

'Vast majority' of acoustic tumor patients benefit from surgery

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Surgery to remove tumors under the brain known as acoustic neuromas produces favorable outcomes in the "vast majority" of patients, according to one of the largest studies of its kind.

Loyola University Hospital surgeons Dr. Douglas Anderson and Dr. John Leonetti followed 730 patients whom they had jointly operated on during a 21-year period. Patients ranged in age from 9 to 79, with a median age of 48. The average clinical followup was 32 months.

Every patient survived the surgery, and the surgeons were able to completely remove the tumors in 95.1 percent of the patients. Ninety percent of patients experienced little or no [facial paralysis](#). And among those who still retained hearing in the affected ear before surgery, 44 percent came out of the surgery with useful hearing in that ear, and 63 percent had at least some hearing.

These results are as good as or better than any other series of acoustic neuromas reported in the medical literature.

"With careful microsurgical technique, one can achieve gross total resection [removal] of the vast majority of acoustic tumors with minimal major [morbidity](#) or mortality and at the same time, achieve a high percentage of normal to near normal facial function," the study authors concluded.

Anderson is first author of the study. He presented results at the 2010 Congress of Neurological Surgeons, which awarded him the prestigious Synthes Skull Base Surgery Award.

An acoustic neuroma, also known as a vestibular schwannoma, is a slow-growing, usually [benign tumor](#), located behind the ear on the nerve that connects the ear to the brain. The tumor can cause [hearing loss](#) in one ear and paralysis on one side

of the face. If the tumor grows large enough, it can be fatal. Treatment options include microsurgery (surgery with a microscope), radiation or simply keeping a watchful eye on the tumor.

In the study, the average tumor diameter was 2.2 cm, and 89.5 percent of the patients had experienced partial or complete loss of hearing in one ear. Other pre-surgery symptoms included tinnitus (43.7 percent of patients), dizziness/imbalance (26.8 percent), facial numbness (11.1 percent), headache (10.3 percent) and facial weakness (2.6 percent).

Leonetti and Anderson work as a team, with Leonetti gaining access to the tumor and Anderson removing it. If the patient still retains hearing, Leonetti uses one of two surgical techniques, called the retrosigmoid approach or the middle fossa approach. If the patient has lost all hearing, Leonetti uses a technique called the translabyrinthine approach. Leonetti is a professor in the departments of Otolaryngology and Neurological Surgery and program director of Cranial Base Surgery, and Anderson is a professor in the Department of Neurological Surgery at Loyola University Chicago Stritch School of Medicine.

In recent years, the adoption of techniques to monitor neural structures during surgery has enabled surgeons to frequently preserve hearing and facial nerves. "Before, the goal simply was to get the tumor out and be glad if the patient survived," Anderson said.

While Anderson and Leonetti have their own practices, they also collaborate to remove acoustic neuromas and other tumors. Over the past 23 years, they have performed about 1,250 surgeries together.

"It's been a long and successful partnership," Anderson said. "We have had wonderful results. It's

like a nice marriage."

Anderson said Leonetti "is a very innovative surgeon, and extremely adept at the myriad of approaches to the skull base. He also has a wonderful attitude -- highly professional but also fun to work with."

Leonetti also has high praise for Anderson. "He is the most technically gifted neurosurgeon I have ever seen," Leonetti said. "More importantly, he is a kind, compassionate and wonderful person -- but he'll never beat me at golf."

Provided by Loyola University Health System

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