



Jefferson | Hospital for  
Neuroscience

Department of Neurosurgery

# *Cerebral Aneurysm*



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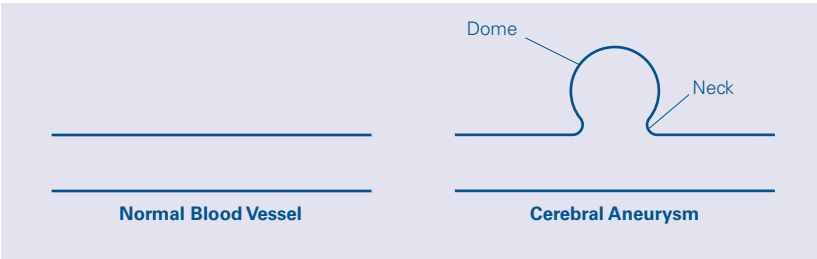
 Jefferson Health System®



# Cerebral Aneurysm

A cerebral aneurysm is an abnormal bulging or bubble-type defect in an artery in the brain which becomes weakened over time. As blood travels through the artery it continually puts pressure on the weakened area and eventually causes it to rupture or break open. When this happens, blood leaks out of the damaged blood vessel into the surrounding brain tissue or into an area surrounding the brain called the subarachnoid space.

The subarachnoid space is normally filled with cerebral spinal fluid. When a brain aneurysm ruptures and leaks blood into the subarachnoid space, it's called a "subarachnoid hemorrhage" or "SAH".





## *Treating A Cerebral Aneurysm*

### **Treatment Goal**

For an unruptured aneurysm, the goal of treatment is to prevent the aneurysm from rupturing. For an aneurysm that has already ruptured, the goal is to prevent further bleeding or a rebleed.

### **Diagnostic Studies**

- **CT scan of the brain and/or a lumbar puncture (spinal tap)**

These are special studies that are used to look for blood outside the blood vessel and confirm the diagnosis of subarachnoid hemorrhage (SAH).

- **Angiogram (also called an arteriogram)**

An angiogram is a type of x-ray study that looks at the blood vessels in the brain. It is used to locate an aneurysm and the source of bleeding. The angiogram is performed by a neurosurgeon specially trained to treat complex problems that involve the blood vessels of the brain and spine. Sometimes these problems can be treated *endovascularly* or from *inside* the blood vessel. In addition to its diagnostic role, the angiogram also plays a vital role in treatment, especially for the aneurysm coiling procedure (see page 5).

## Types of Treatment

Clipping (direct surgery) and coiling (endovascular surgery) are the two surgical treatment options for cerebral aneurysm. The type of treatment a person receives will depend on various factors like the type, size and location of the aneurysm, age, and whether the aneurysm is unruptured or ruptured.

### CRANIOTOMY AND ANEURYSM CLIPPING

A craniotomy is a neurosurgical procedure that involves making an opening in the skull bone through an incision on the scalp. When the neurosurgeon identifies the aneurysm, one or more small permanent metallic clips are placed across the neck or base of the aneurysm to “clip it” or block it off. “Clipping” the aneurysm prevents blood from going through the weakened portion of the vessel and reduces the risk of rupture. You will be asleep (general anesthesia) during this procedure.

### Discharge Instructions/When You Go Home

- Call the office (215-955-7000) to schedule the following appointments:

- If you leave the hospital with stitches or staples, call the office to set up an appointment to have them removed at 2 weeks after surgery.

Exception: Patients who have *dissolvable* stitches do not need to schedule an appointment for stitch removal since dissolvable stitches disappear on their own in about a week. You will be told the type of stitches you have before you are discharged from the hospital.

- Schedule your routine follow-up appointment for 4 – 6 weeks after your surgery.

- Most patients are prescribed anti-seizure medication. This medication is given as a precaution to prevent seizures after brain surgery. Anti-seizure medication is routinely given to **all** patients who have had brain surgery. **This does not mean you have epilepsy.** A special study called an electroencephalogram or EEG will be performed several months after your surgery to determine if you still need to take the anti-seizure medication.

