

CEREBRAL ANEURYSM

An aneurysm is a weak or thin spot on the wall of an artery that bulges out into a thin bubble. As it gets bigger, the wall may weaken and burst.

A cerebral aneurysm, also known as an intracranial or intracerebral aneurysm, occurs in the brain. Most are located along a loop of arteries that run between the underside of the brain and the base of the skull.

There are three main types of cerebral aneurysm. A saccular aneurysm, the most common type, is a pouch-like sac of blood that is attached to an artery or blood vessel. A lateral aneurysm appears as a bulge on one wall of the blood vessel, and a fusiform aneurysm is formed by the widening along blood vessel walls.

RISK FACTORS

Ruptured aneurysms occur in about 30,000 individuals per year in the U.S. They can occur in anyone at any age. They are more common in adults and slightly more common in women.

Aneurysms can be a result of an inborn abnormality. They are also more common in people with certain genetic diseases, such as connective tissue disorders and kidney disease, and certain circulatory disorders.

Other causes include:

- Trauma or injury to the head.
- High blood pressure.
- Tumors or infection.

- Atherosclerosis and other vascular diseases.
- Cigarette smoking.
- Drug abuse.
- Heavy alcohol consumption.

SYMPTOMS

Most cerebral aneurysms do not show symptoms until they burst or become very large. A larger aneurysm that is growing may begin pressing on nerves and tissue. Symptoms may include pain behind the eye, numbness, weakness or vision changes.

When an aneurysm hemorrhages, the most common symptom is a sudden, extremely severe headache. Other signs and symptoms include:

- Nausea and vomiting.
- Stiff neck.
- Blurred or double vision.
- Seizure.
- Sensitivity to light.
- Weakness.
- A dropping eyelid.
- Loss of consciousness.
- Confusion.

DIAGNOSIS

The diagnosis of cerebral aneurysm is commonly confirmed through one of these methods:

Angiography: This is a dye test used to analyze arteries or veins. An intracerebral angiogram can identify changes in an artery or vein like an aneurysm. A flexible catheter is also inserted into an artery and threaded through the body. A small amount of contrast dye is used, and a series of x-rays are taken, noting any changes.

Computed tomography (CT): This is a fast, painless, noninvasive diagnostic tool that can reveal the presence of a cerebral aneurysm and determine if blood has leaked into the brain.

Magnetic resonance imaging (MRI): This uses computer-generated radio waves and a powerful magnetic field to produce images of the brain. It can show the size and shape of an unruptured aneurysm and can detect bleeding in the brain. MRI is painless and noninvasive.

Cerebrospinal fluid analysis: This is where a small amount of fluid is removed by a spinal needle and tested to detect any bleeding or brain hemorrhage.

TREATMENT

Healthcare professionals can choose from a range of treatments for cerebral aneurysm. Medications are aimed at relieving symptoms and managing complications. Physical, speech or occupational therapy may be needed to relearn skills.

Two common treatment options for ruptured brain aneurysms include:

Microvascular clipping: This involves cutting off the flow of blood to the aneurysm. A neurosurgeon will place a small, metal clip on the aneurysm, halting blood supply. The clip prevents the risk of future bleeding.

A related procedure is an occlusion, in which the entire artery is clamped off. This is performed when the aneurysm has damaged the artery.

Endovascular embolization: This procedure is an alternative to surgery, in which the doctor inserts a catheter into an artery and threads it to the site of the aneurysm. The procedure effectively destroys the aneurysm and may have to be performed more than once.

RESOURCES

The Kentucky Neuroscience Institute (KNI) integrates the expertise of the University of Kentucky's neurology and neurosurgery clinicians and researchers. KNI is a referral center dedicated to providing comprehensive care to our patients with the most complex neurological conditions.

For appointments or more information, call **859-323-5661** or visit <https://ukhealthcare.uky.edu/kentucky-neuroscience-institute>

National Stroke Association's mission is to reduce the incidence and impact of stroke by developing compelling education and programs focused on prevention, treatment, rehabilitation and support for all impacted by stroke.

800-787-6537

www.stroke.org