



Case report

Case report on severe splenic injury following colonoscopy with disproportionately stable presentation: A rural hospital perspective

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ABSTRACT

Introduction: Detection of splenic injury following routine colonoscopy is slowly on the rise. Mostly presenting as left upper abdominal or shoulder tip pain along with a sharp fall in haemoglobin level and hemodynamic instability, sometimes the presentation and initial workup may be vague and falsely reassuring.

Case presentation: This is demonstrated in the case of a 72 year old male who presented with vague but severe left lower abdominal pain following colonoscopy, during which one caecal polyp was removed and no intraoperative complications were reported. On emergency presentation, abdominal examination was not particularly concerning with only mild left lower tenderness and minimal guarding. Vital signs remained largely normal and blood counts were reasonable. Close to being discharged, patient demonstrated brief hypotension post ambulation which was easily reversed with a fluid bolus. Upon surgical review, a high index of suspicion prompted further investigation which revealed an unsuspected complication necessitating urgent laparotomy and splenectomy.

Discussion: Splenic injury is slowly becoming an increasingly reported complication following colonoscopy. While many cases present with typical features, others may only display subtle signs of deterioration, and warrant a high degree of suspicion.

Conclusion: Rural doctors should be aware of and able to recognise this potentially fatal complication to ensure timely successful management.

1. Introduction

Colonoscopy is a common diagnostic and interventional procedure performed routinely in rural/regional and metropolitan centres alike, with a very small complication rate reported between 0.5 % and 1.8 % [1,2]. The commonest complications are bleeding and perforation, with some other less frequently encountered complications including ileus, post polypectomy coagulation syndrome, volvulus and splenic injury [3]. The latter, once considered rare, is now being increasingly identified. A 2020 study identified a total of 172 cases found in literature since first being reported in 1974, with current incidence estimated at 0.001–0.021 % [4,5]. This is partly owing to increased uptake of National Bowel Cancer Screening Program, increased average lifespan, and higher utilisation of interventions like polypectomy [6]. Major mechanisms involve difficult intubation, excessive looping and tension at the splenicocolic ligament [7]. Individual reported risk factors are previous

abdominopelvic surgeries, advanced age, and polypectomy [8,9]. Despite being very infrequent, it carries a significant risk of mortality (5 %) [10]. Below is a case of high grade splenic injury requiring splenectomy. This work has been reported in line with the SCARE criteria [11].

