Confronting Aneurysms In the Setting of Gastrointestinal Hemorrhage

Consideration and options.

BY KATE PFAFF, BS; QINGSHENG LU, MD; AND ROY K. GREENBERG, MD

A 70-year-old man with a history of coronary artery bypass grafts, hypertension, atrial fibrillation, diabetes, and smoking, presented with gastrointestinal bleeding. Over the course of 2 days, he received 12 units of packed red blood cells while localization of the bleeding was attempted. A colonoscopy, esophagoduodenoscopy, and multiple attempts at angiographic localization yielded negative results. He was noted to have a large bilateral common iliac aneurysm (in excess of 6 cm) and a small abdominal aortic aneurysm (5 cm) (Figure 1). The question of ilioenteric bleeding was raised but was considered unlikely.

One week later, upon recurrent bleeding, a tagged red cell scan noted bleeding in the right colon. An angiogram at that time demonstrated bilateral common iliac aneurysms (Figure 2) and a suspicious region in the right colon, which was embolized (Figure 3). We hoped that the bleeding was controlled, but if not, the patient would likely require either a right hemicolectomy or subtotal colectomy. The aneurysms were now more of a concern with respect to their size, risk of rupture, and potential for contribution as a bleeding source. However, the prospect of repairing the aneurysms with an open approach should a colon resection be required was not appealing. Further concerns were raised with regard to successful colonic anastomosis, should the patient lose his internal iliac and inferior mesenteric circulation.

Figure 1. CTA reconstruction preoperatively demonstrates infrarenal aorta and bilateral common iliac aneurysms.

Figure 2. An aortogram identifies bilateral iliac artery aneurysms involving the right internal iliac artery.

Figure 3. Coil embolization of two right distal iliocolic branches.

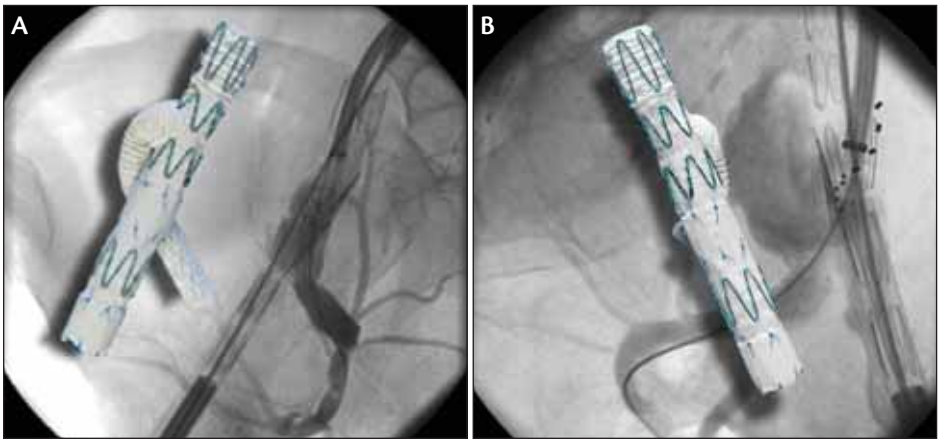

Figure 4. Placement of a bridging stent graft during deployment of a helical hypogastric branch device on the right side (A). Fluoroscopic image shows access of the left internal iliac artery during deployment of a helical hypogastric branch device (B).

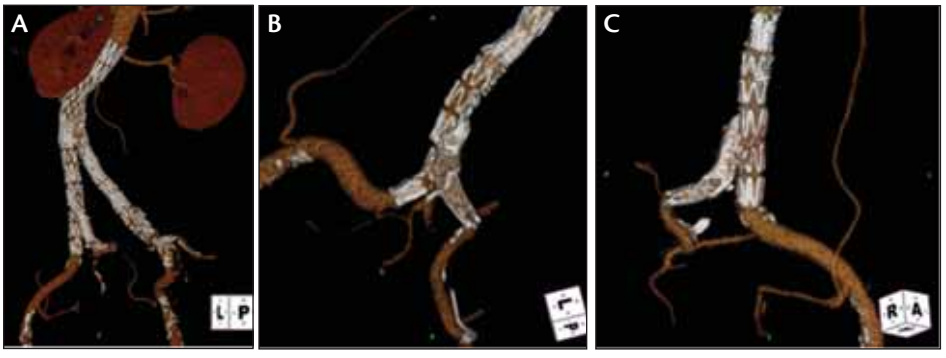

Figure 5. CTA after endovascular repair of the aorta and both common iliac aneurysms. Flow to both internal iliac arteries is intact (A). CTA demonstrates perfusion to the right hypogastric artery with a branched endograft in place (B). CTA demonstrates perfusion to the left hypogastric artery with a branched endograft in place (C). This branched endograft is not for sale in the US.

TREATMENT

We elected to place a Zenith infrarenal endovascular graft (Cook Medical, Bloomington, IN) with branches allowing preservation of both internal iliac arteries. The internal iliac branches were placed first (Figure 4). The infrarenal bifurcate component was then inserted through the left branched graft and ultimately joined both iliac branches with extension components. Fluency grafts (Bard Peripheral Vascular, Tempe, AZ) were used to extend the branches into the distal main internal iliac trunk bilaterally.

The repair was uneventful, and postprocedure CTA demonstrated excellent perfusion of both internal iliac arteries without evidence of any endoleak (Figure 5). The patient was discharged from the hospital without further colonic hemorrhage. However, 2 weeks later, the patient returned with colonic hemorrhage. After another extensive search for the bleeding source, the patient underwent a right hemicolectomy with successful reanastomosis of the colon. He recovered nicely from this surgery as well, and has had no further gastrointestinal bleeding.

DISCUSSION

This case illustrates several issues that must be considered when confronted with aneurysms in the setting of a gastrointestinal bleed. The potential need for a transabdominal-contaminated procedure to address the bleeding source deters any desire to place a prosthetic graft that communicates with the peritoneal cavity. Right distal iliac exposure would be a challenge from a retroperitoneal approach, particularly in the setting of such a large aneurysm. Additionally, the potential need for a colonic primary anastomosis brings into question the safety of eliminating collateral colonic flow. In this situation, branched endografts were placed to treat the aneurysmal disease without violation of the peritoneal cavity—thus minimizing the chance of graft infection and preserving collateral flow to the colon and pelvis. ■

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