Complications of Colonoscopies: Splenic Injury Following Routine Screening for Colorectal Cancer

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Background

Colonoscopy has been performed for well over 75 years and is the primary diagnostic tool to detect early colon cancer. Colonic perforation is a well-known potential complication of colonoscopy; however, there are other life-threatening complications that are becoming more apparent. One of those life-threatening conditions is splenic rupture. We present a case of a 72-year-old female who suffered this complication.

Objective

Recognize post-colonoscopy complications and understand management of traumatic splenic injury following colonoscopy.

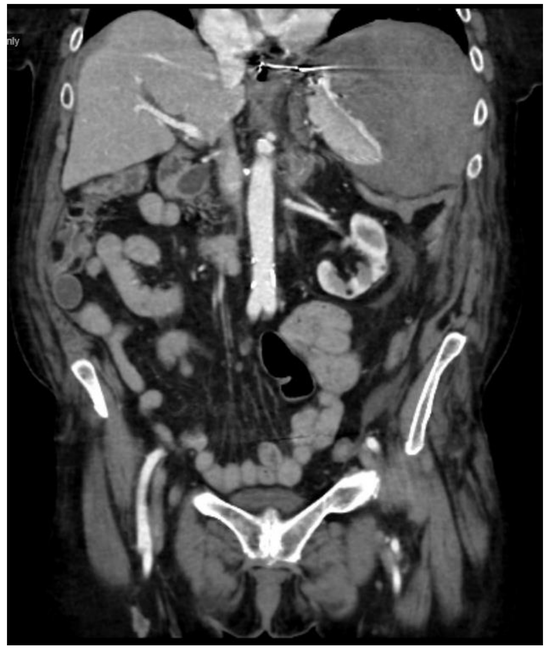
Case Report

72-year-old female with past medical history of chronic back pain, open gastric bypass with revision, ventral hernia repair with mesh, abdominoplasty and cholecystectomy who presented to OPH ED with progressive abdominal pain and weakness following a routine colonoscopy earlier that day. Vitals were significant for tachycardia and mild hypotension. Physical exam demonstrated somnolence and generalized abdominal tenderness. Labs were significant for leukocytosis of 21, anemia with a hemoglobin of 10 and a creatinine of 1.16. CT abdomen/pelvis demonstrated large subcapsular splenic hematoma with small hemoperitoneum. She was admitted and urgently underwent splenic artery embolization with Interventional Radiology. She was monitored post-procedure in the ICU and was discharged home in stable condition.

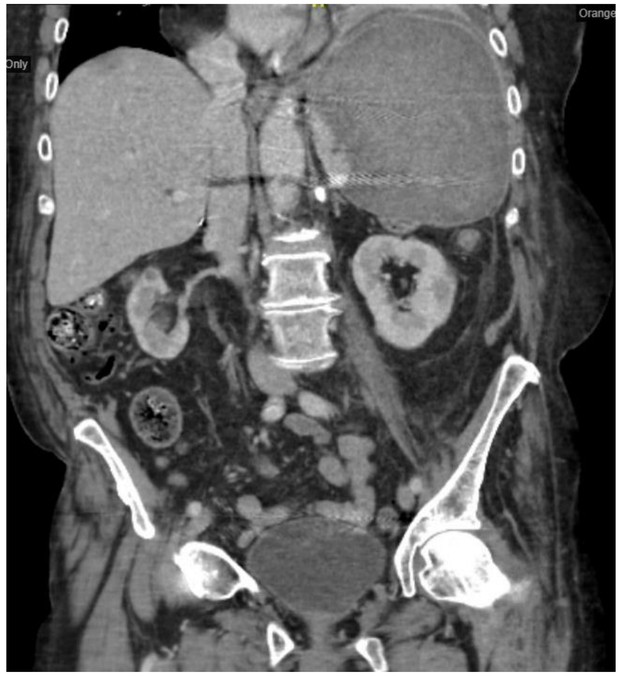
She returned to OPH ED for worsening left upper quadrant abdominal and left flank pain. At that time, her hemoglobin was noted to be 8. CT abdomen/pelvis demonstrated greater size of the spleen causing mass effect on the heart--worrisome for acute bleed vs capsular hematoma—as well as a left pleural effusion. She was taken urgently to the operating room and underwent exploratory laparotomy, extensive lysis of adhesions, splenectomy, diaphragmatic repair, colonic splenic flexure resection and reanastomosis, left chest tube placement and peripancreatic drain placement. She was discharged to acute rehab in stable condition.

She returned to OPH ED for progressive shortness of breath and fever. CT chest demonstrated left lung loculated effusion with left upper quadrant subdiaphragmatic fluid collection. She underwent IR drain placement for and was discharged home in stable condition.

Case Report (continued)



- Figure 1. CT abdomen and pelvis with IV contrast



- Figure 2. CT abdomen and pelvis with IV contrast

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Discussion

Colonoscopy has become increasingly utilized in the screening of colorectal disease over the past 50 years. There are two complications known to be associated with colonoscopy: bleeding and perforation. However, splenic injury is becoming more prevalent and reported over the recent decades. The first reported splenic injury following colonoscopy was reported in 1974. Since then, the reported incidence has risen to approximately 1 in 100,000 procedures. In part this could be because of the increasing rate of screening colonoscopies. One study found the mean age of patients who suffered from splenic injury post-colonoscopy was 63 years of age and nearly 64% of patients were female. They hypothesized this to be due to either slightly better participation amongst females in colorectal screening or because of females' inherently long transverse colons. The mechanism for splenic injury following colonoscopy is still not fully understood. One hypothesis is excessive traction on the splenocolic ligament or on splenocolic adhesions from previous abdominal surgeries. Another hypothesis is believed to be direct blunt trauma of the scope as it transverses the splenic flexure.

Computed tomography (CT) has been found to have a sensitivity of 98.5% in diagnosing splenic trauma. This reinforces the importance of prompt presentation and workup for post-colonoscopy splenic trauma and resultant intervention leading to improved mortality rates.

In the past 40 years, management of traumatic splenic injuries has shifted from immediate operative intervention to nonoperative management. This is in part due to the risk of substantial post-splenectomy infection. Currently, non-operative management in hemodynamically stable patients is the preferred treatment. This includes close monitoring in the intensive care setting with serial hemoglobin checks versus angiography with splenic artery embolization by interventional radiologists depending on what is found on imaging studies.

The failure rate of splenic embolization is approximately 17% and patients typically present between 2-23 days after endovascular intervention either with hemodynamic instability or vague abdominal pain. Delayed splenic artery rupture may be due to vasospasm at the time of embolization masking additional injuries, more extensive injury than thought (i.e. grade 5 splenic injury), the placement of embolization within the splenic artery (i.e. proximal vs distal highly selective) or rapid development after embolization of collateral splenic arterial network via the short gastric vessels. Ultimately, failed nonoperative management requires definitive operative intervention.

Conclusion

Colonoscopy has been performed for almost a century. Colonic perforation is a well-known complication of colonoscopy; however, there are other life threating complications. While splenic rupture is a relatively rate complication, it is nonetheless a serious complication that should be discussed with patients. More research should be done to understand mechanism of injury post-colonoscopy and treatment options for splenic injury post-procedure.

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