Acoustic Neuroma

Symptoms and Treatments

AdventHealth

APPROXIMATELY **2,500**

PEOPLE ARE DIAGNOSED WITH

ACOUSTIC NEUROMAS

EACH YEAR.

Source: National Organization for Rare Disorders, Rare Disease Database

We're here to help.

The AdventHealth Neuroscience Institute is a state-of-the art facility for adults affected by acoustic neuromas. We specialize in minimally invasive treatments that use laser technology to remove tumors or reduce their size. These advanced techniques preserve hearing and facial nerve function more effectively than conventional treatments and often result in less damage to brain tissue. Recovery times are also shorter.

What is an Acoustic Neuroma?

An acoustic neuroma is a benign (noncancerous) tumor that arises on the eighth cranial nerve leading from the brain to the inner ear. It is also sometimes called a vestibular shwannoma because it results from an overproduction of Schwann cells on the nerve. Acoustic neuromas are usually slow-growing, but when large enough, they can displace normal brain tissue. These tumors are very rare and occur in about one out of 100,000 people per year. While they can appear at any time in life, the most common age at which patients develop symptoms is between 30 and 60 years old.

An acoustic neuroma will compress the hearing and balance nerves as it grows, which often causes hearing loss on that side. Other symptoms can include a ringing sound in the ear (tinnitus) as well as dizziness and balance problems. An expanding tumor may also affect the trigeminal nerve, thereby causing facial numbness and prompting weakness or paralysis on that side. A large tumor can be life-threatening when it puts severe pressure on the brainstem and cerebellum.

Causes of Acoustic Neuroma

The causes of acoustic neuroma are not clear, and in most cases, cannot be identified. In its bilateral form (when both ears are affected), this condition can be inherited in patients with a rare disorder called neurofibromatosis type 2. When the condition occurs on just one side, potential causes that have been suggested include past radiation exposure of the face or neck and certain occupational exposures – however, no connection has been verified between exposure to loud noises and the occurrence of acoustic neuroma.

Symptoms of Acoustic Neuroma

The first symptom of an acoustic neuroma is typically a reduction in hearing in one ear. This hearing loss is usually subtle and worsens slowly. Very rarely will someone completely lose their hearing, although if left untreated, total hearing loss will eventually occur. In addition to this reduction in hearing, another initial symptom may be the feeling of fullness in the affected ear.

As the tumor grows, other symptoms may include the feeling of unsteadiness or having balance problems (sometimes even vertigo). The person may experience facial numbness and/or tingling (either constantly or intermittently). The onset of facial pressure could trigger headaches, clumsiness, and/or mental confusion. While facial weakness or paralysis is uncommon with this type of tumor, it may happen over either the short or long term.

- Gradual (or sometimes sudden) hearing loss in one ear
- Ringing sound in one ear (tinnitus)
- Dizziness and balancing problems
- Headaches and confusion
- Facial numbness or tingling sensations

A Challenging Diagnosis

Diagnosing an acoustic neuroma can be very difficult, as symptoms may mimic those of other health issues. However, recent advances in medicine have improved doctors' ability to arrive at this diagnosis.

Routine hearing tests can reveal a loss of hearing and speech recognition. An audiogram may also be used to evaluate hearing in both ears. When hearing loss is identified, an MRI exam would be the next step to reveal whether a tumor is present. If an MRI can't be performed, a CT scan can help with the diagnosis. In this case, performing both an audiogram and a CT scan will approach the reliability of an MRI for diagnosing an acoustic neuroma.

- Ear exam and hearing test
- Audiogram
- MRI or CT scan

Treatment Options

AdventHealth offers the most advanced and effective treatment options for acoustic neuroma. These include:

- Observation – When acoustic neuromas are small, symptoms are typically minor or incidental. This means that if the tumor does not grow or is not growing at a fast-enough rate to affect one's quality of life , observation may be appropriate. There is also good evidence available now that suggests small tumors in older individuals do not grow, thus allowing these tumors to be observed successfully.

- **Microsurgical Tumor Removal** – The type of surgery performed depends on the size, location, skill and experience of the surgeon, and whether or not hearing preservation is a goal. Options include:
  - Subtotal removal, where only a part of the tumor is removed, usually when anything further risks life or neurological function
  - Near total tumor removal, where only a small part of the tumor remains after surgery; this is typically the case when the small area is so adherent to the facial nerve that complete removal would result in facial weakness.
  - Total tumor removal, where the tumor can be resected in its entirety
- **Radiation Therapy** – This treatment option can be delivered as a single-fraction stereotactic radiosurgery (SRS) or as multi-session fractionated stereotactic radiotherapy (FSR). Both are performed in the outpatient setting and do not require general anesthesia or a hospital stay; the purpose of these techniques is to stop the growth of the tumor, causing it to die (also called necrosis).

The 'Gold Standard': Gamma Knife® Surgery

At AdventHealth, emerging treatments and a world-class medical team offer highly effective, precise, advanced technologies and a personalized, team approach to neurological care. An excellent example is our Gamma Knife Radiosurgery Program. With Gamma Knife, our physicians use a very specialized frame that allows them to precisely target an area of the brain that needs to be treated with radiation therapy. They can then focus multiple beams of radiation on the tumor site with virtually no exposure of the surrounding healthy tissues. The accuracy of this system is within less than one millimeter.

Despite its name, this procedure does not involve a knife or a single incision. As the treatment does not involve anesthesia or more-invasive incisions, most patients can undergo this therapy and go home on the very same day.

Follow-up Care

After treatment and removal of the tumor, it is possible that it may recur. Therefore, a follow-up MRI is strongly recommended within one to five years. It is also helpful to remain active after treatment, as this is the best way to combat dizziness. Finally, it is important that you maintain a strong relationship with your primary care physician and discuss any problems that may occur.

Source: Acoustic Neuroma Association

For more information or to schedule an appointment, visit AdventHealthNeuroInstitute.com.

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Patient Protection and Affordable Care Act: Section 1557

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U.S. Department of Health and Human Services
200 Independence Avenue, SW
Room 509F, HHH Building Washington, D.C. 20201
1-800-368-1019, 800-537-7697 (TDD)

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