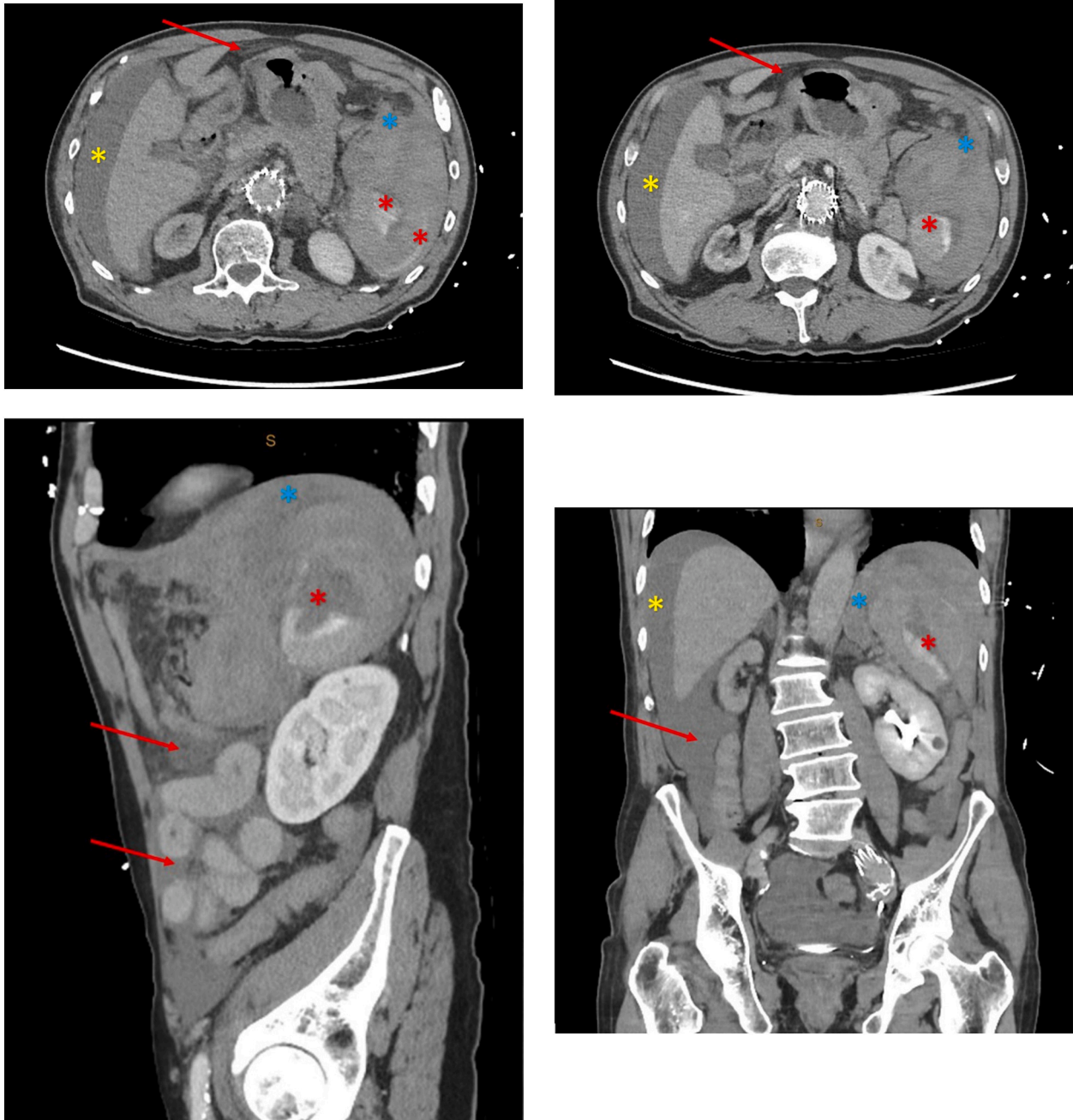
2. Presentation of case

A male patient in his 70's, with a history of hypertension and endovascular aortic aneurysm repair, presented to our rural Victorian emergency department (ED) with vague abdominal symptoms including mild left lower quadrant abdominal pain 6 h following elective colonoscopy. The indication for colonoscopy was polyp surveillance. A single caecal polypectomy had been performed by a general surgeon that morning at the same facility. No intraprocedural or immediate post-procedural complications were noted. There was no postoperative pain

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Figs. 1-4. Key images of axial, coronal and sagittal sections from CT angiogram of abdomen and pelvis, demonstrating extensive contrast extravasation within the spleen (red asterisk), large perisplenic haematoma (blue asterisk), perihepatic haematoma (yellow asterisk), and large haemoperitoneum (red arrow). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

at time of discharge.

Shortly after reaching home, patient noted abdominal pain, associated with postural light headedness and diaphoresis. Ambulance services were called. Upon paramedical staff attendance, the highest degree of pain reported was 7 out of 10, persistent in the left lower quadrant. No chest or upper abdominal pain, breathlessness, nausea, fever, urinary or unusual bowel symptoms were reported. Patient had opened bowels twice with passage of clear liquid likely comprising residual bowel preparation material. Serial vital signs were recorded as normal, including blood pressure of 130/90 mmHg, along with a normal 12 lead ECG. Abdominal examination was documented as soft, non-distended and non-tender. Patient declined intravenous access and was administered 150 micrograms of intranasal fentanyl in two divided doses.

Subsequent pain scores improved to 5 and then 2, out of 10.

Upon arrival to ED, pain score and vital signs remained unchanged, with signs of good peripheral perfusion. Patient was appropriately triaged as category 4. At the time of nursing review followed by medical assessment, no additional symptoms were reported, and pain was reasonably controlled.

