

Produced under an educational grant from Medtronic Vascular.

Achieving Iliac Access for Endovascular Repair

The AneuRx AAAdvantage Stent Graft with the Xcelerant Hydro Delivery System: A case report.

BY CLIFFORD J. BUCKLEY, MD, FACS, AND SHIRLEY D. BUCKLEY, MSN, RN, CS

Iliofemoral access for endovascular abdominal aortic aneurysm (AAA) repair can present challenges for the vascular interventionist. Particular issues, such as vessel tortuosity, presence of calcification, and vessel size, can precipitate adverse events and can be the reason to exclude a patient for an endovascular AAA repair. We present a case of a patient with a moderately sized AAA and associated severe atherosclerotic iliac occlusive disease; this case illustrates a number of these challenges and how a new hydrophilic-coated delivery system facilitated successful vascular stent graft delivery and aneurysm exclusion.

CASE PRESENTATION

A 75-year-old man presented for treatment of a symptomatic AAA. He had a medical history that included coronary artery disease, organic aortic valvular stenosis, hypertension, chronic obstructive pulmonary disease, prostate cancer, and severe aortoiliac occlusive disease. His family his-

tory was significant, with a sister who died of a ruptured AAA in her 40s. A CT scan of the aorta and iliac vessels showed a AAA measuring approximately 5.7 cm in diameter with associated significant atherosclerotic iliac occlusive disease (Figures 1 through 3).

OPERATIVE PROCEDURE

The patient was taken to the operating room where a field block was created in both groins using 1% Xylocaine (AstraZeneca, Wilmington, DE) local anesthesia. Two oblique incisions were made in a parallel fashion in the inguinal crease and carried down to expose the common femoral arteries. Considerable difficulty was encountered accessing the vessels using a Seldinger needle due to heavy vessel calcification. The patient was systemically heparinized, and a .035-inch angled Glidewire (Terumo Interventional Systems, Somerset, NJ) was manipulated through the right iliac system and positioned in the suprarenal aorta.



Figure 1. Preoperative CT three-dimensional reconstruction showing severe aortoiliac occlusive disease with heavy calcification.

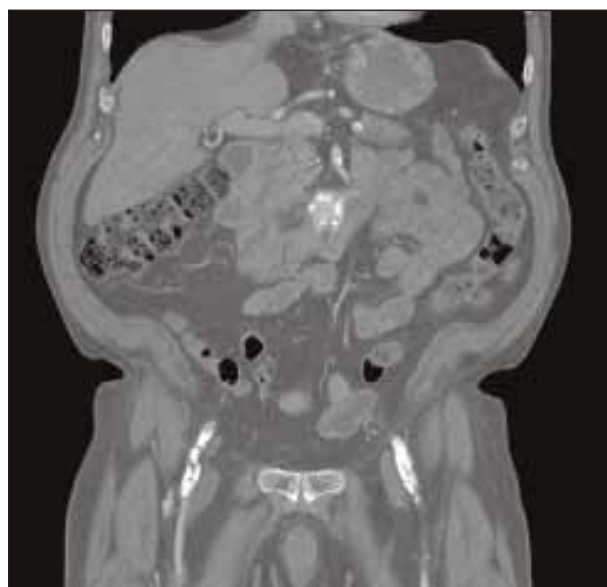


Figure 2. Preoperative CT sagittal view.



Figure 3. Preoperative CT axial view.

Two 9-F introducer sheaths were placed, and an intravascular ultrasound (IVUS) catheter was used to assess the suprarenal and infrarenal aorta. IVUS demonstrated that the left iliac system was the best route for insertion of the main body of the endograft, but it would require iliac balloon angioplasty to facilitate device passage. When this was completed, the main body of the AneuRx AAAAdvantage Stent Graft with the Xcelerant Hydro Delivery System (Medtronic Vascular, Santa Rosa, CA) was inserted and positioned at the level of the renal arteries. As the delivery system was inserted into the arteriotomy, a saline-soaked sponge was applied to the delivery system to activate the hydrophilic coating. Activating the hydrophilic coating at the time of delivery system insertion rather than before the insertion ensured adequate “wetting” of the hydrophilic coating.

A pigtail catheter was then inserted from the right femoral approach, and an operative aortorenal arteriogram was performed. The AneuRx AAAAdvantage Stent Graft was inserted into the iliac artery, tracked up to the suprarenal aorta without difficulty, and deployed at the level of the renal arteries. Contralateral limb gate cannulation was confirmed with IVUS, and the subsequent iliac contralateral limb was deployed covering the iliac system to its bifurcation. Finally, an iliac extension was placed to extend coverage of the stent graft down to the level of the left hypogastric origin.

The completion arteriogram showed good flow to the limbs of the endograft and good perfusion of both renal arteries, the superior mesenteric artery, and both hypogastric arteries with no evidence of endoleak (Figure 4). The patient had an uneventful postoperative course with no

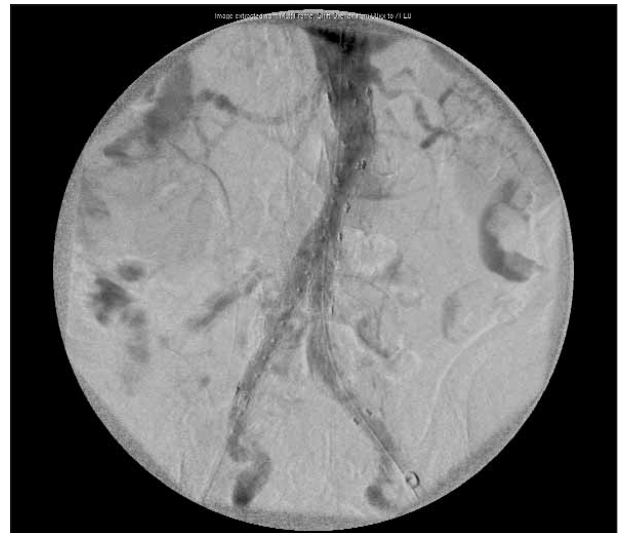


Figure 4. The postprocedure angiogram demonstrated successful exclusion of the aneurysm.

iliac-related complications and was discharged to home on the second postoperative day.

DISCUSSION

This case illustrates a number of unique challenges faced by physicians attempting to treat AAAs with concomitant iliac occlusive disease using an endovascular approach. Use of the new AneuRx AAAAdvantage with the Xcelerant Delivery System with hydrophilic coating facilitated vascular access and stent graft delivery in severely diseased iliac vessels. The new Xcelerant Hydro Delivery System minimizes the friction and trauma in vessels that could not be easily treated using earlier-generation delivery systems. In addition, the Xcelerant Hydro Delivery System has a dual-tapered sheath with a reduction in diameter from 21 F at the proximal end to 18 F at the distal end, further facilitating insertion and retraction of the entire delivery catheter. The low profile (21-F) with the option of a sheathless access also enhances stent graft delivery. Challenging iliac anatomy can now be approached with greater confidence using this new delivery system technology. ■

Clifford J. Buckley, MD, FACS, is Director, Division of Vascular Surgery at Scott & White Memorial Hospital in Temple, Texas. He has disclosed that he is a paid consultant to Medtronic. Dr. Buckley may be reached at (254) 724-0658; cbuckley@swmail.sw.org.

Shirley D. Buckley, MSN, RN, CS, is a clinical nurse specialist from Scott & White Memorial Hospital in Temple, Texas. She has disclosed that she holds no financial interest in any product or company mentioned herein. Mrs. Buckley may be reached at (254) 724-9248; sbuckley@swmail.sw.org.