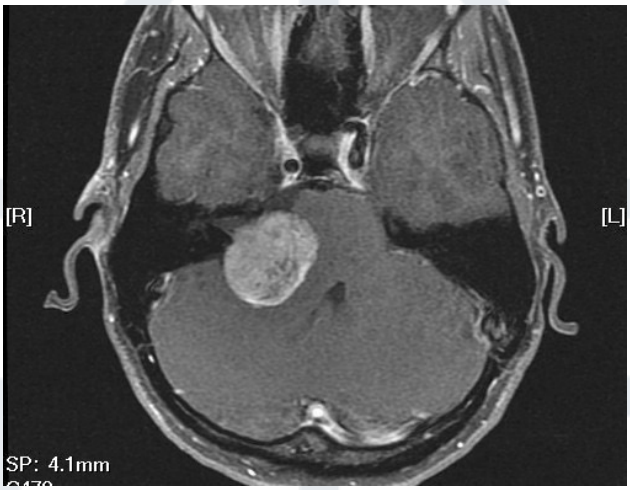
# ACOUSTIC NEUROMA/SCHWANNOMA

Acoustic nerve tumours arise from the balance section of the nerve and are derived from the Schwann cells that comprise the insulation elements of the nerve. They are neither common nor rare; specialised clinics encounter a steady caseload. The tumours are found within the bony canal between the brain and the ear, within the skull or spread between these two areas. They are usually in middle-aged or older individuals. Most are very slow growing; in the elderly there may be little if any growth. The tumours are benign, but the actively growing examples may expand, attaching to the lower brain, then compressing this tissue, producing major balance upsets. In neurofibromatosis the VIII tumours are associated with diffuse lesions. Café-au-lait spots are present in Neurofibromatosis 1 (von Recklinghausen's disease). Bilateral tumours may be present in Neurofibromatosis 2.




Acoustic Schwannoma / Neuroma. Right hearing loss and tinnitus.

## Characteristics

Growth of these tumours is subtle, often unnoticed for some time, the slow compression of the acoustic nerve leading to three main symptoms. Gradual high frequency nerve deafness is typical. Asymmetrical nerve deafness of this nature is a warning sign familiar to all audiologists: such cases are strongly advised to seek an otological opinion. The deafness is accompanied by tinnitus (humming or ringing) and slight unsteadiness on movement. As the disease progresses the unsteadiness becomes more severe, with passible facial paralysis, headache and other neurological aberrations such as incoordination of bodily movements.

**"Silverton Place"**
101 Wickham Terrace
Brisbane Qld 4000
P: 07 38397677 F: 07 38325723

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MRI scans are primary investigations when the symptoms suggest the presence of these tumours. They are also used to track any evidence of growth in the smaller examples, to indicate surgery before the lesions expand excessively.

Audiology shows the unilateral deafness that is often complicated by poor speech discrimination.

## Treatment

With small tumours, especially in the aged, a wait and see approach is optimal, with serial MRI scans undertaken to assess any growth rate. When this occurs the choice is specialised radiotherapy or surgery. The latter is required for larger lesions, the approach being dictated by the pattern of disease present. Although care is taken, the facial nerve is commonly fixed to the tumour and may be damaged, causing facial weakness. Hearing is lost during surgery in the majority of cases. Large tumours that are attached to the brain itself are particularly difficult to remove, hence the need for early detection.

Because of the reduced speech discrimination, hearing aids before or after surgery may not be effective. If the hearing in the non-affected ear is excellent, an active bone conduction implant (Bonebridge, BAHA) may effectively abolish the “head shadow” on the affected side by stimulating the better ear via skull vibration.

The important point of these conditions is the need to investigate unilateral nerve deafness, to avoid missing small tumours that may be removed with minimal complications, before these enlarge into more difficult situations.

## More Information

- Tumours
- Inner Ear Conditions

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