

TN Treatment Options (From a talk by Vancouver neurosurgeon Dr. Chris Honey)

Don't come to the neurosurgeon first. TN should be managed by your family physician and neurologist with medication. You don't need to see a surgeon until:

- The meds don't work, or;
- You can control the pain with medication, but the side effects are so severe that you can no longer function

The two most successful meds are Carbamazepine (Tegretol) and Gabapentin (Neurontin), both are anti-seizure meds. Tegretol is best taken with food. **Neurontin is better tolerated than Tegretol at higher doses and family doctors don't always prescribe a high enough dose. Some patients take up to 1200 mg of Neurontin three times a day.** Side effects include sleepiness and poor memory. Neurontin is OK for long-term use.

The trigeminal nerve is like a wire wrapped in insulation. Hundreds of these nerves are bundled together in a cable known as the trigeminal nerve. If the insulation around part of this nerve is lost (either worn away by a blood vessel or attacked by the immune system in MS), the nerve can short-circuit and cause pain. Meds suppress the information being carried in this nerve and reduce the pain. Unfortunately, meds travel throughout the brain suppressing all sorts of brain functions if the dosage is high. This means that "walking, talking and memory" can be suppressed resulting in people feeling sleepy and wobbly and no longer their former selves. The light's gone out.

Surgery

The choice is between a Rhizotomy, which injures the nerve to block the pain by creating numbness, and a Microvascular Decompression (MVD) which is brain surgery to separate the nerve from the blood vessel that is compressing it.

Rhizotomies: There are many kinds of rhizotomy. Vancouver neurosurgeon Dr. Honey prefers the Radiofrequency Rhizotomy because it can best control the location and degree of numbness.

- **Radiofrequency Rhizotomy:** The nerve is burned with a heated needle. The challenge for the surgeon is the balance between burning the nerve too much and creating unpleasant numbness, or not burning it enough so that there is less numbness but the nerve recovers and the pain can return, necessitating a repeat surgery.

- **Benefits** are that the injury can be directed to a specific place on the nerve creating numbness where the nerve needs it; it is 90 per cent effective; it's an outpatient procedure taking one hour and doesn't require a general anesthetic.
- **People who have TN because they have MS are restricted to a Rhizotomy.** The nerve sheath is being damaged by their own bodies and the MVD brain surgery option will not work for them.
- **Downside:** one per cent can get anesthesia dolorosa (painful numbness); preferable not to do it for TN in the eye as numbness in the eye can lead to eye injuries because people can't feel if they've got anything in their eye; it can create weakness in the jaw; the nerve can heal itself and the procedure will need to be repeated.

Other Types of Rhizotomy

- **Glycerol Rhizotomy:** injures the nerve chemically; can be too mild.
- **Gamma Knife:** fires radiation at the nerve. Benefits are that it's easy to adjust the dose and do minimal damage to the nerve, but there can be recurrence necessitating repeat surgeries.
- **Balloon Compression:** can cause severe damage to the nerve.
- **Peripheral Rhizotomy:** dangerous procedure where nerve is cut directly. High risk of uncomfortable numbness.

Microvascular Decompression: MVD is Brain Surgery

- **Removes the "pinch" on the nerve.** There is usually a blood vessel beating on the nerve and over the years, the insulation has worn off. An MVD separates the two by inserting a piece of Teflon between them.
- **MVD is major surgery** and not always recommended for those who are older or who have other health problems; it does not work for MS patients (TN can be the first symptom of MS)
- It is **recommended for people who are young** and healthy who have a "pinched" nerve. Benefits are that it fixes the cause of the problem, there is no numbness and it's 90 per cent effective. As the surgery is on the outside of the brain, it won't affect "who you are."
- **Risks include:** three hours of brain surgery requiring a general anesthetic which means a one per cent risk of death or stroke; two days in hospital and a six week recovery period; 20 per cent have an allergic reaction to the Teflon padding and need to be treated with steroids until the inflammation settles down; there is a two per cent risk that the smile nerve and the hearing nerve can be damaged.
- **Post surgery:** patients usually stay on their meds for a month; MVD can cause temporary nausea as surgery takes place close to the brain's

nausea centre; there can be some soreness in the neck depending on whether or not you've got a muscular neck so this tends to affect men more than women; no driving until you can check your "blind spot" comfortably; the ear may be plugged with water and it takes about a month for the fluid to drain away; and the head is wrapped in bandages for two weeks to make sure no fluid collects around the location of the MVD.