The Vascular Education Foundation was established to increase awareness of the dangers and severity of vascular disease through the education of both the community and healthcare professionals.

The VEU™

The Vascular & Endovascular Update

Fall 2019

Fenestrated Stent Graft Is Solution to Complicated Abdominal Aortic Aneurysm

For your patients with a complicated AAA, such as juxtarenal, traditional stenting may not be possible. If these patients are medically fragile, open surgery is not an option either. That's when it's time to consider a fenestrated stent, which keeps the aneurysm from bursting, while maintaining blood flow to the kidneys.

What is an Abdominal Aorta Aneurysm?

An AAA happens in the aorta, the body's main blood vessel. The aorta is about the size of a garden hose and runs parallel to the spine, from the heart down through the abdomen into the pelvis, splitting into the left and right common iliac arteries below the waist. The iliac arteries carry blood to the tissues and organs in the abdomen, pelvis and legs. The abdominal aorta has three single anterior visceral branches, three paired lateral visceral branches, five paired lateral abdominal wall branches and three terminal branches.

An aneurysm is a weakening in the wall of the aorta, like a balloon, which begins to expand. This can be caused by aging, smoking, hypertension or injury. Most AAA patients are over age 60, smoked, have high blood pressure and are Caucasian.

Many aneurysms are small and stay small, never causing any problems for a patient. When a smaller AAA is discovered, most physicians recommend a "wait and watch" approach, as it may not pose an immediate health risk. An AAA, no matter how small, should be monitored regularly for any growth or signs of impending rupture. As an AAA continues to grow, the walls of the aorta will thin and lose their ability to stretch. A weakened section may become unable to support the force of blood flow and could rupture, causing serious internal bleeding and death. In fact, only about 50% of AAA ruptures survive the trip to the hospital, and not quite 50% of those will survive a surgical repair.

In most cases your patients will have no symptoms of an AAA. For people who do have symptoms, the most common is pain felt in the mid to upper abdomen, chest or lower back. It could be tenderness, a mild pain or severe pain. Some patients feel the aneurysm as a pulsating or throbbing mass in their abdomen. Other AAA patients experience none of these

symptoms.

An AAA is often discovered during an examination being performed for reasons. You may feel a bulge or pulsation in your patient's abdomen. Often, aneurysms are found during an imaging test such as a CT scan or ultrasound.

When your patient has risk factors for AAA, such as a family history, male gender, smoking, heart disease and high blood pressure, recommend periodic checks, including a physical exam and imaging tests.

How is AAA Treated?

The goal of all AAA treatments is to prevent the aorta from bursting. When an aneurysm is small, the patient should schedule periodic monitoring checkups. If an aneurysm is larger, or is rapidly growing, it has a greater risk of rupturing. If there is a risk the aneurysm may burst, the patient needs treatment. Depending upon the location and severity of the aneurysm and your patient's general health and physiology, your patient's AAA may be repaired with open surgical repair or endovascular repair.

What is an open surgical repair?

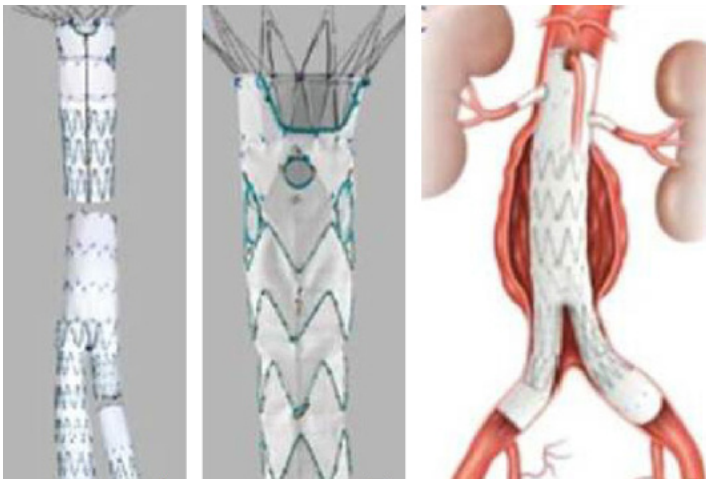
Surgery can be performed to repair the section of the aorta with an aneurysm.

