

## **Patient Instructions: Craniotomy for Aneurysm**

### **Surgical Technique**

A craniotomy is a neurosurgical procedure to temporarily open the scalp and skull to give access to the brain and the coverings overlying the brain. We will work through this opening to expose your aneurysm and place a clip across the base of the aneurysm, which should protect you from the aneurysm. In some cases on the morning of surgery, you will be scheduled for a 'stereotactic' imaging study (either an MRI or CAT scan) at the hospital. You will have several small round stickers applied to your scalp to assist us during surgery with our stereotactic navigation system, similar to ultra-accurate GPS for the brain. It is important not to touch, pick or remove the round stickers once they have been applied to your scalp. Occasionally, a small bit of hair will need to be shaved to facilitate sticking these to your scalp. During surgery, we shave as little hair as possible, and fashion an incision that is as small as possible, but appropriately sized to work through. Many aneurysms are treated without this initial scan and there is no reason to be concerned if your surgeon has not requested it.

After performing a craniotomy, 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 across the base of the aneurysm to effectively exclude the aneurysm from the pressurized blood in the artery. An aneurysm that is successfully clipped will no longer be at risk of rupturing and this protects the patient from this possibility. Once the aneurysm is clipped we try to confirm that blood is still flowing normally in the vessels around the aneurysm and we then close the covering of the brain and replace the bone flap in most cases. The skin is usually closed with staples and following surgery you will go to the ICU for careful monitoring.

### **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.
- Do not eat or drink anything after midnight the day before surgery. This means nothing to drink the morning of surgery except you may take your normal medication with a sip of water if needed. This includes your blood pressure medicine, which in general should be taken. Consult your surgeon or primary care doctor regarding insulin if you take it.
- Do not be late to check in on the day of surgery or it may be cancelled.
- Bring your preoperative folder with you to the surgery and have it when you check in.
- If you have a copy of your MRI or x-rays, please bring these with you to the surgery even if your surgeon has seen them already or might even have a copy. Surgery may be cancelled if we do not have your radiographic images.

### **After Surgery**

For most patients with aneurysms they spend several days in the ICU following surgery. For unruptured aneurysms many times only a single night stay is required. For aneurysms that have ruptured, it may require many days and even weeks to recover and the ICU is usually where patients will receive care. Following their time in the ICU a few days on the regular hospital floor may be necessary before discharge.

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 should start gradually increasing the level of physical activities starting with short and frequent walks. You may discontinue wearing stockings when ambulating without difficulty.

### **Activity Level**

- Do not lift more than 5-10 pounds for the first few weeks after surgery. This may be increased to approximately 20 pounds after 4-6 weeks.
- You may drive after approximately 2-4 weeks and as soon as it is comfortable to do so and when no longer under the influence of pain medications. 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 surgeon.

### **Bandage**

- Bandage (if present) may be removed the second day following surgery.
- If anything other than occasional spotting is noted to be coming from the wound (such as clear spinal fluid or pus), your surgeon should be notified.
- The office should be notified if sustained fevers of greater than 101.5 F are observed.

Drain

- Many times a superficial drain is left in place after surgery. It is usually removed 1-3 days after surgery.

### **Bathing**

- You may shower on third day following surgery, but do not allow water to touch the scalp for 1 week.
  - Quick showers are recommended; try to limit to no more than 5-7 minutes.
  - After 1 week water can touch the scalp, but do not scrub the wound. Let water run over incision, then pat dry with clean towel.
  - No soaking in a bathtub, hot tub or pool for at least 2 weeks.
  - 1-2 weeks after the staples are removed you can shampoo the hair, but be gentle with the incision.
- Diet (Narcotic pain medications are very constipating, be proactive with stool softeners and laxatives)
- A high fiber diet is recommended.
  - Do not strain on the toilet. Keep stools soft with a high fiber diet and/or use of prune juice, Metamucil, Fiber One cereal etc.

### **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.
- Narcotic pain medications are prescribed if Tylenol is inadequate.
- You should not let pain get out of control before taking medication or it will be less effective.
- We will not refill pain medications over the weekend or after hours. Anticipate the need for medication refills.

### **Follow-up**

- Please call Boulder Neurosurgical Associates' (BNA) office (303-938-5700) and schedule your routine postsurgical visit for 7-14 days after discharge from the hospital. Other follow-ups will be scheduled as needed.
- We generally follow patient for at least 3-5 years after surgery, often longer.

### **When to Call Your Doctor**

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

- Ongoing nausea and/or vomiting
- Severe or worsening headaches
- Progressive difficulty seeing or speaking
- Clear fluid leakage from the incision - Fever greater than 101F
- Seizures
- Any new neurologic sensory or motor deficits (weakness, numbness)
- Leg swelling with calf tenderness
- Burning during urination

### **Other FAQs**

***How long will I be in the hospital?*** This varies depending on your surgery and whether your aneurysm was ruptured or unruptured. Some patients go home in 2-3 days, others require a much longer hospital stay.

***How much time off from work?*** This varies depending on the surgery, your job and you as an individual; but in most cases 4-8 weeks is sufficient.

***When can I resume driving?*** Driving is acceptable about 4 weeks after surgery depending on pain medication use. We generally recommend that you refrain from driving while taking 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 peri-operative medications on the day of surgery or prior to your discharge from the facility or hospital. Steroids and/or antiseizure medications must be filled on the day of discharge.

***What about Physical Therapy?*** We usually recommend PT and will refer you to therapy at your first postoperative visit. Please refrain from high energy/high impact activities such as running or horseback riding. A good rule of thumb is 'if it hurts don't do it'.

***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 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 prophylaxis and simple procedures for 3 months following a surgery. 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 choice of antibiotic when using it for prophylaxis, but we would be happy to discuss this with your primary doctor. Most of the time they can make this decision without our guidance, but please have them contact us if there are any concerns.