

Patient Instructions: Craniotomy for Blood, Tumor or Other Brain Lesions

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. Craniotomies are classically performed to remove blood clots (or blood by-products), tumor, infection, or a yet to be determined lesion within the brain or the coverings overlying the brain.

The day before or 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. We then temporarily remove a small amount of skull, which is later replaced with small permanent metallic plates and screws.

Under a microscope and using microsurgical techniques, we carefully remove or resect the abnormality as completely as possible. After the bone is replaced and all of the layers are sewn closed, we use staples to close the skin. Although preliminary information regarding the pathology (diagnosis) is given, if possible, at the time of surgery, a final diagnosis can only be made when the final pathology is done, often up to one week after surgery, and almost always after you are home. Please visit www.bnasurg.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.
- 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

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 two 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.
- Steri-strips, if present, should be left intact on the incision until returning to clinic or for 14 days following surgery.

Drain

- If you are discharged with a drain, you will need to track the daily output of the drain. You will be instructed prior to hospital discharge about how to care for the drain and empty it. Almost all drains are removed within 7 days after surgery, but individual cases vary.

Bathing

- You may shower on third day following surgery. Until then, the incision should be kept clean and dry.
- Quick showers are recommended; try to limit to no more than 5-7 minutes.
- 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.

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 post-surgical visit for 7-14 days after surgery. Other follow-ups will be scheduled as needed. We generally follow patient for at least 2 years after surgery, often longer. For patients with tumors, life-long follow-up is required. It is the patient's responsibility to ensure that this is scheduled on a regular basis, often annually.
- It is your responsibility to ensure that your final pathology is discussed at a follow-up visit.
- If the lesion is suspected (or shown to be a tumor), other treatment modalities, including radiation and/or chemotherapy, may be required depending on the diagnosis and the advice of your medical team.

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. Often, patients spend the first night in the ICU for close observation, although this is not always the case. Patients often go home the second or third day after surgery, unless unexpected medical or surgical complications arise. We have found that patients generally prefer the comforts and support that home has to offer. The sooner you go home, the lower your risk of complications such as hospital-acquired wound infections, blood clots and urinary tract infections.

How much time off from work? This varies depending on the surgery, your job and you as an individual; but usually 2-3 weeks is sufficient. For jobs requiring lifting and physical exertion, up to a month may be required.

When can I resume driving? Driving is acceptable about 2 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 anti-seizure 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.