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Letter to editor

Bucket-handle mesenteric injuries in blunt abdominal trauma: Diagnostic challenges and surgical imperatives

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Bucket-handle mesenteric injuries represent a severe and frequently under-recognized subset of blunt abdominal trauma. These injuries result from shearing forces during rapid deceleration, leading to avulsion of the mesentery from the bowel wall and consequent disruption of vascular supply. Though uncommon, they carry a high risk of morbidity because early clinical signs may be minimal, allowing devascularized bowel to progress silently toward necrosis and perforation.

Here we present a case of a 23-year-old male who sustained a road traffic injury. He presented after 3 hours of injury. On presentation, he had tachycardia (Pulse 121/min) and blood pressure 90/60. He was given 1 Liter of bolus Ringer's lactate; however, he did not respond to the fluid challenge. A bedside FAST examination was done, which showed positive findings in hepatorenal (HR), left upper quadrant (LUQ), and pelvis. He was immediately shifted to the operative room (OR), where 1 liter of blood was evacuated. On examination, he had a bucket handle tear in the mesentery, which was resected, and a primary anastomosis was done [Figure 1]. He made an uneventful recovery.

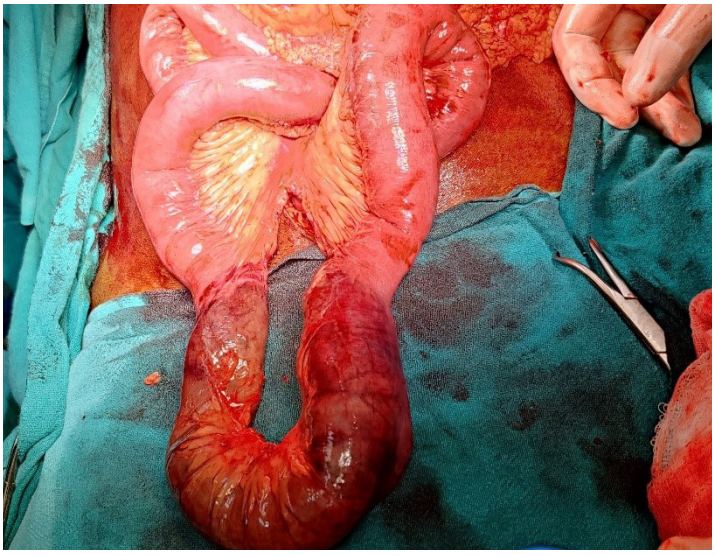

Figure 1: Intraoperative image showing a bucket handle tear of the mesentery.

Sticca *et al* emphasized that these injuries remain "not on any surgeon's bucket list" due to their diagnostic complexity and potentially devastating outcome.[1]Patients often present with nonspecific symptoms such as abdominal discomfort, tachycardia, or mild tenderness. Laboratory parameters may be deceptively normal. Consequently, reliance on imaging and clinical suspicion becomes essential. Sticca highlights that even modern CT imaging may not always reveal clear evidence early, prompting the need for a low threshold for operative exploration in high-risk mechanisms such as high-speed road traffic accidents.[1] Densley *et al*. (2022) present an illustrative case demonstrating how delayed radiologic manifestations can complicate diagnosis.[2] Their report describes a patient with initially subtle CT findings who later developed classic imaging features—mesenteric hematoma, abrupt vessel cut-off signs, and bowel wall hypoenhancement—consistent with a bucket-handle avulsion. This underscores the need for clinicians to recognize evolving radiologic changes and to consider repeat CT scans in patients whose symptoms progress or remain unexplained. Their case reinforces the practice of avoiding premature discharge in equivocal presentations, especially in polytrauma patients.[2] A comprehensive review by Chowdhury *et al*. (2022) further synthesizes the pathophysiology, clinical indicators, and management strategies.[3] They note that CT signs such as free fluid without solid organ injury, mesenteric fat stranding, active extravasation, and the "beak sign" should heighten concern. However, the absence of these findings does not exclude injury. The review consistently supports early laparotomy once clinical or imaging suspicion is raised. Intraoperatively, assessment of bowel viability, control of mesenteric bleeding, and resection of nonviable bowel with primary anastomosis remain the mainstays of treatment. Delay in operative intervention, as highlighted across all three references, is strongly associated with sepsis, multi-organ dysfunction, prolonged hospital stay, and mortality.

Collectively, these studies reinforce a unified message: bucket-handle mesenteric injuries demand high vigilance, timely imaging, and decisive surgical action. Early recognition—particularly in high-energy blunt trauma—remains the cornerstone of reducing delayed complications. A combination of mechanism-based suspicion, dynamic clinical assessment, and careful interpretation of evolving imaging findings is essential for optimizing outcomes.

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