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**SPINAL SURGERY
CRANIAL SURGERY
MICRONEUROSURGERY
SPINAL INSTRUMENTATION**

Welcome

The doctors of Neurosurgical Consultants want to keep you informed about your hospital stay and discharge. Please review the information and talk with your doctor(s) or the hospital staff about your progress.

Insertion of Dorsal Column Stimulator

What is a Dorsal Column Stimulator?

A Dorsal Column Stimulator is an implantable device that blocks the transmission of pain perception through the spinal cord. Pain is a warning of something causing tissue damage somewhere in the body. An example is a burn on the skin. The temperature receptors in the skin send electrical signals through the nerves and spinal cord to the brain where the information is interpreted as a burn and a corrective action to move away from the heat is initiated. Sometimes, the signals from the receptors transmit false information causing the feeling of pain without tissue damage. The purpose of the dorsal column stimulator is to interfere with the false transmission before it reaches the brain. A dorsal column stimulator is not recommended when there is a physical cause for the pain.

A dorsal column stimulator is actually two parts implanted and connected in the body. It gets its name from the location of the electrodes or wires that are implanted within the spinal canal, behind the spinal cord. The backside or posterior part of the body is anatomically known as the dorsal side. The back or dorsal part of the spinal cord is made up of bundles of fibers that conduct pain. There are two such bundles on the back of the spinal cord, one on the right and one on the left. Together, they are called the dorsal columns of the spinal cord. These are the bundles of fibers that conduct most of the pain information in the spinal cord. The electrode is implanted outside the covering around the spinal cord on the back side over the dorsal columns. The exact area of the electrode implant is usually determined before the surgery, during a trial implant and test before final implant surgery is planned.

The electrode is connected to a generator, which generates a low voltage current that flows through the electrodes and stimulates the dorsal columns of the spinal cord. This stimulation can block the transmission of the false pain information. The generator is usually implanted away from the spine toward the side of the body making it easy to be turned on and off by the patient using a wireless remote control. It is powered by battery that may necessitate replacement, from time to time, like a cardiac pacemaker. Some generators can be recharged by placing a special magnet over the generator for several hours every few days.

Description of the surgery:

Intravenous antibiotics are administered before surgery to decrease the risk of infection. You will be anesthetized (put to sleep), and turned face down on the operating table for the surgery. The appropriate level of the electrode placement is identified with fluoroscopy (live x-ray imaging). A small incision is made on the midline of the back. If needed, muscle is then carefully dissected off the spine. Sometimes, a small amount of lamina, the bone on the backside of the spine, is removed to facilitate placement of the electrodes which may be described as a laminotomy or laminectomy. A separate incision is made for the generator and pocket is created under the surface of the skin. The wire is then tunneled under the skin from the midline back incision to the generator pocket. The two parts are connected and tested. After confirmation that the connections are working properly, the generator is positioned in the pocket. The incisions are irrigated with antibiotic solution to decrease the risk of infection. Absorbable stitches are used under the skin to close the incision. Stitches, staples, or a special "skin glue" are used on the surface of the skin. Sterile dressing are placed over the incisions. You will then be placed on your back in a hospital bed. The breathing tube will be removed (extubated) and you will be taken to the recovery room. After waking from anesthesia, the generator will be specifically programmed for you.

How will your family know when the surgery is completed?

Your neurosurgeon will speak with your family members in the family waiting area or call them at home when the surgery has been completed.

What to Expect After Surgery

Day of Surgery

Following the surgery you will spend one to two hours in the Recovery Room (PACU). From there you will be taken to an extended recovery room, if you are to be discharged; or to a regular hospital room, if you are being admitted to the hospital after surgery. The nurses will monitor your temperature, blood pressure, pulse, respirations, and neurological functions. Visitors may be

allowed in the Recovery Room for a few minutes; family and friends can visit more freely when you are sent to the extended recovery room or the regular hospital room. During this time, you will have preliminary instructions on the use of your wireless remote control.

- The nurses will monitor your temperature, blood pressure, pulse and respiration level.
- The nurses will give pain medicine initially by vein and then by mouth, as you need it.
- It is not uncommon to feel nauseous after surgery. This is often due to the anesthesia. Medicine is available to help relieve the nausea and any vomiting.
- Activity: You will be encouraged to walk as soon as you are comfortable. Walking helps to prevent blood clots from forming in the legs after surgery. You should avoid bending over, sitting for more than 1 hour, or lifting anything heavier than five pounds.
- Constipation often occurs from the use of narcotic pain medications. Stool softeners and other medications may be needed to help prevent constipation.
- After surgery, it is important to do deep breathing exercises. This prevents pneumonia from developing. You will use a device called an incentive spirometer to help you deep breathe.

