Baylor Medicine

MICHAEL E. DeBAKEY
DEPARTMENT OF SURGERY

PATIENT EDUCATION

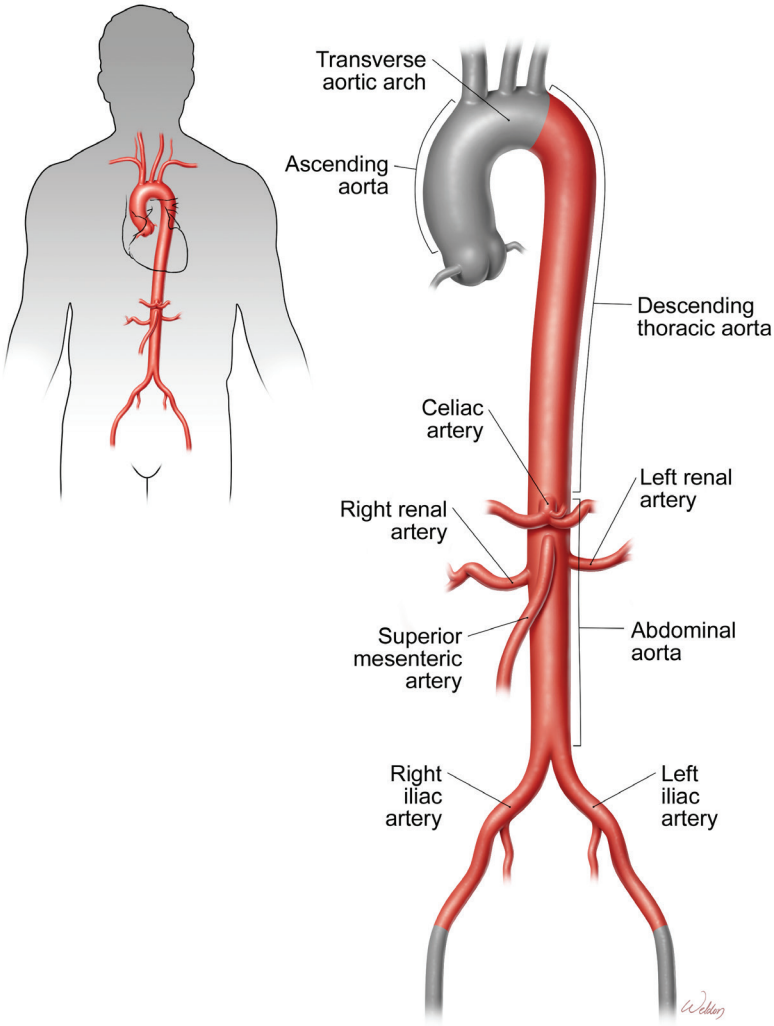
Surgery

ENDOVASCULAR REPAIR OF ABDOMINAL AORTIC ANEURYSMS

What is an Abdominal Aortic Aneurysm?

An abdominal aortic aneurysm (AAA) is an aneurysm in the abdominal portion of the aorta. The aorta is the largest blood vessel in your body. It runs from your heart down to your legs in a shape that resembles a candy cane and is responsible for delivering blood to your whole body. An aneurysm refers to the ballooning, or expansion, of the aorta that causes aortic wall weakening

An AAA may continue to expand (dilate) or remain unchanged over time. If the aortic wall continues to expand, it becomes weaker and risks tearing or rupturing. Abdominal aortic aneurysms are serious. Approximately 200,000 people are diagnosed with AAA yearly and approximately 15,000 people die each year from ruptured aneurysms.



Copyright Baylor College of Medicine.

Risk factors for developing an abdominal aortic aneurysm (AAA)

