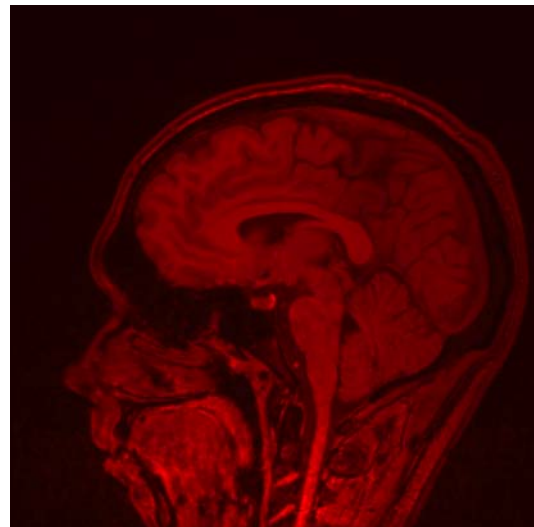
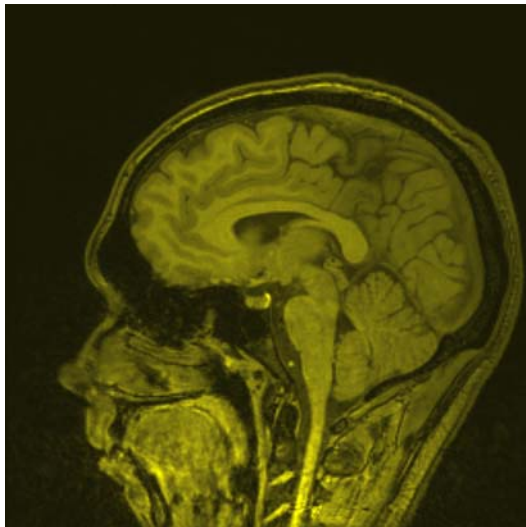
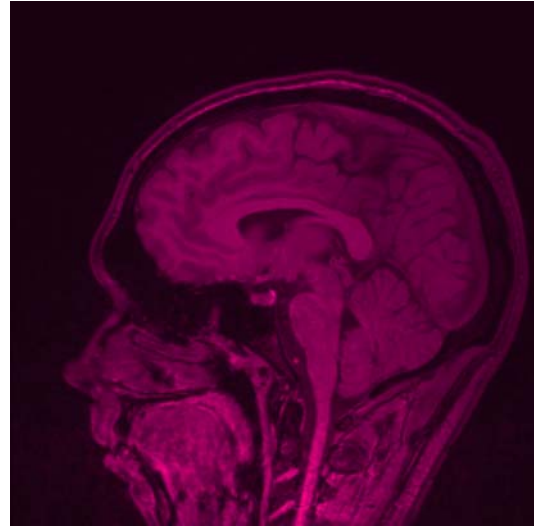
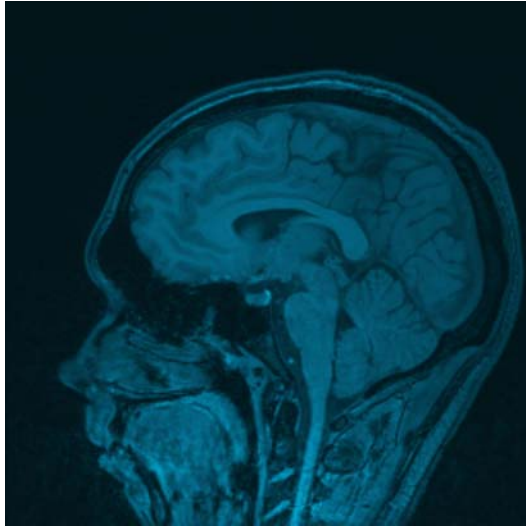


A PATIENT'S GUIDE TO PITUITARY TUMORS



**DEPARTMENT OF NEUROLOGICAL SURGERY
THE OHIO STATE UNIVERSITY MEDICAL CENTER**

You may be reading this pamphlet because you or someone you love has been referred for possible surgical intervention for a pituitary tumor. You are not alone, and will require a dedicated medical team for help.



WHAT IS A PITUITARY TUMOR?

