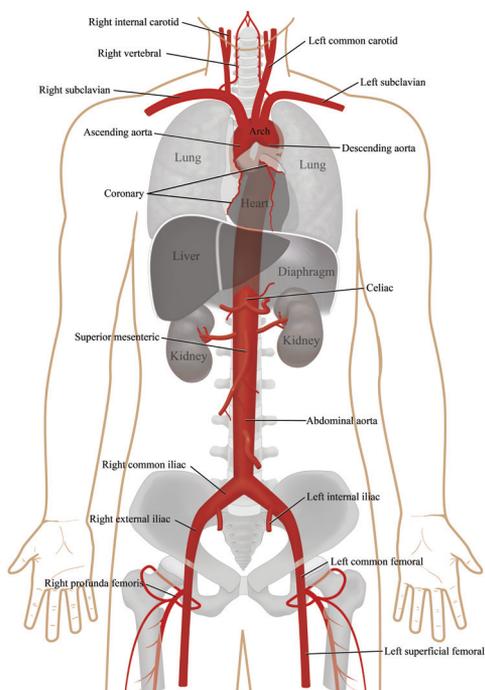


FEVAR PATIENT GUIDE

Endovascular Repair of Complex Aortic Aneurysms Using Fenestrated Devices



INTRODUCTION

You have been diagnosed with an aortic aneurysm. It is complex due to its proximity to the major vessels that arise from the aorta, which feed the kidneys, intestines and liver. Depending on how much of the aorta your aneurysm spans, it is classified as either an abdominal aortic aneurysm, or AAA, or a thoracoabdominal aortic aneurysm, or TAAA. An abdominal aortic aneurysm means the aneurysm is located in your abdomen. A thoracoabdominal aortic aneurysm means the aneurysm extends from your chest to your abdomen. It is common for these aneurysms to have no symptoms, therefore you may feel well. These aneurysms can be a very serious health risk depending on the size and location within the aorta. An aneurysm has the potential to either rupture (burst) or dissect (layers of the aortic wall separate), which can be life-threatening. However, when detected in a timely manner, aneurysms can be treated effectively.

Given the anatomy and configuration of your aneurysm and your overall health, an endovascular repair of your aortic aneurysm is the best treatment for you. Since this is a complex procedure, we've provided this guide to help you understand what you can expect with your procedure and recovery. If you have questions about the information you read or about your condition, please talk with your physician.

WHAT IS A COMPLEX AORTIC ANEURYSM?

A complex aortic aneurysm is a bulging in the portion of the aorta that can extend from the chest to the abdomen (thoracoabdominal) or be located in the abdomen only (abdominal). The bulging is caused by the pressure of blood pumping through areas where the wall of the aorta has weakened. There are four types of classifications for thoracoabdominal aortic aneurysms depending on the location (Extent I, II, III and IV: Figure 1). Abdominal aortic aneurysms that are complex in nature include juxtarenal (at the same level as the kidneys) and suprarenal (above the kidneys) (Figure 2).

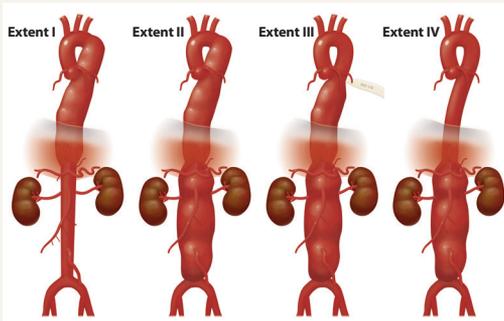


FIGURE 1

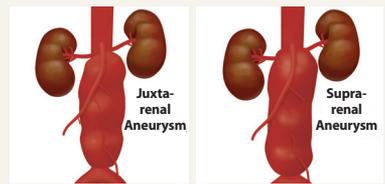


FIGURE 2

WHAT CAUSES A COMPLEX AORTIC ANEURYSM?

Aneurysms occur because of weakness in the artery wall. This weakness can have several possible causes. The most common cause is atherosclerosis, which is a hardening of the arteries caused by plaque buildup. Over time, this plaque can cause the walls of the aorta to become stiff and weak, creating the potential for an aneurysm to form.

