Vestibular Schwannomas
(also known as Acoustic Neuromas)

New Approaches

Vestibular schwannomas are a benign tumor that slowly grows from the balance and gravity nerve of the inner ear. Because the tumor can compress the hearing or cochlear nerve, they usually cause a slowly progressive hearing loss in one ear, tinnitus, and occasionally unsteadiness or dizziness.

Vestibular schwannomas are indeed rare, occurring in approximately 1 case per 100,000 of the population each year. Most will be undetected until an MRI or CT scan is performed, which will usually demonstrate the growth inside the nerve channel of the hearing and balance nerve, the so-called internal auditory canal. Again, these tumors are indeed benign, but some can slowly enlarge and cause additional symptoms including facial paralysis, breathing or swallowing difficulties, and the build-up of pressure in the brain. When they are discovered, a thorough ENT and neurotologic exam and audiometric examination are needed to evaluate the proper course of treatment.

Vestibular schwannomas can actually be found in 3 different size groups; small, medium, and large. Treatment depends on the size of the lesion and whether it is enlarging or not, the presence of vertigo, and the residual hearing at the time. Each tumor and patient's circumstances are different, so the comments below are not absolute but rather general recommendations for the treatment depending on the size of the lesion.

Small sized tumors are those that are less than 14 mm in total length, and are usually a symptomatic except for hearing loss and tinnitus in one ear. In general, we prefer to observe these lesions with yearly MRI scans as surveillance in order to be certain there is indeed enlargement before recommending treatment. In most patients, small tumors never require treatment except for follow-up MRI scans every 2 to 3 years.

Medium sized tumors up to 30mm in length and small tumors that demonstrate enlargement should be treated to avoid future complications from the tumor. If the hearing is good, we usually recommend stereotactic radiation to the tumor, an outpatient treatment that does not involve surgically opening the brain or ear. Sterotactic radiation (or radiosurgery) uses sophisticated computers to direct a very focused radiation beam to the center of the tumor. It has few side effects and has a 95%

success rate in controlling and shrinking the tumor and a hearing preservation rate of approximately 67%. It's main advantage however, is that it avoids a surgical procedure, anesthetic complications and is almost always safe for the facial and trigeminal nerves. In other words, the patient may return to work the next day, so quality of life is essentially unchanged by this approach. After treatment MRI scans are obtained every 2 to 3 years to be ascertain the status of the tumor bed.

If a patient has vertigo and the hearing is poor, our team may recommend a surgical procedure such as the trans-labyrinthine approach and removal of the tumor. This procedure is performed with both the ear doctor and the neurosurgeon both performing respective aspects of the procedure. It begins with microsurgical exposure of the tumor through the mastoid bone, and then careful removal of the tumor from the facial nerve, and in some cases from the auditory or cochlear nerve. It also requires a general anesthetic and a short hospital stay. This approach will stop the vertigo episodes, remove the tumor, and prepare the site for a future cochlear implant if the patient desires hearing restoration. However, it does result in hearing loss and can include complications such as facial weakness, infection, and spinal fluid leakage or infection, although these are unusual. After a short recovery period, most patients can resume their usual activities and work and will not have to have surveillance MRI scans after 1 year.

Large tumors are those that compress the lower portion of the brainstem and are usually larger than 30 mm in size. These tumors require a surgical decompression of the brainstem, usually performed by our neurosurgical colleagues through a sub-occipital approach. After the tumor has been debunked, reduced, and decompressed from the brain, it can then be treated with stereotactic radiation as described earlier. This new approach preserves the facial nerve in most cases, and can preserve the hearing as well in some cases. It is well tolerated, and safer than prior procedures which involved risk to the facial nerve and lower brain structures. Most patients recover very quickly after this approach and can resume their activities and work within 6 to 8 weeks.

If you have been diagnosed with an acoustic neuroma, vestibular schwannoma or meningioma and would like a second opinion and discuss these new approaches, please contact us at (615) 386-9089. We will be happy to review your MRI scans.