

Pallidotomy and Thalamotomy

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This booklet will provide information about the following surgical procedures: Pallidotomy and Thalamotomy.

What is a Pallidotomy?

A pallidotomy is an operation for Parkinson's disease where a small lesion is made in the globus pallidum (an area of the brain involved with motion control). The lesion is made by an electrode placed in the brain through a small opening in the skull. The beneficial effects are seen on the opposite side of the body, i.e. a lesion on the left side of your brain will help to control movement on the right side of your body. Pallidotomy will help reduce dyskinesia (medication induced writhing), and will also improve bradykinesia (slowness).

Risks

Risks include a rare chance of death (0.2%) and a low chance (7%) of weakness or blindness on the opposite side of the body.

What is a Thalamotomy?

A thalamotomy is an operation for tremor where a small lesion is made in the thalamus. The lesion is made with an electrode placed in the brain through a small hole in the skull. The benefits (approximately 80% reduction in tremor) are seen on the opposite side of the body, i.e. a left thalamotomy reduces tremor in the right hand.

Risks

Risks include a rare chance of death (0.2%) and a low chance (10%) of weakness, incoordination, speech and/or swallowing difficulties.

Preparing for Surgery

Before Admission to Hospital

- 1) Anticoagulants and other medications that thin your blood such as Aspirin, Coumadin (Warfarin), Lovenox (Enoxaparin), Ticlid (Ticlopidine), Plavix (Clopidogrel) and Ginkgo must be discontinued 2 weeks before your surgery. Pradaxa (Dabigatran), Xarelto (Rivaroxaban) and Eliquis (Apixaban) must be discontinued 5 days before your surgery.
- 2) Since you will be having a MRI, it is important to inform your neurosurgeon if you are claustrophobic, have metal fragments in your eye or have a pacemaker.

Admission to Hospital

Your surgeon's office will contact you the day before your scheduled surgery to confirm the time to report to the Jim Pattison Pavilion Admitting Department.

If you are being admitted on a Sunday or on a holiday Monday, please call the Admitting Department of Vancouver Hospital at 604-875-4300 after 10:00 a.m. the day before your operation to find out when you are to come to hospital.

The Night Before Surgery

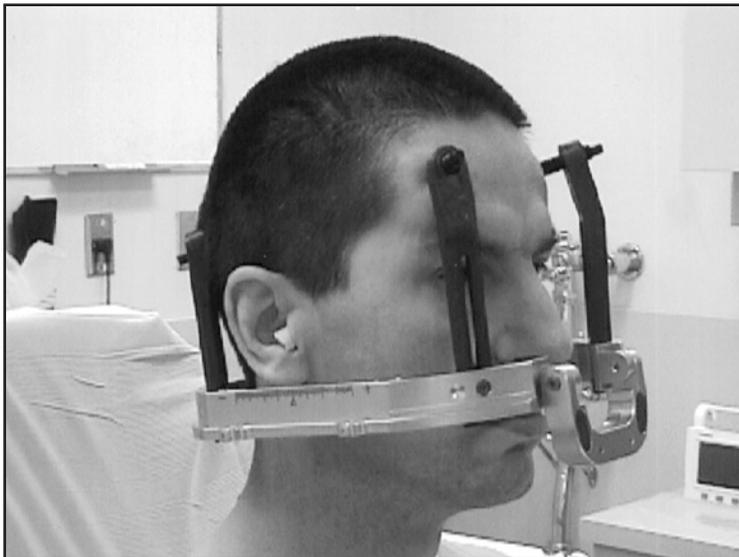
Whether you are in the hospital or at home, your preparation for surgery the night before is the same. Before going to bed, shower and shampoo with a medicated soap that will help prevent infection. Pallidotomy patients will stop their Parkinson's medications 12 hours before surgery. This will make you stiff but will help keep you still for the operation. Thalamotomy patients should not take their tremor medications on the morning of surgery. This will help us see the tremor and know if we have blocked it during the operation.

The Morning of Surgery

You will have an intravenous (IV) line started in your arm. This IV line will provide you with fluids that you would normally get from drinking. You will be given all your other medications (e.g. blood pressure pills) with a sip of water the morning of surgery. **Do not take your Parkinson's or tremor medications** until after surgery.

