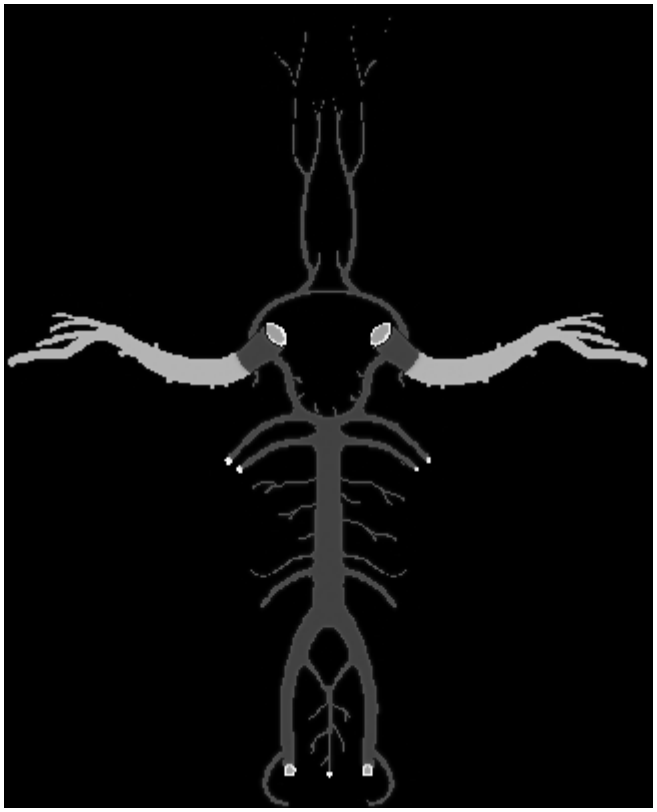
SUBARACHNOID HEMORRHAGE

A subarachnoid hemorrhage (SAH) is often caused by a brain aneurysm which has ruptured and allowed blood to flow into the subarachnoid space and ventricles of the brain. A subarachnoid hemorrhage is a type of stroke. The doctors are able to find and diagnose a SAH by sending the patient for a CT scan of the head and sometimes with a cerebral angiogram.

WHAT IS A BRAIN ANEURYSM?

An aneurysm is a bulge or bubble that forms in the wall of an artery. They generally occur where two or more arteries come together. An artery is a large blood vessel that carries oxygenated blood from the heart to the brain. Aneurysms come in several shapes, but the two most common are the berry and the fusiform. Because the aneurysm is a weakening of the artery wall, they are susceptible to bleeding and a spike in blood pressure may often be the cause of the aneurysm's rupture.

The damage that occurs to the brain once the aneurysm ruptures cannot be undone. The goal of the physicians and nurses treating the patient is to prevent any further damage from occurring.



