Gamma Knife May Be Epilepsy Surgery Option

BY DOUG BRUNK
San Diego Bureau

SAN DIEGO — Gamma knife radiosurgery may be a viable alternative to standard open surgery for patients with mesial temporal lobe epilepsy, preliminary results from a multicenter study suggest.

"Anterior temporal lobectomy is the gold standard for the treatment of mesial temporal lobe epilepsy, so why consider an alternative therapy such as gamma knife radiosurgery?" Dr. Mark Quigg asked at the annual meetings of the American Epilepsy Society and the Canadian League Against Epilepsy. "Well, nothing's perfect. There's a small but significant morbidity with open surgery. Traditional surgery with its obligate ICU time and inpatient stay costs money. Many patients and some referring physicians have an unrealistic look as to what epilepsy surgery entails."

In a 3-year multicenter study, Dr. Quigg and his associates performed gamma knife radiosurgery on 30 patients with mesial temporal lobe epilepsy. The treatment target was the temporal portion of the amygdala, the anterior 2 cm of the hippocampal gyrus, and the adjacent parahippocampal gyrus. Of the 30 patients, 17 were randomized to 20 Gy (low dose) and 13 were randomized to 24 Gy (high dose), comprising 5.0-7.5 mL at the 50% isodose volume.

The mean age of patients was 34 years and more than half (18) were female, said Dr. Quigg of the department of neurology at the University of Virginia, Charlottesville. After surgery, patients were followed for 18 months at 3-month intervals. They also were evaluated again at 24 months and 36 months.

Patients were considered seizure free if no seizures (excluding auras) occurred between the 18- and 24-month visits. At the meeting, Dr. Quigg limited his data presentation to outcomes at 24 months.

Dr. Quigg reported that overall, 67% of patients who underwent gamma knife surgery were seizure free at 24 months. A greater proportion of those who underwent high-dose gamma knife surgery were seizure free, compared with those who underwent low-dose surgery (85% vs. 56%, respectively), but the differences were not statistically significant because of the small sample size. By 24 months, one patient was lost to follow-up and another patient experienced papilledema that responded partially to dexamethasone and underwent anterior temporal lobectomy. Some patients required the supplementary use of antiepileptic drugs for auras and almost half required steroids for edema/headaches.

"The strength of the study is that the actual Gy of surgical target is very uniform amongst all of the centers," Dr. Quigg commented.

"The rates of seizure remission are comparable to what's published for anterior lobectomy. The safety profile of these patients is within bounds of standard open surgery. It's going to take more time and perhaps a prospective comparison to sort out the relative merits of one procedure over another," he said.

The study was supported by the National Institutes of Health and Elekta AB, maker of the Leksell Gamma Knife.

Participating sites included the University of Virginia; Columbia University, New York; Indiana University, Indianapolis; the State University of New York, Syracuse; the University of California, San Francisco; the University of Pittsburgh; the University of Southern California, Los Angeles; and the University of Washington, Seattle. ■

Half of Kids Seizure Free

Seizures *from page 1*

least more than a 90% reduction in seizures, most of the patients had seemed to be seizure free and doing very well."

He added that 38% of patients were off all antiepileptic drugs, and 67% reported improved cognition and/or behavior.

In their poster, the researchers noted that patients undergoing endoscopic resection had significantly shorter postsurgical hospital stays, compared with patients at the medical center who have undergone transcallosal resection (a mean of 5.8 days vs. 8.7 days, respectively).

However, there was no significant difference in the efficacy rate between the two procedures.

"Currently our neurosurgeon prefers performing the endoscopic resection although every case is reviewed on an individual basis," they wrote.

"If the hypothalamic hamartoma tumor is too large and attached bilaterally to the hypothalamus, transcallosal resection may be performed." ■

Depression in Epilepsy Patients Is Common, but Undertreated

BY DOUG BRUNK
San Diego Bureau

SAN DIEGO — The Patient Health Questionnaire 9-item depression scale detected major depression in 29% of epilepsy patients, results from a large single-center study showed.

Moreover, 52% of patients who had scores consistent with major depression were not on antidepressant medications, Dr. Nicole A. Seminario reported in a poster session at the annual meetings of the American Epilepsy Society and the Canadian League Against Epilepsy.

"It's important to be able to identify those people," she said in an interview. "This scale is nice because you can hand it out to your patients in the clinic, and it's not as time consuming as a lot of the other inventories."