When it is time for your surgery, hospital escort will take you on a stretcher to the x-ray department where your neurosurgeon will attach a frame securely to your head (see diagram below). Your scalp will be injected with a local anaesthetic (freezing). You will feel a pinprick and slight burning. Once the freezing takes effect, the frame will be placed around your head. Four pins will anchor the head frame to your skull. You will feel a tight squeeze as the frame grips the skull then (after a few minutes) you will not feel the frame at all. You will wear this frame until the end of your surgery and we will use it to keep your head still.

Once the frame is secured, you will undergo an MRI scan. Following the MRI scan you will be taken to the Operating Room.



The Operating Room

Hospital escort will take you to the Perioperative Care Centre (PCC). A nurse will admit you and you will wait there on the stretcher until the operating room is ready. A family member or friend may wait with you in the PCC.

The nurse who will care for you during your surgery will take you to the operating room. Your Neurosurgeon with a Neurosurgical Fellow or Resident will perform your surgery. You will lie comfortably on the table with your head in a secure headrest to prevent any movement during surgery. A small patch of hair will be shaved and the area cleaned with antiseptic. Your neurosurgeon will inject local anaesthetic (freezing). Once the freezing has taken effect a small incision will be made in your scalp and a tiny hole drilled in the bone. You will hear the sound of the drill but you will not experience any pain. Most people are nervous about the drilling but soon realize it is loud but painless.

Once your neurosurgeon has found the target area within the brain, he will ask you questions to make sure it is exactly the right spot. This is why you will be awake during the entire operation. Pallidotomy patients are tested for potential side effects such as flashing lights or hand/face tightness. Tremor patients will be tested to see if a test lesion blocks the tremor sufficiently without causing side effects such as hand/face tightness.

Recovery Room

After your operation, you will be taken to the Recovery Room for an average of 1–2 hours. Your blood pressure (BP), pulse, level of consciousness, and motor strength will be monitored.

Nursing Unit

From the Recovery Room, you will be taken to the Nursing Unit. Your nurse will admit you and continue to assess you regularly just as in the Recovery Room. Your nurses will be assessing your motor strength by asking you to do certain tasks such as wiggling your toes, pushing down and pulling back with your feet, and squeezing the nurse's fingers with your hands. Your nurses will check your level of consciousness by asking such questions as: your name, the date, the year, and where you are.

Discharge

Your neurosurgeon will discharge you within 1–2 days of your surgery. You should not do any strenuous activities for 6 weeks. Swelling of your eyelid on the side of your surgery several days after surgery is common. You may also have temporary weakness on the side of your body opposite to the surgery (be careful not to fall if that happens). This should resolve as the expected swelling decreases after a week. You will have a bandage on the top of your head.

Stitches: DON'T TOUCH THEM. Please make an appointment with your family doctor to have the stitches removed 7 days after your surgery. You may wash your hair and bathe or shower the day after the stitches are removed.

If you experience fever, chills, sweats or notice any redness, swelling or discharge from your incisions, please call your neurosurgeon's office immediately.

Follow Up Appointment

Your office visit is usually 6–8 weeks after surgery. Please phone to arrange an appointment.

Commonly Asked Questions

1. Do neurosurgeons routinely perform this operation?

This procedure is routinely performed by Neurosurgeons with expertise in functional neurosurgery. Vancouver Hospital & Health Sciences Centre is the only centre in B.C. performing this operation. This surgery is performed regularly throughout the year.

2. Do I need to discontinue my medication before the operation?

- a) Anticoagulants and other medications that thin your blood such as Aspirin, Coumadin (Warfarin), Lovenox (noxaparin), Ticlid (Ticlopidine), Plavix (Clopidogrel) and Ginkgo must be discontinued 2 weeks before your surgery. Pradaxa (Dabigatran), Xarelto (Rivaroxaban) and Eliquis (Apixaban) must be discontinued 5 days before your surgery.
- b) Anticoagulants and blood thinners can be restarted 2 weeks after surgery.

3. Is the procedure painful?

No. The scalp is frozen with a local anaesthetic before the skin incision and tiny hole is made.

4. Will I be awake during the procedure?

Yes. Your neurosurgeon will ask you questions during the procedure to help localize the brain target.

5. Is this operation a cure for my Parkinson's disease?

No. The operation will control symptoms; it does not cure your disease.

6. Will surgery interfere with other treatments/ cures that may be available in the future?

No

7. How does the small hole in my head heal?

The bone will reform over time but you may always feel a small depression.

8. When will I be able to dye my hair, swim and use a hot tub?

After the stitches are removed.

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