OLYMPIA
NEUROLOGICAL INSTITUTE
ROUND ROCK - AUSTIN - TULSA - WAGONER - MEEKER

Olympia Neurological Institute
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Patient Discharge Instructions:
Craniotomy for Tumor Removal/Resection

Surgical Technique
A craniotomy is a neurosurgical procedure that involves making an incision in the patient's scalp and then creating an opening in the skull. This opening allows access to the intracranial space where the tumor is located. Tumor resection is often guided by computer-aided stereotactic techniques. These techniques make use of a computer system that incorporates information from diagnostic tests such as MRI and CT scans to aid in intracranial navigation. The use of stereotactic navigation allows precise placement of the scalp incision and bone opening to provide optimal access to a tumor. This precision permits the use of minimally invasive surgical techniques, and as surgical openings have become smaller, associated morbidity has declined in brain tumor procedures. Another advantage of stereotactic navigation is that it provides the ability to distinguish between tumor and healthy tissues and identify the precise location of the abnormal tissue.

The day before or the morning of surgery, you will be scheduled for a 'stereotactic' imaging study (either an MRI or CT scan) at the hospital where your surgery will be performed. You may have several small round stickers applied to your scalp to assist your surgeon in surgery using a stereotactic navigation system similar to ultra-accurate GPS for the brain. It is important not to touch, pick or remove these stickers once they have been applied to your scalp. Occasionally, a small amount of hair is shaved to help keep the stickers affixed to your scalp.

During surgery, a small amount of bone is removed, which is later replaced with permanent metallic plates and screws. Under a microscope and using microsurgical techniques, we carefully remove or resect the tumor as completely as possible. After the bone is replaced, all layers of the scalp are sewn closed. At the time of surgery, preliminary information regarding the pathology (diagnosis) is given if possible, but a final diagnosis can only be made when the final pathology is done, often up to one or 2 weeks after surgery, and almost always after you are home.
Please visit 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 increase your bleeding risk during 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.
- Increase your strength and improve your recovery by walking at least 30 minutes a day before your procedure. Exercising before surgery will help you recover after your 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. Medications for nausea and vomiting that are very common after this type of surgery, can be prescribed. Please let your doctor know if this is a problem.
- It may take a week, month, or more before you recover your usual energy level.
- You may be discharged from the hospital on a steroid medication (Dexamethasone) to decrease brain swelling. Some of the possible side effects of steroid medications include dizziness, appetite changes, emotional changes, heartburn, constipation, insomnia, and fluid retention. Steroids help ease the aches and pains that you feel on a day to day basis, so when you are tapering off of the steroids, you might feel these symptoms return. You may also feel tired and emotionally down for a few days. Just rest and know that you will feel better in time. We will gradually decrease your steroid dose and frequency. Please do not stop this medication on your own.
- Urgent side effects to report: Itching or hives, swelling in your face or hands, swelling or tingling in your mouth or throat, chest tightness, trouble breathing.
- Seizures: You may experience seizures after your surgery. Even if you did not experience seizures before surgery, you might be placed on anti-seizure medication for 2 weeks to 1 month afterward. If you have a seizure before or after surgery, you may be on one or more of these medications for longer.
- Blood thinners: If you were on blood thinners (Aspirin, Heparin, Lovenox, Coumadin, Pradaxa, Eliquis, Xarelto, Plavix, etc.), you will need to contact your primary care provider for when to resume these medications

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.

Bandage

- If a bandage is present, it may be removed the second day following surgery.
- Depending on your surgeon's preference, you will have either Steri-Strips, staples, a liquid skin adhesive (Dermabond), or external sutures over your incision.
- Scalp sutures may or may not need to be removed (some can dissolve over time). Ask your if your sutures require removal.
- If anything other than occasional spotting is noted to be coming from the wound (such as clear spinal fluid or pus), notify your surgeon.
- Steri-Strips should be left intact until returning to the clinic for your postoperative follow-up visit 7 - 14 days following surgery.
- Liquid skin adhesive (Dermabond) should be left in place and will eventually fall off naturally over the next 1 - 2 weeks.
- Do not use topical ointments on your incision unless approved or directed to do so explicitly by your surgeon.

Bathing

- We recommend waiting to shower until the third day after surgery.
- We recommend you wash your hair daily with a soft shampoo such as baby shampoo and avoid hair products and conditioners until your wound has healed.
- 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 7-21 days after surgery (if it is not already scheduled). Other follow-ups will be scheduled as needed.
- Your final pathology will be 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. You will need to make an appointment with your oncologist.

When to Call Your Doctor

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

- Itching or hives
- Swelling in your face or hands
- Swelling or tingling in your mouth or throat
- Chest tightness
- Trouble breathing
- Ongoing nausea and/or vomiting
- Severe or worsening headaches or neck stiffness
- Confusion or changes in behavior
- Inability to urinate or burning during urination
- 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

Other FAQs

How long will I be in the hospital? This varies depending on the type of surgery performed. Some patients may be in the ICU for anywhere from one to several days in the ICU for close observation. This may also be dependent upon whether and how long you have a cranial drain in place. We have found that patients generally prefer the comforts and support that home offers. 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? The amount of time needed to recover prior to returning to work varies and depends on the surgery, your job, and you as an individual. Typically, 2 - 3 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 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 interval with subsequent visits. The follow-up schedule will be determined by your surgeon at each follow-up visit.