal nerve, supplies the sensation to your face.

This nerve runs very close to the 8th nerve that the tumour is growing on. It can occasionally get bruised either by the tumour pressing on it or during surgery to remove the tumour.

Up to 10% of patients with acoustic neuromas have loss of sensation on the side of the tumour. As with the other nerve functions, the degree of function loss is dependant on the tumour size and the amount of damage to the nerve. Many patients see a full return of facial sensation with time.

The nerves that control eye movement (not vision) are occasionally affected by surgery. This can lead to double vision.

Again, this is a small risk and usually temporary but it can be difficult to function with double

vision and it can require input from an eye specialist in a small number of cases.

There is a smaller risk to the lower cranial nerves. These supply the swallowing and voice function meaning swallow and voice quality could be impaired, usually temporarily.

The risk of damage either through tumour compression or damage during surgery is less than 3%. Larger tumours have a higher risk of complications involving these nerves though it must be stressed that this occurs in a very small minority of cases and many patients see a full return of swallowing and voice function in time.

A complication of surgery is leakage of the fluid surrounding the brain, which occurs in about 5-10% of patients. This may come through the nose as there is a connection between the nose and the ear, or it may come through the wound.

A leak may be treated by draining some of the fluid from around the brain. This is performed by inserting a thin tube into the back.

Occasionally it is necessary to close off the leak by performing another smaller operation.

There are several other very rare complications that can occur with this surgery. You will be told about these not because they are common, but because they can be potentially very serious.

There is a small chance of infection which can either be superficial and just involve the wound, or can extend internally and affect the linings of the brain. This is meningitis and occurs in about 2% of cases. It is usually treated successfully with intravenous antibiotics.

There is a 1% chance of developing a blood clot next to the brain after surgery and this usually needs to be removed with a further operation.

There is a small risk (1%) of a stroke from damage either to the blood vessels supplying blood to the brain, or the veins that drain blood from the brain.

The severity of such a stroke could be very mild, or very severe and life-threatening. Overall there is a less than 0.5% chance of dying because of the surgery. This can seem very daunting but the chances of such events are very rare.

Returning to the ward

After a period of time in recovery, you will be transferred to the ward. The ward you are taken to may not be the ward you were admitted to. This may be because you need a higher level of care.

Most patients are nursed on ward H7, in the high dependency area or on the main neurosurgical high dependency ward. Occasionally it may be necessary to transfer you to the intensive care unit.

This could be due to an existing health issue or a complication during surgery. This does not happen in the majority of cases.

You will have several tubes, lines and monitors attached to you. You may have a tube going into one of the arteries in your wrist to measure your blood pressure constantly.

There will also be at least one smaller tube dripping fluids into your veins.

You will have leads attached to your chest and arms to measure the activity of your heart and a small probe attached to the end of your finger to measure the levels of oxygen in your body. You will also have either a mask over your nose and mouth or a small tube to the entrance of both nostrils to deliver oxygen to your body.

Most patients have a catheter in place which was inserted in theatre. This will empty your bladder continuously as you will be drowsy for some time after the operation.

You are likely to feel quite sick after the operation and often people are dizzy. You will be given anti-sickness medication, usually via a drip, injection or patch, to help with the sickness. As this improves, you can take oral tablets to reduce the sickness.

You may not feel able to tolerate any diet or fluids at this stage, however, we do encourage you to at least try and sip small amounts of water. A drip of fluids will be in place to hydrate you.

You may also have some pain where your incision is. The nursing staff will administer pain relief to reduce the pain. Again this is usually via a drip or injection initially.

You will have a bandage around your head and covering the ear on the side of surgery. This applies gentle pressure to prevent any leakage of CSF, the fluid that circulates the brain, and to help the wound to heal. This will stay in place for 2 days.

You may also have a wound to your abdomen with a drain coming out of it. It collects any excess of blood to prevent it collecting under the wound.

This is where your surgeon took your fat graft from to pack your head wound. This only applies to patients who have had a translabrynthine approach to surgery.

We expect that you will be very drowsy on this first night. You will be closely monitored overnight and will be woken on an hourly basis to have your blood pressure checked.

You will also be asked to answer some questions relating to time and place and the nurse will test your eyes and the power in your arms and legs. This is to check that your brain is functioning well and is a vital part of our monitoring.

Day one



On the first day after your operation you are likely to feel tired, nauseous (sick) and a little dizzy. You may have a mild head pain where the incision was made for your surgery.

The nursing staff will be able to administer medication to aid these symptoms. You will be offered breakfast and drinks. We encourage you to try a little though you may not feel like anything at this early stage.

Your drip will continue to hydrate you. Patients who have had pre-operative gentamycin injections often find the initial days after surgery a lot easier in terms of nausea and dizziness/imbalance. They are often able to mobilise earlier too.

The skull base team will come to see you this morning. You will be asked to make several movements with your face.

