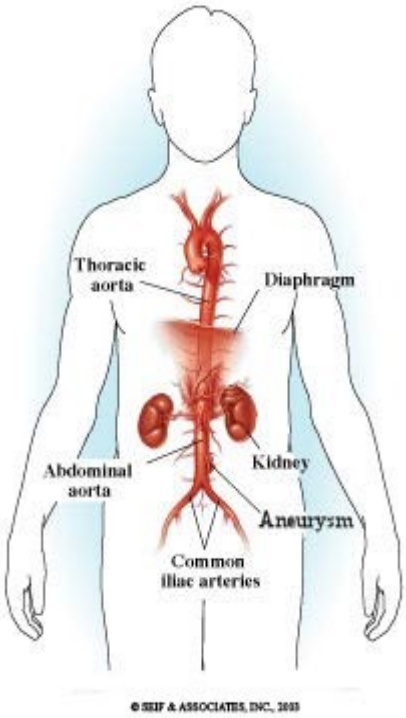
Abdominal Aortic Aneurysm

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, rises (*ascends*), arches, and goes down (*descends*) through the chest until it reaches the diaphragm. The diaphragm is the muscular part between the chest and belly (*abdomen*).
- The second part of the aorta is 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. The majority are located along the abdominal aorta. The major concern with an aortic aneurysm is that it can enlarge and rupture. This can cause death unless diagnosed and treated promptly. Half of all persons with untreated abdominal aortic aneurysms die of rupture within 5 years. Aneurysms can also develop blood clots or infections.

CAUSES

At least 80% of aortic aneurysms are caused by arteriosclerosis. 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.
- Being male.
- White race.
- Family history of aneurysm.
- Less frequent causes of abdominal aortic aneurysms include:
  - Connective tissue diseases.
  - Abdominal trauma.
  - Inflammation of blood vessels (*arteritis*).
  - Inherited (*congenital*) malformations.
  - Infection.

SYMPTOMS

- Many aneurysms do not cause problems. A small, unchanging or slowly changing aneurysm may produce no symptoms until it ruptures without warning. It may then cause death.
- The signs and problems (*symptoms*) of an un-ruptured aneurysm will partly depend on its size and rate of growth.
- Abdominal aortic aneurysms may cause pain. The pain typically has a deep quality as if it is piercing into the person. It is felt most often in the lower back area. The pain is usually steady but may be relieved by changing your body position.
- The person may also become aware of an abnormally prominent pulse in the belly (*abdominal pulsation*).

DIAGNOSIS

An aortic aneurysm may be discovered by chance on physical exam, or on x-ray studies done for other reasons. It may be suspected because of other problems such as back or abdominal pain. The following tests may help identify the problem.

- X-rays of the abdomen can show calcium deposits in the aneurysm wall.
- CT scanning of the abdomen, particularly with contrast medium, is accurate at showing the exact size and shape of the aneurysm.
- Ultrasounds give a clear picture of the size of an aneurysm (about 98% accuracy).
- MRI scanning is accurate, but often unnecessary.
- An abdominal 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*).

TREATMENT

Treating an abdominal aortic aneurysm depends on the size. A rupture of an aneurysm is uncommon when they are less than 5 cm wide (5 cm is about 2 ½ inches). **Rupture is far more common in aneurysms that are over 6 cm wide.**

- Surgical repair is usually recommended for all aneurysms over 6 cm wide. This depends on the health, age, and other circumstances of the individual. This type of surgery consists of opening the abdomen, removing the aneurysm, and sewing a synthetic graft (similar to a cloth tube) in its place. A less invasive form of this surgery, using stent grafts, is sometimes recommended.
- For most patients, elective repair is recommended for aneurysms between 4 and 6 cm. Elective means the surgery can be done at your convenience. This should not be put off too long if surgery is recommended.
- If you smoke, stop immediately. Smoking is a major risk factor for enlargement and rupture.
- Medications may be used to help decrease complications – these include medicine to lower blood pressure and control cholesterol.

HOME CARE INSTRUCTIONS

- If you smoke, stop. Do not start smoking.
- Take all medications as prescribed.
- Your caregiver will tell you when to have your aneurysm rechecked, either by ultrasound or CT scan.
- If your caregiver has given you a follow-up appointment, it is very important to keep that appointment. Not keeping the appointment could result in a chronic or permanent injury, pain, and disability. If there is any problem keeping the appointment, you must call back to this facility for assistance.

SEEK MEDICAL CARE IF:

- You develop mild abdominal pain or pressure.
- You are able to feel or perceive your aneurysm, and you sense any change.

SEEK IMMEDIATE MEDICAL CARE IF:

- You develop severe 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.

MAKE SURE YOU:

- Understand these instructions.
- Will watch your condition.
- Will get help right away if you are not doing well or get worse.

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