

Rectosigmoid screwdriver perforation presenting as a strangulated inguinal hernia

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Summary

We present a case of a young male patient with no previously known medical, surgical or psychiatric history, who was referred to our institution as an irreducible left inguinal hernia with signs of strangulation. Intraoperative findings, however, revealed a retained foreign body at the rectosigmoid junction, which had previously perforated through the floor of the inguinal canal, essentially sealing off the contamination into the inguinal canal and contributing to the clinical presentation of a left inguinal hernia. This is, to our knowledge, the first published case report locally and internationally concerning rectosigmoid-inguinal canal perforation with the working end of a screwdriver.

Case report

A 32-year male with no medical, surgical or psychiatric history was referred from his base hospital as an irreducible left inguinal hernia, with concern of ischaemia to the herniated bowel. He complained of a 2-week history of an allegedly previously reducible mass in his left groin, now with an acute history of abdominal pain, tenderness and irreducibility. He also had associated vomiting and constipation but was still passing flatus. The patient reported no drug or alcohol history, and worked full time as a software engineer.

Clinically, he was haemodynamically stable with a blood pressure of 130/85 mmHg, pulse rate of 130 bpm, respiratory rate of 26 breaths per minute and temperature of 37 °C. His general examination was unremarkable, except for a large, erythematous swelling approximately 15 x 15 cm, extending from the pubic tubercle to anterior superior iliac spine on the left. It produced pain out of proportion to touch on examination, and thus was not completely evaluated. His abdomen was generally soft, with local tenderness in the left iliac fossa on light palpation.

His arterial blood gas revealed a compensated metabolic acidosis with hyperlactatemia of 2.5 mmol/L and hyperkalaemia of 5.6 mEq/L. Formal bloods revealed raised inflammatory markers. The patient was fluid resuscitated and consented for local exploration of his left inguinal canal, with conversion to midline laparotomy with or without stoma, if conditions not favouring primary repair were present.

Intraoperatively, an incision was made in the left groin, and dissection through layers of anterolateral abdominal wall was made anatomically. The inguinal canal was opened and approximately 200 ml purulent exudate was expelled. The decision was made to convert to a midline laparotomy, revealing no gross intra-peritoneal contamination. Upon inspection of the left iliac fossa, it was noted that the rectosigmoid junction was attached to the floor of the

inguinal canal, and on palpation, a firm, foreign object was noted intra-luminally, extending into the inguinal canal with the bowel. On reduction of the rectosigmoid and foreign body, the object was revealed to be a screwdriver, with the pointed working end having perforated the rectosigmoid junction and floor of the inguinal canal. Intraoperatively, the patient became acidotic and hypotensive, and was non-responsive to fluid boluses, requiring inotropic support to maintain acceptable mean blood pressures. A decision was made to perform a Hartmann's procedure and to debride and primarily repair the inguinal canal with sutures.

Postoperatively, the patient's pain resolved and his vital signs stabilised. On further enquiry regarding the presence of the screwdriver, the patient admitted to an 'unfortunate encounter' 2 weeks prior, but denied rape, medication or substance abuse and declined to give further information on the unfortunate incident or to receive social worker or psychiatric evaluation. His stoma functioned well, and his inguinal canal was treated with topical dressings. He was discharged 10 days later, with scheduled follow-up in the surgical outpatients for wound review and elective reversal of stoma.

Discussion

Retained anorectal foreign bodies have been described in both international and local literature, with patients presenting with varying reasons for self-insertion and clinical presentation to the reporting institution.¹⁻³ Previous reports detail the pitfalls in literature in terms of lack of level-one based surgical algorithms, differences in management techniques intraoperatively and the need for a holistic approach and management of the patient and their possible psychiatric shortfalls or sexual preferences.¹⁻⁵ Having not been previously described in literature, local or international, a perforated rectosigmoid colon herniating into the left inguinal canal is both rare and a fortuitous event