However, and the patient had already opened bowels once, without any rectal bleeding. Further to this, hemodynamic parameters remained within normal limits for the most part. Abdomen examined soft and only mildly tender with the main site of guarding being the left lower quadrant, which was thought to be non-specific. Baseline blood tests were reasonably reassuring with a borderline haemoglobin of 9.9 g/dL that was well above the transfusion limit, and no previous baseline

haemoglobin available to compare with. While in emergency, the patient was able to tolerate a small portion of diet without any nausea or worsening pain. Emergency department team were reassured by how well the patient was trending, and in the absence of hard clinical signs reflective of deterioration, deemed calling the on-call CT radiographer unnecessary. It is assumed that a point of care ultrasound scan may also not have been undertaken for the same reason.

Soon after, patient ambulated to the toilet and passed a watery bowel action. However, shortly after ambulation, the patient suffered a transient drop in blood pressure to systolic 80 mmHg, prompting surgical referral. While awaiting surgical review, patient had responded very well to a 250 ml crystalloid bolus, and abdominal examination remained reassuring. Understandably, the brief episode of postural drop was rationalised as hypovolemia likely secondary to fasting for the procedure that morning, poor oral intake, and loose bowels. Despite this, whilst the overall impression was a lack of significant deterioration, a high degree of suspicion was raised upon surgical review. This was owed to the significant though reversed hypotension, the degree of initial pain requiring high dose strong opioid, and prior aortic aneurysm, signaling the need to engage the strictly on call service for a CT angiogram of the abdomen. Surprisingly, this revealed a large hemoperitoneum with extensive contrast extravasation into the splenic parenchyma demonstrating a large subcapsular and extracapsular splenic hematoma, consistent with a clinical Grade IV splenic injury according to the American Association for the Surgery of Trauma (AAST) (Figs. 1-4).

Due to non-availability of angioembolisation and subsequent rapid deterioration, the patient was promptly taken to operating theatre while being resuscitated according to the CCrISP (Care of the Critically Ill Surgical Patient) protocol [12], including transfusion of blood products. Urgent laparotomy was performed revealing 3.5 L of frank blood with large clots in the peritoneal cavity. Washout of this demonstrated a ruptured spleen with brisk active bleeding at the splenic hilum, and further distinct bleeders at the level of short gastric vessels, consistent with an operative Grade V AAST splenic injury. Timely splenectomy was performed, and a drain tube was left in to facilitate ongoing evacuation of the peritoneal cavity. A total of 4 packed red blood cell units was transfused. Postoperatively, the patient was monitored in HDU for one day. Drain was removed, followed by transfer to ward, where the post splenectomy protocol was initiated in accordance with Spleen Australia recommendations.

The postoperative course remained uneventful with successful discharge in 5 days from operation.

Histopathology was consistent with ruptured spleen. Patient was followed up in clinic 12 days later, wound review was satisfactory, and patient reported diligent compliance with post splenectomy advice. He was safely discharged back to community.

3. Discussion

Splenic trauma from colonoscopy is being increasingly reported over time. Most cases present within 24 h of colorectal endoscopy, although cases presenting up to 10 days later have also been reported [3]. Patient presentation is typically reported as that of moderate to severe left sided abdominal pain, mostly left upper quadrant, and left shoulder tip pain [7]. Iatrogenic splenic injury is graded as per the AAST scale of traumatic splenic injury [13]. A drop in haemoglobin and/or hemodynamic instability is considered pathognomonic of a high grade injury [9]. Mortality can be as high as 5 % [10]. This case report however demonstrates the presence of a potentially life threatening splenic injury without proportionately severe clinical features. In a rural health care setting with limited round the clock availability of diagnostic and interventional radiology, a high degree of suspicion is required to promptly investigate and manage such a patient. Despite nonspecific

symptomatology and relatively reassuring abdominal examination, along with a reasonable haemoglobin level, there should be a low threshold to consider the possibility of splenic injury. Although majority are low grade injuries able to be managed conservatively, a significant proportion is comprised of high grade injuries requiring angioembolization or even laparotomy [4]. Lack of some treatment options in a rural setting may need to be taken into account to ensure timely successful management and prevention of significant morbidity and mortality.

4. Conclusion

Splenic injury previously deemed a rare complication of colonoscopy is possibly under-recognised and under-reported. It warrants special consideration in deceptively stable case presentations, especially in rural settings where diagnostic and treatment options may be time limited. Rural doctors should be aware of and able to recognise this potentially fatal complication.

Consent

Provided by patient.

Ethical approval

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Declaration of competing interest

None to declare.

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