The doctors are assessing any facial weakness you may have following your operation.

Some patients will have some form of weakness at this stage. It does not mean that there has been permanent damage to your facial nerve. It is usually just bruised from the surgery and will take some time to recover.

Your surgeon will discuss with you the extent of your facial weakness, if you have one, and the expected outcome. They will also review your wounds, any drainage if you have an abdominal drain in place and ensure that your vital signs, i.e. blood pressure, temperature etc, are within normal limits.

Later in the morning you may have the lines and tubes that have monitored you, removed. You may have to keep the fluid drip in place and are likely to need the catheter for at least another 24 hours until you are more mobile. Your abdominal drain usually comes out this evening.

The nurses will assist you with a wash or shower if you feel able to. You should no longer require high dependency care and may be moved to another ward.

It is important that we get you out of bed on the first day to prevent complications such as blood clots and chest infections. You may feel dizzy and tired but the staff will assist you and it will initially be for small periods. You can return to bed any time you wish.

You may have visitors today but we expect that you will feel tired and advise that the visits are short and initially only close relatives or friends.

Day two



You may feel a little brighter today. Try to increase the amount of diet and fluid you are taking. You may still be dizzy and nauseous but you can still have medication to treat that.

The staff and physiotherapists will encourage you to extend the periods you are out of bed. You may want to walk to the bathroom or just up and down the ward. Ensure you have somebody with you as you can get dizzy quite quickly.

Your bandage will be removed from around your head which often alleviates some of the head pain. You will have a small dressing over your abdominal wound.

The doctors will prescribe an injection into your tummy to help prevent blood clots as you are not as mobile as you would normally be.

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You may also be prescribed laxatives as we do not want you to strain when going to the toilet as this can raise the pressure of the fluid that cushions the brain and can put you at risk of this fluid leaking from your nose, wound or ear.

If you have facial weakness you may be unable to close your eye fully on the side of the operation. You will be prescribed eye drops to keep the eye wet and may have tape or a patch applied to close the eye to prevent it from drying out. You may be referred to an eye specialist if there is very poor closure or signs that the eye is too dry or infected.

Day three, four & five



We expect that you will see some significant improvements within the 3rd, 4th and 5th day. Some patients even go home around this time, especially those who have lost their balance function in the pre-operative period. Your nausea should settle and you are likely to feel less dizzy as your body adapts to the loss of the balance nerve on the side of the tumour.

You will feel like eating more and will be able to mobilise a little further each day. You are likely to remain tired for some time so we advise that you do not push yourself too far too soon.

You may find it difficult coming to terms with the changes to your body. If you have lost the hearing on the affected side it can be very frustrating trying to communicate with others. Take your time and ask others to speak slowly and a little louder to help you to hear.

If you have a facial weakness you may feel down at the prospect of a droop on one side of your face.

This could occur up to two weeks after the surgery so don't be alarmed if this develops for the first time after discharge. You can speak to the specialist nurse for more advice. Please be patient with recovery of facial movement as progress can take months. The majority of patients will see significant improvements within 6 months of surgery. Your surgeon will discuss expected outcomes with you after surgery though recovery is variable.

If you feel wetness from the wound it is important that you inform a member of staff on the ward. This is less likely to happen when you have gone home. Very rarely, patients may get a leak from their nose, down the back of their throat or from the ear. If this occurs please tell a member of staff or if you are at home, you must ring the specialist nurse for advice.

Day six & seven



The majority of patients will go home by day 7. It is important that you have somebody at home with you at least for a day or two.

If you do not have anyone who can help you, it may be necessary to refer you to social services for help with your daily activities.

You will be discharged with any necessary medications and an information letter from the ward. Your GP will receive a letter informing him of your surgery and any needs you may have. You will only need to see your GP in the event of any complications.

If you have any transport needs, please inform the ward staff at the earliest possible moment.

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The ward staff will give you a self referral form to see the practice nurse or district nurse to have your clips removed from your head and abdomen if applicable. This is usually on day 10 if the wounds are healthy.

In very rare cases, patients may have a need for a longer stay in hospital either due to a complication or as they simply need more time to improve balance/mobility or they have issues such as ongoing pain or nausea.

A very small number of patients require a period of inpatient rehabilitation if they are not fit to be discharged home. This will be discussed if necessary.

At home

Once you are home we advise you to rest. It is very likely that you will be tired for many weeks and even many months in a small number of cases so a slow return to normal life is important. It may be useful to take naps in the afternoon and gradually increase the level of activity until your energy returns.

It is equally important that you gently mobilise several times a day to prevent any complications. Take short walks around the house or into the garden and gradually increase the length of your walks.

Do not lift heavy objects or do any strenuous activity for the first 3 months. Continue to take your laxatives as needed to avoid straining.

If you notice any leakage of clear fluid from your nose, down the back of your throat or from the wound, contact the specialist nurse or see you GP.

