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## Craniotomy

The purpose of this document is to help prepare for upcoming brain surgery. It includes information about what to expect before, during, and after your operation. Please read it carefully. If you still have questions or concerns regarding your procedure after reading this guide, please discuss them with Mr D'Urso.

### Understanding Your Surgical Procedure

The surgical procedure you will undergo is called a craniotomy. A craniotomy is a temporary opening of part of the cranium, or skull. A neurosurgeon performs a craniotomy to gain access to the disease or injury affecting the brain or its blood vessels.

A craniotomy is performed to:

- remove a lesion such as a [tumour](#), nodule, cyst or neoplasm;
- remove a blood clot known as a haematoma;
- repair a leaking blood vessel known as an [aneurysm](#);
- remove an abnormal collection of blood vessels known as an [arterio-venous malformation](#) or [AVM](#);
- drain an infection or abscess;
- re-route circulation around a blocked blood vessel through techniques known as Microvascular Anastomosis or Extracranial-Intracranial (EC-IC) bypass;
- repair fractures of the skull that resulted from injury;
- remove pressure from a trigeminal nerve which is called a microvascular decompression; or
- remove pressure from the brainstem (Chiari decompression).

Mr D'Urso has recommended a craniotomy because he believes this procedure is the best method for treating your condition.

### Your Preadmission Testing Appointment

You may undergo blood tests, an electrocardiogram, a chest x-ray and perhaps [Computed Tomography \(CT\)](#), [Magnetic Resonance Imaging \(MRI\)](#) or other tests.

A physician or nurse practitioner or physician assistant will conduct a

comprehensive medical evaluation to assess the non-neurological aspects of your health. This caregiver will take a detailed medical history and conduct a thorough physical exam.

### **The Week Before Surgery**

You should stop taking any over-the-counter medications containing Aspirin or Ibuprofen or any other blood-thinning medications for one week prior to your surgery. Other medications you should not take 7-10 days prior to surgery are: Clopidogrel, Plavix, Warfarin. If you are on Warfarin, this will also need to be stopped about 5 days prior to surgery and a Prothrombin time checked on the morning of your surgery. Your medical doctor will advise you about the exact date of stopping the Warfarin in conjunction with your neurosurgeon. You may take Panadol for pain if needed.

### **Before Surgery**

An anesthetist will evaluate you prior to your surgery. This evaluation will include asking you questions about your general health, allergies, previous surgeries, and past reactions to different anesthetics and may be done over the phone or at the hospital depending upon your specific needs.

You will be asked not to eat or drink any food or water before your surgery. You may brush your teeth and rinse your mouth, but do not swallow the fluid. Ask your anaesthetist about taking your usual medications the morning of your surgery.

### **The Day Of Surgery**

**If you have films from another hospital or facility, please remember to bring them with you the day of surgery.**

The hospital will call you several days prior to your admission to tell you what time you should arrive. When you arrive at the hospital, you will register at the Patient Registration/Admission Office. You will be asked to sign a surgical consent form that specifies the operation that you will undergo and that has been described to you by your doctor. You will then be directed to the General Care Unit or pre-operative holding area.

Your family and friends may remain with you until you leave your room for surgery. Depending on the reason for surgery, the length of the operation is from four to six hours or possibly longer. Ask Mr. D'Urso the approximate length of your surgery.

If your surgery is scheduled for the afternoon, your nurse will inform you of the time it will take place. Your physician will try to prevent delays, but they can occur because of emergencies. If your surgery is delayed, your nurse will tell you when you can expect it to begin.

### **Preparing for Surgery**

Before leaving your room, you will be asked to disrobe, put on a hospital gown, and empty your bladder. For your safety, you will be asked to remove hairpins, nail polish, make-up, jewelry, dentures, partial plates, hearing aids, contact lenses and glasses. Please store dentures, glasses, contact lenses, and hearing aids in containers labeled with your name. You should send your jewelry, wallet, and other valuables home with your family for safekeeping.

