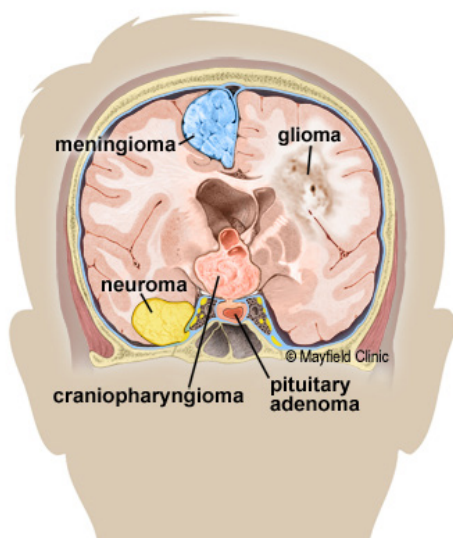


MINIMALLY INVASIVE TUMOR RESECTION

CANDIDATES FOR A MINIMALLY INVASIVE TUMOR RESECTION

A brain tumor is an irregular growth of cells that may have originated from the brain tissue (primary) or may have spread from another area of the body affected by cancer (metastasis). Brain tumors can either be benign, meaning the tumor is not cancerous, or may be malignant, meaning the tumor does carry cancerous cells. Both forms can be potentially life-threatening depending on placement and rate of growth. Many brain tumors can be successfully resected.



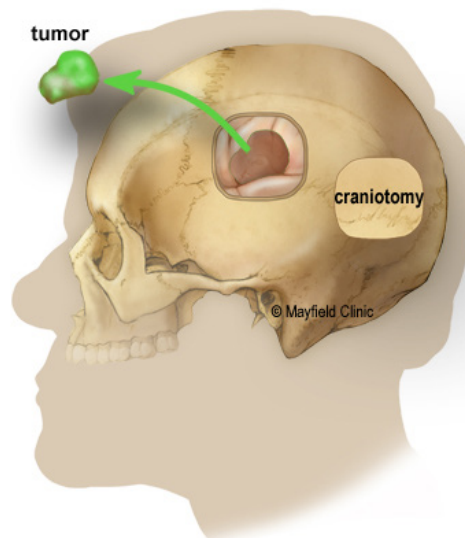
The World Health Organization (WHO) took the more than 120 types of brain tumors into consideration when developing a classification and grading system designed to streamline brain tumor communications, treatments and potential outcomes. During a biopsy, the cell type and grade are identified to classify the tumor. Depending on the cell type, grade, size and location of the tumor, a Minimally Invasive Tumor Resection may be the recommended course of treatment and will likely occur in conjunction with various other

treatments, including radiation therapy and chemotherapy.

The neurosurgeon will also take into account the patient's age and overall health. Surgery may be recommended if observation of the tumor reveals rapid growth, if symptoms worsen or if medications have become ineffective. The goal of surgery is to resect as much of the tumor as possible without causing major injury to the brain and will help to relieve pressure on the skull.

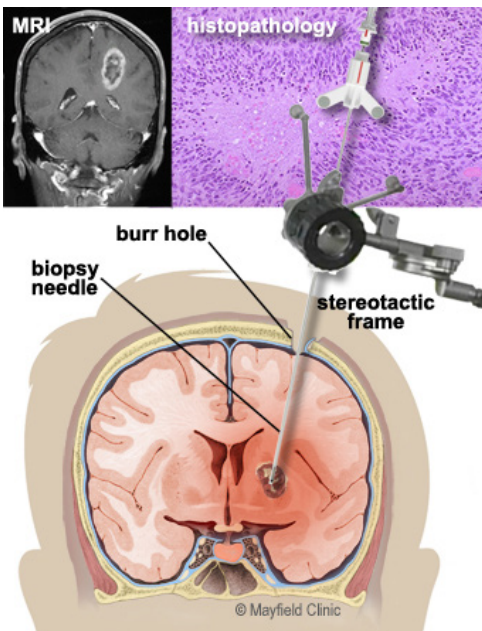
WHAT IS A MINIMALLY INVASIVE TUMOR RESECTION?

In cases where a Minimally Invasive Tumor Resection is ideal, the goal is to fully remove the tumor. The tumor, along with a small amount of healthy tissue surrounding it, is completely removed when possible. The procedure is performed through a "keyhole" incision utilizing robotic navigation assistance for a minimally invasive approach.



