Heart Disease and Aortic Aneurysm

An aneurysm is an abnormal bulge in the wall of an artery. Normally, the walls of arteries are thick and muscular, allowing them to withstand a large amount of pressure. Occasionally, however, a weak area develops in the wall of an artery. This allows the pressure within the artery to push outwards, creating a bulge or ballooned area called an "aneurysm."

Aneurysms can form in any blood vessel, but they occur most commonly in the aorta (aortic aneurysm). The aorta is the largest artery in the body. It carries blood from the heart to the rest of the body. Aortic aneurysms can occur in two main places:

**Recommended Related to Heart Disease**

Heart Disease and Exercise

A sedentary (inactive) lifestyle is one of the top risk factors for heart disease. Fortunately, it’s a risk factor that you can do something about. Regular exercise, especially aerobic exercise, has many benefits. It can: Strengthen your heart and cardiovascular system. Improve your circulation and help your body use oxygen better. Improve heart failure symptoms in some people with congestive heart failure. Increase energy levels so you can do more activities without...

1. Abdominal aortic aneurysms occur in the part of the aorta that passes through the middle to low abdomen.
2. Thoracic aortic aneurysms occur on the aorta as it passes through the chest cavity. These are less common than abdominal aneurysms.

Small aneurysms generally pose no threat. However, aneurysms increase the risk for:

- Atherosclerotic plaque formation at the site of the aneurysm. This causes further weakening of the artery wall.
- A blood clot may form at the site and dislodge, increasing the chance of stroke.
- Increase in the size of the aneurysm, causing it to press on other organs. This may cause pain.
- Aneurysm rupture. Because the artery wall thins at this spot, it is fragile and may burst under stress. The rupture of an aortic aneurysm is a catastrophic, life-threatening event.

**What Causes Aortic Aneurysms?**

Aortic aneurysms may be caused by:

- Atherosclerosis, or hardening of the arteries, which weakens arterial walls
- Hypertension (high blood pressure)
- Local injury to the artery
- Congenital abnormality. A number of conditions, such as Marfan syndrome or bicuspid aortic valves are present at birth and can cause weakness of the artery walls.
- Aging
- Syphilis used to be a common cause of thoracic aneurysms, but it is no longer as common.

*Note: Instead of causing a bulge in a thinned artery wall, aortic aneurysms occasionally occur between layers of the artery itself. This is called a “dissecting aneurysm.” Blood starts to flow in the separated artery layers cutting off blood flow in the artery. This condition can rapidly lead to rupture of the artery.*

**What Are the Symptoms of an Aortic Aneurysm?**
Aortic aneurysms often cause no symptoms at all. But if present, symptoms include:

- Tearing pain in the chest, abdomen, and/or middle of the back between the shoulder blades.
- Thoracic aneurysms may cause shortness of breath, hoarseness, cough (due to pressure on the lungs and airways), and difficulty swallowing (pressure on the esophagus).
- Rupture of an aneurysm can cause loss of consciousness, stroke, shock, or a heart attack.

If you are experiencing sudden unexplained chest, abdominal, or back pain, or any of the other symptoms mentioned above, seek medical attention.

How Are Aortic Aneurysms Diagnosed?

The diagnosis of an aortic aneurysm is difficult because often there are no symptoms. A doctor may find one incidentally during an exam. A thoracic aneurysm may cause a heart murmur. An abdominal aneurysm feels like a pulsating mass in the stomach.

If one is detected, it must be monitored. Aneurysms are at higher risk of rupture as they grow larger. Doctors will monitor them carefully and may recommend repair when they are more than 5 cm wide. Tests to detect them include:

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- Ultrasound
- Angiography (dye test to look at the aorta)
- Magnetic resonance imaging (MRI)
- Computed tomography (CT scan)

How Are Aortic Aneurysms Treated?

Small aortic aneurysms that aren't causing any symptoms are monitored over time until they become large and at a higher risk for rupture.

When an aortic aneurysm is large or associated with symptoms, the weakened section of the vessel can be surgically removed and replaced with a graft of artificial material. If the aneurysm is close to the aortic valve, valve replacement may also be recommended.

Repairing the aneurysm surgically is complicated and requires an experienced surgical team. However, neglecting an aneurysm presents a higher risk. The repair requires open-chest or abdominal surgery, general anesthesia and usually a minimum hospital stay of five days. If you've undergone surgery to repair an aneurysm, it is recommended you adopt the same heart-healthy lifestyle led by other heart surgery patients. Newer techniques for repairing abdominal and thoracic aneurysms involve placing a graft without surgery and may benefit higher-risk patients.

Aneurysm Prevention To prevent a potential aortic aneurysm, people with atherosclerosis in other parts of the body (coronary artery disease or carotid artery blockage) should get regular exams from their doctor.