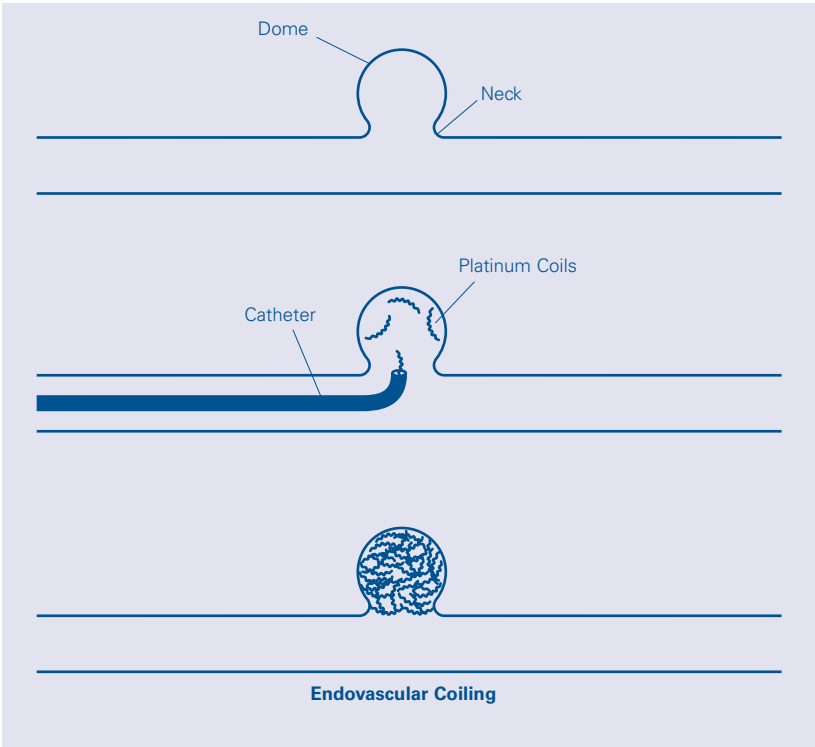


### **Incision Instructions**

- Sometimes you may see what looks like a “thread” on your incision or wound. This is a stitch so don’t pull on it.
- Do NOT get your stitches or staples wet.
- Do NOT shower until *after* your stitches or staples are removed (approximately 2 weeks). You may also shampoo your hair at this time but do NOT put hair coloring or gel on the incision area. If you have *dissolvable* stitches, you may shower 5 days after surgery. Call the office if you are not sure what type of stitches you have.
- You may clean the incision area with a solution of half hydrogen peroxide and half water
- Do NOT put cream or ointment on your stitches/staples.
- It is normal for your scalp and incision to feel numb. Scalp wounds can also get flaky and itch. This is normal. Avoid scratching the area since this can cause infection.
- Scalp wounds or incisions that are near your face may cause your face to swell or bruise. This is normal. It’s also normal to experience trouble chewing or to feel discomfort when you yawn. This will get better over time as you heal.
- Wound/incision pain and headache are normal after your surgery. You may take Tylenol or Tylenol Extra-Strength for your pain. Please call the Neurosurgery Office if these medications fail to relieve your pain.
- Follow “Instructions For All Patients” on page 7.

## ENDOVASCULAR COILING

The first step in the coiling procedure is an angiogram. Your neurosurgeon will make a small incision in your groin area and insert a catheter (small flexible tube) into the artery in your groin. The catheter is passed from the artery in your leg up to the blood vessel that contains the aneurysm. Your doctor guides the catheter to the aneurysm by watching it on a TV-like monitor. Tiny platinum coils are then fed through the catheter. When the coils reach the aneurysm they are released into the dome section. Packing and filling the dome with coils basically blocks blood from entering the weakened aneurysm and reduces the risk of rupture. You will be asleep during this procedure.





## When You Go Home/Discharge Instructions

- Call the office (215-955-7000) to schedule the following appointments:
  - A follow-up office visit for 4–6 weeks after your procedure. Your doctor will tell you at this appointment when you can resume your regular activities
  - A follow-up appointment for an MRA (an MRI with dye) and angiogram for 6 months after your procedure. This study is done to make sure the coils are doing their job. Coils are MRI compatible — they are not affected by the MRI.
- There will be a clear dressing over your groin area. You can remove the dressing in 48 hours but keep the area clean and dry.
- Mild headache and bruising, as well as pain around the groin area are normal after your surgery. You may take Tylenol or Tylenol Extra-Strength for discomfort.
- Medications:

You will be prescribed anti-seizure medication. This medication is routinely given to **all** patients after brain surgery as a precaution to prevent seizures. **This does not mean you have epilepsy.** A special study called an electroencephalogram or EEG will be performed several months after your surgery to determine if you still need the anti-seizure medication.

You may also be prescribed Aspirin, Plavix, or both. These are blood thinners. You will be instructed as to how long you will need to take these medications.

- If you have any questions about your coils, please call the office at 215-955-7000.
- Follow “Instructions For ALL Patients” on page 7.

## ***Instructions For All Patients*** (Clipping & Coils)

Until You Are Seen In The Office For Your Follow-Up Visit:

- Do NOT drive.
- Do NOT lift anything heavier than a newspaper.
- Do NOT go back to work or resume your usual household activities.
- You may take Tylenol or Tylenol Extra-Strength for your pain. Please call the neurosurgery office if these medications fail to relieve your pain.

### **Call OUR OFFICE (215-955-7000)**

#### **If You Experience Any Of The Following Problems:**

- Fever higher than 101.5°F (Check your temperature *before* taking Tylenol since Tylenol will lower a fever)
- Increased redness or discomfort and/or new or excessive drainage from your incision or wound area.
- Worsening headache not relieved by pain medication

### **Go To The EMERGENCY ROOM**

#### **If You Experience Any Of The Following Problems:**

- Very severe worsening headache
- Nausea and/or vomiting
- Weakness or trouble moving your arms or legs
- Trouble seeing
- Eyes bothered by bright lights
- Stiff neck
- Confusion
- Increased sleepiness
- Problems walking or talking

(continued on next page)



**For Coiling Patients Only –  
Go To The EMERGENCY ROOM  
If You Experience Any Of The Following Problems:**

- Obvious bleeding at the groin incision site
- A bruise at the groin incision area that is getting significantly bigger and is raised above the skin (swells up).
- Color change or numbness in the leg that had the catheter inserted.

**FEEL FREE TO CALL THE OFFICE AT 215-503-7000  
IF YOU HAVE ANY QUESTIONS OR CONCERNS**



**Jefferson Hospital for Neuroscience**

Department of Neurosurgery

909 Walnut Street

Philadelphia, PA 19107

215-955-7000

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