Adapted from the Prime-MD patient health questionnaire, the self-administered Patient Health Questionnaire 9-item depression scale (PHQ-9) was first described in psychiatric literature (Psychiatr. Ann. 2002;32:509-21). It has been validated in the general population, indicating a prevalence rate of 9.2% for a current depressive disorder and a prevalence rate of 3.8% for major depression.

Dr. Seminario and her associates used the survey to determine the prevalence of major depression in 229 patients seen at the epilepsy clinic of the University of California, Davis, between May and November of 2005, including those seen for the first time and those seen for follow-up visits.

The patients filled out the PHQ-9 in the waiting room. The mean age of patients was 41 years, and 51% were female.

The researchers defined major depression as having a PHQ-9 score of 10 or higher (based on a scale of 0-27), as has been previously recommended in the medical literature.

Of the 229 patients, 67 (29%) had PHQ-9 scores of 10 or higher, reported Dr. Seminario, of the department of neurology at the University of California, Davis. Of these 67 patients, 35 (52%) were not on antidepressant medications, which suggests that they were undertreated. In addition, the mean depression scores were significantly higher in survey respondents who were on antidepressants, compared with those who were not taking antidepressants.

Depression status did not vary by type of antiepileptic medication used.

Patients with nonepileptic seizures were more likely to have depression than were their counterparts with other forms—localization related, idiopathic generalized, symptomatic generalized, and undetermined—of epilepsy. There were no other significant differences in depression scores among any of the other epilepsy groups.

"Our findings suggest that depression has a stronger association with lack of seizure freedom rather than the burden of antiepileptic drugs," the researchers wrote. "There was no difference in depression score between patients on various monotherapies suggesting that the depression scores did not relate to particular side effects of the antiepileptic medications." ■

Adverse Events Occur in Over 30% of VNS Device Patients

BY MICHELE G. SULLIVAN
Mid-Atlantic Bureau

PITTSBURGH — Treatment-limiting adverse events occurred in more than 30% of patients who received a vagus nerve stimulator for the treatment of seizure disorders, Dr. Phillip Pearl reported at the annual meeting of the Child Neurology Society.

The number of adverse events may increase even more as vagus nerve stimulator (VNS) devices become more common among new populations of patients with seizure disorders, Dr. Pearl said. "I think this is probably the tip of the iceberg and that we will be seeing more cases as more people receive this device and as the longevity of VNS therapy increases beyond what was studied for the initial approval."

Dr. Pearl reported adverse events among 62 patients who had VNS devices implanted in 1998-2005 at the Children's National Medical Center, Washington, where he is a pediatric neurologist. The patients ranged in age from 3 to 29 years (median 12 years). The median duration of therapy was 40 months (range 1-96 months).

Of the 62 patients, 35% (22 patients) had at least one clinically significant adverse event. The most common were persistent drooling (six), coughing (five), throat discomfort or spasms (four), and dysphagia (three). Two patients had difficulty breathing, with one requiring device removal. Two experienced vomiting while the VNS current was delivered, and two more experienced vocal cord weakness. All of these adverse events required some limiting of the current output of the device. Two more patients experienced axillary wound infections that required oral antibiotic treatment.

Of the patients with adverse events, eight needed nonroutine surgical intervention. The device was removed from five patients (8%), including a 13-year-old girl who developed serious complications from wound infection requiring intravenous antibiotics. She also needed a percutaneous endoscopic gastroscopy tube because of vocal cord paralysis and persistent dysphagia. The other four explantations were necessary because of persistent problems with breathing, coughing, or throat discomfort.

There were also two lead failures, Dr. Pearl said. One was discovered during a routine device interrogation more than 7 years after the initial implant. The other one was discovered after seizure control worsened.

In addition to these adverse events, two patients experienced unique unanticipated problems. One was a 13-year-old boy who had received the implant for intractable generalized seizures and was seen at an emergency department for convulsive status. Peripheral vein access was limited; an emergency physician searching for an access site misidentified the VNS wire in the boy's neck as the jugular vein. "The wire was stabbed several times until it became apparent that it was not a vein," Dr. Pearl said. Interrogation of the device a few days later showed no evidence of malfunction. One year later, the device did malfunction; the patient experienced increased seizures and needed a replacement. ■