

# Splenic injury after colonoscopy: An unexpected complication

K Ekeh,<sup>1</sup> FCS (SA), MMed , K Tshishiku,<sup>2</sup> MB ChB; F Ghoor,<sup>3</sup> FCS (SA), MMed

<sup>1</sup> Department of General Surgery, Mankweng Hospital, Limpopo Academic Complex, and School of Medicine, University of Limpopo, Polokwane, South Africa

<sup>2</sup> Department of General Surgery, Job Shimankana Tabane Hospital, Rustenburg, South Africa

<sup>3</sup> Mediclinic Brits, North West Province, South Africa

**Corresponding author:** K Ekeh (dr.ekeh@gmail.com)

Colonoscopy is a useful diagnostic and therapeutic modality, but has a number of reported complications. Splenic injury, although a rare complication, can easily be mistaken for other injuries. We report a case of splenic rupture post colonoscopy that occurred at Job Shimankana Tabane Hospital in Rustenburg, North West Province, South Africa.

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Colonoscopy is a surgical procedure frequently performed for investigation of gastrointestinal symptoms. Commonly reported complications include perforation of the bowel (0.1 - 2.5%) and intraluminal bleeding (0.3 - 2.1%), usually after a biopsy.<sup>[1]</sup> Rarer complications are mesenteric tear, pneumothorax, incarceration of hernia, volvulus, septicaemia, portal vein gas, appendicitis, gas explosion, retroperitoneal abscess, emphysema, pneumomediastinum and splenic injury.<sup>[1,2]</sup> The first case of splenic injury during a colonoscopy was reported in 1974 by Wherry and Zehner.<sup>[3]</sup> Since then, >100 cases have been reported. The incidence has been reported as ~0.00005 - 0.017%, with a 5% mortality rate.<sup>[1]</sup> The low incidence could be due to under-reporting, as symptoms of pain or discomfort could be attributed to residual bowel gas from the insufflation or inadequate analgesia. We report a case of splenic rupture post colonoscopy that occurred at Job Shimankana Tabane Hospital in Rustenburg, North West Province, South Africa.

## Case report

A 68-year-old white woman had an elective colonoscopy after she presented with constipation, loss of weight and lumbosacral back pain. Her previous surgical history included caesarean sections and hysterectomy. The findings on colonoscopy were reported as essentially normal. Soon after the procedure, the patient complained of severe abdominal pain in the left upper quadrant and was admitted for observation. Her abdomen was not distended, but was tender in the left upper region. Soon after admission she went into hypovolaemic shock with a pulse rate of 68 bpm, a blood pressure of 91/51 mmHg and a haemoglobin level of 3.5 g/dL. An urgent laparotomy revealed a ruptured spleen with no bowel perforation (Fig. 1). She required some inotropic support in the intensive care unit and was discharged home 4 days later.

## Discussion

The mechanism of injury in our patient is not clear. The cause of splenic injuries during colonoscopy is not well known, although three theories have emerged. Firstly, some endoscopic manoeuvres can cause excessive tension on the splenicocolic ligament<sup>[2,4-7]</sup> The second theory is that previous intra-abdominal inflammation or surgical procedures cause traction due to splenicocolic adhesions.<sup>[1,2]</sup> Our patient had had previous lower abdominal surgical procedures for obstetric reasons.

Lastly, there may be direct trauma to the spleen as the colonoscope loops around the splenic flexure.<sup>[1,2,5]</sup> Predisposing patient factors such as splenomegaly, use of antiplatelets, coagulopathies and inflammatory bowel disease, and even patient position during colonoscopy, have also been identified as possible causes.<sup>[8]</sup> Our patient was in the supine and left lateral positions during her procedure. A review of 66 cases of splenic injury during colonoscopy did not find age, previous abdominal surgery, ease of colonoscopy or biopsies performed during the procedure to be risk factors for the injury.<sup>[1]</sup> There have been more cases in females than in males, but the reasons for this are uncertain. A high index of suspicion is necessary, as excessive insufflation of gas during the procedure, inadequate analgesia or bowel perforation are commonly mistaken for rupture of the spleen. Most patients (74%) develop symptoms within the first 24 hours.<sup>[1]</sup> Approximately one-third of patients present with pain in the left upper quadrant. Most patients do not have symptoms of nausea, vomiting, abdominal distension or guarding, and ~40% present with haemodynamic instability. Our patient complained of left upper quadrant pain as soon as she was off sedation and developed abdominal distension within 24 hours.

Delay in the diagnosis of splenic injury is common. In addition to routine blood tests when perforation is suspected, abdominal



Fig. 1. Postoperative spleen specimen.

ultrasound scans or computed tomography scans can be performed depending on availability and how stable the patient's condition is. Management depends on the grade of injury; it can be conservative or may require operative intervention (laparoscopic or open, depending on haemodynamic stability).

## Conclusion

Complications of colonoscopy do occur, and patients should be carefully monitored after the procedure. Splenic injury, although uncommon, may go unnoticed and result in significant morbidity and mortality. It should always be borne in mind as a possible complication.

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