To reach the abdominal aortic aneurysm, a cut is made through the abdomen or the side of the patient. The aneurysm will be replaced with a fabric tube graft. The graft is sewn into place and acts as a replacement blood vessel. The blood flow through the aorta is stopped while the graft is put into place, which means kidney health is compromised and, especially in older patients, mortality is possible. The surgery takes about two to four hours to complete. Open surgical repair is a proven medical procedure for candidates who are in good overall health with no diabetes or kidney disease. There is long recovery period, typically with an overnight in the intensive care unit and a hospital stay of another five to nine days. Many patients are unable to eat normally for five to seven days after the surgery. The overall recovery period can last up to three months.

What is endovascular repair?

Most AAA are infrerenal, meaning the enlarged area is at least 15mm below the intersection of the aorta and the renal arteries which lead to the kidneys. Infrerenal AAA gives a vascular surgery ample space to place a standard stent graft. This resembles a very tiny pair of pants, with the elongated torso of the "pants". This stent protects the aneurysm from rupture while the "legs" branch off into each iliac artery and providing the lower extremities with blood flow.

What is the Zenith Fenestrated AAA Endovascular Graft repair?

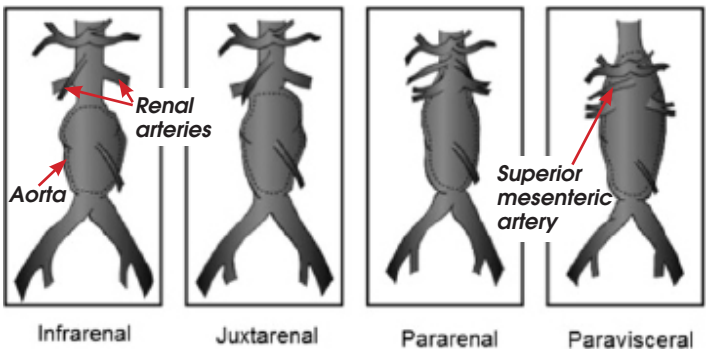


When a AAA is juxtarenal, there is, at most, 5mm of space between the renal arteries and the aneurysm itself. A regular stent can't be placed in this location because blood flow to the kidneys would be permanently blocked.

While a vascular fellow at Cleveland Clinic, Dr. Gene Tanquilut, under the auspices of Dr. Roy Greenberg, began using fenestrated stents in the early 2000's. In spring 2012, the Zenith Fenestrated AAA Endovascular Graft, made of woven polyester fabric and stainless steel, was approved for general use in the United States by the FDA. Cook Medical is the exclusive manufacturer of these stents.

The ZFen was developed to provide an endovascular repair option for patients with a juxtarenal abdominal aortic aneurysm, where the distance between the renal arteries and the start of the aneurysm is less than 5mm. In the very near future, there will endovascular options for the pararenal and paravisceral abdominal aortic aneurysms

Deploying a fenestrated stent graft requires access to multiple vessels including the renal arteries and at times the superior mesenteric artery. It is a complicated process that may need up to 5 components to exclude the aneurysm.



How are the grafts implanted?

Before the procedure, the vascular surgeon will review the CT scan and angiogram of your patient's aorta and iliac arteries. From measurements taken from these images, the proper size for each part of the Zenith Fenestrated AAA Endovascular Graft is custom fashioned so that it will exactly fit your patient's aorta.

How successful is the Zenith Fenestrated AAA Endovascular Graft?

Data has shown that, within 5 years of placement of a Zenith Fenestrated AAA Endovascular Graft, there have been zero ruptures and no conversions via open repair. In those 5 years, 97.3% of patients have survived any AAA-related causes of mortality, and there have been no deaths from device failure.

What are follow-up requirements?

When your patient receives a Fenestrated AAA Endovascular Graft, they will follow up with the vascular surgeon every few months in the first year after surgery and then annually after that.

Talk to your vascular surgeon partner to ensure that your patient is getting the best treatment for their unique physiology, medical history and condition.