If you have facial weakness, the team will discuss eye care and use of eye drops with you which you will need to continue to do at home. You may need to be seen by an eye specialist as an outpatient. This will be discussed with you if necessary.

It is very normal to have some headache and nausea after surgery and for some weeks after though usually to a lesser degree.

Any new, increasing or concerning symptoms should be reported to the specialist nurses, the ward or GP.

The Specialist nurses will discuss this in detail before discharge and will ensure you have written information for signs and symptoms to observe for.

We don't suggest that you receive any early treatment for facial weakness as this can hinder natural recovery.

The team will discuss recovery expectations with you and will suggest potential treatment if appropriate. You may receive a leaflet with regards to managing facial weakness before discharge home.

Driving

The DVLA advises that unless specified by your surgeon, you need not inform them of your surgery unless you are symptomatic of giddiness or, less rarely, seizures. You can clarify this with your surgeon after your operation.

We advise that you do not return to driving until fully recovered. This may not apply to those who drive for a living and advice should be sought from the DVLA.

Working

Dependant on your recovery there is no reason that you should not return to work once fully recovered. This is usually after the first 3 months.

Expect to feel a little tired initially. It may be advisable to do a phased return to work, gradually increasing your hours as you feel able.

If you have any concerns about returning to work, please discuss this with the surgeons or specialist nurse. You can obtain a certificate of sickness from the ward.

Follow up

The specialist nurses will telephone you after 2 weeks to ensure you are recovering well. If you are unable to use the telephone due to hearing loss, then there is also an email address with the specialist nurse contact or we can liaise with your next of kin or carer with your consent.

You will be seen in outpatients at Salford Royal approximately 6 weeks after your operation. The surgeon will discuss your recovery and can address any issues you may have.

Arrangements will be made to follow you up with a scan, usually 1-2 years after surgery, to ensure there is no sign of residual or reoccurring tumour. This is very unlikely.

There is usually one further scan after 5 years and if this is normal then you will probably be discharged. Follow up scans are carried out as a precaution and it is unlikely you will ever require any further treatment for this tumour.

Hearing aids

If you have lost the hearing on the affected side, you might want to consider a bone anchored hearing aid (BAHA). BAHAs are permanent fixtures surgically inserted into the skull bone behind the ear.

There is a detachable sound processor which clips on to the aid and is fairly light. Sound is carried through the bones as your hearing function can no longer use air conduction. BAHAs do not restore your hearing but can improve your everyday hearing function.

CROS Aids consist of 2 hearing aids, one for each ear. The one on the side of the surgery contains a microphone and picks up sounds on this side.

These sounds are then sent wirelessly to the other hearing aid in the normal ear where sound is delivered by a tiny speaker. These also help with hearing on the side of surgery but do not replace the hearing you had before. We can discuss either aid if you feel you want to.

Who to contact

If you have any issues after your operation or if you need some help or advice, please contact:

Andrea Wadeson

Skull Base Specialist Nurse

 **0161 206 2303**

 andrea.wadeson@srft.nhs.uk

Helen Entwistle

Skull Base Specialist Nurse

 **0161 206 5090**

 helen.entwistle@srft.nhs.uk

Secretary to Mr. Rutherford

 **0161 206 0119**

Secretary to Professor King

 **0161 206 5541**

Secretary to Mrs Hammerbeck-Ward & Mr Pathmanaban

 **0161 206 5830**

Secretary to Professor Lloyd, Mr Freeman & Ms Stapleton

 **0161 206 5754**

If the issue is of an urgent nature, see your GP or attend your local accident and emergency department.

Useful contacts

BASIC (Brain and spinal injuries charity)

This is a specialist resource for patients and families affected by neurological diagnosis.

 **0870 7500 000**

 www.basiccharity.org.uk

BANA (British Acoustic Neuroma Association)

This site was developed by people affected by acoustic neuroma and offers information and support to patients and families.

 **0800 6523 143**

 www.bana-uk.com

RNID (Royal National Institute for the Deaf)

This site can offer help and advice to people with hearing difficulties and deafness.

 **0808 8080 123**

 www.rnid.org.uk

BUSK (BAHA users support group)

This site offers advice and support to those considering or who have had a bone anchored hearing aid.

 www.baha-users-support.com

Notes

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If you need this interpreting please telephone

Polish

Jeżeli potrzebne jest Państwu tłumaczenie, proszę zadzwonić pod numer.

Urdu

اگر آپ کو اس ترجمانی کی ضرورت ہے تو مہربانی کر کے فون کریں۔

Arabic

إذا كنتم بحاجة الى تفسير او ترجمة هذا الرجاء الاتصال

Chinese

如果需要翻译，请拨打电话

Farsi

اگر به ترجمه این نیاز دارید ، لطفاً تلفن کنید

0161 206 0224

Email: InterpretationandTrans@srft.nhs.uk

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