Pituitary tumors are tumors found in the pituitary gland, a small organ about the size of a pea in the center of the brain just above the back of the nose. The pituitary gland makes hormones that affect growth and the functions of other glands in the body. Pituitary tumors are classified according to size: Microadenomas are smaller than 10 millimeters. Macroadenomas are 10 millimeters or larger. Most pituitary adenomas are microadenomas. Once a pituitary tumor is found, more tests will be done to find out how far the tumor has spread, the type of tumor, and whether or not it makes hormones. A doctor needs to know the type of tumor to plan treatment.

DIAGNOSING PITUITARY TUMORS

There are many different tests used to diagnose pituitary tumors; you may need:

- Computed Tomography (CT): A CT scan provides a two-dimensional map of tissues and organs in the body using an x-ray beam
- Magnetic Resonance Imaging (MRI): The MRI creates a detailed picture of the brain and surrounding structures using a powerful magnetic field
- Bone Fiducials: An invasive preoperative procedure consisting of a set of five to six small screws anchored in the skull which provides a map of the brain. Bone fiducials guide final electrode placement during surgery.

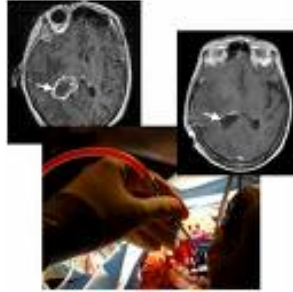
- Lumbar Puncture: Lumbar puncture, also called spinal tap, is the insertion of a hollow needle into the subarachnoid space of the lumbar spine to withdraw a sample of spinal fluid for examination in the laboratory. A local anesthetic is administered prior to the procedure.
- Myelography: Myelography is a specialized x-ray technique. A radio-opaque substance injected into the subarachnoid space followed by x-rays may depict blockage or growths.

SURGICAL INTERVENTION

There are treatments for all patients with pituitary tumors. Three kinds of treatment are used:

Surgery: taking out the tumor in an operation, radiation therapy: using high-dose x-rays to kill tumor cells, and drug therapy. Surgery is a common treatment of pituitary tumors. Surgical removal of a tumor is referred to as “debulking”. “Debulking” of as much tumor as possible is the first step in treating a brain tumor. A doctor may “debulk” or remove the tumor using one of the following operations: Transsphenoidal surgery removes the tumor through a cut in the nasal passage. A craniotomy removes the tumor through a cut in the front of the skull. Gliadel wafers may be used in conjunction with resection of the tumor. Gliadel wafers are a dime-sized disk that are used as a means of providing chemotherapy directly to the tumor bed area.

Radiation therapy uses high-energy x-rays to kill cancer cells and shrink tumors. Radiation for pituitary tumors usually comes from a machine outside the body (external radiation therapy). Clinical trials are testing stereotactic radiation surgery, in which radiation is aimed to the tumor only, with less damage to healthy tissue. A CT scan or MRI is used to find the exact location of the tumor. A rigid head frame is attached to the skull and high-dose radiation is directed to the tumor through openings in the head frame, so only a small amount of normal brain tissue is affected. This procedure does not involve surgery. Radiation therapy may be used alone or in addition to surgery or drug therapy. Drug therapy is the use of drugs to stop the pituitary gland from making too many hormones.



BEFORE SURGERY

Even before your surgery starts, the planning begins to help make your hospitalization comfortable and your recovery safe. A few things will need to be done before your surgery:

Pre-operative assessment: In addition to the tests mentioned before, you will have an exam by the anesthesia team at the Outpatient Pre-Operative Assessment Center (OPAC). The purpose of this exam is to review your health conditions and risks of surgery. You will also be asked to consent for anesthesia. The OPAC is located at Martha Morehouse Tower, 2050 Kenny Road, Columbus, OH 43221, phone 614-366-4087.

Bring the name, telephone number and address of your Primary Care Physician in order to facilitate post-operative care.

Medication review: Bring a list of your medications (include dose, times taken) or the actual bottles to your OPAC appointment as well as on the day of surgery. The OPAC team will review them and make any recommendations to temporarily hold medications before surgery. These would include aspirin, aspirin-containing products, blood thinners, anti-inflammatories.

Notify surgeon's office if you develop a cold, sore throat, cough, fever or illness before surgery.

If you smoke cigarettes, it is advised you stop smoking completely or decrease the amount you smoke. Smoking adversely affects healing of the bone and incision. As a result will delay or impede the recovery process following your procedure.

Make sure you get plenty of rest, eat healthy and drink plenty of clear fluids before your surgery. Post-operative pain medications can cause constipation. You may consider taking stool softeners for a few days prior to your surgery to make sure that you are not uncomfortable following surgery and during your hospitalization. Post-operative pain medications can cause constipation.

