Microvascular decompression (MVD) for trigeminal neuralgia (TN)

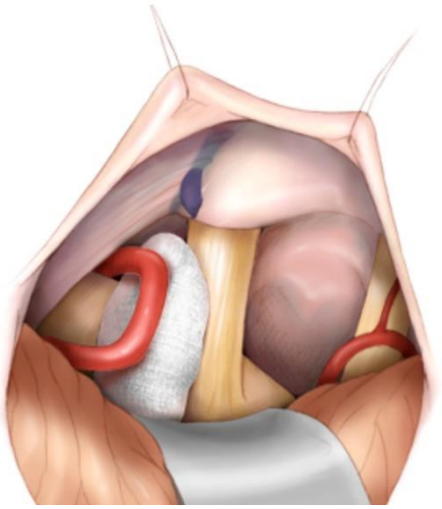
Indications

Trigeminal neuralgia (TN), also called tic douloureux, is a chronic pain condition that affects the trigeminal (5^{th}) cranial nerve. The trigeminal nerve carries sensation from your face and is divided into three branches. The three branches are V_1 (eyes and forehead, gold color in the image to the right), V_2 (cheek area, purple color), and V_3 (jaw area, blue color). The pain is often described as sharp or shooting or like having an electrical shock in the jaw, teeth, or gums. It may involve any of the three branches or a combination of them. The pain may be triggered by stimulation of the face such as from brushing your teeth or touching the face.

TN affects women more often than men, and is more likely to occur people over age 50. Doctors can usually manage TN with medications in the early stages, but TN symptoms may become nonresponsive to medications and progress into longer or more frequent bouts of severe, searing pain. When that happens, surgery should be considered.

Surgery description

Microvascular decompression (MVD) for TN is a surgery to remove abnormal compression of the trigeminal nerve. Neurovascular compression (compression of the trigeminal nerve by a blood vessel) is a very common cause of TN. MVD involves a small opening in the skull (craniotomy) and exposing the trigeminal nerve to insert a pad between the nerve and offending blood vessel triggering the pain signals. By removing the neurovascular compression, the pain symptoms are relieved. Patients with TN who have failed medical treatment are potential candidates for this procedure. The procedure takes about two hours and is under general anesthesia. A small curved incision is made behind the ear on the affected side, the skull is opened (craniotomy), and under the microscope the trigeminal nerve is inspected carefully and all compressive arteries and/or veins are dissected free and padded with a Teflon sponge. In the image at right, you can see the trigeminal nerve (yellow) is now protected from the artery (red) by the sponge (white). The skull and skin are then closed and a dressing is applied.



Postoperative care and outcome

After the surgery, the patient is kept comfortable, monitored carefully overnight, and most often discharged the following day. Patients may walk around and shower immediately. Sometimes people experience some dizziness or imbalance for a few days following this procedure. During the postoperative visit two weeks after surgery, the incision is checked and sutures are removed. In some cases, physical therapy (PT) will be ordered, particularly if there are any residual difficulties with balance postoperatively.

MVD for TN is approximately 80-90% effective in relieving pain. Compared to some other procedures (such as radiosurgery), MVD does not lead to facial numbness. There is some risk of recurrence of TN after MVD (about 20% within 10 years).