### **Accommodations for your Family**

A surgical waiting area is available for your family to use while you are in surgery. During surgery, the operating room nurse will call the waiting area and provide your family with updates about your progress.

### **Entering the Operating Room**

A transporter will assist you onto a cart and take you to the hospital's specially equipped neurosurgical area. When you arrive, the operating room nurse, anaesthetist, and neurophysiology technician will talk with you and answer any questions you may have about the procedure.

### **Surgical Preparation**

An intravenous (IV) catheter will be placed in your hand or arm at this time. The catheter allows for fluids and medications to be given to you during surgery. You will be given medication via the catheter and you will fall asleep. After you are asleep, the anaesthetist will place a breathing tube in your throat to help you breathe during surgery.

After you are asleep, it may be necessary for the anaesthetist to insert another catheter into an artery in your wrist in order to measure your blood pressure more accurately. It may also be necessary for the anaesthetist to insert an IV catheter into your neck or upper chest area so that your blood pressure, fluid volume status or both can be measured accurately. Your heart rate and rhythm, breathing, blood pressure, and oxygen saturation will all be monitored closely by the anaesthetist. Another catheter called a Foley catheter, may be gently placed into your bladder in order to accurately measure your urinary output. These catheters are all temporary and will be taken out within a few days of surgery. In order to maintain adequate blood circulation in your legs during surgery, tight white stockings called "TED Hose" and compressive boots will be placed on your legs. You will wear these during the entire surgery and during your recovery period.

### **Undergoing Surgery**

Your body will be positioned according to the area of the brain that must be reached. A portion of your head may be shaved and washed with an antiseptic cleansing solution.

Mr. D'Urso will make an incision in your scalp over the predetermined location. He will then make a window or bone flap in the cranium. It is through this bone flap that Mr. D'Urso will enter the brain and perform your surgery.

Mr. D'Urso may use specialised instruments to perform the surgery. These instruments may include the Stealth Guidance System, surgical microscope, special magnification glasses, a surgical laser, and an ultrasonic tissue aspirator.

If you are undergoing surgery for a tumor, a portion of the tumor that is removed will be given to a pathologist, who will analyze the tissue immediately. Based on the initial analysis of this tissue and other findings, Mr. D'Urso will choose to biopsy or remove the tumor. The pathologist will continue to analyze the tumor tissue and provide a detailed report about it approximately two to three days after surgery.

When Mr. D'Urso has completed surgery, the brain covering membrane (dura) is stitched closed, and the bone is replaced and sutured into place. The operation is completed when the skin has been closed with either stitches or staples. The breathing tube, used to help you breathe during surgery, will be removed. Your throat may be dry and a little scratchy. Your physician may decide, based on your physical condition, to keep the breathing tube in place overnight.

### **Beginning your In-Hospital Recovery**

After your operation is completed you will be transported to the post-anesthesia care unit (PACU) where you will remain for two to four hours or you may go directly to the intensive care unit (ICU). The nurses will be frequently checking your heart rate and rhythm, blood pressure, temperature, and oxygenation. You will frequently be asked to move your arms, fingers, toes, and legs. A nurse will also check your pupils with a flashlight and will ask you questions such as "What is your name?" Mr. D'Urso will discuss your surgery with your family after you have arrived in the PACU or ICU. He will also send your referring or family physician a report on the operation.

### **Your Stay in the Intensive Care Unit (ICU)**

Your nurse will continue to closely monitor your vital signs, such as blood pressure, pulse and temperature and perform neurologic examinations every 1-2 hours. You may experience a mild headache after the surgery. If so, you will be given a mild analgesic. You may also feel some tightness or discomfort in the area of your incision. If so, please alert your nurse. In the ICU, pain medicine is not given on a schedule; nurses administer it when needed. If you are in pain, request medication from your nurse.

