

EMERGENCY CASEBOOK

Jejunal transection after blunt abdominal trauma: a report of two cases

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Emerg Med J 2006;23:e55 (<http://www.emjonline.com/cgi/content/full/23/10/e55>). doi: 10.1136/emj.2006.038604

Small bowel injuries are uncommon after blunt abdominal trauma and are usually due to high-energy deceleration injury, often in relation to motor vehicle accidents.¹ Reports of intestinal perforation during low-energy impacts, such as bicycle falls, are extremely rare.² We report on two cases of jejunal transection that occurred after apparently trivial blows to the central abdomen. We must keep the possibility of occult intestinal injury in mind for all patients presenting with blunt abdominal trauma, despite minimal physical signs.

Case report 1

A 12-year-old boy fell off his bicycle and sustained a handlebar injury to his central abdomen. He presented with severe abdominal pain. Physical examination was normal apart from an area of mild tenderness to the right paraumbilical region, which corresponded to a 3×2-cm superficial abrasion caused by the handlebar. Abdominal ultrasonography showed an oedematous loop of small bowel, but no signs of solid organ injury. The patient was initially managed conservatively. He experienced worsening abdominal pain and vomiting 48 h after admission. He became febrile (37.8°C), and abdominal examination showed mild abdominal distension with signs of peritonism on the right. His white cell count (normal on admission) increased to $27 \times 10^9/l$. An urgent computed tomography scan showed free intraperitoneal air and fluid. He therefore underwent a laparotomy. Findings showed an almost complete transection of the distal jejunum. There was no evidence of intestinal ischaemia, and the mesenteric vessels were intact. A limited small bowel resection and primary anastomosis was performed. He made a satisfactory postoperative recovery and was discharged on day 5.

Case report 2

A 23-year-old man sustained a blow to the central abdomen during a collision while playing soccer. He presented with severe abdominal pain and vomiting. Examination showed that he was afebrile, haemodynamically stable and had generalised abdominal tenderness. No signs of peritonism were evident, and bowel sounds were audible and normal. His white cell count on admission was $20.8 \times 10^9/l$ and radiographs were unremarkable. There were no associated injuries. After overnight observation, his pain remained severe and his abdominal tenderness increased. An urgent computed tomography scan showed a pneumoperitoneum. He subsequently underwent urgent laparotomy, and was found to have sustained a complete transection of the proximal jejunum. A limited small bowel resection and primary anastomosis was performed. His postoperative course was uneventful, and he was discharged on day 11.

DISCUSSION

Most cases of small bowel perforation after blunt trauma occur as a result of motor vehicle accidents and falls from heights, and are often associated with multiple injuries.¹ In such cases, the mechanism of injury is usually mesenteric

laceration due to direct compression, or small bowel rupture due to deceleration injury. This would typically affect fixed segments such as the duodenum, duodeno-jejunal flexure,² proximal jejunum and terminal ileum.¹ In the presented cases, isolated rupture of the mid-small bowel occurred due to application of a localised blunt force to the central abdomen, which resulted in jejunal transection, presumably by direct compression against the lumbar spine.

Case 1 is the second published report of small bowel rupture after handlebar trauma, and there are several similarities between the two. In both cases, external signs of localised trauma to the central abdomen were evident. Neither patient displayed signs of peritonism at presentation. Clinical deterioration occurred within 36–48 h after injury, and at laparotomy, similar injuries were present. Small bowel rupture after a soccer injury is similarly extremely rare, and there has been only one previous report of traumatic jejunal rupture by this mechanism.³

Owing to the rarity of small bowel injury after blunt abdominal trauma, absence of peritoneal signs and insensitivity of radiological imaging, the diagnosis of small bowel perforation is often delayed and is associated with marked morbidity and mortality.⁴ The presented cases highlight the importance of obtaining a thorough history, paying particular attention to the nature and velocity of the projectile, the mechanism of injury and the exact anatomical site of the applied force. Patients sustaining apparently minor injuries to the central abdomen may be at particular risk of small bowel perforation. Such patients should be reviewed at frequent intervals by an experienced clinician and should undergo prompt surgical intervention at the earliest sign of clinical deterioration.

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Competing interests: None declared.

This work was presented in abstract form at the Royal Society of Medicine President's Day Meeting in Winchester, UK (Adrian Tanner prize session) on 8 July 2005.

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Accepted for publication 18 June 2006

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