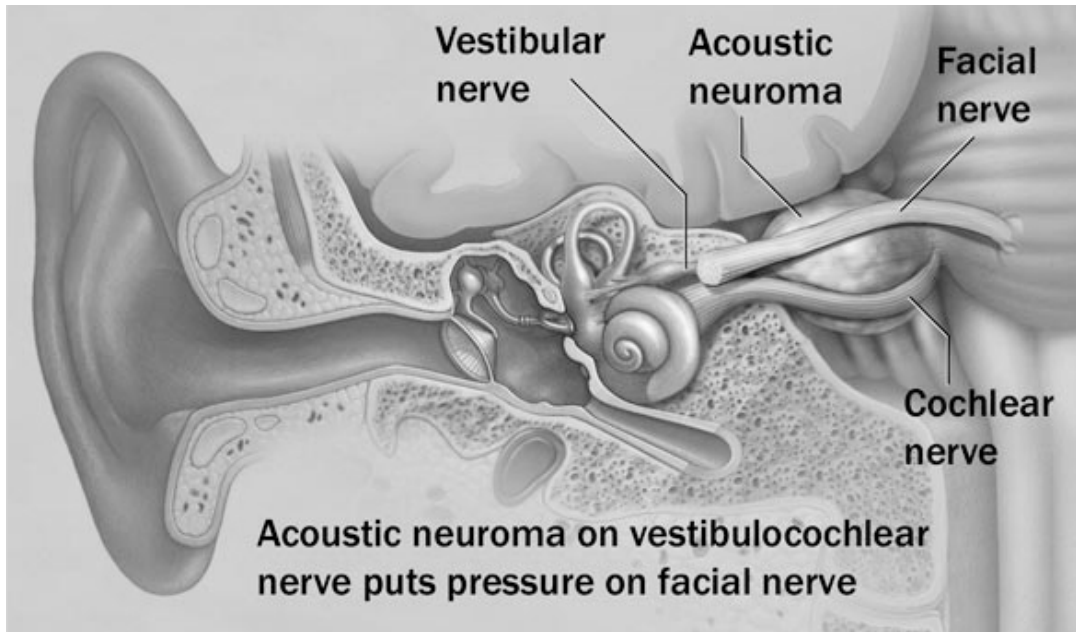


Acoustic neuroma



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WHAT IS AN ACOUSTIC NEUROMA?

An acoustic neuroma is one of the most common brain tumours and occurs in people most commonly from 30- 60 years of age. They are benign (non cancerous) and slow growing tumours that develop from cells supporting the 8th cranial nerve; this nerve has two parts, called the vestibular and cochlear nerves, and is responsible for balance and hearing. These supporting cells are called Schwann cells and the growth most commonly occurs on the vestibular part, hence a more correct term for this growth is “*vestibular schwannoma*”.

An acoustic neuroma does not invade brain tissue but may cause symptoms from pressure on surrounding structures, resulting in hearing loss, ringing in the ears (tinnitus), balance disturbance or later on facial weakness and numbness. In rare cases, the tumour may become large enough to press on the brainstem or cause fluid build up (hydrocephalus) and become life threatening. Thankfully, many are small and may never cause trouble. Treatment options including regular monitoring, surgery to remove the tumour or radiotherapy.

WHAT CAUSES ACOUSTIC NEUROMAS?

The cause of acoustic neuromas are mostly unknown. A rare genetic disorder, neurofibromatosis 2 (NF2) is associated with acoustic neuromas on both sides usually occurring at a young age. NF2 is an autosomal dominant (inherited) disorder. Heavy use of mobile phones is being investigated as being linked with these tumours but of yet studies are inconclusive.

DIAGNOSIS (HOW DO YOU TELL WHAT IS WRONG)

Hearing is assessed with a test called an audiogram. If this shows asymmetry (inequality between the ears), Dr Iseli will recommend an MRI scan. An MRI scan is the best diagnostic test in most cases for acoustic neuroma. In people who cannot have an MRI due to metal implants, a CT scan may be combined with a nerve conduction test (Auditory- evoked Brainstem Response or ABR) as the next best test.

The ABR involves placing stickers on your head while a click sound is produced to the ear. The electrical response is charted on a graph to determine whether an acoustic neuroma is slowing conduction down the hearing nerve.



TREATMENT OPTIONS

There are three options for treating an acoustic neuroma: observation to see whether it is growing and at what rate, surgical removal and radiotherapy.

MONITORING/ OBSERVATION

A small acoustic neuroma causes few symptoms and signs and monitoring is often the preferred initial approach for older patients (especially over 60 years of age). Also, if your hearing is already affected, it is unlikely that good hearing would be maintained by early removal of the tumour. Tumours usually grow slowly (on average 1-3mm/ year) so a MRI scan (or CT scans if you cannot have MRIs) is performed every 12-18 months. If the tumour is growing more rapidly, causing symptoms or getting close to the brainstem, surgery or radiotherapy would be recommended. Monitoring, though often selected when the tumour is small and so posing no threat to the brainstem, can result in further loss of hearing or balance as the tumor grows.

SURGERY

Surgery is the preferred treatment in young patients where useful hearing may be preserved or for larger tumours (>2cm) when brainstem compression may become an issue. The aim of surgery is to remove or debulk the tumour and protect the facial nerve. Surgery for smaller tumours (<1.5cm) which have not yet significantly affected the hearing may preserve useful hearing in a proportion (about 50%) of patients. There are multiple ways that the surgery can be performed, each of which carry different risks and benefits that Dr Iseli will discuss with you.

Surgery is done by a specialized ENT surgeon (neurotologist) and brain surgeon (neurosurgeon) usually operating together.

RADIOTHERAPY

Radiotherapy is administered in a very precise way at a relatively low dose to a very small area of tissue including the tumour. Radiotherapy may be appropriate for small tumours (<2cm) and does not require a general anesthetic and may avoid a craniotomy (surgical opening in the skull). Radiotherapy does not remove the tumour but aims to stop the growth of the tumour while protecting the facial nerve from further tumour growth. Long term your hearing is still likely to gradually go down and there is a chance of the tumor starting to grow again after many years, so this is usually reserved for older patients with small tumors. You will need long term follow up with hearing tests and MRI scans to monitor the effect of radiotherapy.

SUPPORT

Being told you have a brain tumour is stressful, even one that is benign (non cancerous). You will worry about losing more of your hearing and the possibility of facial weakness. It is important that you educate yourself about the condition. A good web site is:

<http://www.mayoclinic.com/health/acoustic-neuroma/DS00803>

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