There are certain precautions that should be taken before your surgery including:

- If you are on blood thinners you should stop taking them a week before your surgery.
- Do not eat or drink anything after midnight the day of your surgery.
- You will be given soap that you should wash with twice the day before your surgery.

WHAT HAPPENS ON THE DAY OF SURGERY?

On the day of surgery, you should not eat or drink after midnight. You may have a few sips of water to take any of your regular medications unless you have been instructed otherwise.

You should plan on arriving to the hospital **two hours** before your surgery is scheduled to begin. After you arrive at the hospital, you will be asked to check in to the admitting department. From there, you will be transported to the ambulatory surgery unit (ASU). The ASU will ensure that all paperwork, laboratory work and x-ray imaging has been completed prior to your surgery. Approximately 30 minutes prior to your surgery, a member of the anesthesia team will meet you in the pre-operative waiting area to talk to you about your health and to insert intravenous (IV) catheters and a foley catheter.

Your family members will be asked to wait in the designated waiting area. A volunteer and monitor will update them throughout the waiting period.

AFTER SURGERY

Immediately following surgery, you will be taken to the post-anesthesia care unit (PACU) to recover from your anesthesia for approximately 1-2 hours. Once you have recovered, you will be transported to the neurosurgical nursing floor where your family will be able to meet you. A nurse and patient care assistant will help get you situated in your room.

- Within a few hours after surgery, you should begin to drink fluids on your own. Your foley catheter used during surgery should no longer be required and will be removed. You will need to ask your nurse or patient care assistant for help to walk to the bathroom.

- You may feel nauseated after surgery. Your nurse can provide you with anti-nausea medications.
- You will have an incision with sutures, staples or steri-strips that will be covered by a dressing. This will be left on for one day. Your surgery team will remove it after one day. You will be given instructions on how to take care of this at home. Generally, the area should be kept clean and dry. You should notify your surgery team of any discharge, odor, redness, warmth or opening to this area.
- Your home medications will be restarted according to your home schedule.
- You will have pain following surgery. We will attempt to keep you as comfortable as possible with appropriate pain medications. You will be asked to rate your pain so that we can measure any changes or effects of pain medications.

Your successful recovery from surgery will require many people working together, including you! Here are some of the responsibilities each person will have:

Surgeon/Nurse Practitioner

- Daily brief physical assessment and exam.
- Review health changes since previous day.
- Communicate orders to nursing staff
- Respond to questions from patient/family.

Nurse/Patient Care Assistant

- Regular assessments of vital signs, activity levels, nutrition
- Manage IVs, foleys
- Monitor and address pain issues
- Patient teaching related to home care
- Communication with surgical team for changes to health
- Respond to questions from patient/family

Physical Therapist

- Assess current physical status
- Recommend appropriate safe environment at discharge, either home or rehabilitation center
- Assist with getting patient out of bed as soon after surgery as possible
- Respond to questions from patient/family

Patient Care Resource Manager

- Prepare discharge paperwork, including instructions and recommendations
- Assist with any discharge referrals recommended by the team

Social Worker

- Coordinate any placements to skilled nursing facilities or acute rehabilitation centers
- Inform patient of

Patient/Family

- Inform team of pain issues related to surgery
- Listen to recommendations
- Ask questions to team related to safety, pain, function

AFTER HOSPITAL DISCHARGE

You will be discharged when the medical team, including yourself, feel that you can safely continue recovering outside of the hospital. On average, simple spine procedures can be 1-2 hospital days, complex spine procedures may be 2-4 hospital days. This does not always mean that you are pain-free or that you are able to return home. Most people are tired when they leave the hospital. Every day should get a little better once you are discharged.

Your discharge paperwork will have your follow-up appointments listed.

Care of your incision

Your incision may be slightly red around any staples or sutures. This is normal. You will be given instructions about when and where to have these removed. Some patients will have their primary care providers remove them. Be sure to call their office before going in. If your primary care office cannot remove them, you may return to your surgeon's office to have them removed at the instructed time.

If you have Steri-strips in place, they will fall off on their own in 1-3 weeks. You do not have to pull them off.

Follow your surgeon's recommendations regarding getting your wound wet. Most importantly, you should keep the surgical area clean and dry until it is completely healed, which could be up to 2-4 weeks after the sutures, staples or steri-strips are gone.