The neurosurgeon will begin by creating a small incision in the scalp to access the skull. A craniotomy is then performed to remove a portion of the skull and gain access to the tumor. Guided by imaging technologies to verify placement, the robotic navigation system assists in accessing the tumor, mapping its borders and determining how much of the tumor can be resected. Ideally, if the entire edge of the tumor can be resected, a margin of healthy tissue surrounding the tumor is also resected to confirm its removal and prevent regrowth.

Sometimes, only part of the tumor can be resected if it is located in a critical area of the brain and injury to the brain would be unavoidable. Removal of a portion of the tumor can help to relieve pressure and symptoms, and surgery helps to refine the diagnosis and map the affected areas. If the entire tumor could not be resected through surgery, radiation therapy and chemotherapy may be able to treat the remaining cells.



RESULTS OF A MINIMALLY INVASIVE TUMOR RESECTION PROCEDURE

The results of a Minimally Invasive Tumor Resection will vary from patient to patient. A team of doctors is generally involved in the medical care of a patient suffering from a tumor and may recommend home health care during recovery. Changes in mental status may be evaluated and treated accordingly by professionals. Canes and walkers may be recommended for patients who struggle with walking. Driving may be restricted for patients taking anti-seizure medication. Physical therapy, occupational therapy and speech therapy may also be recommended during recovery.

Rehabilitation from the treatment of a brain tumor may take some time, as movement, speech, vision, critical thinking and cognitive abilities may have been affected. These functions may be improved or corrected over time.

WHAT ARE THE RISKS OF A MINIMALLY INVASIVE TUMOR RESECTION?

The primary risk of a brain tumor is recurrence. Depending on the type of tumor, grade of severity, size and location, tumors will respond differently to surgery and other treatments. Ideally, the tumor will remain in remission, where the tumor cells cease to grow and multiply. A recurrent tumor may grow back after being destroyed through treatments, or a new tumor may grow in its place.

Periods of remission will also vary. Benign tumors are less likely to recur than malignant tumors. Consistent, life-long monitoring is typically recommended for patients who have suffered a brain tumor. Follow-up MRI or CT scans may be performed every three to six months or annually following a Minimally Invasive Tumor Resection.

PRE AND POST-PROCEDURE INSTRUCTIONS

Pre-Procedure:

1. You will need to complete a medical clearance and/or lab work prior to surgery. Specific instructions will be given to you by our scheduling coordinator. You should get your lab work done PRIOR to your medical clearance appointment so your PCP can review the results during the appointment.
2. You must discontinue the following medication seven (7) days prior to surgery: Aspirin, Aspirin related products, NSAIDS such as Advil, Ibuprofen, Aleve, Feldene, Nuprin, Motrin, Celebrex, Darvon, Ecotrin, Endodan, Excedrin, Florinal, Norgesic, Orphengesic, Percodan, Pravigard, and Soma. These medications may be resumed as soon as possible when deemed safe by your surgeon.
3. YOU MUST discontinue ALL blood thinners such as: Plavix (Clopidogrel), Coumadin (Warfarin), Eliquis, Pradaxa, Brillinta, Fish Oil, Aggrenox, Vitamin K, Vitamin E, Vitamin B6 7 day prior to surgery. These medications may be resumed as soon as possible when deemed safe by your surgeon.
4. FOR WOMEN ONLY: Hold Estrogens (Cenestin, Estratest, Estropipate, Menest, Ortho-Est, Premarin, Premphase, Prempro etc.) on the day of surgery and resume when instructed by your physician.
5. Hold ALL herbal supplements including garlic, ginseng, and St. John's Wart 7 days before surgery.
6. Please discontinue any and all diet pills two (2) weeks prior to your surgical procedure.
7. DO NOT EAT OR DRINK ANYTHING AFTER MIDNIGHT THE DAY BEFORE YOUR SURGERY, AND NOTHING ON THE MORNING OF YOUR SURGERY, UNLESS OTHERWISE ADVISED BY YOUR PHYSICIAN. You may take essential medications, such as blood pressure medications with JUST a sip of water.

8. Please arrive at the surgery center about 1-2 hours prior to your anticipated start time. Typically, the surgery center will provide you with instructions on when to arrive and specific directions (1-2 days beforehand) on when to get there and what to bring. However, it is VERY important that you bring your most recent imaging with you (CT scan/MRI disk).

9. We highly encourage bringing a friend or a family member to the surgery center with you, so that we can explain the post-operative rules and instructions.

10. After your procedure, you will recover in the PACU where nursing staff will provide you with post-operative care and inform you of how the procedure went.

