

ACOUSTIC NEUROMA

By: Gil Lederman, M.D.

Those having attended Harvard Medical School keep in communication with colleagues and the school through the Harvard Medical Alumni Bulletin. My wife (Josiane trained at Massachusetts General Hospital in Dermatology) and I both receive it and I enjoy to read about my colleagues and where they have landed throughout the world as well as updating current activities at the medical school.

In the most recent edition, the Alumni Notes records a comment from Dr. Stephen F. Cooper, a graduate of the 1974 class of Harvard Medical School. His note is quite brief but to me quite poignant. He wrote, "Recovering from acoustic neuroma excision. Not yet back to work."

To me, this was quite devastating news. For this decade we have been developing innovative non-invasive treatments for acoustic neuromas and other benign and malignant brain tumors. In fact, our acoustic neuroma work has brought patients from around the world. Our data appears in major medical meeting, medical journals and the current oncologic medical text books.

The basic problem with surgical intervention of this disease is not the results of tumor treatment but rather the results on the patient. The vast majority of patients are hospitalized for prolonged periods of time and many suffer untoward effects. Almost all patients are left deaf in the operated ear and facial paralysis is very common. Other complications including spinal fluid leakage, bleeding into the brain and paralysis, are not uncommon even at the so-called largest surgical centers. A patient survey has evaluated these points. Often it takes months for the patient to attempt to return to normal activities.

Because toxicity of surgery is so great, often resulting in inability to return to normal function as described by that Harvard Alumnus or even worse, the possibility of death, non-invasive treatments have been sought.

Our group has treated more than 300 hundred patients with CP angle tumors using fractionated technique. CP angle describes the location in the brain where acoustic neuromas most commonly are found. There are many aspects of great appeal compared to surgery or single shot radiosurgery.

Surgery results in hearing loss for the vast majority of the patients. That means deafness in the operated ear. Also, patients, when asked after surgery about facial function report in the majority have weakness or paralysis of the face on the involved side. This creates great social and physical problems as well as emotional and psychological distress. There are other negative aspects to surgery which include the possibility of bleeding in the brain, damage to the surrounding brain, paralysis, stroke or even worse.

Single shot radiosurgery minimizes many of these complications but still hearing is only about 50% preserved. Facial paralysis has been reported in up to 50% of the patients with trigeminal neuropathy in a similar proportion. Some institutions are dropping the dose of single shot radiosurgery in an attempt to get results equivalent to those with fractionation. But long-term data remains sparse from this lower dose. If dose is lowered too much, recurrence rates may rise.

Fractionated radiosurgery by our physicians has been ongoing and is the largest such series in the world. Our data is compelling in that the vast majority of patients have maintained and in some cases even improved hearing.

The likelihood of facial paralysis is minuscule as is trigeminal neuropathy which was not observed.

No patients have required surgery for treatment failure. The work is all done non-invasively with no pins in the head. The pin-on-head frame is quite unpleasant and we do everything we can to avoid it.

The greatest appeal of fractionation is the protection of the normal, healthy surrounding nerves and brain stem - the critical issue which fractionation can provide.

What happens to our patients undergoing fractionated radiosurgery?

The typical patient will come for four or five treatments, with each treatment lasting approximately one half hour. Before and after treatment they have eaten, carried on their normal activities, worked, walked, and slept every night at their own home (or hotel if coming from afar).

I suspect if that same Harvard Medical School Graduate had had fractionated radiosurgery he might comment in passing about all aspects of his life, noting additionally that he had fractionated radiosurgery for acoustic neuroma and that he continued to work and carry on normal functions throughout his few treatments.

Our efforts have been to educate patients and their physicians about the new treatment options. A recent patient from Wales, Great Britain, returned after a five day stay here committed to changing the course in her life to educate patients and physicians that new non-invasive treatment options are available. I certainly wish her, and in fact, all success.

P.S.

Our physicians have currently treated 500 people with acoustic neuromas. Our control rate is 99% - with high quality of life. Most - 95% - have hearing and 80% have stable or improved hearing. This is the largest experience worldwide using fractionated stereotactic radiosurgery. Our experience should be very reassuring to those with small or large acoustic neuromas.