Some factors that increase your risk for atherosclerosis are:

- ▶ Smoking
- ▶ High blood pressure
- ▶ High cholesterol
- ▶ Being overweight
- ▶ A family history of cardiovascular disease

Other factors that increase your risk for developing a complex aortic aneurysm are:

- ▶ Older age
- ▶ Gender (occurrence in males is more prevalent than females)

WHAT CAUSES A COMPLEX AORTIC ANEURYSM? (CONTINUED)

- ▶ Family history of aneurysms (please ask your physician about screening of family members.)
- ▶ Diabetes
- ▶ Genetic disorders that affect connective tissue, such as Marfan syndrome, Ehlers-Danlos syndrome, Loeys-Dietz syndrome
- ▶ Infection or injury to the aorta

It is common for aneurysms to form without symptoms. Over half of patients do not experience symptoms. **For those who do experience symptoms, the following can be warning signs of a complex aortic aneurysm, particularly a thoracoabdominal aortic aneurysm:**

- ▶ A mass in the abdomen
- ▶ A pulsing sensation that feels like a heartbeat in the abdomen
- ▶ Sudden onset of intense pain in the abdomen, chest, lower back
- ▶ Sores, discoloring or pain on the feet
- ▶ The abdomen has become stiff or rigid

Symptoms of a ruptured thoracoabdominal aortic aneurysm include:

- ▶ A drop in blood pressure
- ▶ An increase in heart rate
- ▶ Dizziness or lightheadedness
- ▶ Severe pain

TREATMENT

Treatment options for complex aortic aneurysms vary and include medical management (monitoring the aneurysm while controlling blood pressure), open surgery and catheter-based endovascular repair.

Endovascular repair

Your health care provider has recommended an endovascular repair. This is a minimally invasive procedure and when performed to repair a complex aortic aneurysm, it is known as a FEVAR, or fenestrated endovascular aortic repair. Traditional endovascular repair involves inserting a stent graft into the aneurysm. Because your aneurysm involves the major vessels that arise from the aorta to feed the kidneys, intestines and liver, these stent grafts cannot be used because

TREATMENT (CONTINUED)

they would block blood flow to these organs. Instead, a fenestrated endograft will be used. These grafts have openings, or fenestrations, or graft branches that align with the arteries branching off of the aorta through which smaller stent grafts are connected to the aortic branches, allowing blood flow to continue. Without the use of branched or fenestrated endovascular grafts, repair of aortic aneurysms in this area of the body requires extensive open surgery. Many patients are not candidates for an open aneurysm repair because of the magnitude of the operation, and these patients may have no other options for repair. Thus, this minimally invasive procedure allows treatment for patients who previously were not aneurysm repair candidates.

THE PROCEDURE

Before the procedure

Here are some tips and information that will help your procedure be as successful as possible:

- ▶ The evening before your surgery, you may eat a normal dinner. However, you cannot eat or drink anything, including water, gum or hard candy, beginning at midnight prior to your operation.
- ▶ Bring a list of your current medications that includes the names, dosages and how often you take them.
- ▶ Talk to your physician about possible drug interactions. If you are taking anticoagulant (blood-thinning) medication such as Warfarin, Coumadin or antiplatelet medication such as Plavix or Aspirin, you may be asked to stop taking them because they make it more difficult for your blood to clot.
- ▶ Talk to your health care provider about which medications you should stop and for how long. You should also ask your health care provider which medications you should still take on the day of your surgery.
- ▶ You will be given a special soap to wash with the day before your surgery, which decreases bacteria on your skin and may help reduce the risk of infection after your procedure.
- ▶ For the comfort and safety of all patients, UF Health requests that you do not bring jewelry, valuables, electric appliances (hair dryer, shaver, heating pads, etc.), food or medications with you on the day of your procedure.

THE PROCEDURE (CONTINUED)

- ▶ Shortly before your scheduled time of surgery, you will be taken to the pre-op care unit. An intravenous, or IV, line may be started before the procedure to provide fluid and any pre-op medications you have not yet received.
- ▶ Before going to the operating room, remove all jewelry, including rings. You may wear your glasses/contacts, dentures and/or hearing aids until you go to surgery so you can communicate with members of the team in the preparation area. Prior to going to the operating room, your pre-op nurse will give these items to your family until you need them during recovery.