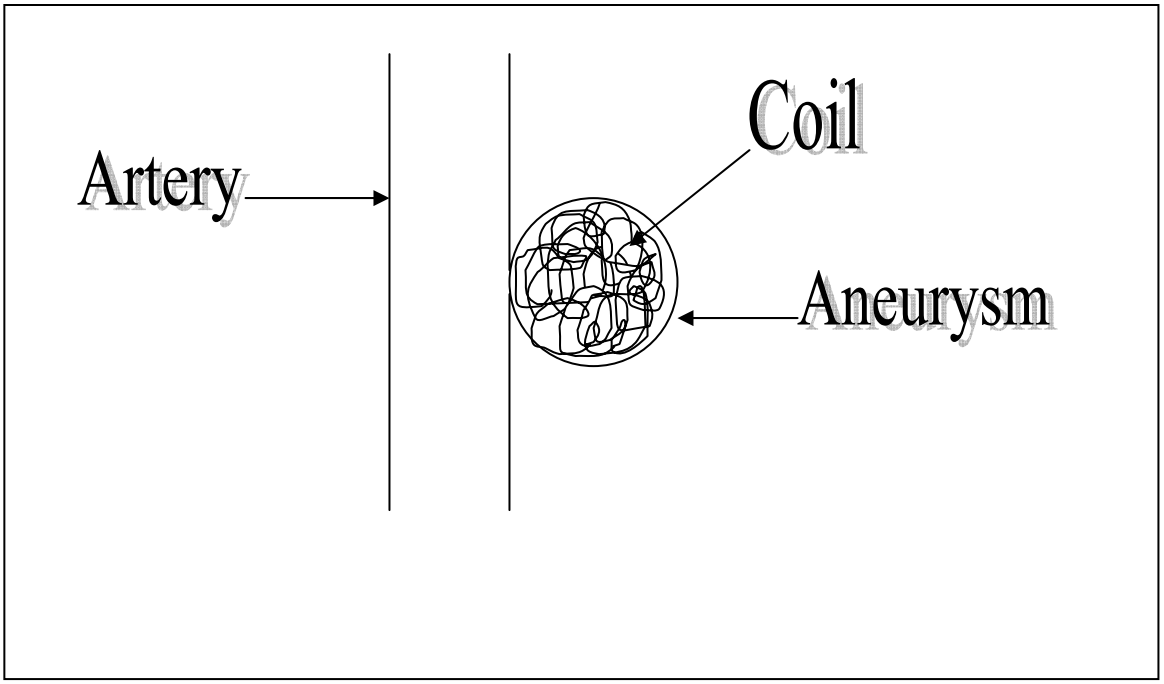
This is a diagram of the blood vessels that sit at the base of the brain. Aneurysms are often found where a vessel branches

WHAT DO WE DO TO FIX THE ANEURYSM?

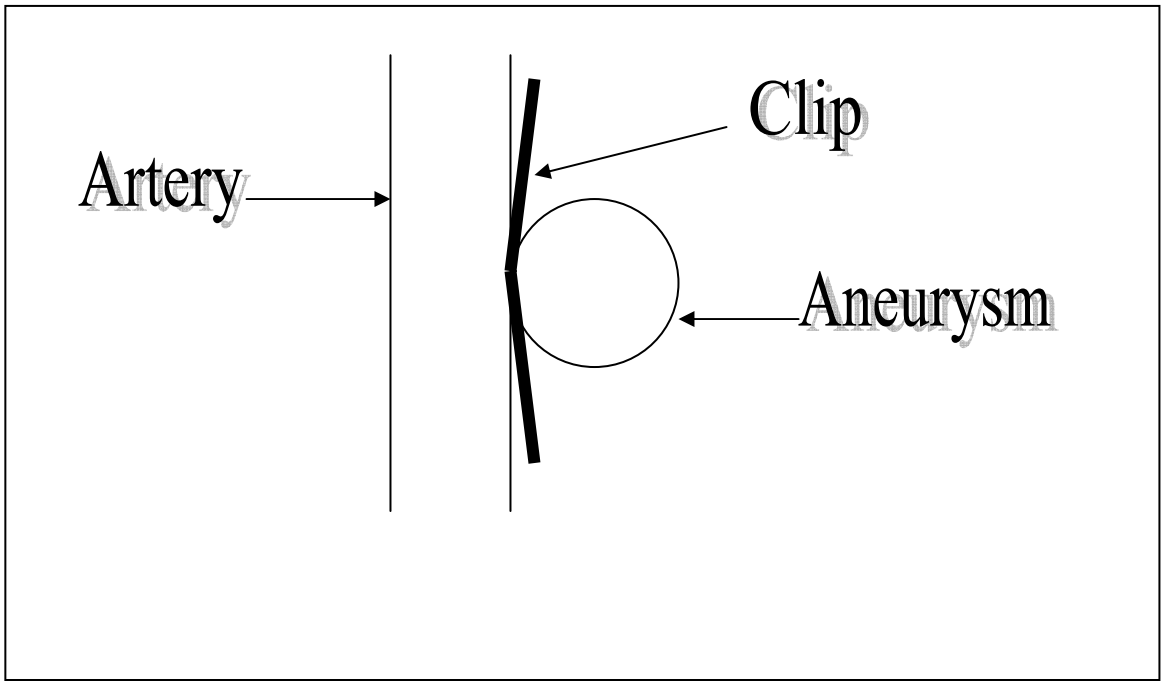
There are two primary treatment options for securing an aneurysm. The method chosen depends on many factors, including the size and location of the aneurysm.

