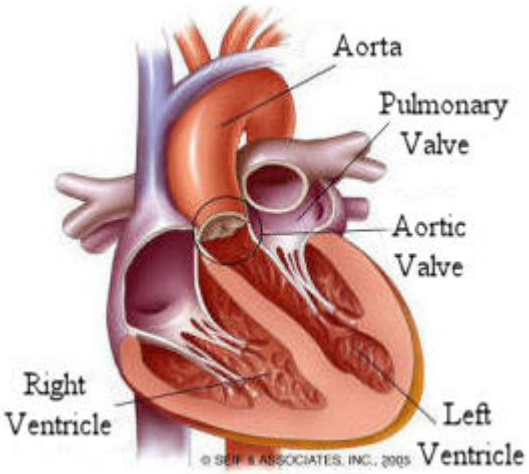
Thoracic Aortic Aneurysm

An aneurysm is the enlargement (*dilatation*), bulging or ballooning out of part of the wall of a vein or artery. An Aortic Aneurysm is a bulging in the largest artery of the body. This artery supplies blood from the heart to the rest of the body. The first part of the aorta is called the thoracic aorta. It leaves the heart, ascends (rises), arches, and descends (goes down) through the chest until it reaches the diaphragm (the muscular partition between the chest and abdomen (belly). The second part of the aorta is then called the abdominal aorta after it has passed the diaphragm and continues down through the abdomen. The abdominal aorta ends where it splits to form the two iliac arteries that go to the legs.



Aortic aneurysms can develop anywhere along the length of the aorta. A thoracic aortic aneurysm (TAA) occurs in the first part of the aorta, between the heart and the diaphragm. The major importance of an aneurysm is that it can rupture or tear (*dissect*), causing death unless diagnosed and treated promptly.

CAUSES

Most thoracic aortic aneurysms are related to arteriosclerosis. The arteriosclerosis can weaken the aortic wall. The pressure of the blood being pumped through the aorta causes it to balloon out at the site of weakness. Therefore, elevated blood pressure (*hypertension*) is associated with aneurysm. Other risk factors include:

- Age over 60.
- Tobacco use.
- Male sex.
- Family history of aneurysm.

Additional causes of thoracic aortic aneurysms include:

- Genetics (passed by birth).
- Injury: After physical trauma to the aorta.
- Inflammation of blood vessels.
- Hardening of the arteries.
- Infection.

SYMPTOMS

Many aneurysms do not cause problems. A small, unchanging or slowly changing aneurysm may produce no symptoms until it suddenly ruptures or dissects (separation of the layers of the aortic wall) without warning. It may then cause death.

The symptoms (problems) of a developing aneurysm will partly depend on its size and rate of growth. Thoracic aortic aneurysms may cause pain in the:

- Chest.
- Back.
- Sides.
- Abdomen.

The pain most often has a deep quality as if it is boring into the person. It may cause:

- Heart failure.
- Heart attack.
- Hoarseness.
- Cough.
- Shortness of breath.
- Swallowing problems.

DIAGNOSIS

A thoracic aortic aneurysm may be suspected based on your symptoms. It may also be detected by x-ray or CT

studies done for unrelated reasons.

Several different imaging studies can be used to confirm a TAA:

- An echocardiogram is an ultrasound test to examine the heart. It can also examine the first parts of the aorta. Sometimes, this test is done by putting you to sleep and inserting a flexible telescope through your mouth into your esophagus, which is next to the aorta; excellent pictures of the aorta can be obtained. This is called a transesophageal echocardiogram (TEE).
- CT scanning of the chest is accurate at showing the exact size and shape of the aneurysm.
- MRI scanning is accurate, and is used for certain types of TAA.
- An aortic angiogram shows the source of the major blood vessels arising from the aorta. It reveals the size and extent of any aneurysm. It can also show a clot clinging to the wall of the aneurysm (mural thrombus). The angiogram may give information about a tear of the aorta.

TREATMENT

Treatment for a thoracic aortic aneurysm depends on:

- Location.
- Size.
- Other factors.
- Rate of growth.
- Underlying cause.

Medical treatment is used for smaller or complicated aneurysms, or those that do not cause symptoms. These include:

- Stopping smoking.
- Blood pressure control.
- Control of cholesterol.

Surgical treatment is used for aneurysms that cause symptoms, or for those that are large or growing in size. The surgical technique depends on the location of the aneurysm.

HOME CARE INSTRUCTIONS

- If you smoke, stop. If you do not, do not start.
- Take all medications as prescribed.
- Your caregiver will tell you when to have your aneurysm rechecked, either by echocardiogram or CT scan. Be sure to keep this and all follow-up appointments.

SEEK MEDICAL CARE IF:

- You develop mild pain in your chest, upper back, sides, or abdomen.
- You develop cough, hoarseness or trouble swallowing.

SEEK IMMEDIATE MEDICAL CARE IF:

- You develop severe chest or abdominal pain, or severe pain moving (*radiating*) to your back.
- You suddenly develop cold or blue toes or feet.
- You suddenly develop lightheadedness or fainting spells.
- You develop trouble breathing.

Document Released: 12/18/2006 Document Re-Released: 09/26/2009
ExitCare® Patient Information ©2011 ExitCare, LLC.