RESEARCH PAPER

Multiple Intestinal Perforations Following Penetrating Abdominal Trauma: A Rare Case Report

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ABSTRACT

Multiple intestinal perforations following penetrating abdominal trauma are uncommon and often underdiagnosed during initial evaluation. Delayed recognition can result in peritonitis, sepsis, and increased mortality. Prompt surgical exploration and meticulous intraoperative bowel assessment are essential to prevent missed injuries.

A 23-year-old male presented two hours after sustaining a stab wound to the right side of the abdomen during a street altercation. He was conscious but in significant distress with progressive abdominal pain. Investigations revealed pneumoperitoneum, prompting emergency exploratory laparotomy. Intraoperatively, a transverse colon perforation and two ileal perforations were identified. Primary repair was performed for the colonic and one ileal perforation, while a diverting loop ileostomy was created for the second ileal injury. The postoperative course was uneventful, and ileostomy closure at four weeks revealed healthy bowel.

This case highlights the diagnostic challenges of multiple intestinal perforations in penetrating abdominal trauma and emphasizes the importance of early surgical intervention and systematic intraoperative bowel evaluation.

Keywords: Penetrating abdominal trauma; Intestinal perforation; Ileal injury; Transverse colon injury; Laparotomy; Case report.

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INTRODUCTION

Penetrating abdominal trauma remains a significant cause of morbidity in emergency surgical practice, particularly among young adults. The small intestine, especially the ileum, is the most frequently injured segment owing to its mobility and intraperitoneal location. While isolated bowel perforations are common, multiple intestinal perforations are relatively rare and pose diagnostic challenges.

Preoperative imaging may fail to detect subtle or multiple bowel injuries, leading to delayed intervention. Delayed recognition significantly increases the risk of peritonitis, sepsis, and postoperative complications. In patients with penetrating abdominal trauma and signs of peritonitis, early laparotomy and a meticulous intraoperative bowel run are essential to prevent missed injuries.

CASE PRESENTATION

A 23-year-old male presented to the emergency department approximately two hours after sustaining a stab injury to the right side of the abdomen during a street altercation. He complained of progressively worsening abdominal pain. On examination, he was conscious but in significant discomfort. A 2-cm stab wound was noted over the right lateral abdominal wall with localized guarding and rebound tenderness. He was tachycardic with a heart rate of 112 beats per minute but normotensive. Bowel sounds were reduced. Laboratory investigations revealed leukocytosis with neutrophilia.

An erect abdominal radiograph demonstrated pneumoperitoneum, prompting immediate resuscitation with intravenous fluids, analgesia, and broad-spectrum antibiotics, followed by urgent exploratory laparotomy.

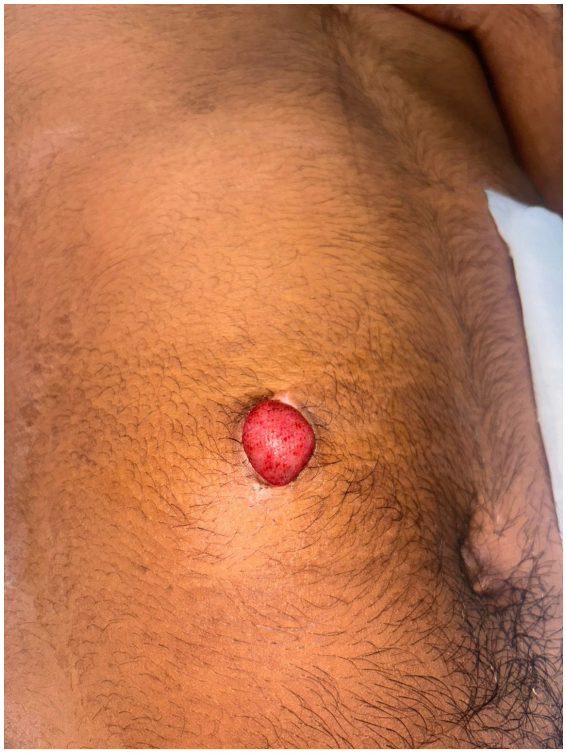

Figure 1: Clinical photograph of an adult patient demonstrating a penetrating abdominal stab injury with an oblique entry site located approximately 6 cm from the right costal margin along the mid-clavicular line. Evisceration of bowel loops through the wound is evident.