If there is drainage, redness or swelling around your wound, please call your surgeon.

Walking and exercise

Walking short distances as tolerated is recommended. It also prevents clots and muscle stiffness. Pace yourself and do not allow yourself to become overly tired. Start with short distances and gradually work yourself up to 30 minutes of walking daily.

Avoid lifting more than 15-20 pounds for six weeks. No heavy housework for four to six weeks. Avoid climbing stairs until your strength and balance have returned.

When you should call your surgeon

If you experience any of the following symptoms at home, please call your doctor immediately.

- Increased weakness or numbness of the face, arm or leg on one side of the body.
- Vision changes including loss of vision, sudden blurred vision or double vision.
- Loss of speech or difficulty talking or swallowing.
- Sudden, severe headache with no known cause.
- Increased sleepiness or confusion.
- Painful, frequent urination or unable to urinate.
- Temperature greater than 100.5°.
- Bleeding from the surgical wound.
- Signs of infection (redness, swelling, draining wound).
- Leg calf pain or tenderness.

Important phone numbers to remember

Once you leave the hospital, you may have questions for any of the people who have cared for you. Here are some important numbers:

The Ohio State University Medical Center is (614) 293-8000. You can reach any extension from this number.

Between 8 AM and 5 pm Monday through Friday, you can call your surgeon's number. After hours, you will be given to an answering service to have the resident paged.

FREQUENTLY ASKED QUESTIONS

Q: Will I need to continue seeing the doctor who performed my surgery?

A: You will be asked to come back to your surgeon's office 6-weeks after your surgery

Q: How long does the surgery take?

A: Two to three hours.

Q: Is it normal to feel pain for weeks after the procedure?

A: In order for your surgeon to remove parts of your spine, the layers of tissue and muscle must be cut. This will result in pain. Each patient rates their pain differently. Every effort will be made to lessen your pain. We cannot, however, promise that you will ever be pain free. The main goals of surgery are to improve your function and keep your independence and provide stability. In many instances, your pre-surgery pain should improve, but will not completely go away.

Q: Will my neurosurgeon give me pain medications?

A: When you are discharged from the hospital, you will be given a prescription for pain medications and instructions for use based on your procedure, pain rating and hospitalization. In some cases this will be plenty to cover your post-operative pain. In some cases, it may not be. We encourage you to let us know if the pain is getting worse instead of better. If your pain persists beyond a reasonable recovery time, we will refer you to a pain specialist to manage your pain as we are not here to provide chronic pain medications. Some patients return to their primary care providers who manage their chronic pain issues.

Q: What precautions should be followed after surgery?

A: During the first six to eight weeks after surgery you should avoid lifting, bending, and twisting movements.

Q: How do I donate my own blood for my surgery? Can a family or friend donate blood for my surgery?

A: If you are planning to donate your blood for surgery or someone would like to donate blood for your surgery, contact the American Red Cross at the Columbus, Ohio office at 614-251-1451. They will be able to answer your questions regarding fees, time, preparation and scheduling. Keep in mind that they will not be able to do this if your surgery is within 1-3 days.

Q: When can I return to work?

A:

Q: What if surgery doesn't work? Can I have it again?

A: It is important that you keep realistic goals of the surgery and discuss them with your family and surgeon. We cannot guarantee a pain-free life. Recovery and success from surgery depends heavily on you! You should listen and follow recommendations such as exercise, practice good body mechanics, avoid behaviors that can affect healing, e.g. smoking, and know your physical limitations.

GLOSSARY OF TERMS

Ambulatory Surgery Unit: Area of the hospital dedicated to preparing patients for surgical procedures

Anesthesia Team: Health care professionals who specialize in pain management and putting patients to sleep during procedures and operations

Craniotomy: Procedure performed in the operating room where a portion of the skull is removed to gain access to the brain

Diagnostic Test: Information gathered to determine the cause of a problem

Lesioning: Destruction of targeted, abnormal brain tissue.

Neurologist: A medical doctor who specialized in problems of the brain and nervous system

Neurosurgeon: A medical doctor who specializes in operating on structures of the brain and spine

Recurrent: An activity that continues to happen, or disappears and comes back again

Side Effects: Any unwanted result of taking a medication, such as rashes, fatigue, or headache

Surgical Intensive Care Unit: Area of the hospital dedicated to caring for patients requiring close monitoring after a surgical procedure.

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