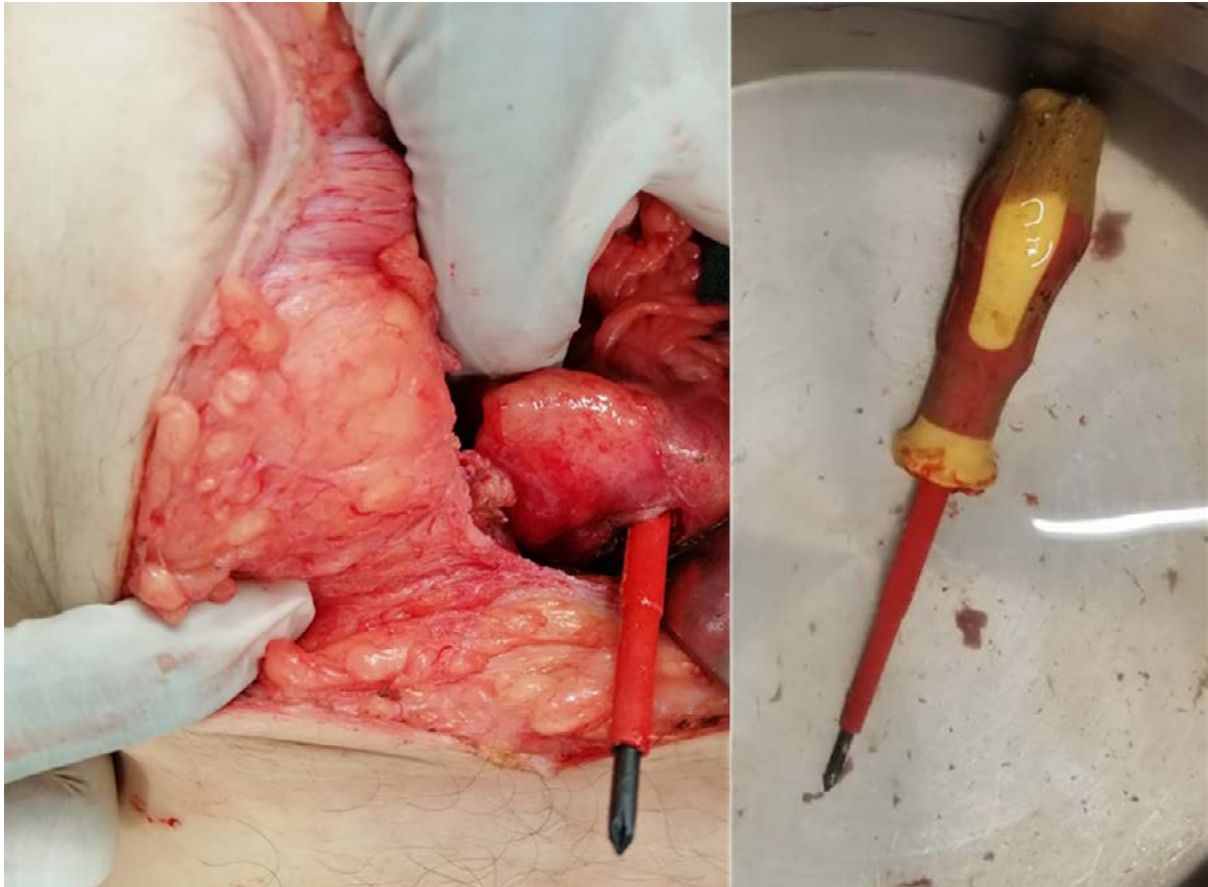


Figure 1: The screwdriver

for our patient, as a free feculent contamination of 2 weeks would surely have been fatal.

Due to the rarity of presentation, set management algorithms for removal of known anorectal foreign bodies are few and far in between. Case studies have described an initial 'conservative' manual or endoscopic extraction for retrieval, and only if retrieval is unsuccessful, or instability or fear of perforation occurs, is an invasive surgical approach thought to be recommended.¹

In terms of surgical management of penetrating intra-abdominal rectal injuries, while recommendations have been published regarding the thought process and decision making in terms of whether to repair or to divert colonic injuries, it remains a challenge to the operating surgeon to choose the most appropriate course of action. Factors have been described to affect the continuously changing management strategy of the injured patient including, but not limited to, intraoperative factors such as severe acidosis, degree of faecal contamination and bowel oedema intraoperatively, haemodynamic stability on presentation (and degree of shock), and even preoperative factors such as delayed presentation to hospital or time taken to theatre, to name but a few.^{6,7}

Furthermore, the role of laparoscopy in trauma has been widely debated both locally and internationally, with systematic reviews showing sensitivity, specificity and accuracy of laparoscopy in diagnosis and management of penetrating intra-abdominal trauma of up to 100%.⁸ The use of laparoscopy has also been punted locally, showing no inferiority between hybrid laparoscopic assisted procedures and entirely laparoscopic procedures in stable patients for

the diagnosis and management of penetrating abdominal injuries.^{8,9}

Conflict of interest

The authors have no conflicts of interest to declare.

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Ethical approval


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