

Research Analyzes Repeat Surgery for Patients Suffering from Recurrent and Painful Trigeminal Neuralgia

Newswise - Trigeminal neuralgia (TN, also known as tic douloureux) is the most common facial pain syndrome with approximately 15,000 new patients diagnosed each year in the United States. TN is characterized by episodic, intense, shock-like pain in one or more divisions of the trigeminal nerve. Typically, women are affected more frequently than men, and the pain generally follows a relapsing and recurring course. It is common for patients to be misdiagnosed for many years after the pain begins. The most common cause of TN is considered idiopathic - compression of the trigeminal nerve by a blood vessel as it exits the brainstem, but TN can also occur secondary to tumors or demyelinating disease (multiple sclerosis).

TN usually responds well initially to medical therapy. However, patients with refractory disease or those who cannot tolerate medical therapy are candidates for surgery. An estimated 8,000 patients with TN undergo surgery each year in the United States, at a cost exceeding \$100 million. Although TN surgery is successful in about 60 to 90 percent of cases, some patients are especially challenging and continue to have persistent or recurrent TN despite multiple operations.

Researchers at the Mayo Clinic investigated surgical outcome in trigeminal neuralgia patients who experienced multiple failed surgeries for this condition. The results of this study, *Surgical Management of Trigeminal Neuralgia Patients Who Have Failed Three or More Prior Operations*, will be presented by Bruce E. Pollock, MD, 3:09 to 3:20 pm, Tuesday, May 5, 2009, during the 77th Annual Meeting of the American Association of Neurological Surgeons in San Diego. Kathy J. Stien, RN, is the co-author.

Posterior fossa exploration (PFE) is a surgical procedure which enables the neurosurgeon to access the trigeminal nerves and is helpful in determining the best suitable treatment option for the individual patient. The specific operation performed is based on the individual patient's age, history of prior surgery, and severity of pain.

Nearly all currently available TN surgical options fall under the category of destructive approach, while only one falls under the nondestructive approach. Destructive techniques attempt to relieve pain through damage of the trigeminal nerve's sensory pathways and include partial nerve sectioning, radiofrequency rhizotomy, glycerol rhizotomy, balloon microcompression, and stereotactic radiosurgery.

Microvascular decompression (MVD), which removes the vascular compression from the trigeminal nerve, is the only nondestructive surgery. It provides long-lasting pain relief for most patients, while preserving the function of the trigeminal nerve.

"While there isn't one surgical approach that is 100 percent effective for everyone, it can be reassuring to patients whom have suffered for years with medically intractable pain to know that there are multiple surgical options available," stated Dr. Pollock.

Review of 639 patients undergoing TN surgery between July 1999 and March 2008 identified 87 patients (14 percent) who had three or more previous operations for idiopathic TN.

- Mean patient age: 65.8 years.

- Fifty-four patients (62 percent) had undergone a prior PFE and 16 patients (18 percent) described being in constant pain.

- The operations performed were PFE (35 patients), radiosurgery (31 patients), glycerol rhizotomy (15 patients) and balloon compression (6 patients).

The following patient outcomes were noted:

- Complete pain relief (no pain, no medications) was 66 percent at one year and 50 percent at three years.

- The potential for complete pain relief in patients who underwent PFE was significantly greater than in patients who had other procedures (71 percent versus 36 percent at three-year follow-up).

- No difference was noted between radiosurgery and percutaneous techniques.

- Additional surgery was performed in 8 patients after PFE (23 percent) compared to 25 patients (48 percent) who had less-invasive surgical techniques.

"PFE gives the operating surgeon the option of performing either a nondestructive (MVD) or destructive (partial nerve section) procedure, and is associated with better facial pain outcomes in this difficult patient group," concluded Dr. Pollock.

The author reports no conflicts of interest.