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CASE REPORT | ENDOSCOPY

Delayed Presentation of Splenic Rupture After Endoscopy in a Patient With Hemophilia A: Case Report and Review of the Literature

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Abstract

An 88-year-old female presented with dyspnea on exertion and severe anemia. Colonoscopy was unremarkable and the patient was transfused with packed red blood cells prior to discharge. The patient returned 2 weeks later with severe abdominal pain, hypotension, and anemia. Computed tomography revealed splenic hematoma and hemoperitoneum. She bled from the surgical sites during emergent splenectomy and work-up revealed hemophilia A. We present, to our knowledge, a case of the longest reported delay in presentation of post-colonoscopy splenic rupture and the first in a patient with hemophilia A.

Introduction

Colonoscopy is typically a safe procedure. Common complications include perforation and hemorrhage, with perforation rates near 0.05% and hemorrhage estimated at 0.28%.[1] Splenic rupture is a less common but potentially fatal complication, with 102 cases reported worldwide.[2] Most cases occur within 24 hours after colonoscopy (71%), though others present later, and the longest documented delay is 10 days.[3] The most common symptom is abdominal pain (94%), and computed tomography (CT) is the most sensitive diagnostic test.[3]

Case Report

An 88-year-old female presented to the hospital with symptomatic anemia and hemoglobin 4.1 gm/dL. Medications included meloxicam and ibuprofen, and review of systems noted easy bruising. Family history was negative for bleeding disorders. Physical exam was unremarkable. She was transfused with packed red blood cells. Colonoscopy with propofol sedation and upper endoscopy were unremarkable, and there was not felt to be extensive looping or need for external pressure. The patient was discharged with intended follow-up for capsule endoscopy. However, 2 weeks later the patient presented to the hospital with severe abdominal pain, tachycardia, and hypotension. Her abdomen was diffusely tender with guarding and rebound tenderness. Hemoglobin was 6.0 gm/dL. CT revealed active bleeding from a splenic hematoma and hemoperitoneum (Figure 1).

Emergent exploratory laparotomy and splenectomy were performed. Postoperatively, the patient oozed from surgical and central line sites. Coagulation studies revealed a partial thromboplastin time (PTT) of 82 seconds, factor VIII value of <1.0, and circulating factor VIII inhibitor (102 Bethesda units). Findings were consistent with acquired hemophilia A. The patient was treated with IV steroids, immunoglobulin, rituximab, and activated recombinant factor VII. She required mechanical ventilation and vasopressors until support was withdrawn.

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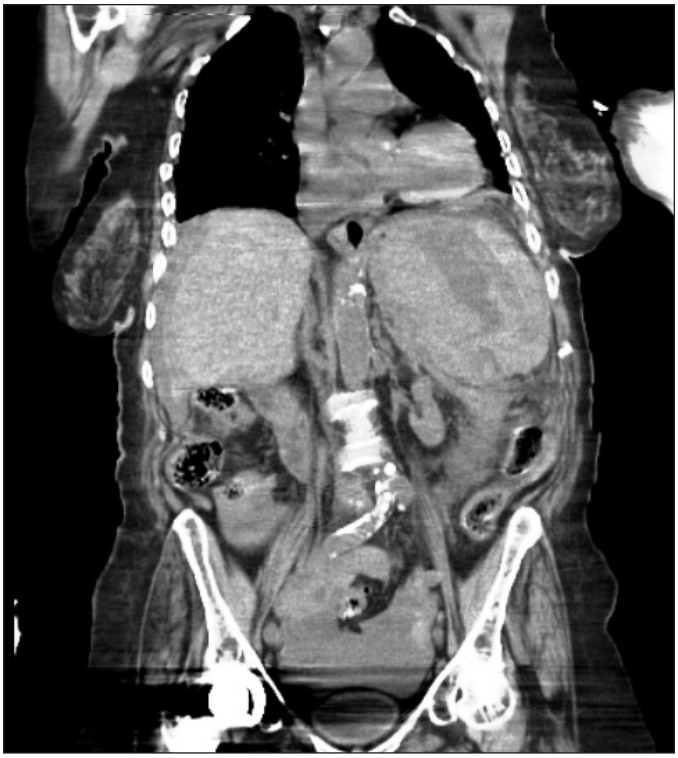

Figure 1. CT revealing active bleeding from a splenic hematoma and hemoperitoneum.

Discussion

Factors associated with splenic injury during colonoscopy include difficult intubation, traction of the splenocolic ligament, looping of the colonoscope, adhesions between the spleen and colon, and presence of a large mass or polyp at the splenic flexure. These factors may lead to splenic capsular lacerations and avulsions. Other maneuvers implicated in splenic injury are excessive pressure on the left hydrochrondrium to get past the splenic flexure, hooking the splenic flexure to straighten the left colon, and slide-by advancement.

Only a few cases of splenic injury have been reported post-esophagogastroduodenoscopy (EGD).[4,5] Authors attribute splenic injury during EGD and endoscopic retrograde cholangiopancreatography (ERCP) to looping of the endoscope and traction on the greater curvature of the stomach and short gastric vessels.[6–9] Reports of splenic injury post-colonoscopy have increased, possibly secondary to better awareness and use of deeper sedation masking symptoms. Colonoscopy has traditionally been performed with conscious sedation, but recently, there has been increased use of deeper sedatives such as propofol. It is postulated that deep sedation may blunt a patient's response to painful stimuli. A case series by Rao et al described propofol use in 6 of 9 patients with splenic rupture.[10] However, a recent study by Cooper et al reviewed 130,399 colonoscopies (78% performed without anesthesia and 21.2% with anesthesia) and found that while overall complications were more common with anesthesia assistance ($p<0.01$), frequencies of perforation and splenic injury were statistically similar.[11]

A search of inpatient ICD-9 codes from 2000–2007 suggested that colonoscopy-associated splenic injuries may be more common than once thought. The search revealed 437 cases of closed spleen injuries during 2,654,456 inpatient colonoscopies, or roughly 1 in 6,000 cases.[3] More than 14 million total colonoscopies are performed annually in the United States, suggesting 2,300 splenic injuries per year. Risk of death is 5% in splenic injury cases and further investigation may be warranted.[2] While risk of death secondary to splenic injury is less than 1 in 120,000 colonoscopies, the absolute number of deaths per year is estimated at 115.

We present a case of the longest reported delay, to our knowledge, of splenic rupture after colonoscopy and the first reported case in a patient with hemophilia A. The long delay in presentation suggests that if she had not had a coagulation disorder, she might have otherwise experienced a "subclinical" splenic injury without hemorrhage and death. It is possible that many patients experience subclinical splenic injuries that go undetected. Further investigation of splenic injury is necessary to determine accurate incidence rates, develop systematic ways to decrease its occurrence, and enable earlier recognition of splenic injury.

Disclosures

Author contributions: A. Mazulis performed the literature review, wrote the initial manuscript, performed revisions, and is the article guarantor. A. Lakha initiated the report and performed the procedures. B. Qazi assisted with writing the initial manuscript. A. Shapiro assisted with writing the initial manuscript, and editing the revision.

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