When you are awake in the ICU, you will notice that you are connected to a monitor. The monitor will continually display your vital signs and may beep occasionally. The monitor uses patches connected to your chest and various cables to monitor your vital signs; it will not cause any discomfort. You may notice sounds in addition to the beeping of the monitor. You may hear beeps, buzzes, and alarms from equipment used in the ICU. These sounds are all normal and should not be cause for alarm.

When you first arrive in the ICU, your eyes may seem a little blurry from the ointment that the anesthetist placed in your eyes to keep them moist during surgery.

Once your eyes are wiped you will be able to see clearly again. You may have some swelling that may increase for the first two days over your eyelids. You may also be thirsty, but you may not drink fluids for the first few hours after surgery due to the risk of choking or vomiting. Wet sponges can be obtained from the

nurse to make your mouth more comfortable. When you are fully alert you will be allowed to have ice chips and will progress to a clear liquid breakfast the day following surgery and a regular diet for lunch as tolerated.

You will have a turban-like dressing or soft adhesive dressing over your incision. You will also notice compressive boots and "TED Hose." Both of these items need to be worn at all times in order to prevent blood clots from forming in your legs. You will be reminded by your nurses to perform deep breathing and leg exercises every one or two hours. Your nurses will also help you turn from side to side in bed. Turning in bed is very important while you are inactive; it helps in preventing complications caused by bed rest such as pneumonia.

If needed, you will be re-evaluated by the physical, occupational, and speech therapists. These therapists will assess your flexibility, muscle strength, and sensation after surgery. They will also assess your speaking and thinking skills. The sooner therapy can start, the quicker the recovery.

### **Completing Your Hospital Stay**

You will remain in the ICU for one to two days following surgery. Your family may visit according to visiting hours. When you leave the ICU, you may be transferred to a General Care Unit or "Step-Down" Unit. The Step-down Unit is an intermediate care unit where the nurse can monitor your neurological and vital sign status a little less frequently than in the ICU. You may remain in the step-down unit for 1 to 2 days.

### **Planning for your Discharge**

The usual length of hospitalization is five days, but your length of stay may be different. Physical, occupational, and speech therapists, the psychologist, social worker and other members of the team will closely monitor your progress and will plan with you and your family for your discharge. If further therapies or treatments are recommended, arrangements will be made for them prior to your departure from the hospital.

Instructions about your incision, medications, activity restrictions and follow-up physician visits will be explained and written for you at the time of your discharge. Your physician, nurse, and therapists will discuss the following issues with you before you leave the hospital:

- when you will be able to return to work
- when you will be able to drive,
- what medicines you should take, and
- when you should return for a post-surgical check up.

They will also discuss with you any restrictions you should follow on your recreational, household, or sexual activity; and restrictions on your traveling, alcohol consumption, diet, and exercise.

### **Your At Home Recovery**

After you are discharged from the hospital, you will continue to see your physician periodically for continued evaluation of your progress. Your sutures or staples will be removed 7 to 10 days after surgery. You may have your sutures or staples removed closer to home, if preferred, by your family physician.

If you were not scheduled for the removal of your sutures or staples at the time of your discharge, call Mr. D'Urso's rooms and schedule an appointment when you return home.

The incision site should remain dry while the sutures or staples are still in place. You will be able to shower and wash your head with a mild shampoo 24 hours after the sutures or staples are removed. Your incision should be kept clean. Do not place ointments or powders on the incision unless prescribed by your physician. If any redness, drainage, swelling, or fever occurs, call your doctor.

Your next appointment will be scheduled for approximately one month after surgery. At that time you may undergo an MRI or CT scan to assess how you are healing and to have a post-operative baseline scan for comparison. You may also be evaluated by physical, occupational, and speech therapists to assess your progress.

You may feel fatigued for a period of 2 to 6 weeks after surgery. This is a normal part of healing and is expected. Remember to rest when you feel tired and not to overextend yourself. Pay attention to your body and avoid over-exertion. You may want to consider having your family or friends to assist you with child care, home maintenance and meals.

A handwritten signature in black ink, appearing to read 'P. D'Urso', with a stylized flourish above the name.

Paul D'Urso  
November 2004