

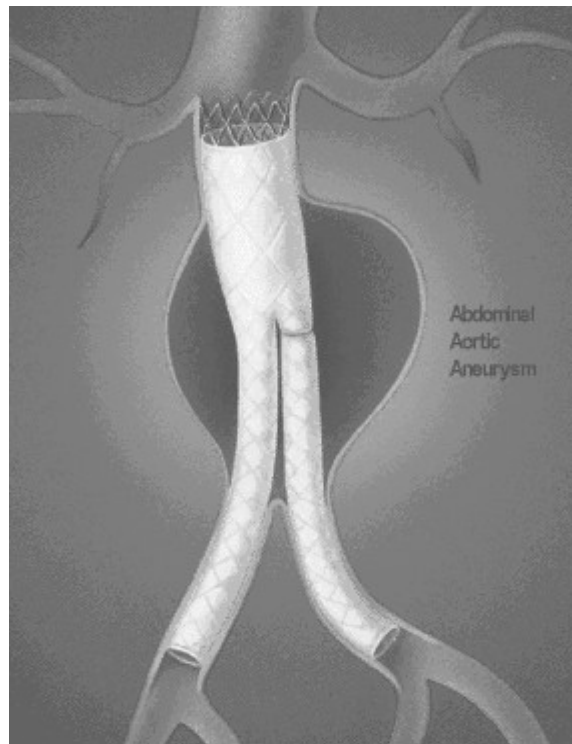
FACTS ABOUT ABDOMINAL AORTIC ANEURYSM

What is an Abdominal Aortic Aneurysm (AAA)?

An aneurysm is a widening or ballooning of an artery, usually due to a weak area in the wall of the artery. Aneurysms can be caused by trauma to the artery wall, certain diseases and infections, or a congenital (present at birth) defect. The most common cause of abdominal aortic aneurysm is weakening of the wall due to atherosclerosis. New research suggests there is a genetic predisposition to this disease. An abdominal aortic aneurysm (AAA) is an aneurysm in the abdominal portion of the aorta, the largest blood vessel in the body.

The aorta leads from the heart through the chest and diaphragm to the lower abdomen. It then divides, forming the major arteries to the legs. Through its branch blood vessels, the aorta supplies blood to the entire body. In an AAA, the aorta slowly and progressively widens (dilates) and may balloon to four or five times its normal size. As it dilates, the aortic wall thins out and becomes weakened.

Aneurysms can clot, dissect (a small tear in the lining of the artery) or rupture (breaking open of the AAA causing profuse bleeding). If an AAA ruptures, the only chance of saving the patient is immediate emergency surgery to replace the ruptured aorta with synthetic material. The illustration below shows an AAA repaired with a synthetic stent-graft.



What causes AAA?

All arteries are made up of three layers - the intima (inner wall), the media (middle wall) and the adventitia (outer wall). Damage to the middle layer (the media) causes an AAA. The most common cause of abdominal aortic aneurysm is atherosclerosis (hardening of the arteries). In the abdominal aorta, this disease process may lead to a weakening of the artery wall. High blood pressure may accelerate the development of AAA. In addition, there may be hereditary factors involved leading to a weakened aortic wall, as aneurysms tend to run in families. There is a strong association between AAA and cigarette smoking. Smokers die from ruptured aneurysms four times more often than nonsmokers. Aneurysms in smokers expand and weaken faster than do those in nonsmokers. Aneurysms may also result from tears in the artery wall (dissection of the aorta) and from infections of the vessel wall (mycotic aneurysm).

AAA's in children are usually caused by blunt trauma or a condition known as Marfan's syndrome.

Who is at Risk?

AAA is most common in white men over 40, but can occur in anyone. AAA occurs less frequently in white women and African Americans of both sexes. In children, abdominal aortic aneurysm can result from blunt abdominal injury or from Marfan's syndrome.

What are the Risks of AAA?

AAA's are dangerous because often, people do not know that they have them until a medical emergency occurs. The AAA can dissect, which means that a tear develops in the lining of the artery. An AAA that dissects is at greater risk of rupture. This is a medical emergency where the aneurysm breaks open, resulting in profuse bleeding. Ruptured aneurysm occurs in approximately 5 out of 10,000 people. Survival rates after rupture are poor, so it is important to detect AAA prior to rupture.

Symptoms of Abdominal Aortic Aneurysm

Abdominal aortic aneurysms usually produce no symptoms, especially when the size of the aneurysm is small. As the aneurysm grows, there may be mild abdominal discomfort, back pain, or groin pain. Some patients may feel a pulsatile (beating) mass in the abdomen. As the aneurysm starts to rupture, there is sudden, very severe abdominal or back pain. Immediate medical attention is critical to survival!

Diagnosis of Abdominal Aortic Aneurysm

The AAA can often be felt as an abdominal mass that pulses with each heartbeat. This is typically discovered during a routine physical exam. In larger individuals, the AAA may not be felt even when it is quite large. Abdominal ultrasound is an easy accurate way to detect and follow abdominal aortic aneurysms. Using high frequency sound waves, the aneurysm size can be precisely measured. Since the risk of rupture is related to the size and rate of expansion of the aneurysm, periodic abdominal ultrasound examinations are routinely used to follow the aneurysm. Abdominal CT scans or MRI exams can also be helpful. Abdominal x-rays can show calcification in the abdominal aorta. The shape of this calcification can suggest that an aneurysm is present leading to more definitive studies such as ultrasound to make the diagnosis. If you are over 40 and have a family history of AAA, you should talk with your doctor about an ultrasound (an ultrasound is a safe, painless, non-invasive procedure).

Treatment of Abdominal Aortic Aneurysm

The size of the AAA is related to the risk of rupture. Larger AAA's (5-6 cm) pose a substantial risk of rupture, and are generally repaired surgically or with stent-graft tubes (Dr. Stratienco placed the first AneuRx stent-graft in a patient in Chattanooga in 2000.)

Surgical repair is done under general anesthesia. The surgeon opens the abdomen, isolates the aneurysm and opens it. A woven tube graft is then sewn in and the aneurysm wall is sewn over the graft. Elective repair is quite successful with a hospital stay of less than 10 days and recovery period of 6 to 8 weeks. Stent-graft repair usually requires only one or two days in the hospital with full recovery within several days. Not all patients are candidates for stent-graft treatment. Discuss your case with Dr. Stratienco.

Some doctors disagree on how to treat smaller AAA's, as they pose a smaller risk of rupture. Many doctors recommend "watchful waiting" for smaller AAA's. This involves periodic follow-up with ultrasound scans. Some AAA's grow very slowly and remain stable over a long period of time. A rapidly growing AAA is a warning sign that needs to be addressed immediately.

Emergency repair of a leaking or ruptured AAA is quite another matter. These emergency operations are associated with a high rate of death and complications. For this reason, it is important to make the diagnosis early, to follow the aneurysm carefully with periodic ultrasound examinations, and to operate electively when the aneurysm reaches an appropriate size. Successful surgery for AAA usually results in full recovery. Abdominal aneurysms generally do not recur, and people with AAA are not particularly at risk from aneurysms in other locations. Because the underlying cause of AAA is usually hardening of the arteries, lifestyle changes to minimize the progression of the disease are indicated. These include avoidance of tobacco products, control of cholesterol, treatment of high blood pressure, avoidance of stress, treatment of diabetes and regular exercise.

What Can I Do To Improve My Condition?

Give up smoking. Control your blood pressure. Adopt a mild exercise program. There are currently no drugs that have been proven to reduce the growth of AAA's.