CASE REPORT

Splenic injury following elective colonoscopy: a rare complication

Efstathios Pavlidis*, Ioannis Gkizas, Olga Mavromati, Nikolaos Milonakis, and Kahlan Syrianos

Department of Surgery, General Hospital of Grevena, Thessaloniki, Greece

*Correspondence address. Department of Surgery, General Hospital of Grevena, A. Samothraki 23, 54248 Thessaloniki, Greece. Tel: +30-2310318307; Fax: +30-6976695551; E-mail: pavlidis.md@gmail.com

Abstract

Splenic injury is an extremely rare, yet serious, complication related to colonoscopy. So far, less than 80 cases have been reported worldwide since 1970. With the increasing use of colonoscopy, endoscopists, surgeons and radiologists are more likely to encounter this unusual complication. Increased splenocolic adhesions, splenomegaly or underlying splenic disease might, inter alia, constitute a predisposing factor. However, it might also occur in patients without significant adhesions or underlying splenic pathology. Patients with abdominal pain, hypotension and a fall in hematocrit without rectal bleeding after colonoscopy, should be suspected of having splenic injury. Most patients present with symptoms within 24 hours after colonoscopy, nevertheless, delayed presentations have been described as well. We report such a case of splenic injury secondary to colonoscopy. The patient was presented with hemorrhagic shock and abdominal pain following a colonoscopy which had taken place before 36 hours, an urgent splenectomy was required with successful outcome.

INTRODUCTION

Colonoscopy is an excellent diagnostic and therapeutic tool, but not without serious complications. Hemorrhage and perforation of the colon are the most common complications after colonoscopy, occurring in <1% of patients and often associated with biopsy or polypectomy. Many other rare complications have been described such as bacteremia, vasovagal problems, ileus, electrocardiogram abnormalities, mesenteric tears, pneumothorax, pneumoperitoneum, pneumoscrotum and colonic volvulus [1–3].

Splenic injury after colonoscopy is rare, but serious complication of the procedure that may become even a lethal one. The most possible mechanism responsible for causing the complication at hand is tension on the splenocolic ligament or on preexisting adhesions consequent to manipulations into the colon, or as a result of a direct injury to the spleen during passage of colonoscope through the splenic flexure. Intraperitoneal adhesions or any underlying splenic pathology may increase this risk. With the increasing utilization of colonoscopy, both endoscopists and surgeons should be aware of this rare life-threatening complication following this procedure. A case of splenic rupture diagnosed 36 hours after elective colonoscopy that required an emergent splenectomy is reported in this manuscript.

CASE REPORT

A 74-year-old man with a past medical history of only arterial hypertension underwent routine screening colonoscopy without any significant findings. The patient developed severe abdominal pain 36 hours later that progressively worsened. He was admitted to the hospital’s emergency department with his blood...
pressure being 70/50 mmHg and his heart rate 120 beats/minute. On physical examination, he had diffuse abdominal tenderness, rebound tenderness and guarding. His hematocrit counted 34% on admission and dropped sharply to 24% during his presence on the emergencies. He was resuscitated with IV crystalloids. Computed tomography (CT) scan of the abdomen and pelvis revealed splenic injury with a large amount of blood in the left upper quadrant, perihepatic region and pelvic areas (Fig. 1).

The patient underwent an emergent exploratory laparotomy. It revealed 2500 ml of blood and clots within the peritoneal cavity, integrity without perforation of the colon and a bleeding from the splenocolic ligament and splenic hilum. A splenectomy was performed and a drain was left in place. Surgical specimen histopathology examination showed a rupture spleen with no other underlying pathology. The patient remained stable postoperatively over the course of his hospitalization. The drain was removed on the third postoperative day, when the patient tolerated on oral diet also. He was discharged on the fifth postoperative day with an uneventful postoperative recovery.

DISCUSSION
A review of the literature indicates that the first case of splenic injury associated with colonoscopy was reported in 1974 [4] and less than 80 cases have been reported in the world literature since then [5]. The most likely mechanism responsible for this complication is tension on the splenocolic ligament, or on preexisting adhesions, or on both, due to manipulations of the sigmoid, des-advancement of the endoscope past the splenic ex-posure resulting in parenchymal tears or avulsion of the spleen [6]. Splenic rupture can also occur in a normal spleen after the endoscopic approach past the splenic flexure with no other underlying pathology. The patient remained stable postoperatively over the course of his hospitalization. The drain was removed on the third postoperative day, when the patient tolerated on oral diet also. He was discharged on the fifth postoperative day with an uneventful postoperative recovery.

CT scan is highly accurate for detecting splenic injury and the extent of hemoperitoneum. This examination is considered the diagnostic modality of choice in a stable patient [7]. Although splenectomy is required in the majority of cases, observation or splenorrhaphy may represent alternative options for the surgeon in certain cases. The non-operative approach is usually preferred in patients with no intraperitoneal blood, a closed subcapsular hematoma and a stable hemodynamic status [3].

Three deaths have been reported secondary to splenic rupture after colonoscopy. Two cases occurred during emergent laparotomy, and one case was found during autopsy after the patient’s death from severe shock [10]. All other patients had successful outcomes, including those patients undergoing splenectomy and expectant management.

The onset of symptoms usually occurs within the first 24 hours following the procedure. Treatment may include close observation, embolization or splenectomy. In our case, the spleen could not be preserved, and splenectomy was manda-tory due to the fact that the injury could not be managed by using conservative techniques.

Splen injury and rupture are infrequent complications of colonoscopy which must not be forgotten in the differential diagnosis of post-procedural pain. Both endoscopists and surgeons need to suspect splenic injury after colonoscopy in a patient who develops abdominal pain and tenderness without any evidence of bowel perforation or rectal bleeding with or without hemodynamic instability.

CONFLICT OF INTEREST STATEMENT
None declared.

REFERENCES
1. Levine E, Wetzel LH. Splenic trauma during colonoscopy. AJR Am J Roentgenol 1987;149:939–40.
2. Tuso P, McElligott J, Marignani P. Splenic rupture at colonoscopy. J Clin Gastroenterol 1987;9:559–62.
3. Prowda JC, Trevisian SG, Lev-Toaff AS. Splenic injury after colonoscopy: conservative management using CT. AJR Am J Roentgenol 2005;185:708–10.
4. Wherry DC, Zehner H Jr. Colonoscopic fiberoptic colonoscopic approach to the colon and polypectomy. Med Ann Dist Columbia 1974;43:189–92.
5. Petersen CR, Adamsen S, Gocht-Jensen P, Arnesen RB, Hart-Hansen O. Splenic injury after colonoscopy. Endoscopy 2008;40:76–9.
6. Sarhan M, Ramcharan A, Ponnapalli S. Splenic injury after elective colonoscopy. JSLS 2009;13:616–9.
7. Espinal EA, Hoak T, Porter JA, Slezak FA. Splenic rupture from colonoscopy. A report of two cases and review of the literature. Surg Endosc 1997;11:71–3.
8. Viamonte M, Wukan M, Irani H. Splenic trauma as a complication of colonoscopy. Surg Laparosc Endosc 1992;2:154–7.
9. Lo AY, Washington M, Fisher MG. Splenic trauma following endoscopic retrograde cholangiopancreatography. Surg Endosc 1994;8:692–3.
10. Tse CC, Chung KM, Hwang JS. Splenic injury following colonoscopy. Hong Kong Med J 1999;5:202–3.