

Bilateral Iliac Branched Endoprosthesis

■ Patient Case Study

A 61-year-old male presented with bilateral large fusiform common iliac artery aneurysms that were incidentally found on a CT scan performed as part of a trauma work-up after a fall. The CT scan demonstrated bilateral isolated common iliac artery aneurysms with no evidence of aortic aneurysm (*Figure 1*). Given their size and eventual risk of rupture, repair was recommended.

Traditional endovascular (minimally invasive) repairs of iliac artery aneurysms without associated aortic aneurysms frequently involved sacrificing blood flow into the internal iliac artery branch (that delivers blood to the pelvis) so that the stent-graft could be safely sealed in the external iliac artery branch, thereby preserving blood-flow down the leg. Single internal iliac artery sacrifice usually was fairly well-tolerated, though not without a moderate incidence of buttock claudication, and other potential complications. However, when bilateral iliac artery aneurysms were treated as such, the incidence of buttock claudication, dangerously insufficient blood flow to the colon and pelvic organs, erectile dysfunction and other major risks were incurred.

The advent of the FDA-approved Iliac Branch Device (Gore Medical) allowed successful endovascular exclusion of blood flow into the aneurysm, while simultaneously preserving internal iliac artery branch blood flow. Simultaneous Iliac Branch Device (IBD) placement to treat bilateral common iliac artery aneurysms is less commonly performed, and involves an increasing level of complexity. However, in a patient with suitable anatomy, it affords the benefit of preventing buttock claudication. The procedure is performed through the femoral arteries in the groins, either via small puncture holes closed with sutures, knotted above the skin and then slipped down to the artery, or via small incisions to directly repair the artery.

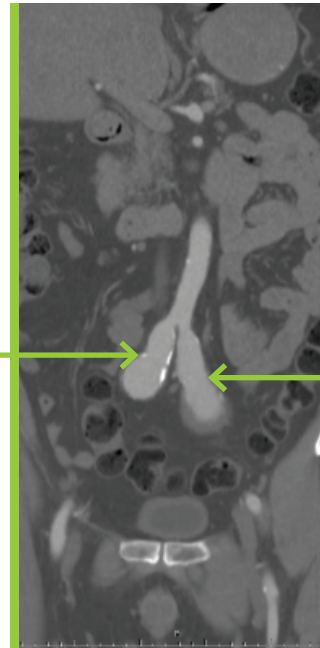


Figure 1 - Coronal reconstruction of CT scan demonstrating bilateral large, fusiform common iliac artery aneurysms (green arrows).



Figure 2 - Angiogram upon completion of procedure demonstrates successful exclusion of iliac aneurysms with stent grafts and continued normal blood flow into internal iliac arteries.

Our patient's procedure required a small 4cm incision in one groin, and a tiny puncture hole in the other side. Both IBDs were deployed successfully, and normal pelvic blood-flow was maintained upon completion. Both aneurysms were successfully excluded from blood flow to prevent continued pressurization and eventual rupture. The patient tolerated the procedure well and did not develop any complications of poor pelvic blood flow, including no buttock claudication (*Figure 2*).

■ First in the Region to Perform Bilateral IBE

"While endovascular repair has become more common, Doylestown Health is offering a more complex level of care," explains Atul Rao, MD, vascular surgeon. This includes the use of specially-designed stent grafts that allow surgeons to preserve and maintain blood flow to areas which were previously unreachable." Doylestown Health vascular surgeons were first in the Delaware Valley to perform a

bilateral iliac branched endoprosthesis (IBE) procedure, when Dr. Rao and Joshua Eisenberg, MD, simultaneously treated two iliac aneurysms (left and right) in a 61-year-old male while preserving blood flow to both iliac arteries.

The IBE procedure is a cutting-edge therapy that effectively treats the aneurysm while preserving quality of life for the patient.

I Doylestown Health Vascular Surgery

Doylestown Health Vascular Surgery offers comprehensive diagnostic and therapeutic interventions for arterial conditions and venous systems. Our highly experienced, fellowship-trained endovascular surgeons perform complex open surgeries and minimally-invasive endovascular treatments in Doylestown Hospital's sophisticated hybrid operating room. Other reasons to choose Doylestown Health include:

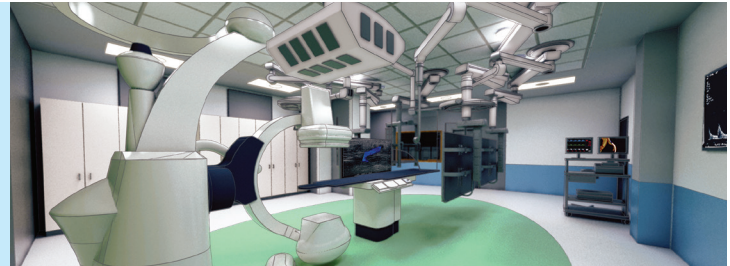
- Doylestown Health vascular surgeons offer minimally invasive interventions for aortic and iliac aneurysm.
- The majority of Doylestown Health's endovascular abdominal aortic aneurysm and thoracic aneurysm repairs are done percutaneously (through tiny holes in the groin as opposed to surgical cutdown). This includes routine and complex repairs, such as iliac branch and fenestrated.
- Benefits of the percutaneous approach include less scarring, quicker recovery and decreased chance of infection.
- Doylestown Health's hybrid operating rooms offer state-of-the-art imaging and software reconstruction capabilities for complex, open surgeries and endovascular procedures.

Therapies include:

- Aortic iliac aneurysms
- Aortic intervention
- Branch grafts
- Carotid disease
- Dialysis access
- Endovascular stent grafts
- Percutaneous endovascular aneurysm repairs
- Peripheral arterial disease
- Mesentery ischemia

New Hybrid Operating Suite

A new hybrid operating suite at Doylestown Hospital will be complete Summer 2017. The endovascular hybrid operating room combines advanced imaging capabilities with a fully integrated surgical suite allowing for more complex minimally-invasive vascular and endovascular procedures.



I Other Complex Aortic Interventions

Thoracic Endovascular Aneurysm Repairs (TEVAR)

TEVAR is a minimally invasive repair of thoracic aneurysms. This therapy significantly reduces the recovery and risks associated with open chest incisions that were the mainstay of treatment in the past. Drs. Rao and Eisenberg have introduced this technology to Doylestown Hospital.

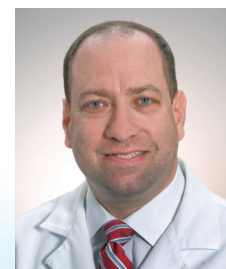
Fenestrated Endovascular Branch Graft (FEVAR)

Sometimes, an aneurysm occurs in the section of the aorta where the kidney arteries or intestinal arteries branch off. Fenestrated stent grafts are custom designed using enhanced imaging, and holes are placed at the exact locations of the kidney or intestinal arteries. This innovative therapy has also been brought to Doylestown Hospital by Drs. Rao and Eisenberg.

I Vascular Surgery Team



Atul Rao
MD, FACS



Joshua Eisenberg
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I Refer a Patient

To learn more, physician consultation or to refer a patient, call **215.230.6982** or visit **DoylestownHealth.org/Vascular**