Epilepsy Surgery
Is it for you?

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Surgery as Treatment

Many people have epilepsy and may not be aware of the various avenues that are available in treating uncontrolled seizures. If the seizures are uncontrolled by medications and are causing problems in everyday living, you may decide to investigate surgery as an option. The physicians that are involved in this process will need to take many factors into consideration before you become a potential candidate for surgery. Some of these factors may be: your age, any other medical conditions you may have, how much your life is affected by your seizures, the types and amounts of medications you have been treated with, the type of seizures you may have, and the location of the area that would require surgery.

Pre-Surgical Testing

If the doctors believe that surgery may be a possibility, you will need to have a number of tests done. The purpose of these tests is to ensure that surgery is possible, and that it is safe. These tests will help localize the area of the brain where your seizures begin, and to ensure that important functions of the brain, such as memory and speech, are not affected.

The types of tests that you will need in order to make the best decision possible include:

Routine Electroencephalograms (EEGs)

These are 20-40 minute recordings in the VGH EEG Department that record interictal activity (your brain’s electrical activity in between seizures). You may have already had this done. EEG’s help to determine any focus of unusual electrical activity that may agree with some of the other test results.
Computed Tomography (CT) Scan
This is a special scanning procedure that uses both x-rays and computer technology to visualize part of the body in cross sections. The purpose is to help detect any abnormalities. This may be done with a "contrast injection" (a special dye is given into a vein for a clearer picture).

Magnetic Resonance Imaging (MRI) Scan
This is a non-invasive imaging technique that uses a magnetic field to produce detailed pictures of the head. There is no pain or discomfort, but you will need to remain as still as possible for approximately one hour.

In-patient Assessment in the Seizure Investigation Unit at VGH
You will spend 7-14 days in the hospital to have a recording made of your seizures. Your activity and brain activity will be recorded for 24 hours a day to allow the doctors to view your seizures and understand the electrical activity in your brain during a seizure.

Neuropsychological Evaluation
This will measure memory and intellectual function using paper and pencil tests, and will take 1-2 days. These tests help to understand which areas of your brain are being used most effectively and to detect any problem areas that may assist in the decision about surgery. This test may not be necessary in every patient.

Speech Lateralization (Wada Test)
This is a test that involves doing an angiogram which is an x-ray study of the blood vessels. A medication is injected to put one side of your brain to sleep for 2-3 minutes to see how speech and memory can function in the other half. This is critical in deciding which parts of your brain are most important for your speech and memory. Only a small percentage of patients will require this test.

Consultation with a Neurosurgeon
This visit allows the surgeon to meet you, review your medical history, and discuss the risks and outcomes of surgery.

When the testing is completed, your case will be presented at Multidisciplinary Seizure Rounds. The results are discussed by the Epilepsy Team, and a recommendation will be given as to whether surgery is a suitable option for you.

Sometimes the information gathered is not sufficiently clear to decide on surgery. In some cases, further testing with intracranial electrodes (electrodes placed inside the skull) may need to be performed, or tests may need to be repeated. Possibly the information may show that surgery is not an option for you.

The presurgical process can take many months and requires a lot of commitment from the patient and family.
Types of Epilepsy Surgery

Usually, epilepsy surgery involves removing a small area of scar tissue in the brain (commonly in the temporal lobe) where the doctors have determined your seizures originate.

Preparation for Surgery

The best way to prepare for surgery is to learn as much as you can about the surgery. The Epilepsy Team can help answer your questions about the testing involved, the surgery itself and the post-operative period.

Knowing what to expect will help handle issues that may arise later. It is important that you have a realistic picture of the risks involved, the benefits and chances of “success”. It is a good idea for you and your family to talk about what “successful surgery” means. Sometimes it is easy to make the mistake of expecting too much from surgery, thinking that it will magically change your life.

Some patients have found it helpful to talk to others who have gone through the same type of surgery. Hearing others’ experiences and the different outcomes may help you and your family make a decision as well as prepare for the recovery period. Planning should include organizing help with household chores and childcare for 3-4 weeks following surgery.

Recovery Period

The hospitalization for epilepsy surgery is about 4-6 days. Recovery usually takes a few weeks and the doctors advise that you take a few months off to recuperate at home.

Most patients gradually resume their previous activities after 2-3 months. You will be followed up by the Epilepsy Team during the post-op months and years and various tests may be repeated. Anti-epileptic drugs must be continued. It is usually recommended that patients stay on them for up to two years post-op if seizure free. Following surgery you will need to be seizure free for one year to be eligible to drive.

If you have further questions please feel free to contact the Epilepsy Clinic at 604-875-4402