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(CASE REPORT)

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Post-colonoscopy splenic trauma: A report of a rare case

Omar Bennour *, Badr Tarif, Anass Barchid, Aymane Jbilou, Youness Aggouri and Sais Ait Laalim

Department of General Surgery, Mohammed VI University Hospital, Faculty of Medicine and Pharmacy, Abdelmalek Essaadi University, Tanger, Morocco.

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Abstract

A 70-year-old male developed a rare complication—splenic rupture—following an exploratory colonoscopy, which included polypectomy. Several hours post-procedure, he experienced severe abdominal pain, and a CT scan revealed a splenic rupture with significant bleeding. The patient received blood transfusions and underwent an urgent splenectomy, recovering without issues.

Post-colonoscopy splenic rupture is an extremely rare but serious complication, often presenting 24-72 hours after the procedure, particularly following polypectomy. Management depends on the patient's hemodynamic stability, with splenectomy required in unstable cases

Keywords: Post-colonoscopy; splenic rupture; complication; polypectomy; hemoperitoneum

1. Introduction

Colonoscopy is an essential diagnostic and therapeutic tool in the management of various gastrointestinal disorders. While the procedure is generally well-tolerated and complications are infrequent, rare but potentially life-threatening adverse events can occur. Post-colonoscopy splenic trauma, although exceedingly uncommon, represents one such complication. This case report aims to highlight the pathophysiology, potential risk factors, and clinical management of splenic rupture following a routine colonoscopic examination. Understanding this rare phenomenon is crucial for timely recognition and appropriate intervention, which can significantly impact patient outcomes.

2. Observations

A 70-year-old male with the following medical history: bilateral inguinal hernia surgery, hypertension, type 1 diabetes, thyroid dysfunction, gout, and 20 years of hypokinetic dilated cardiomyopathy with healthy coronary arteries. The patient underwent a scheduled colonoscopy at Verdun Hospital on November 27, 2024, for chronic constipation. The procedure was complicated by dolichocolon, revealing uncomplicated sigmoid and right-sided colonic diverticulosis. A 5mm adenomatous polyp was removed from the right colic flexure, and an 8mm non-adenomatous polyp was excised from the sigmoid colon. There were no immediate complications during the procedure, and the patient was discharged home on the same day. However, several hours later, he developed intense left flank pain, which subsequently radiated across the entire abdomen.

Upon arrival at the emergency department, the patient was neurologically intact (GCS 15) but displayed signs of peripheral hypoperfusion (mottling of the knees) with blood pressure at 09/65 mmHg. He appeared pale and was tachycardic (heart rate 85 bpm, under beta-blocker therapy), but his respiration was normal in ambient air. Laboratory results showed a white blood cell count of 17,000 (with 13,700 neutrophils), a CRP of 2, and no evidence of acute renal

* Corresponding author: Omar Bennour

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failure (urea 5.6, creatinine 87). His hemoglobin was low at 7.3 g/dL. An abdominal-pelvic CT scan revealed a splenic rupture with a 1-liter hematoma in the splenic fossa and a large hemoperitoneum. No pneumoperitoneum, signs of gastrointestinal perforation, or active bleeding were observed. Additionally, an infarction of the lower pole of the left kidney was noted.(figures 1a,1b)

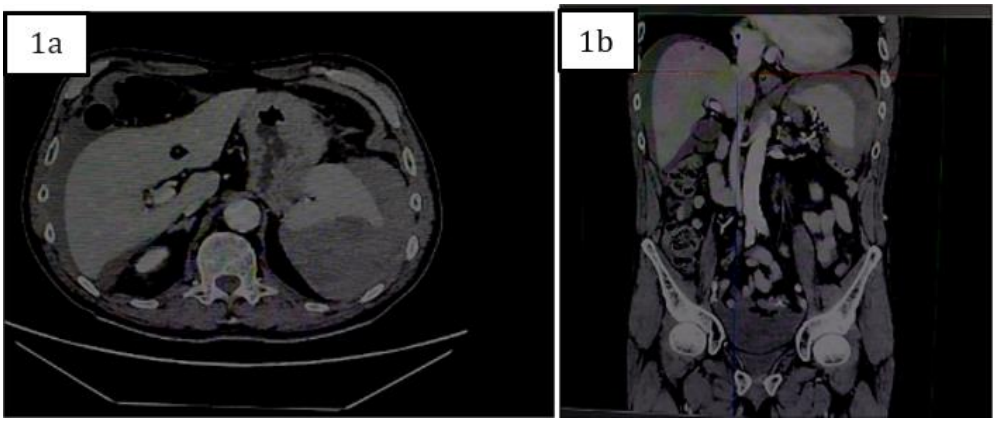

Figure 1 a, b Abdominal CT scan showing a splenic hematoma and hemoperitoneum

Initial management included a transfusion of two units of packed red blood cells due to hemorrhagic shock, along with pain management using Perfalgan and morphine, and proton pump inhibitors. Following stabilization, the patient developed signs of hemodynamic instability, which led to the decision for an urgent splenectomy (figure 2) . The postoperative course was uneventful, and the patient was discharged on day 7.

Figure 2 Operative piece of total splenectomy

3. Discussion

This case illustrates a rare complication of colonoscopy: splenic rupture, which can carry a mortality rate of up to 5%. Post-colonoscopy splenic injuries are exceedingly rare, with incidence rates estimated between 0.000005% and 0.017% in a meta-analysis.[1] Splenic trauma during colonoscopy remains an infrequent complication, with potential mechanisms including direct injury to the splenic parenchyma from the colonoscope or excessive traction on the suspensory ligament of the spleen.

Polypectomy is a known risk factor for splenic injury, which was present in this patient.[2] The clinical presentation of post-colonoscopy splenic rupture typically occurs in a subacute manner (24 to 72 hours after the procedure), often initially attributed to discomfort from air insufflation during the procedure. It is most commonly characterized by localized left-sided abdominal pain and hemodynamic instability. Less frequently, patients may experience referred pain to the left shoulder (Kehr's sign) or syncopal episodes.

The mortality rate associated with splenic rupture is high, with some studies reporting figures around 20%, as noted in a recent literature review by Ullah et al. [3] According to the latest guidelines from the World Society of Emergency Surgery (WSES), the management of splenic trauma is determined by the patient's hemodynamic status. A laparotomy is indicated regardless of the radiological stage of the splenic injury if the patient is hemodynamically unstable. In most cases (60%), urgent splenectomy via laparotomy is performed. In hemodynamically stable patients without anticoagulant or antiplatelet therapy, a conservative treatment approach may be considered under close monitoring in a specialized setting.

Results from splenic artery embolization via angiography have generally been disappointing. In this case, the patient underwent an urgent splenectomy via laparotomy, with a straightforward postoperative recovery, allowing discharge on day 7.

4. Conclusion

Post-colonoscopy splenic rupture, despite its low incidence, is a severe complication that necessitates prompt diagnosis and intervention to mitigate morbidity and mortality. This report underscores the importance of early clinical suspicion in patients presenting with atypical abdominal pain or hemodynamic instability following colonoscopy, especially in those undergoing polypectomy. Management strategies, including urgent splenectomy in hemodynamically unstable patients, are critical to ensure favorable recovery. Although the overall incidence remains rare, heightened awareness and a thorough understanding of this potential risk are essential for optimizing patient care and improving clinical outcomes in such cases.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflicts of interest

Statement of informed consent

Informed consent was obtained from all individual participants include in the study.

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