Splenic injury during colonoscopy: modern treatment approach and splenic salvage

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Splenic injury is a rare complication of colonoscopy, estimated to occur in 0.020 to 0.034% of procedures, with a 30-day mortality of 3.6% (1-3). Of the three major severe adverse events during colonoscopy (perforation, bleeding, and splenic injury), splenic injury has the highest mortality but is rarest (1). The spleen is attached to the colonic splenic flexure by the splenocolic ligament, suggesting that manipulation of the colon during colonoscopy may cause direct tension or impaction on the spleen and splenic hilum as the mechanism of injury (2,3). Patients typically present within 24 hours of colonoscopy with severe abdominal pain and peritonism, and may be haemodynamically unstable (2).

The majority of published cases of high-grade splenic injury due to colonoscopy have been managed with splenectomy (2,3), however smaller numbers have been managed with embolization and conservative measures (3). Modern treatment options for splenic injury due to colonoscopy can be classified into conservative, endovascular, and surgical management (3). Conservative management involves inpatient monitoring, with analgesia, intravenous fluids, and blood transfusion (2,3). Endovascular treatment is splenic artery embolization, typically with deployment of coils into the splenic artery proximal to the splenic hilum or into a single splenic artery branch in cases with an isolated focal injury (2-4). Surgical management is principally laparotomic splenectomy (2,3). In modern treatment protocols, splenectomy is usually reserved for unstable patients who require emergent laparotomy (4). Given the similarity in mechanism between splenic injuries due to blunt trauma and those due to colonoscopy, it may be helpful to conceptualize splenic injuries due to colonoscopy according to the American Association for the Surgery of Trauma (AAST) grading system (5).

After institutional ethical approval, electronic medical records over a 10-year period (2012-2022) were searched to identify all patients treated for splenic injury due to colonoscopy, with the following inclusion criteria:

- Splenic laceration diagnosed on computed tomography (CT).

Figure 1. — Axial (A) and Sagittal (B) CT images showing splenic injury due to colonoscopy with laceration at the anterior parenchyma and splenic hilum, with mixed-density surrounding haematoma and haemoperitoneum.

- Colonoscopy within 72 hours of CT diagnosis.
- Absence of blunt external traumatic incident between colonoscopy and diagnosis.

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As a rare complication of colonoscopy, splenic injury requires prompt diagnosis and management to minimize mortality. All patients in the present cohort survived, 3 of 5 with splenic salvage. A treatment protocol utilizing conservative management for low-grade injuries and embolization for high-grade injuries may optimise rates of splenic salvage with long-term public health benefits.

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### References