

CASE REPORTS

Delay is Deadly: A Rare Case of Bull Gore Injury with Complete Small Bowel Gangrene

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Abstract

Introduction: Blunt abdominal trauma secondary to animal attacks is uncommon but may result in catastrophic intra-abdominal injuries, particularly in rural environments where delayed access to definitive care is frequent. Bull gore injuries, though typically associated with penetrating trauma, may also cause severe blunt visceral ischemia with delayed clinical manifestations.

Case Presentation: We report the case of a 65-year-old male from the Satara district of Maharashtra who sustained blunt abdominal trauma following a bull attack. The patient presented approximately 96 hours after injury with features of generalized peritonitis and septic shock. Initial evaluation revealed hemodynamic instability and laboratory evidence of severe sepsis. Emergency exploratory laparotomy demonstrated complete gangrene of the small intestine with associated ischemic segments of the large bowel, consistent with mesenteric vascular compromise. Extensive bowel resection with stoma formation was performed. Despite aggressive postoperative intensive care, including broad-spectrum antibiotics, vasopressor support, and organ support, the patient developed progressive multiorgan failure and died on postoperative day six.

Discussion: This case highlights the lethal consequences of delayed presentation in blunt abdominal trauma, where evolving mesenteric ischemia may remain clinically silent until irreversible bowel necrosis occurs. Early recognition, prompt imaging, and timely surgical intervention are essential to prevent progression to bowel gangrene and septic shock.

Conclusion: Bull-related blunt abdominal trauma can result in fatal ischemic bowel injury when diagnosis and surgical management are delayed. Enhanced public awareness, early referral pathways, and improved trauma care infrastructure in rural regions are critical to reducing mortality associated with such injuries.

Keywords: Bull gore injury; Blunt abdominal trauma; Small bowel gangrene; Mesenteric ischemia; Rural trauma

Introduction

Blunt abdominal trauma is commonly encountered, most often due to road traffic accidents, falls, or assaults. However, trauma caused by domestic animals such as bulls or buffaloes, although rare, can lead to serious internal injuries, including solid organ rupture, bowel perforation, or ischemia [1] [1])

Rural populations are particularly vulnerable due to frequent exposure to domestic animals and a delay in accessing definitive medical care [2, 3] (2)(3). Gut trauma needs an immediate surgical intervention to prevent hemothorax, mesenteric or diaphragmatic injury, or sepsis due to perforation of the gut.

This case presents the fatal outcome of a delayed presentation following a bull attack, underscoring the importance of early presentation and surgical intervention in a rural trauma scenario.

Case Report

A 65-year-old farmer from Satara district, Maharashtra, presented to our emergency department with severe abdominal pain and progressive distention. He reported that four days earlier, he had been forcibly struck in the abdomen by a bull at home.

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Initially, he experienced mild discomfort but did not seek medical care for two days. Eventually, his pain increased, localized to the periumbilical region, and over two days progressed to involve the whole abdomen, associated with distension and breathlessness.

Upon admission, the patient was hypotensive (BP: 92/58 mmHg), had tachycardia (pulse: 130 bpm), and was in respiratory distress with Spo₂ – 98% on O₂ at 6 liters/min. Abdominal examination revealed a distended, tense abdomen with an everted umbilicus. Ecchymotic patches were present over the periumbilical region. Generalized abdominal tenderness with rigidity and a tympanic note on percussion were suggestive of a hollow viscus perforation.

Laboratory findings included leukocytosis (WBC: 18,000/mm³) and abnormal renal function parameters (urea 75 mg/dL, creatinine 1.63 mg/dL). ABG was suggestive of metabolic acidosis (serum lactate 5.02 mmol/dL). The patient was resuscitated with intravenous (IV) fluids and broad-spectrum antibiotics.

The Extended Focused Assessment with Sonography for Trauma (eFAST) was suggestive of free fluid in the pelvis and abdomen. Contrast-Enhanced Computed Tomography (CECT) of the abdomen and pelvis revealed an intra-abdominal collection of free fluid, intra-peritoneal air foci, and dilated, edematous bowel loops. The patient was diagnosed with blunt abdominal trauma, hemoperitoneum, Acute Kidney Injury (AKI), and sepsis.

The patient underwent emergency exploratory laparotomy under general anesthesia. Intraoperatively, 1.5 L of foul-smelling altered blood with hemoperitoneum was drained (Fig 1).

Gangrenous non-viable small bowel 20 cm distal to the DJ flexure till the IC junction was resected (Fig. 2).

Mesenteric lacerations were noted at the level of origin of SMA and IMA (Fig. 3).

Multiple inter-bowel loop adhesions were present.

A segmental resection of the ischemic small bowel was carried out with end jejunostomy. The patient was transferred to the Surgical Intensive Care Unit (SICU) and placed on mechanical ventilation.

Patient remained febrile and tachycardic postoperatively with deranged renal function tests (Urea 136, Creatinine = 2.57). He was taken up on post-operative day 02 for second-look surgery to assess the condition of the remnant bowel. Intraoperatively, no obvious intra-abdominal collection was noted with satisfactory vascularity of the jejunal loop to the distal ileal segment. The patient underwent a side-to-side jejuno-ileal anastomosis with appendicectomy. Intraoperatively, the patient was started on inotropic support (noradrenaline 2.5 mL/h).

