Ischemic Duodenal Ulceration After Thoracic Endovascular Aortic Repair

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CASE REPORT

Ischemia is an uncommon cause of duodenal ulcers because of the duodenum’s redundant blood supply.1 Aortic surgery is a known but rare risk factor for mesenteric ischemia. Endovascular aortic repair is an increasingly common alternative to open surgery for select patients with aortic aneurysms; however, postprocedural complications including endoleaks and graft migration can occur.2,3 Less commonly reported complications downstream from the surgery itself, including bowel ischemia have been elucidated, with only a handful of reports detailing duodenal ulceration in the current literature.4 We present a case of ischemic duodenal ulceration after thoracic endovascular aortic repair (TEVAR).

An 82-year-old man on dual antiplatelet therapy presented with lightheadedness, dyspnea, and melena. He had been discharged to skilled nursing 3 days earlier after TEVAR for DeBakey Type III aortic dissection distal to the left subclavian artery. His recovery was complicated by the endovascular leak at the left subclavian artery, left renal artery dissection, and thrombosis of the superior mesenteric artery, which were treated with coiling and stenting of the left renal artery and superior mesenteric artery. Hemoglobin on return was 6.7 g/dL compared with 8.3 g/dL on initial discharge. Esophagogastroduodenoscopy revealed a large, near-circumferential Forrest IIc ulcer in the duodenum with concern for underlying ischemic etiology (Figure 1). Computed tomography angiography (CTA) of the chest and abdomen revealed a duodenal ulcer with associated mural thickening and fat stranding (Figure 2). Compared with post-TEVAR CTA images, repeat CTA with reconfiguration 2 weeks later identified stenosis at the
bifurcation of the common hepatic artery and stenosis of the celiac artery (Figure 3). These findings were confirmed with celiac angiography and repaired using drug-coated balloon catheter percutaneous transluminal angioplasty to the common hepatic artery and balloon expandable stenting to the celiac artery. The patient’s hemoglobin stabilized postoperatively with complete symptom resolution.

Upper intestinal ischemia is an important cause of duodenal ulceration and hemorrhage after TEVAR. Bowel ischemia from TEVAR is more commonly seen when the distal aspect of the graft has celiac artery involvement; review of the current literature reveals fewer reports of ischemic duodenal ulceration after TEVAR, highlighting the importance of this case presentation. Based on the imaging obtained before and after the intervention and the temporal relationship between those images, it was believed that the initial vascular injury was not directly related to the procedure, rather was a downstream consequence and one that should be identified in patients presenting with symptoms similar to those presented in this case. Early recognition of ischemic duodenal ulceration after TEVAR is of significant clinical importance because treatment differs from other etiologies of duodenal ulcer formation, and early intervention lowers morbidity.

DISCLOSURES

Author contributions: LA Bierle wrote the manuscript and is the article guarantor. JM Sweet revised the manuscript for intellectual content. V. Chitnavis provided the images.

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