Procedure

General anesthesia is used so you will be asleep during the procedure. To prevent spinal cord ischemia (paralysis), by decreasing spinal cord pressure, a spinal drain may be placed in your back, if indicated.

Incisions may be created in one or both of your groins and you may also have an incision on your arm or in your axilla (armpit). Using wires and catheters, the aorta will be accessed through these small incisions. X-rays will be taken using a special contrast dye that helps visualize blood vessels (Figure 3). Under this direct visualization, a stent graft is guided over the wires into the aorta, it is positioned and deployed. Next, wires are placed through the graft fenestrations or branches and smaller stent grafts that connect to the branch vessels are deployed. This allows exclusion of the aortic aneurysm while preserving blood flow to all the abdominal organs.

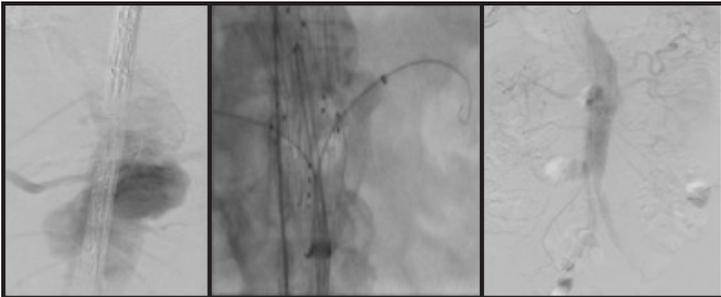


FIGURE 3

After the procedure

You will be taken to the intensive care unit, or ICU. Once you are ready to leave the ICU, typically in a day or two, you will be moved to a medical-surgical unit to complete your recovery. You are asked to lay flat in bed until the spinal drain has been discontinued, usually 24-48 hours after your procedure. When you are tolerating a diet and able to walk, you will be able to leave the hospital. A typical stay will last from three to seven days, depending on the complexity of the repair.

There are risks associated with every procedure. Those specific to this operation include, but are not limited to:

- ▶ Weakness or complete paralysis of legs
- ▶ Transient issues with the kidneys secondary to the dye (contrast)
- ▶ Problems with the arteries to the intestine
- ▶ Endoleak (poor seal/apposition of the graft to the arterial wall)
- ▶ Infection of the groin incision
- ▶ Bleeding

Post-operative care

For two weeks after the endovascular repair, you should not lift anything that weighs more than five to 10 pounds. If you are taking narcotic medications, do not drive or operate heavy machinery as these medications can impair judgment. You may shower and let soap and water run over your incisions, but must pat them dry afterwards. You may return to work when you are cleared by your doctor.

Check your incision daily for signs of infection (redness, increased tenderness, warmth or swelling). If you develop sudden shortness of breath or chest pain, or if you notice changes in color, sensation or strength in your legs, please seek medical attention immediately.

Follow-up

Over time, stent grafts may have problems such as kinking, migration or leakage and you may or may not experience symptoms. Therefore, you will need lifelong routine surveillance.

At the time of discharge, you will be provided an appointment at one month and six months from the date of repair with a repeat CT scan to evaluate the stent graft and remodeling of the aorta around the graft. After that, follow-up will be done yearly. It is crucial that you are compliant with the follow-up plan provided to you to ensure the most successful outcome after your procedure.

If you develop an endoleak, the aneurysm may continue to grow after the procedure, and may result in rupture. This is why it is so important to be compliant with your routine follow-up as directed by your physician. Most endoleaks can be treated by a simple, minimally invasive treatment.

***We look forward to caring for you.
Our top priority is to make your procedure with us successful
and as easy and comfortable as possible.***

Contact

If you have any comments, questions or concerns about your experience at the UF Health Aorta Center, please don't hesitate to contact our program manager Julie Sablik, MBA, at 352.594.6239 or sablij@shands.ufl.edu. Your feedback is very valuable in helping us to continually enhance the patient experience.

Location

Appointments at the UF Health Aorta Center are held at UF Health Surgical Specialists, located on the first floor of UF Health Shands Hospital.



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