

# Craniotomy for Brain Tumor Resection

## *University Neurosurgery Information Sheet*

### **General Indications for the procedure:**

A craniotomy is typically indicated to get to the tumor so that it can be removed, reduced in size, and/or obtain a small piece so that a biopsy can be made for diagnosis.

### **Description of the procedure:**

A craniotomy is a neurosurgical procedure by which a bone window is created to gain access to the inside of the skull. Once the patient has been put to sleep by the anesthesiologist, the surgeon shaves and then marks on the scalp where the incision will go. After the scalp is opened, the bone is opened using special drills. Then the tumor/lesion is accessed in order to perform the surgery. The bone is then usually reattached to the skull at the end of surgery using either sutures or miniature plates.

### **Risks of the procedure:**

The risks of surgery include, but are not limited to: personality changes, inability to smell out of one or both nostrils, complete or partial blindness, injury to the nerves that control eye movements resulting in double vision and/or a droopy eye lid, facial numbness, stroke from involvement of arteries and or veins near the area of surgery with possible inability to move one half of the body, injury or stroke of speech areas, injury to the pituitary gland with possible need for replacement of hormones for life (includes hormone that prevents excessive urination), brain swelling, leakage of brain fluid, hydrocephalus (the inability to circulate brain fluid), incomplete removal, re-growth of the tumor, need for radiation therapy of area of removal, need for re-operation to drain a blood clot after surgery, infection, seizures, breakdown of incision, atrophy of the temple muscle, pain, coma, and death. If the craniotomy involves the middle fossa (mid portion of skull) and/or the posterior fossa (the part where the brain meets the spinal cord and the brain stem), the risks also include: Facial paralysis from involvement of facial nerve, deafness, vertigo, difficulty walking due to cerebellar manipulation, difficulty swallowing with unlikely need for a tracheotomy and feeding tube, difficulty moving the tongue, instability of the skull on the first cervical vertebra, and pain in the posterior aspect of the head.

### **Procedure alternatives, if any:**

Some tumors can be treated without a craniotomy with radiation and/or chemotherapy. The neurosurgeon can discuss with the patient if the particular tumor in question could be treated as such. Also, sometimes no treatment is urgently needed and follow up studies (i.e. CT, MRI) can be done instead of surgery.

### **Probable consequences of refusing procedure:**

Without a tissue diagnosis, future treatment can be delayed since the doctors will not know for sure what type of tumor is being treated. Also, if the tumor continues to grow, this can adversely affect the neurological outcome. Typically, the larger a tumor gets, the more difficult it is to take it out.

**Person(s) performing the procedure:**

The surgical team for this procedure is large. This involves, but is not limited to, the attending surgeons, resident surgeons, surgical nurses, physician assistants, surgical technologists and anesthesiologists. Everyone involved will be performing important tasks related to the surgery in accordance with the hospital policies, and based on their skill set and under the supervision of the responsible practitioners.