

Vestibular Schwannoma

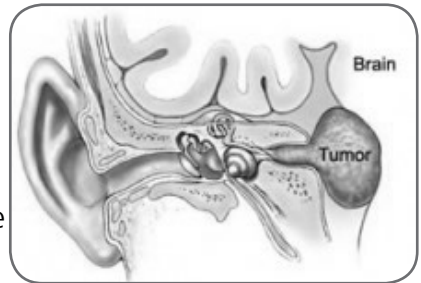


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This leaflet is a guide to understanding vestibular schwannomas (VS). Your surgeon and multidisciplinary team will discuss the management of your VS in more detail and answer any questions you may have. Groups that offer information, mutual support and shared experiences are listed at the end of this leaflet.

What is a VS?

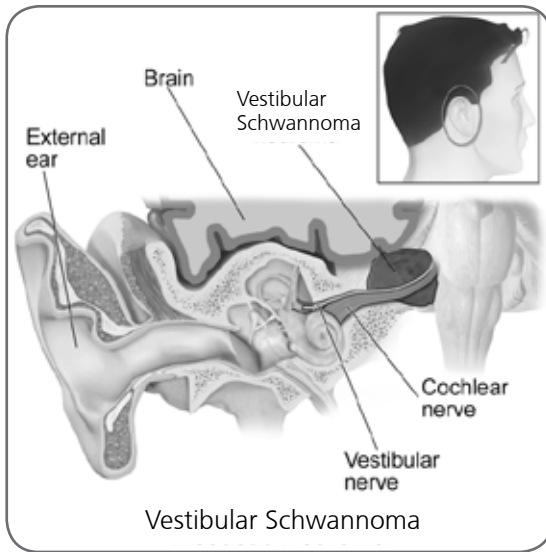
A VS, also known as an acoustic neuroma, is a benign tumour that develops on the nerve of balance (the vestibular nerve) connecting the inner ear to the brain. This nerve runs directly alongside the nerve of hearing (the cochlear nerve). Together they form the vestibulocochlear nerve



which in turn is very close to the facial nerve which controls facial expression. Because they are benign VSs do not spread to other parts of the brain cavity or body.

What causes a VS?

VSs arise from the Schwann cells that insulate the outside of nerves and permit electrical transmission. The cause of most VSs is still unknown. A small number of patients with a rare, inherited condition called neurofibromatosis type 2 have VSs on both sides.



Symptoms

Vestibular schwannomas are usually slow growing and the associated symptoms develop gradually over several months to years. They often remain small causing few if any symptoms at all.

As a VS grows it puts pressure on the vestibulocochlear nerve and surrounding brain structures. This may cause tinnitus (ringing in the ear), hearing loss, dizziness and disturbed balance. With further growth a VS may compress the brainstem, cerebellum and other surrounding nerves leading to facial numbness and weakness; discomfort or pain around the ear and unsteadiness walking.

Very large tumours occasionally block the flow of the cerebrospinal fluid (CSF) causing hydrocephalus. This may lead to more severe headaches, nausea, vomiting, visual problems, memory impairment and increasing drowsiness.

Diagnosis and Investigation

The first indication that a patient has a VS may be an abnormal hearing test. Hearing tests (audiograms) and assessments of hearing function (speech discrimination studies) are performed routinely for patients with a VS.

In most cases a VS is readily diagnosed using a standard MRI scan. MRI scans are non-invasive and carry no risk to patients. Some patients with severe claustrophobia may find a standard MRI scan difficult to tolerate. They may be helped by using an open MRI scanner. Patients with metallic implants and devices such as a cardiac pacemaker may not have a MRI scan.

If a MRI scan cannot be performed, a CT (computed tomography) scan with the injection of an intravenous contrast (an X-Ray dye) is used to diagnose the VS. CT scans are also used to study the bony structure of the ear to assist in planning surgery.

The Multi-disciplinary Team

Treatment options vary depending on each patient's age and general health, the size and site of their VS and its growth rate. The optimal treatment for each patient is determined by a panel of specialists: the multidisciplinary team (MDT) consisting of neurosurgeons and neuro-otologists (ENT surgeons) with specific expertise in VS surgery; neuro-oncologists specializing in radiotherapy for brain tumours; neuro-radiologists who interpret brain scans; neuropathologists who examine tumours under the microscope; specialist nurse practitioners and a coordinator.

The MDT's recommendations on treatment will be discussed with you by your consultant at your outpatient consultation taking into account all of the factors relevant to your case.

Treatment Options

Watch and wait.

If your VS is small, immediate treatment may not be necessary. A "watch and wait" policy may be recommended using MRI scans to check for tumour growth.

Radiotherapy

Radiotherapy treatment uses high energy rays to damage the DNA of the VS tumour cells. This destroys the active cells within the tumour and leaves it inactive. The commonest form of radiotherapy is stereotactic radiosurgery often delivered by a device called a Gamma-knife. Radiosurgery is usually recommended as the first line treatment for patients with good hearing and small tumours. It may also be a good alternative to surgery for other patients.

Most patients receive radiosurgery as a single treatment over the course of one day but in some cases there may be reasons to give radiotherapy in multiple treatments over several days or weeks.

