

Introduction

Brain tumors are serious diseases that can affect a variety of body functions, and may also lead to death.

Doctors usually recommend surgery for a brain tumor. If your doctor recommends surgery, the decision whether or not to have surgery is yours.

This reference summary will help you understand the benefits and risks of this surgery.

Anatomy

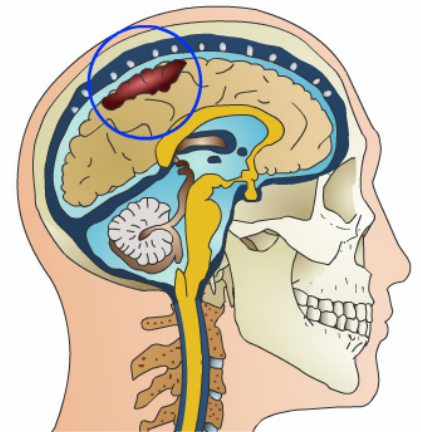
The brain is the control center of the body. It is inside of, and protected by, the skull. The spinal cord connects the brain to the rest of the body.

A brain tumor is an abnormal growth of tissue in or on the brain. This abnormal growth not only interferes with the normal functioning of the brain, but if left unchecked could result in death. Because the brain controls most body functions, the symptoms of a brain tumor vary widely, depending on where the tumor occurs in the brain.

Symptoms and their Causes

The symptoms of brain tumors vary widely. They range from simple headaches to blindness and other symptoms. Other symptoms include weakness, memory loss, personality changes, speech difficulties, and poor balance. Seizures may also be symptoms of a brain tumor.

MRI and CAT scans are very helpful in finding the exact location of the tumor in the brain. Sometimes an MRI can also help determine if a tumor is benign (not cancerous) or malignant (cancerous). The type of tumor is determined by a pathologist. The pathologist uses a microscope to examine a sample of the tumor obtained at the time of surgery.



Additional Treatments

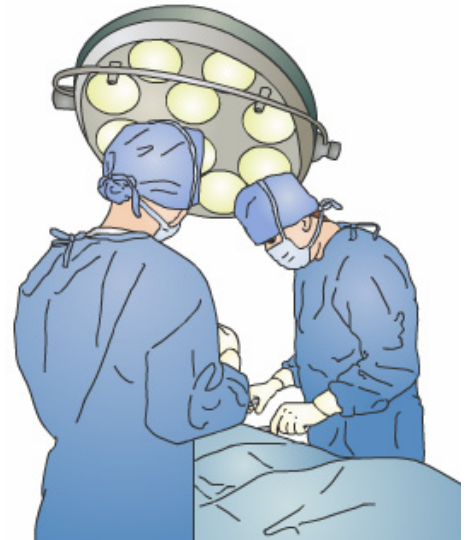
A drain may be needed temporarily to relieve the pressure the tumor puts on the brain. However, this is usually not enough to treat the tumor.

After determining the nature of the tumor, radiation and chemotherapy may be needed to control it. When a tumor is discovered, an operation is often necessary for two reasons. The first reason is to obtain samples of the tumor to be examined by the pathologist. The pathologist would help determine whether further treatment is recommended. The second reason is to take out as much of the tumor as is safely possible to relieve the symptoms.

Using MRIs or CAT scans, doctors might determine that some tumors are benign. If these tumors do not cause any symptoms, the doctor may recommend observing the tumor instead of removing it by surgery.

Surgical Treatment

- Before taking the tumor out, the hair on the head is usually clipped.
- A skin incision is made.
- Holes are put in the skull, and a piece of bone is taken out.
- The brain itself is then entered and the tumor is removed.
- At the end of the operation, the piece of skull is placed back and the skin is closed.



The amount of tumor taken out depends on the location of the tumor and how easy it is to remove without damaging surrounding brain tissue. Your doctor will tell you how long you are likely to stay in the hospital. This depends on several factors, such as your age and medical condition, as well as the location of the tumor.

Risks and Complications

This operation is relatively safe. There are, however, several possible risks and complications. You need to know about them just in case they happen. By being informed, you may be able to help your doctor detect complications early.

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The risks and complications include those related to anesthesia and those related to any type of surgery.

Risks of general anesthesia include nausea, vomiting, urinary retention, cut lips, chipped teeth, sore throat, and headache. More serious risks of general anesthesia include heart attack, stroke, and pneumonia. Your anesthesiologist will discuss these risks with you, and ask you if you are allergic to certain medications.

Some of the risks are seen in any type of surgery. These include:

- Infection, deep in the brain or at the skin level
- Bleeding
- Scar that may be painful or ugly

Blood clots in the legs can occur due to inactivity during and after the surgery. These usually show up a few days after surgery. They cause the leg to swell and hurt. Blood clots can become dislodged from the leg and go to the lungs, where they will cause shortness of breath, chest pain and possibly death. It is extremely important to let your doctors know if any of these symptoms occur. Sometimes the shortness of breath can happen without warning. Getting out of bed shortly after surgery may help decrease the risk of blood clots in the legs.

Other risks and complications are related specifically to this surgery. These are also unlikely; however, it is important to know about them. There are risks that are typical of brain tumor operations. These risks depend on the location and size of the tumor. The bigger the tumor is and the deeper it is in the brain, the greater the risk.

These risks include, but are not limited to: stroke, paralysis, weakness, inability to understand or speak, blindness, personality changes, seizures, and death. There is also the possibility of bleeding. This can happen in the



operating room or after the operation. The blood vessels of the tumors are very fragile and may bleed a lot either during or after the operation. This may require another operation to remove a blood clot. A blood transfusion may be necessary.

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Infections may also occur. They can be limited to the skin only, or they can be deep, involving the bone flap and requiring its removal. The infection can also involve the brain itself, requiring long-term antibiotics and possibly another operation.

Brain tumors could also cause significant brain swelling that worsens in the first three to seven days after the operation. This can cause a worsening of symptoms or the appearance of new symptoms. These symptoms tend to improve with time.

In summary, the risks and complications of brain tumor surgery are possible, but not common. The level of risk depends on the kind, size, and location of the tumor.

After the Surgery

After the surgery you will probably spend a day or two in the intensive care unit (ICU), depending on how well you are doing.

The nurses in the intensive care will watch you carefully. This involves the repeated checking of your neurological status, as well as close watch over your heart rate and blood pressure. You will be repeatedly asked to move your arms and legs. You will also be asked lots of questions to determine whether you are confused. If your condition gets worse, a CAT scan of the head may be ordered to determine whether there is bleeding.

Swelling may occur. Medications are available to treat swelling of the brain, if it happens. Later you may receive physical therapy, occupational therapy, and other therapies to aid your recovery.

Whether or not you will be able to resume your usual activities depends on how well you are doing at the time of your follow-up visit to the doctor. Your doctor will tell you how long it will take before you are healed, and if and when you can go back to work. This depends on your age, type of work, and medical condition, as well as the kind of tumor you have and whether you will need further therapy.



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Summary

Brain surgery can relieve a variety of serious symptoms. It can even be life saving.

Operations for removing brain tumors have become much safer than before, thanks to advances in technology and anesthesia. However, as you have learned, complications may still happen. Knowing about them will help you detect them early if they happen.



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