11. If you are prescribed opiate pain medication by another physician (such as pain management physician), MAKE SURE you see them prior to surgery so you are covered for post-surgical pain. Pharmacies will not fill prescriptions from another provider. If you do not take opiates at home, we will prescribe you with a 7-day course to cover your post operative pain.

12. After surgery, you will most likely require physical therapy. This has been proven to lead to optimal outcomes. If you have a preference of a physical therapist, please let your provider know prior to or during your post-operative appointment.

Post Procedure:

1. Refrain from strenuous activities and follow post-operative instructions.

2. Pain can increase in your treatment areas 2-5 days after your procedure. It may take up to 14 days for symptoms to improve. Symptoms may fluctuate during the healing process, which occurs over 4-8 weeks. You likely will not feel fully back to "normal" for about 3 months.

3. You may have some difficulty swallowing and a sore throat for several days after your procedure. This is very common and will typically go away on its own. If it does not go away or you have difficulty with breathing please, call the number provided below.

4. You should apply ice around places of discomfort for 20 minutes on and 20 minutes off. Please place a barrier between your skin and the ice. Heat is okay to apply to your back or neck muscles, just not over the incision site.

5. You may experience a low-grade fever after treatment. Call if your temperature is above 100.4.

6. No anti-inflammatory medication (Celebrex, Advil, Mobic, Motrin, Aleve) should be used for 10 days after surgery.

7. Light exercise or physical therapy is okay to start 2 weeks after treatment.

8. Pain medication prescriptions may say to take 2 tablets every 6 hours. If your instructions say this, JUST TAKE ONE tablet every 4-6 hours as needed for pain. WE DO NOT REFILL NARCOTIC PAIN MEDICATIONS AFTER SURGERY. If you continue to have pain, you will need to see a pain management doctor for narcotics.

9. If you were prescribed a brace, you must wear it when out of bed. If you are sleeping, sitting down, relaxing or eating, you may remove your brace. You will be in your brace between 4-6 weeks, depending on the type of surgery you had. If you had a cervical disc arthroplasty “replacement,” you will only require a soft collar for two weeks.

10. Do not drive until you can stomp your feet on the ground and do not feel pain.

11. Wound care: You will have stitches buried underneath your skin. They will dissolve on their own. On top of the wound, you will have skin glue and steri strips (which look like little pieces of white tape).

PLEASE INFORM PROVIDER PRIOR IF YOU HAVE ANY ALLERGIES TO SKIN GLUE OR ADHESIVE PRODUCTS. Do NOT remove or peel off steri-strips, these will fall off on their own. On top of the steri-strips, you will have gauze and tape. The gauze and tape is what you will be able to remove in 3 days. Do not wet the dressing at all in those 3 days. On day 3, you may remove the top layer of your dressing in the morning and shower as you normally would. DO NOT SUBMERGE wound in water for 3 weeks (bath tub, jacuzzi, beach, etc.).

12. Besides narcotic medication for pain, you may use Tylenol (acetaminophen) to optimize pain control. You may take up to 3,000 mg per day, unless contraindicated due to allergy or liver issues. Make note that some narcotics are mixed with Tylenol, (for example, Percocet has 325 mg of Tylenol per pill) so dose accordingly.

13. You may walk as long as you are stable. We do want you out of bed as much as possible unless otherwise instructed. NO BENDING, TWISTING, OR LIFTING OVER 10 LBS FOR 4 WEEKS.

14. You will need to follow up in the clinic for a post-operative evaluation in 4 weeks. Depending on your procedure, you may be required to have an X-ray done prior to the appointment. PLEASE BRING THE CD OF YOUR IMAGES. Your X-ray script will be given to you the day of your surgery. If you do not receive it or lose it, please call for a new script.

15. You may have a drain after surgery. Do not be alarmed. The reason we place these drains is because you may have been a little “oozy” after the procedure. We place them so the extra blood and fluid can drain out of your wound easily. They are typically removed the next day by your home healthcare nurse. If you do not have home healthcare set up, call the office for an appointment to remove the drain. For questions regarding surgical scheduling, please call Chris (Scheduling Coordinator) at 727-605-1770 (EXT 1003). For any post-operative questions or concerns, please call our office at 727-605-1770. Please note that you may be sent to



voicemail. We will return your call as soon as possible. If it is an emergency, please call 911. If you are calling after hours, please leave a voicemail in the general inbox and it will be forwarded to the medical team.

O: 727.605.1770

F: 727.605.1080

scheduling@premierneurosurgery.com

