

## Patient Discharge Instructions: Craniotomy for Aneurysm Clipping

### **Surgical Technique**

A craniotomy is a neurosurgical procedure that temporarily opens the scalp and skull to give access to the brain, and the coverings overlying the brain. An aneurysm develops when the wall of a blood vessel weakens, which causes part of the vessel to balloon outwards. Once the aneurysm reaches a certain size, it has a high chance of bursting. It can leak blood and cause bleeding along the surface of the brain. One treatment option is to place a clip around the neck of the aneurysm. Your surgeon may also place a clip around the blood vessels that supply the aneurysm. This clip cuts off the blood supply to the aneurysm, allowing it to clot and shrink.

The size and location of the incision depend on the location of the aneurysm. In some cases, only a small incision is needed to place the clip. In other cases, the surgeon must remove a portion of the skull over the aneurysm. An opening in your skull is created to expose the aneurysm. We will use a microscope and microsurgical techniques to expose the blood vessel with the aneurysm and the aneurysm itself. Once it is adequately exposed, we then place a clip to effectively exclude the aneurysm from the pressurized blood in the artery. Once the aneurysm is clipped, we try to confirm that blood is still flowing normally in the vessels around the aneurysm. We then close the covering of the brain and, in most cases, replace the bone flap affix it with metal plates and screws for secure healing.

Aneurysm clipping surgery carries the risk of seizures or vasospasm, a narrowing of a blood vessel in the brain that can occur days or weeks after surgery. A major risk of clipping surgery, especially when performed on a ruptured aneurysm, is re-bleeding from the aneurysm site. After clipping surgery, patients may also experience headaches and swelling in the face and around the incision site. As with any surgery, infection is also a risk.

Please visit [www.olympiadoctors.com](http://www.olympiadoctors.com) for more information.

### **Before Surgery**

Seven days prior to surgery, please do not take any anti-inflammatory NSAID medications (Celebrex, Ibuprofen, Aleve, Naprosyn, Advil, etc.) as this could prolong your bleeding time in surgery.

If you are taking any blood-thinning medications (Plavix, Coumadin, etc.), please talk to the prescribing doctor about when you can safely stop that medication before surgery to reduce your risk of bleeding. Usually, these medications are stopped anywhere from 3 - 7 days before surgery.

Be aware that nicotine users have a significantly higher risk of surgical wound complications, such as healing and infection, as well as increased surgical bleeding. Nicotine disrupts many normal body functions, including nutrients and blood supplies. It is advised that any nicotine use be discontinued at least 4 weeks before surgery.

### **Day of Surgery**

Do not eat or drink anything after midnight the day before surgery. This also means nothing to drink the morning of surgery, except you may take your prescribed medications (e.g., blood pressure medications) with a sip of water if needed. Consult your surgeon or primary care doctor regarding insulin if you take it. Some hospitals are now allowing clear fluids until a few hours before surgery – please follow the directions of the individual hospital protocols (if you do not follow the individual hospital guidelines this may result in your surgery being canceled).

Be early or on-time to check-in on the day of surgery so that surgery is not delayed or canceled.

Bring your hospital surgical folder and any related paperwork (consents, etc.) to surgery.

Bring a copy of all relevant imaging studies (CT, MRI, or x-rays) to surgery, even if your surgeon has already seen them in the clinic or may have a copy. Surgery may be canceled if your surgeon cannot view your radiographic images on the day of surgery.

### **After Surgery**

As with any major surgery, you must allow time for the body to recover. It may take a week, month, or more before you recover your usual energy level.

You will probably feel very tired for several weeks after this surgery. You may also have headaches or problems concentrating for 1 to 2 weeks.

The incisions may be sore for about 5 days after surgery. You may also have numbness and shooting pains near your wound or swelling and bruising around your eyes. As your wound starts to heal, it may begin to itch. Medicines and ice packs can help with headaches, pain, swelling, and itching.

Try not to lie flat when you rest or sleep but keep your head elevated.

You will be able to walk through airport securities without setting off any alarms.

**MRI compatibility:** Most clips placed after 2000 are MRI-safe. If you expect to undergo an MRI at any time after having aneurysm clipping surgery, check with your surgeon to be sure that the clip used in your procedure is MRI-safe.

### **Activity Level**

Walking is the best exercise after spine surgery because it strengthens the muscles, increases endurance, relieves stress, improves blood flow, keeps the bowels moving, and prevents fluid from building up in the lungs.

Immediately after surgery, patients are encouraged to walk, starting with short and frequent walks and gradually increasing distances. The sooner patients can be active, the sooner he/she may be able to resume their routine.

You may discontinue wearing stockings when ambulating without difficulty.

