Trigeminal Neuralgia

Trigeminal neuralgia is caused by loss of insulation around the nerve fibers that make up the trigeminal nerve. The loss of insulation allows messages that should only be carried by a few nerve fibers to spread to many more nerve fibers (ephaptic transmission). This causes an excessively intense stimulation of the brain, which the brain interprets as pain. The loss of insulation is usually caused by pressure on the trigeminal nerve as it exits the brain. This pressure is typically from atherosclerosis of the arteries around the brain but in rare patients is from a tumor, vascular anomaly or multiple sclerosis.

Symptoms
Trigeminal neuralgia is associated with pain in a portion of the face or jaw. There is usually a “trigger zone” where touch causes very brief intense pain. There may be a series of flashes of pain lasting minutes or sometime hours. Initially the pain is very brief and there is little or no background pain between the flashes. Medical or surgical treatment usually relieves these flashes, but sometimes an underlying more constant pain emerges. The pain is often triggered by eating, talking, brushing teeth or a touch on the face.

Sometimes pain is in the gum and teeth and can be confused with dental pain. It can also mimic sinus disease, temporomandibular joint disease or muscle contraction syndrome, but its very brief duration and response to Carbamazepine (Tegretol) distinguish it from these other conditions which have more sustained pain and are not relieved by Carbamazepine.

Evaluation
In most cases, trigeminal neuralgia is diagnosed by its characteristic symptoms and its response to Carbamazepine. Sometimes an MRI scan is needed to be sure a tumor or multiple sclerosis is not present. There are no tests which prove the diagnosis.
Treatment

There are three basic kinds of treatment for trigeminal neuralgia.

Medications

All patients begin with medications. The most effective are usually Carbamazepine (Tegretol) or Oxcarbamazepine (Trileptal), but many seizure medications help. Narcotics are usually not very helpful. When medications are not adequate or cause too many side effects, a surgical procedure can be considered.

Decompression

It is possible to expose the nerve and lift an artery away, decompressing the nerve. It may be necessary to place a pad between the artery and the nerve. This is the most successful procedure for trigeminal neuralgia but requires a major craniotomy exposing the nerve in the center of the head. It is primarily used in young patients who tolerate major brain operations better than older patients. This operation relieves pain 90 percent of the time but sometimes causes imbalance, deafness, in-coordination, facial numbness or pain.

Nerve Damage

The other surgical choice is to damage the nerve. For more than a century, this has been effectively used to treat trigeminal neuralgia. Many techniques have been used to damage the nerve, including alcohol block, glycerol block, radiofrequency rhizotomy and balloon compression. Experience has shown the best results occur when the nerve is mildly damaged as close to the brain as possible. For the past two decades, the preferred method for this has been Gamma Knife Radiosurgery.

Gamma Knife Radiosurgery has a 90 percent chance of helping pain with a 70 percent chance of being free of pain and an approximately 45 percent chance of being pain-free and off medications. Pain may improve within a few days, but there is sometimes a delay of up to three months before the procedure takes effect. There may be mild numbness but it is rare for severe numbness to occur. If the degree of nerve injury is not sufficient to relieve pain, the procedure can be repeated but with a higher risk of numbness. This is an outpatient procedure and usually patients can resume normal activities the next day, although there may be a few days of soreness due to the stereotactic frame this technique requires.

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We work closely with providers to make the referral process as easy as possible. To make a referral, or to learn more about our program, please call 916-454-6977 or 1-888-287-2270. Physicians outside the Sacramento area may receive referral assistance from Sutter Specialty Network by calling 1-888-834-1788.