Coiling: The patient will be taken to neuroradiology where the Neuroradiologist will perform a cerebral angiogram. This involves the insertion of a large catheter into the femoral artery. The Neuroradiologist uses the catheter to feed a small coil up into the aneurysm. The coil acts like a clot and prevents further blood from entering the aneurysm. This will prevent the aneurysm from bleeding in the future.

During this procedure, the patient will be placed under anesthesia. Once the procedure is completed, the patient will return to the NNICU. Upon arrival, the nurses will perform regular neuro exams and procedure site checks to assure that the patient's condition does not deteriorate and that there is no bleeding at the catheter insertion site. Because the procedure was performed using the large femoral artery, the patient will be required to lie flat for up to six hours to reduce the risk of bleeding at that site.



Clipping: Clipping of an aneurysm requires that the patient undergo brain surgery to have a small clip attached to the base of the aneurysm. The clip will prevent any further blood from entering the aneurysm, preventing future bleeding. The patient will return to the NNICU after surgery where the nurses will assure that he/she is comfortable and provide close monitoring of the patient's neuro status and vital signs. The patient returns from surgery with a white turban on their head to protect the incision from infection and to keep swelling to a minimum. It is very common for the physicians to cut off all the patient's hair in preparation for surgery.



WHAT HAPPENS NEXT ONCE THE ANEURYSM HAS BEEN SECURED?

All patients with subarachnoid hemorrhages are at risk for developing vasospasm, which can happen three to fourteen days after the stroke occurred. Vasospasm is a narrowing of the blood vessels in the brain which prevents blood from getting to all parts of the brain. Since vasospasm is unpredictable and there is no way of knowing for certain who will develop vasospasm or exactly when it will occur, all subarachnoid hemorrhage patients are kept in the NNICU or the NIMU for about ten days. This allows the nurses to monitor the patient closely for any signs of vasospasm. These signs may include an increase in sleepiness, blood pressure, headaches, or weakness on one side of the body. If any of the above occurs then the nurse will take the patient for a CT scan. The CT scan will show whether or not the blood vessels in the brain are in vasospasm. If the CT shows that the vessels are in vasospasm, then the patient will remain in the NNICU until the vasospasm is no longer a concern. (Please refer to the vasospasm handout for further information.)

OTHER GOOD THINGS TO KNOW….

Headaches: Headaches are a very common side effect of a subarachnoid hemorrhage. This comes from the blood irritating the brain and sometimes from a build up of pressure in the brain due to the blood. The nurses will attempt to control the patient's pain with medications. The nurses may also ask visitors to leave for periods of time in order to allow the patient some quiet time to recover from their headache. It is important to note that despite all the medications the patient will receive, he/she will still have some degree of headache and this is normal.

Hydrocephalus: Occasionally, patients who have had a subarachnoid hemorrhage are unable to drain the fluid in their brain normally, so excess fluid on the brain can develop. If this happens, the patient may receive a ventriculostomy, which is a drain that allows the excess fluid to flow out, or they may receive a shunt which is placed during a surgical procedure. A shunt also allows the excess fluid to flow out, but it is internalized so that the fluid drains from the brain into the abdomen. In some cases for severe headaches, the doctor may perform a lumbar puncture (LP) to relieve some of the pressure in the patients head.

Blood sugars: You may notice the nurses checking the patient's blood sugar regularly. This does not mean that the patient has diabetes. This is done because studies have shown that by keeping blood sugars under tight control, patients will heal better and have improved outcomes. So, if the patient's blood sugar is high, the nurse will place him/her on an insulin infusion and check the blood sugar every hour.

Diet: Most patients are allowed to eat a regular diet, however for the reasons just explained above, we do not allow them to eat foods or drinks sodas with a lot of sugar.