

Cerebral Aneurysm

A brain or cerebral aneurysm is a small, weak area or bulge in the wall of one of the large blood vessels that supply the brain. These bulges can break and bleed into the brain or the spaces around the brain. They often occur after the age of 40 and vary in shape, size, and location.

Causes

The exact cause is not always known.

Causes may include:

- High blood pressure
- Head injury
- Infection
- Drugs such as amphetamines and cocaine
- Genetic (can be present at birth)
- Smoking

Signs and Symptoms

Most people have no signs or symptoms until an aneurysm ruptures. Some may complain of headaches, tiredness, and/or neck pain. Signs and symptoms also depend on where and how big it is. At the time of the rupture or bleeding, people may have an intense headache described as “the worst headache of my life.”

Other signs and symptoms include:

- Vision problems.
- Nausea and vomiting.
- Stiff neck.
- Sensitive to light.
- More tired than usual.
- Trouble staying awake.
- Irritable.
- Numbness or weakness on one side of the body.

Tests

Tests might include:

- **Cerebral angiography:** allows the provider to see blood vessels in your brain and find any aneurysms.
- **CT scan of the head:** this test uses x-rays to make detailed pictures of the inside of your head which can confirm the presence of blood within the brain or brain spaces after rupture.
- **Lumbar puncture (also known as a spinal tap):** a needle is used to take a sample of the fluid in the sac that surrounds your spinal cord. This test is sometimes used to see if there is blood in the spinal fluid.
- **MRI and MRA of the head:** strong magnetic fields are used to see inside your head, including blood vessels, looking for aneurysms or abnormalities.
- **Transcranial dopplers or TCDs:** ultrasound of the skull to check for spasms in the blood vessels in the brain.

After an Aneurysm Ruptures

Blood leaks out into the space around the brain after an aneurysm ruptures. The doctors and nurses may refer to this as a subarachnoid hemorrhage (SAH). Blood can also leak into the brain itself. When an aneurysm bleeds, there is a greater chance of bleeding in the future.

The effects of a ruptured aneurysm depend on the size and location. It also depends on a person’s age, overall health, and neurologic health. A ruptured aneurysm may cause a long-term brain injury or may become fatal.

Problems

- **Cerebral vasospasms** are spasms of the brain's blood vessels. Spasms cause blood vessels to tighten or narrow, leading to less blood flow to the brain. Spasms are most common within the first 14 days after the rupture.
- **Re-bleeding** can occur if an aneurysm is left untreated. It can also occur after surgery.
- **Hydrocephalus** happens when cerebral spinal fluid (CSF) cannot drain from the brain as it should.

Guidelines to Follow until Treatment

- Keep quiet and calm.
- Limit excitement such as visitors or strenuous activity.
- Keep rooms dimly lit.
- Avoid straining to have a bowel movement. Avoid constipation.
- Stay well hydrated. This will help improve blood flow to the brain and decrease the chance of blood vessel spasms.
- Avoid strenuous coughing. Deep breathing is ok. Keep the head of the bed up to promote easier breathing and decrease the chance of blood clots in the lungs.
- Eat healthy foods. This helps in the healing process.
- Avoid caffeine. It dehydrates and stimulates your brain and body.
- Control your blood pressure if you have high blood pressure.

Treatments

There are options for treatment. The team will help you make the best treatment choice for you or your loved one. The length of time you stay in the hospital depends on the treatment you need and how you heal. Some people need to stay for days or even weeks.

Aneurysm coiling: platinum coils are placed into the aneurysm using an x-ray to see the vessels. The coils act as a barrier to blood flow and seal it off.

Surgery: to clip the aneurysm to stop blood flow to the weak or bulging area.

When to Call

- Increased headache.
- Increased neck stiffness.
- Increased sensitivity to light.
- Confusion or acting strangely.
- Trouble speaking.
- Loss of balance and dizziness.
- Constipation.
- Signs of infection, redness, swelling, drainage near the surgical site, or fever.
- Increased amounts of urine.

References

What You Should Know About Cerebral Aneurysms.

www.americanheart.org (Use search words "cerebral aneurysm")

www.stroke.org (Use search words "cerebral aneurysm")

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 8/2023 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#6171