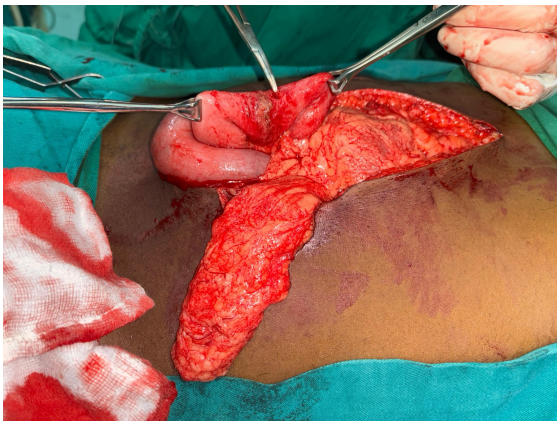

Figure 2: Intraoperative photograph obtained during exploratory laparotomy demonstrating a perforation of the transverse colon.

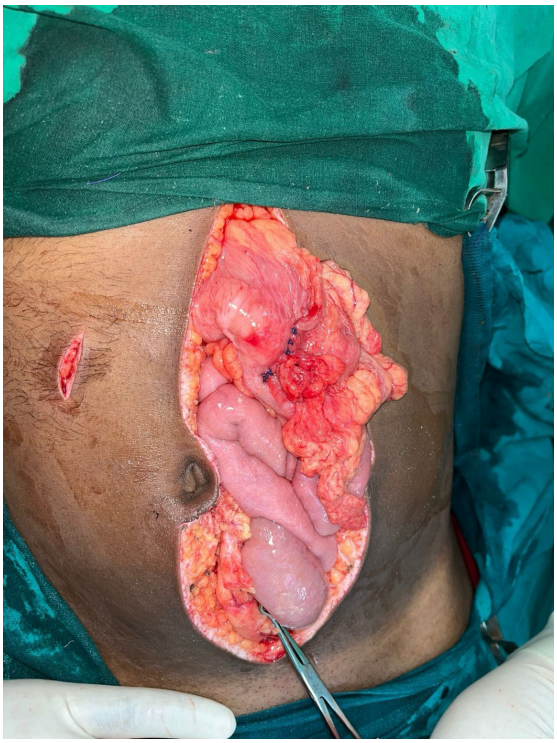

Figure 3: Intraoperative photograph demonstrating the repaired perforation of the transverse colon following primary suturing.

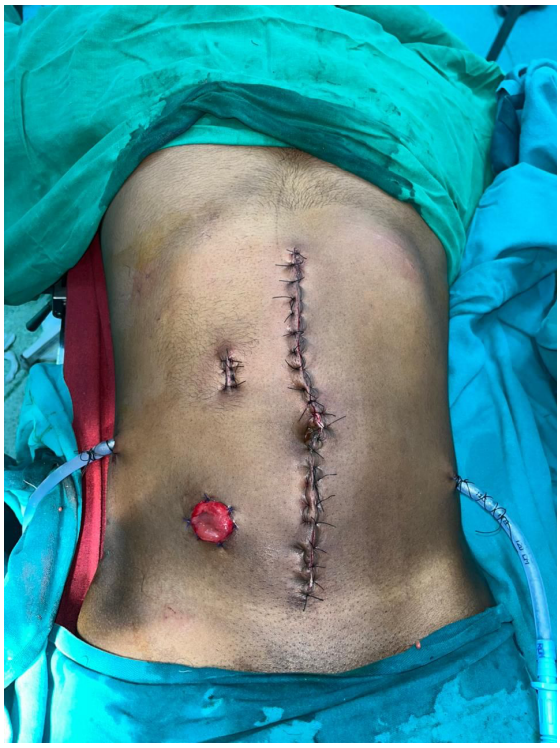

Figure 4: Intraoperative photograph demonstrating creation of an ileostomy through the perforation site with stoma maturation. Abdominal drains are placed in Morrison's pouch and the pelvis, and the abdominal skin is closed.

DISCUSSION

Multiple intestinal perforations represent an uncommon but serious consequence of penetrating abdominal trauma. The ileum is the most frequently injured bowel segment due to its mobility, whereas transverse colon injuries are less common but often associated with significant fecal contamination. Clinical diagnosis can be challenging, as presenting symptoms may be nonspecific and radiological investigations may fail to identify multiple perforations.

This case underscores the importance of early surgical exploration in patients with penetrating abdominal trauma and signs of peritonitis. A systematic bowel run from the ligament of Treitz to the rectum is essential to avoid missed injuries, which remain a leading cause of postoperative sepsis and mortality. The decision between primary repair and fecal diversion should be individualized, considering bowel viability, degree of contamination, and patient physiology.

CONCLUSION

Multiple intestinal perforations following penetrating abdominal trauma require a high index of clinical suspicion and early surgical intervention. A meticulous intraoperative bowel run is essential to identify all injuries and prevent missed perforations. Individualized operative strategies, including fecal diversion when indicated, are crucial for achieving optimal patient outcomes.

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