On the second postoperative day, inotropic support was increased (noradrenaline dose increased to 10 mL/hr and vasopressin to 2 mL/hr) because the patient was hypotensive (BP = 58/30 mmHg).

Despite intensive postoperative management, including broad-spectrum antibiotics and dual vasopressor

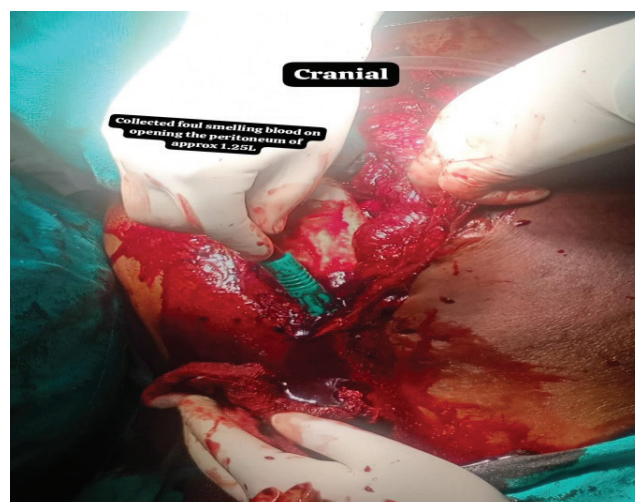


Figure 1: 1.5 Liters of foul-smelling hemoperitoneum encountered

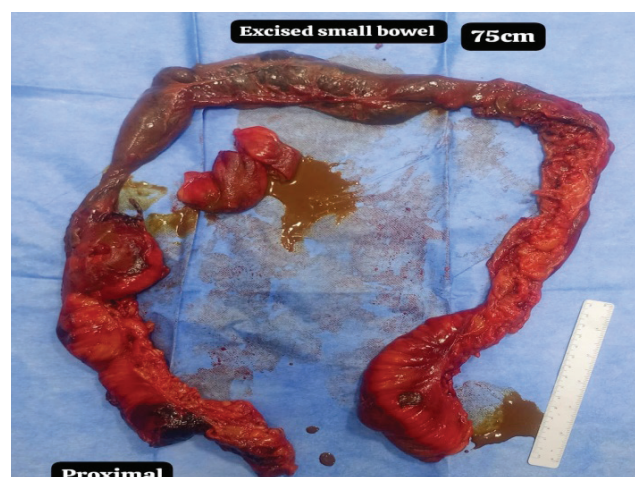


Figure 2: Gangrenous non-viable small bowel



Figure 3: Mesenteric lacerations noted at the origin of the SMA & IMA

support, the patient remained hemodynamically unstable, developed multiorgan dysfunction syndrome (MODS), and succumbed to his illness on postoperative day six after the index surgery.

Discussion

The bull is generally a docile animal but may become aggressive. Bull attacks are underreported because of blunt trauma in agrarian communities of South Asia, as not all patients are admitted to a hospital (2). Injuries often involve the abdomen and chest, since the bull's head corresponds to the victim's abdomen, as was seen in our case [3, 4].

Middle-aged (35-64 years) males are the most common victims because they engage in more outdoor activities and work as shepherds for animals in open fields [2, 5]. This pattern is illustrated by our case of a 65-year-old male attacked by a domesticated bull.

Patients presenting with animal-related injuries are at significant risk of high morbidity and mortality. Injuries from animal attacks range from simple contusions and lacerations to blunt and penetrating, life-threatening injuries, with blunt trauma being encountered most commonly [2].

Small bowel injuries are difficult to diagnose, especially in blunt trauma cases, and hence there is diagnostic delay, which may lead to peritonitis and can adversely affect the patient's prognosis [6].

This also occurred in our case, where near-complete small-bowel gangrene was found during laparotomy. A significant increase in mortality with delayed surgery, i.e., from 13% to 30% when surgery was delayed from <8 hrs to >24 hrs, has been noted [6].

Even if the injuries are not life-threatening, trauma from large animals warrants observation and a high index of suspicion for occult injuries [6, 7].

We must complement clinical examination with radiological imaging, such as eFAST and CECT, to identify free fluid and reveal visceral injuries in the chest and abdomen as early as possible [1].

Delays in transport to a hospital have been associated with increased mortality [1].

In our case, the delay was due to the patient's neglect of symptoms, which ultimately proved detrimental. Rural healthcare limitations and low awareness of the seriousness of internal injuries contribute to such poor outcomes. [8, 9]

Public education and improved access to trauma care are vital for mitigating these preventable fatalities.

Conclusion

This case illustrates the devastating impact of delayed presentation in blunt abdominal trauma caused by a bull attack. Timely surgical intervention is critical to prevent progression to bowel necrosis and sepsis. Increased public awareness and improved trauma care systems in rural areas are essential to reduce mortality in similar cases.

Abbreviations

IV - Intravenous; eFAST - Extended Focused Assessment with Sonography for Trauma SMA & Contrast-Enhanced Computed Tomography (CECT); IMA - Inferior Mesenteric Artery; SMA - Superior Mesenteric Artery; AKI - Acute Kidney Injury; ICU - Intensive Care Unit;

DJ – duodenojejunal; IC - Ileocecal; MODS - Multiorgan Dysfunction Syndrome;

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