

# An unusual cause of gastrointestinal bleeding in an elderly patient

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## QUESTION

A 65-year-old male patient was referred to our clinic due to complaints of fatigue, intermittent melena, and hematochezia for 2 months. Chronic obstructive pulmonary disease, coronary heart disease, and peripheral arterial disease were noted in his medical history. The patient also had a history of aortofemoral bypass surgery during which an aortofemoral polyester vascular graft had been inserted. The surgery had been performed 2 years

previously due to right common iliac artery occlusion. Laboratory test results were unremarkable except for anemia (hemoglobin: 8.7 g/dL [11.7-15.5]), leukocytosis ( $12.3 \times 10^9/L$  [4.1-11.2]), and high C-reactive protein levels (24.3 mg/dL [0-0.8]). Upper gastrointestinal endoscopy was performed on the patient. The endoscopic view of the duodenum is shown in Figure 1.

**What is the patient's most likely diagnosis?**



Figure 1. Endoscopic view of the third part of the duodenum

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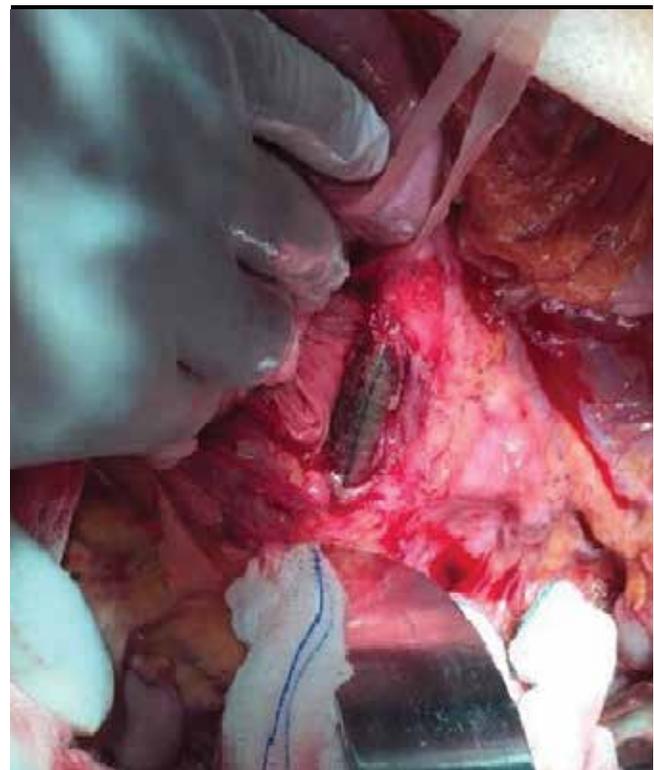
**Answer: Duodenal penetration of the aortofemoral vascular graft**

Upper gastrointestinal endoscopy showed the intact vascular graft penetrating into the duodenal wall in the third part of the duodenum together with ulcerations and clots (Figure 2). Abdominal computed tomography showed no contrast extravasation in the duodenum in spite of the penetrating vascular graft, but showed increased perigraft soft tissue densities that were consistent with infection. The patient underwent aortofemoral graft revision with segmental duodenal resection (Figure 3). During 6 months of follow-up, no new bleeding episode occurred after the surgery.

Gastrointestinal penetration of the vascular graft is a rare complication of open aortic reconstructive surgery. It is thought to be the preliminary step of secondary aortoenteric fistula and does not involve anastomosis between aorta and graft. Mechanical pressure by the graft on the bowel, leading to bowel erosion, is the major underlying cause of the penetration (1). The duodenum is the most commonly involved part of the gastrointestinal tract due to its anatomic position, and usually the third part of the duodenum is affected. Patients generally present with graft infection or sepsis, and systemic signs of infection, such as fever, leukocytosis, and hypotension, are frequently seen. Gastrointestinal bleeding can occur due to destruction of the bowel wall in areas that are in direct communication with the gastrointestinal tract and aortic graft, and the bleeding is generally self-limited, as in the current case (1,2). However, the penetration may be complicated with secondary aortoenteric fistula (AEF) in some cases that present with massive gastrointestinal bleeding and hemorrhagic shock (1). A definitive diagnosis of the penetration is made with esophagogastroduodenoscopy or radiologically with computed tomography and magnetic resonance imaging. The third and fourth part of the duodenum, which are the most common sites of penetration, should be evaluated during upper endoscopy (1,2). The management of penetration includes control of infection with antibiotics, follow-up of the hemorrhage, and when necessary, blood transfusion and open or endovascular graft replacement. Bowel repair or resection is required in some cases as in the current patient (2-4). Although mortality rates have improved with the new treatment modalities, these lesions are still associated with a poor prognosis. Mortality rates have been report-



**Figure 2.** Intact vascular graft penetrating into the duodenal wall, ulcerations, and clots on areas of direct communication between the aortic graft and duodenum



**Figure 3.** Intraoperative view of the vascular graft in the duodenum

ed to be approximately 19%-27% and are similar to those of secondary AEFs (1).

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