All radiotherapy and radiosurgery is carried out at the Bristol Oncology Centre under the care of a Consultant Neuro-oncologist. Patients who are being offered radiosurgery will be seen by a member of the neuro-oncology team.

Surgery

Vs may be removed surgically by creating a window through the ear bone (the translabyrinthine approach) or just behind the ear bone (the retrosigmoid approach). The surgery is performed under an operating microscope using techniques that have been developed and refined over more than 50 years. The choice of the operative approach is determined by the MDT based on a number of technical factors.

All patients who are offered surgery are seen by one of the neurosurgical and/or neuro-otology consultants to discuss the planned operation in detail. The discussion will cover the patient's symptoms, the reasons for recommending surgery, recovery from surgery and the risks involved in operating. It is rare for VS surgery to be carried out urgently. This leaves plenty of time for patients to think about the operation before making a final decision.

The aim of the surgery is to remove as much of the VS as possible without damaging the surrounding nerves and brain. It is common to leave a small strip of the outer capsule of the tumour to protect vulnerable nerves, particularly the facial nerve. These small capsular remnants are monitored with post-operative scans to check that they do not grow.

In preparation for surgery you will attend a pre-operative assessment clinic where you will be seen by one of the specialist nurse practitioners. In addition to a physical examination you will have blood tests, an electrocardiogram (ECG) and occasionally, you may be referred for further diagnostic tests or for a review by an anaesthetist. The pre-operative assessment clinic provides another opportunity to ask questions about the surgery and hospital care.

On the day of surgery you will be seen again by your surgeon and anaesthetist. VS operations typically last for 8-12 hours. Following surgery you will be cared for in the high dependency setting for a few days before being transferred to a neurosurgical ward. Patients undergoing VS surgery are usually in hospital for 7 days. You may experience symptoms of nausea, vomiting and dizziness following surgery which are managed with anti-sickness medications. Balance difficulties will be assessed by a physiotherapist who will arrange community or further inpatient rehabilitation if needed.

In most instances hearing loss in the affected ear cannot be avoided following surgical removal of the tumour. After your surgery, you will be seen by a hearing therapist who will advise regarding equipment available to you and provide counselling as well as assisting with communication. They will also direct you to charities that support living with hearing loss.

Temporary weakness of the facial nerve is common following removal of large tumours. This may interfere with the ability to blink and close the eye which risks the surface of the eye drying out and damage to the cornea (the clear part of the eye). To prevent this artificial tears and lubricants may be used and the eye taped closed at night. You will be given advice regarding the care of your eye. If there are concerns you will be referred to an ophthalmologist.

Following removal of large tumours, there is a risk of more severe and occasionally permanent weakness of the face together with a disturbance of the nerves and brain centres that control speech and swallowing. These difficulties will be assessed by a speech and language therapist. Very rarely it is necessary to use a nasogastric tube to support feeding until the swallowing recovers.

Serious complications of surgery are fortunately rare, but do include infections, meningitis, CSF leakage, brain damage and hydrocephalus. These problems are usually detected in hospital, but if you develop any of the following symptoms after you have been discharged home you should seek urgent medical attention:

- A clear watery fluid leakage from your nose or ear
- Fever
- Neck stiffness
- Worsening headaches that do not respond to simple painkillers
- Visual disturbance
- A sudden onset of facial weakness
- Any redness, swelling or oozing from the surgical wound

Driving

Following your operation, you may drive when fully recovered. There is no requirement to inform the DVLA. You may wish to see your GP prior to returning to driving for confirmation. You should inform your insurance company of the surgery.

Follow up

You will be seen in the Skullbase clinic approximately 6 weeks after surgery. If you have any concerns or queries before you are due to be seen please contact the specialist nurse practitioners. A post-operative MRI scan is usually performed three months after your surgery. Further scans may be performed as necessary, particularly if a small amount of tumour was left behind.

Recovery

The rate of recovery varies from patient to patient. You are likely to experience fatigue in the first few weeks after surgery. It is important that you have adequate rest and that you build up your activities gradually.

Often patients will require 3-6 months off work whilst they recover from surgery. This can be dependent on a number of on-going factors. If you have any questions regarding your recovery, please contact the specialist nurse practitioner team for advice.

Contacts:

Specialist nurse practitioners: 01174147534

Mr Nelson's Secretary, Susan Garwood: 01174146702

References/Further Support

British Acoustic Neuroma Association

Web: www.bana-uk.com

Tel: 01246550011

E-mail: admin@bana-uk.com

Brain tumour support

Web: www.braintumoursupport.co.uk

General enquiries: 01454 414355

Support Services line: 01454 422701

Facial palsy UK

Web: www.facialpalsy.org.uk

Email: info@facialpalsy.org.uk

Enquiries: 0300 030 9333

Hearing Link

Web: www.hearinglink.org

Tel: 01844 348100

Email: info@hearingdogs.org.uk

Action for hearing loss

Web: www.actiononhearingloss.org.uk

Telephone: 08088080123

Textphone: 08088089000

SMS: 07800000360

Email: informationonline@hearingloss.org.uk

**PATIENT
APPROVED** 

How to contact us:



**Specialist nurse practitioners:
01174147534**



**Mr Nelson's Secretary Susan Garwood:
01174146702**



www.nbt.nhs.uk

If you or the individual you are caring for need support reading this leaflet please ask a member of staff for advice.

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