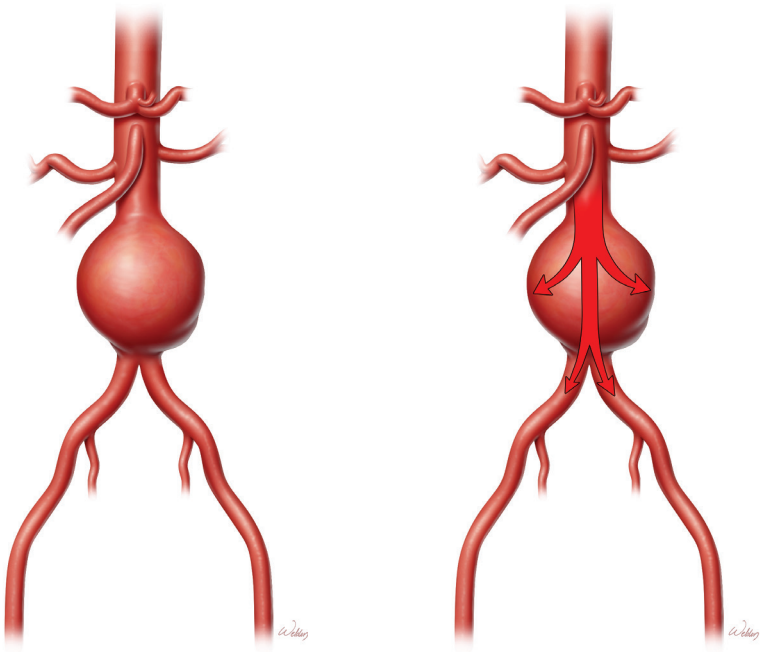
- Age – being 60 years or older
- Gender – males are most at risk for developing aneurysms
- Family history of aneurysms
- History of smoking
- Hardening or narrowing of any arteries
- High blood pressure

Symptoms

- **No Early Signs:** Often, there are no early symptoms, making it tricky to detect.
- **Pain or Tenderness:** Some people may feel pain or tenderness in the belly or back.
- **Pulsing Lump:** You might notice a pulsing lump in your belly, especially if the aneurysm is large.
- **Rupture Signs:** If it bursts (ruptures), it can cause sudden, intense pain, dizziness, and low blood pressure – which is an emergency!

Treatment Options

- **Improving risk factors is essential, such as:**
  - Quit smoking
  - Work with your primary doctor to achieve good control of your diabetes, high blood pressure, or high cholesterol.
  - Discuss screening with your primary doctor if you are between the ages of 65–75 with a history of smoking.
- **Monitoring:** If the aneurysm is small (less than 5 cm), doctors will monitor it regularly with imaging tests
- **Surgery:** For aneurysms larger than 5 cm, surgery may be needed. If surgery is needed, your surgeon will discuss two possible treatment options with you: endovascular aorta repair or open aorta repair.



Copyright Baylor College of Medicine.

Endovascular Repair of AAA

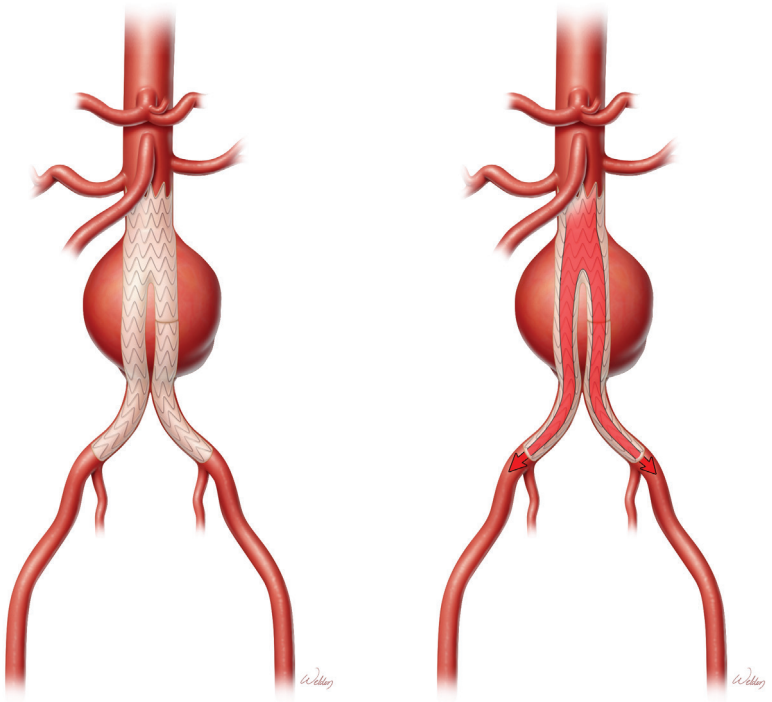
An EVAR, or Endovascular Aneurysm Repair, is a medical procedure designed to treat an abdominal aortic aneurysm. Unlike traditional open surgery, EVAR is a minimally invasive approach that involves repairing the weakened part of the aorta from the inside. This keeps the aneurysm from getting bigger over time and prevents it from rupturing.