Discharge: You can plan on going home one to three days after surgery if not performed as a same day procedure.

Once You Are Home

When to call your doctor?

One of the neurosurgeons from Neurosurgical Consultants Inc. is on call each day. This means that if needed, your neurosurgeon or his covering associate can be reached 24 hours a day. Call the Norwood office at (781) 769-4640 if there is drainage from the wound, a fever greater than 101 degrees Fahrenheit, new weakness, or new numbness. Patients may experience some pain or tingling radiating down their leg(s). If bothersome, an adjustment to dorsal column stimulator settings may be needed.

Pain medication:

You should only need narcotic medication, such as Percocet or Vicodin, for the first few days after surgery for incisional pain. Extra strength Tylenol should be sufficient to control any pain after the first few days and certainly by the end of the week. If you have been on chronic pain medication prior to surgery, your dosing will be adjusted by your pain doctor.

How to care for your surgical incision?

There will be a gauze or Mepilex dressing secured with silk or clear plastic tape. Under the dressing will be either stitches or skin glue, possibly covered by Steri-Strips; or skin staples. Steri-Strips are small pieces of special tape that will fall off on their own once they start getting wet, typically 7-10 days after surgery.

The skin glue is clear synthetic glue that holds the skin edges together and acts as an impermeable barrier to water. It will start to flake off 7-10 days after surgery.

You may shower after a few days, but must take precautions to keep the dressing dry. This can be done by covering the dressing and at least 4 inches of surrounding skin with heavy plastic, such as from a clean, heavy garbage bag, secured with 2 inch tape applied on all sides completely sealing the edges.

If you have a Mepilex (silver impregnated) dressing, it should be left in place for 5 days and then can be removed. After removal, the wound can be left open. However, if desired, it can be re-dressed with gauze for patient comfort. If the dressing gets wet before the 5 days have passed, it **should** be removed and replaced with a clean, dry gauze dressing.

If you have a gauze dressing, it may be removed after 5 days. After removal, the wound can be left open. However, if desired, it can be re-dressed with gauze for patient comfort. If the dressing gets wet, it **should** be removed and replaced with a clean, dry gauze dressing.

If you have Steri-Strips, the operative area and Steri-strips should be covered with plastic to keep the area dry during a shower. This can be done by covering the operative area, Steri-strips, and at least 4 inches of surrounding skin with heavy plastic, such as from a clean heavy garbage bag, secured with 2 inch tape applied on all sides completely sealing the edges. After 5 days you no longer need to protect the Steri-strips during shower.

Patients may shower but should not bathe or swim for at least 3 weeks. Your incision should not be immersed in water until all scab has fallen off.

Activity

The following is a guide to activity levels while you are recovering. You should avoid any stretching, bending, and strenuous activities for six (6) weeks after surgery, as doing so may cause the electrodes to shift out of ideal position. In addition, you will be given a prescription for an abdominal binder to secure the tissues of the torso and help prevent movement of the electrodes. After six weeks, there is sufficient scarring around the electrodes to keep them in position.

Weeks 1-2

Unlimited walking is permitted. You may walk up stairs. Do not lift any object greater than 5 pounds. You should not drive, but you may ride as a passenger. You will have a followup with your neurosurgeon and also with your pain doctor. It is not unusual for the dorsal column stimulator to need reprogramming every few weeks for the first couple of months. You may have sexual relations when you feel that you are ready. During sexual relations, you should avoid positions that cause discomfort; you should assume a recumbent position and avoid stretching until cleared by your pain doctor.

Week 3

Unlimited walking is permitted. You may walk up stairs. Do not lift any object greater than 10 pounds. You should not drive until you have had a followup with your pain doctor and a check of the dorsal column stimulator function. During sexual relations, you should avoid positions that cause discomfort, you should assume a recumbent position and avoid stretching until cleared by your pain doctor.

Week 4

Make sure to discuss issues such as returning to work with your pain doctor and neurosurgeon. Many people can return to work sooner if no lifting or bending is involved. If your goal is to return to work earlier, it should be discussed with your neurosurgeon and pain doctor pre-operatively. As of 2016 some dorsal column stimulator systems are MRI compatible. Be sure to check on the system specifics of your implant before going for MRI testing after the implant surgery.

These instructions are meant to be a guide to recovery from Insertion of Dorsal Column Stimulator Surgery for patients in our practice. We hope that you find them helpful. They are not a substitute for medical care by a professional. Also, other neurosurgeons may have different routines. For more information, visit our Web Site, <http://www.neurosurgical-consult.com>.

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