Do not lift more than 5 -10 pounds for several weeks after surgery. This restriction may be increased to approximately 20 pounds after 4 - 6 weeks. Your surgical team will help guide you with your specific lifting restrictions after 6 weeks.

If you have had a seizure or have visual deficits, you may not drive until cleared by a neurologist.

Avoid activities with the potential for a fall or physical contact (high energy or high impact activities) until cleared by your surgeon.  
Drain

If you are discharged with a drain, you will need to record the daily drain output. You will be instructed prior to hospital discharge on drain care, including how to clean and empty it. Almost all drains are removed within 7 days after surgery, but individual cases vary. If you have a drain, please NOTIFY your surgeon's team (303-938-5700) of the drain output EVERY OTHER business day, unless instructed otherwise.

### **Bathing**

You should wait to shower on the 3rd day after surgery.

Do not color your hair for 4 weeks after your surgery.

Try to limit showers to no more than 5 - 7 minutes.

Do not scrub the incision directly. Instead, let the clean water run over the incision and then pat the incision dry.

Do not soak in a bathtub, hot tub, or pool until you are cleared to do so by your surgeon

### **Diet**

Narcotic pain medications can be very constipating. Be proactive with stool softeners and laxatives.

A high fiber diet is recommended.

Avoid straining on the toilet. Keep stools soft with a high fiber diet and/or use of prune juice, Metamucil, Fiber One cereal, etc.

Drink plenty of fluids, including Gatorade, or any kind of juice to stay adequately hydrated, prevent blood clots, and other problems.

## **Pain Medications**

Do not take NSAID medications (Ibuprofen, Naprosyn, etc.) or Cox-2 inhibitors (i.e., Celebrex) for 1 week following surgery.

Tylenol can be taken as needed.

Stronger pain medications will be prescribed if Tylenol is inadequate. Avoid letting the pain get out of control before taking medication, or it will be less effective.

ONI providers will NOT refill pain medications after hours: 5 pm on weekdays or anytime on the week- end.

It is crucial to anticipate the need for medication refills so that they can be refilled with an adequate notification, which may take anywhere from 24 - 48 hours.

## **Follow-up**

Please call Olympia Neurological Institute (ONI) office (833-940-3733) and schedule your routine post-surgical visit for 7-14 days after surgery (if it is not already scheduled). Other follow-ups will be scheduled as needed.

## **When to Call Your Doctor**

Please call your ONI physician's office immediately or go to the emergency room if you have:

Ongoing nausea and/or vomiting

Severe or worsening headaches or neck stiffness

Confusion or changes in behavior

Increased drowsiness

Progressive difficulty seeing or speaking

Clear fluid leakage from the incision

Fever greater than 101.4F

Seizures

Any new neurologic sensory or motor deficits (weakness, numbness)

Leg swelling with calf tenderness

Inability to urinate or burning during urination

## **Other FAQs**

***How long will I be in the hospital?*** For unruptured aneurysms, only a one- or two-night stay may be sufficient. For aneurysms that have ruptured, a much longer time is required. These patients stay in the ICU for 14 -21 days and are monitored for signs of vasospasm, which is the narrowing of an artery that may occur 3 - 14 days following the rupture of an aneurysm. Following the time in the ICU, a few days on the regular hospital floor may be necessary before discharge.

***How much time off from work?*** Typically, 4 – 8 weeks is sufficient. However, patients should ask their surgeon for an individual recommendation. The return to physically demanding jobs will be at the discretion of your surgeon.

***When can I resume driving?*** Driving is acceptable, depending on the use of pain medication. We strongly advise against driving while taking narcotic pain medications following the surgery. If you have had a seizure or have visual deficits, you may not drive until cleared by a neurologist.

***What about pain and other medications?*** We will prescribe pain medications and other perioperative medications on the day of surgery or prior to your discharge from the facility or hospital. Anti-seizure medications must be filled on the day of discharge. ***What kind of follow-up is required?*** Patients return to our office for routine follow up appointments at intervals that are determined on a case-by-case basis. We typically see patients back in the office within a couple of weeks following surgery and then increase this to several months, followed by an annual exam. Your individual needs will be determined by your surgeon at each follow-up visit. We like to follow patients with aneurysms for at least 4-5 years after surgery.

***Do I need antibiotic prophylaxis for dental procedures?***

We recommend avoiding routine dental procedures for 3 months following surgeries in which hardware is placed. This includes any dental work. You should brush your teeth as you normally do. If you must have a dental procedure within 3 months, then it would be advisable to use antibiotic prophylaxis. We generally do not make recommendations about the choice of antibiotic when using it for prophylaxis, and we usually defer this to your primary care physician or your dentist. After 3 months, prophylactic antibiotics are not recommended except for specific individuals with extenuating circumstances, such as patients who are at risk for infective endocarditis.