When you have questions, reach out to vascular surgeon Dr. Eugene Tanquilut at 708-305-0248.

He will be happy to explain how a Zenith Fenestrated AAA Endovascular Graft works and why it may be the best choice for your patient.

You're invited to LEA-UP Lower Extremity Amputation and Ulcer Prevention

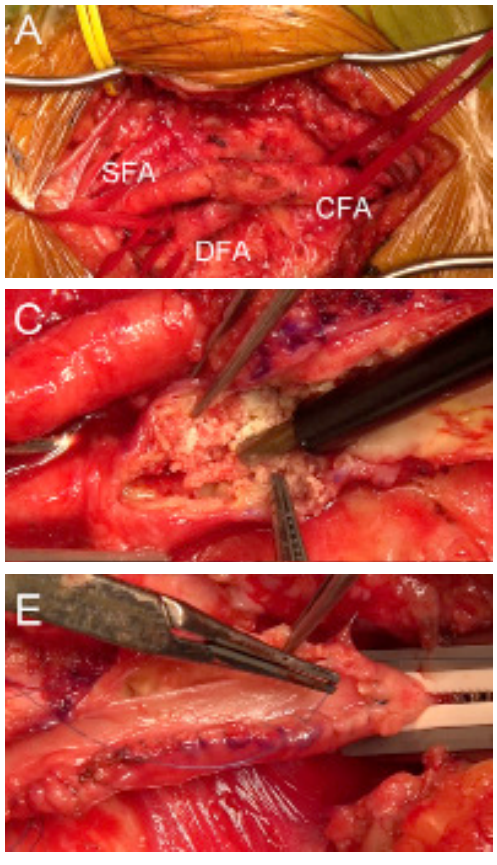
Wednesday, November 13, 2019 6:30 pm

See back for details!

Who is best qualified to perform endovascular abdominal aortic aneurysm repairs?

Open abdominal aortic aneurysm repairs have been repaired by vascular surgeons and cardio-thoracic surgeons. Best outcomes have been by surgeons who have the highest volume of surgeries. Endovascular abdominal aortic aneurysm repairs (EVAR) are performed by vascular surgeons and cardio-thoracic surgeons. Nonsurgical specialties (i.e., interventional radiologists and cardiologists) are able to perform endovascular aneurysm repairs with the aid of vascular surgeons. Many of these patients have extremely calcified femoral (at left) or iliac arteries that may need surgical intervention either prior to or after EVAR (bottom). It is also possible that the aorta will rupture during EVAR. This would automatically require conversion to an open surgical repair.

Left - Arrow indicates the calcium-filled common femoral artery. This would most likely require endarterectomy either prior or after endovascular repair.



Top and left - A. CFA – common femoral artery, SFA – superficial femoral artery, DFA – deep (profunda) femoral artery; B, C and D: Endarterectomy (decalcification) of the common femoral, femoral and profunda femoral arteries; E: Patch angioplasty with vein.

About the author, Dr. Eugene Tanquilut

Award-winning and recognized as a Vitals Top 10 Doctor and a Patient's Choice Doctor, ***Dr. Eugene Tanquilut*** is board-certified in both vascular and endovascular surgery. He earned Vascular and Endovascular Fellowships at Cleveland Clinic.

Dr. Tanquilut is the President of Vascular Specialists and has participated in numerous research studies, published papers and is a widely-requested speaker.

You're invited to LEA-UP Lower Extremity Amputation and Ulcer Prevention

LEA-UP meets quarterly to learn from experts in the fields of podiatry, infectious disease, primary care, nephrology, vascular surgery and more.

Saturday, November 23, 2019 • 6:30 pm

Capri Ristorante Italiano
12307 S. Harlem Avenue, Palos Heights

Katerina Bakhmut, PharmD, BCPS
presenting "A Brief Overview of Direct Oral Anticoagulants (DOACs) in Clinical Practice."

Reserve your seat with Dana
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or text to 708-738-9648

Inside: Fenestrated Stent Graft Is Solution to Complicated Abdominal Aortic Aneurysm

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