When screening becomes anything but routine

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INTRODUCTION

Fifteen million colonoscopies are performed each year for colon cancer screening. The most common serious adverse events are hemorrhage (1%) and perforation (0.1%). An often under-reported, and rare complication, is splenic injury.

CASE DESCRIPTION

A 58 year old woman with history of ankylosing spondylitis and cholecystectomy presented to the emergency department with acute onset diffuse abdominal pain, left shoulder pain and lightheadedness. Patient reported having a routine screening colonoscopy 24 hrs prior to presentation. No immediate complications during procedure were noted, other than poor visualization. Physical exam was significant for hypotension (89/58 mmHg), tachycardia (116 beats per minute), diffuse abdominal tenderness and guarding. Laboratory evaluation showed a white blood count of 25,000, hemoglobin of 8.3 g/dl (baseline 13-15g/dl), platelets of 428,000, creatinine 2.62 mg/dl (baseline within normal limit), and venous lactate of 16.3 mmol/L. Urgent abdominal computed tomography (CT) scan showed an abnormal spleen which was reported as concerning for rupture plus hemorrhage – grade V splenic injury. General surgery was immediately consulted and massive transfusion was started (total of 6 units of packed red blood cells, 4 units of fresh frozen plasma, and 2 units of platelets). Hemodynamics improved and patient was taken urgently to the interventional radiology suite for empiric coil embolization to splenic artery. Post-procedural course was uneventful and she was discharged home on post-procedural day 6. In addition, patient received standard post-splenectomy vaccinations.

REFERENCES

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Figure 1: CT Abdomen/Pelvis with IV contrast

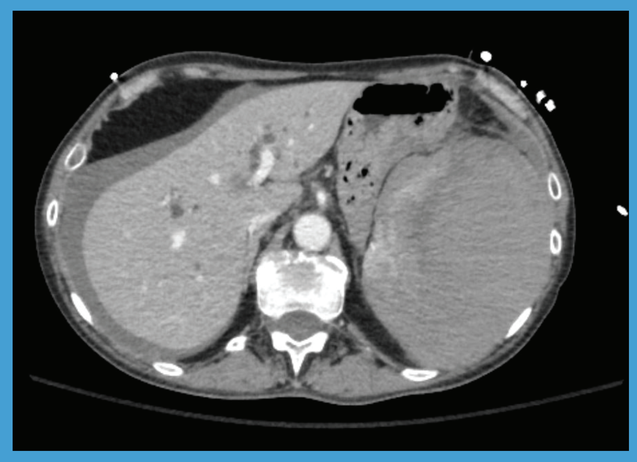
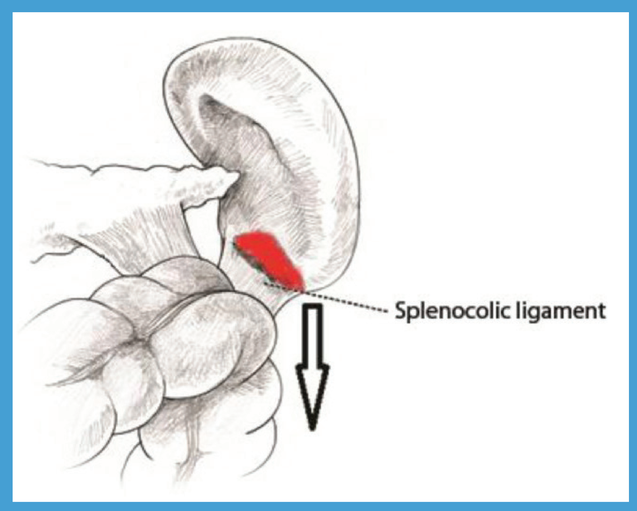


Figure 2: Proposed mechanism of splenic injury



Source: Abunnaja, Salim & Panait, Lucian & Alexander Palesty, J & Macaron, Shady. (2012). Laparoscopic Splenectomy for Traumatic Splenic Injury after Screening Colonoscopy. Case reports in gastroenterology. 6. 624-8. 10.1159/000343428.

Table 1: Risk factors for splenic injury

Patient dependent
(1) Splenomegaly
(2) Adhesions between spleen and colon from prior surgery
(3) Neoplasm
(4) Inflammation: diverticular disease, pancreatitis, inflammatory bowel disease, endometriosis
(5) Infection: malaria, typhoid fever, Epstein-Barr virus-induced mononucleosis
(6) Anticoagulation
Operator dependent
(7) Supine position
(8) Inexperienced operator
(9) Biopsy, polypectomy
(10) Excess traction
(11) Direct injury
(12) Techniques: hooking splenic flexure to straighten left colon, external pressure on the left hypochondrium, slide by advancement, alpha manoeuvre, straightening sigmoid loop
(13) Technically difficult colonoscopy
(14) Multiple previous colonoscopies

Source: Jennifer Fong Ha, David Minchin. Splenic injury in colonoscopy: A review. International Journal of Surgery, Volume 7, Issue 5, 2009, Pages 424-427

DISCUSSION

Colorectal cancer is the second leading cause of cancer deaths. The U.S. preventive services task force (USPSTF) recommends colorectal cancer screening with occult blood testing, sigmoidoscopy or colonoscopies starting at age 50 until age 75. Up to 33% of patients report at least one minor, transient GI symptom after colonoscopy. Serious complications are uncommon. Retrospective studies have found overall serious adverse event rate was 2.8 per 1000 procedures. Splenic injury is rare following colonoscopy, with a reported incidence of 0.00005 - 0.017% but a mortality rate of 5%. The presumed mechanism of injury is by direct trauma to the spleen and excessive spleno-colic ligament traction. Because of its rarity and lack of awareness, this life threatening diagnosis has potential to be delayed. Abdominal pain within 24hr is the most reliable indicator and one must keep this diagnosis in the differential. Abdominal CT is the gold-standard to diagnose splenic rupture. Depending upon patient stability and splenic injury grading, treatment options include: observation, embolization, or surgery.