How Does EVAR Work?

A stent graft is placed in the center of the aneurysm to direct the blood flow. This graft is a small tube made of fabric and metal mesh. With directed blood flow, there is less pressure to the artery walls. This prevents further expansion of the artery.

Advantages of EVAR

- **Minimally Invasive:** EVAR involves only small incisions, resulting in less impact on the body compared to open surgery.
- **Shorter Hospital Stay:** The hospital stay for EVAR is typically shorter, allowing patients to return home sooner.
- **Faster Recovery:** Patients often experience a quicker recovery time with EVAR than with traditional open repair.



Copyright Baylor College of Medicine.

Steps

1. You will be given anesthesia, so you will be asleep and pain-free
2. Through an IV, you will be receiving fluids and other medicines like antibiotics during the surgery.
3. After you are completely asleep, a breathing tube will be put into your windpipe through your mouth to help you breathe. This will usually be removed before you wake up.
4. The area where the procedure will be performed will be numbed using local anesthesia.
5. The surgeon will make a small incision over the artery, then will insert a needle into the artery.
6. Through the needle, they will insert a medical wire. The surgeon will push the wire up to the aneurysm site, using X-rays to check the wire placement
7. The surgeon will then insert the stent graft over the wire and up to the aneurysm site, using X-rays to check its placement
8. Once the graft is in perfect position, the surgeon will expand it in a spring-like fashion
9. The surgeon will once again take X-rays to confirm proper positioning of the graft and to check for any ongoing flow to the aneurysm, or leaks.
10. After there is confirmation of correct positioning and absences of any leaks, all instruments will be removed through the small incision.
11. Once the instruments have been removed, the access sites will be covered with a pressure dressing to prevent any bleeding.

After Surgery

Recovery – What to Expect

- After surgery you will be transferred to the intensive care unit (ICU) for overnight monitoring of your blood pressure, oxygenation and heart rate. You will have to lay flat for the first 2 hours.
- The next day if you are stable in the ICU, your surgery team will decide whether it is safe to discharge you home or if you need further monitoring on another floor of the hospital.
- Before you go home, your team will ensure that
  - Your blood pressure is stable
  - You have regained urinary/bowel function
  - You are able to eat and drink
- Upon discharge, you should arrange for a family member/friend to provide transportation home

Activity

- Do not lift anything heavier than 15 pounds, stoop or bend for the next two days after you get home. This should stop any bleeding from the access sites.
- Avoid high intensity or strenuous physical activities like moderate exercise or sports. For example, walking is okay but running is not.
- You may walk and climb stairs as needed but avoid long walks or climbing stairs for exercise

Hydration

If you do not have kidney disease, lung disease, or heart failure, you should drink, at least, the recommended amount of daily water intake, which is 3 liters. If you have kidney disease, lung disease, or heart failure, please contact your doctor for recommendations.

Incision Site Care

- Keep an eye out for bleeding from the incision. A small amount of blood on the bandage is normal, up to the size of a quarter.
- If you experience bleeding, lie down and press on the area for 15 minutes. If the bleeding doesn't stop, call your surgeon's office or go to the hospital right away.
- You may remove the surgery dressing and shower 24 hours after the procedure. Be sure to pat the surgery area dry with a clean towel. You do not need to cover the surgical site after the original dressing has been removed.
- Do not soak the area around the incision until it has healed. Do not take a bath for a week, or until your doctor says it's okay.
- If the surgical area is sore or swollen, put ice or a cold pack on it for 10 to 20 minutes at a time. Put a thin piece of cloth between your skin and the ice.

Follow Up

- You will follow up in our office in 2 weeks with an ultrasound or CT of the abdominal aorta. You will receive an appointment confirmation call 1–2 business days prior to the appointment. This information will also be available on your MyChart portal.
- If you have any questions or concerns regarding your procedure or care, please call the office, or you can send a message through the MyChart portal.

Call your surgery team right away if you have one of the following symptoms:

- No urination after 8 hours at home
- A growing lump near your surgery site
- Bleeding from your surgery site
- Incision that opens up or pulls apart
- Numbness, weakness, heat, or swelling in the arm or leg that has the surgery site
- Fever > 100.4
- Difficult talking or smiling
- Pain uncontrolled by pain medication
- Persistent nausea or vomiting