



Cerebral Aneurysm Facts

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Every year, an estimated 30,000 people in the United States experience a ruptured cerebral aneurysm, and up to 6 percent of the population may have an unruptured aneurysm. A cerebral aneurysm is an area where a blood vessel in the brain weakens, resulting in a bulging or ballooning out of part of the vessel wall. Usually, aneurysms develop at the point where a blood vessel branches, because the 'fork' is structurally more vulnerable. The disorder may result from congenital defects or from other conditions such as high blood pressure, *atherosclerosis* (the build-up of fatty deposits in the arteries), or head trauma. People who suffer a ruptured brain aneurysm (subarachnoid hemorrhage) may have warning signs, but unruptured aneurysms may be asymptomatic. Ruptured brain aneurysms are fatal in about 50 percent of cases.

Symptoms

Unruptured brain aneurysms may cause headaches in some people, but this symptom is most often associated with ruptured aneurysms. Most people with unruptured brain aneurysms have no symptoms. Others might experience some or all of the following symptoms, which may be possible signs of an aneurysm:

- Cranial nerve palsy
- Dilated pupils
- Double vision
- Pain above and behind eye
- Localized headache

Warning Signs

Ruptured brain aneurysms (subarachnoid hemorrhage) will often have warning signs. The following warning signs may precede major ruptures:

- Localized headache
- Nausea and vomiting
- Stiff neck
- Blurred or double vision
- Sensitivity to light (photophobia)
- Loss of sensation

Diagnosis

Unruptured cerebral aneurysms can be detected by non-invasive measures, including magnetic resonance imaging (MRI) and a carotid angiogram. A rupture can be detected by a computerized tomography (CT or CAT scan) or lumbar puncture. If these tests suggest the presence of an aneurysm, formal cerebral angiography may be performed.

Treatment

Unruptured brain aneurysms can be detected by neurosurgeons with increasing frequency. Unruptured aneurysms are no less frightening or life altering for patients but may require different diagnostic methods and potential treatment. The following are factors to consider in the treatment of unruptured aneurysms:

- Risk of hemorrhage – what is the probability of the aneurysm rupturing?
- Size and location
- Age and health of patient
- Family history
- Surgical risks

Surgery

An operation to “clip” the aneurysm is performed by doing a craniotomy (opening the skull surgically), and isolating the aneurysm from the bloodstream, which allows it to deflate. Surgical repair of cerebral aneurysms is not possible if they are located in unreachable parts of the brain. In some cases, they may be repaired using fine metal coils inserted into the aneurysm from inside the artery. Angiography is used to visualize closure of the aneurysm and preservation of the normal flow of blood in the brain. Aneurysms may be treated with minimally invasive endovascular techniques when the risk of surgery is too high.

Surgical risks and outcomes depend on whether or not the aneurysm has ruptured, the size and location of the aneurysm, and the patient’s age and overall health.

For more detailed information, visit www.NeurosurgeryToday.org.