

Under Pressure: Pancreatic Laceration in a Young Male Post Blunt Trauma



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ABSTRACT

Pancreatic injury following blunt abdominal trauma is an uncommon clinical scenario that often poses diagnostic and therapeutic challenges. Early recognition is critical to avoid serious complications.

A 21 year old healthy male presented to the emergency department after sustaining blunt abdominal trauma during an assault. He reported epigastric pain and was initially hemodynamically stable. A contrast enhanced CT scan revealed a pancreatic laceration without immediate signs of ductal disruption. The patient was managed conservatively but subsequently developed peritonitis. Surgical exploration confirmed a Grade III pancreatic injury with ductal involvement, necessitating distal pancreatectomy.

Introduction

Pancreatic injuries resulting from blunt abdominal trauma represent a relatively rare but clinically significant subset of traumatic abdominal injuries, accounting for less than 2% of all such cases. Due to its retroperitoneal location and the subtle, often nonspecific nature of early symptoms, pancreatic trauma poses considerable diagnostic and therapeutic challenges. The initial clinical presentation is frequently insidious, with patients exhibiting only mild epigastric pain or tenderness, which can lead to under-recognition and delayed diagnosis. Such delays are associated with a heightened risk of severe complications, including pancreatic fistulas, abscess

formation, pseudocysts, and sepsis, all of which significantly increase morbidity and mortality [1,2].

Given these diagnostic uncertainties, a high index of clinical suspicion is essential, particularly in patients with appropriate mechanisms of injury and evolving abdominal findings. Advanced imaging modalities, such as magnetic resonance cholangiopancreatography (MRCP) or endoscopic retrograde cholangiopancreatography (ERCP), play a complementary role in evaluating ductal integrity when CT findings are equivocal or when clinical concern persists [2].

This case report describes the clinical course of a young male who sustained a pancreatic laceration

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following blunt abdominal trauma, highlighting the diagnostic pitfalls, the importance of serial clinical assessment, and the pivotal role of timely surgical management when ductal injury is suspected. Through this discussion, we aim to reinforce the need for vigilant evaluation and a multidisciplinary approach in the management of this potentially life-threatening injury.

Case presentation

A 21-year-old previously healthy male presented to the emergency department after an alleged physical assault during which he was repeatedly punched in the abdomen. He arrived approximately one hour after the incident, reporting sharp, non-radiating epigastric pain.

On examination, he was alert and oriented, with stable vital signs: blood pressure 124/80 mmHg, heart rate 98 beats per minute, and temperature 37.1 °C. Abdominal examination revealed localized tenderness in the epigastric region with mild guarding, but no rigidity or rebound tenderness. No external signs of trauma, such as bruising or abrasions, were observed.

Laboratory investigations demonstrated a white blood cell count of $12.5 \times 10^9/L$ and hemoglobin of 13.8 g/dL. Serum amylase and lipase levels were elevated at 289 U/L and 412 U/L, respectively. Liver

and renal function tests were within normal limits. A contrast-enhanced CT scan of the abdomen revealed a laceration in the tail of the pancreas with mild peripancreatic fluid collection (Figure 1). No injuries to surrounding abdominal organs were identified.

The patient was initially admitted for observation due to his stable clinical condition. Within 24 hours, however, he developed worsening abdominal pain, a low-grade fever, and clinical signs of peritonitis. Given the deterioration and suspicion of pancreatic duct involvement, an exploratory laparotomy was performed. Intraoperative findings revealed a deep laceration across the tail of the pancreas with disruption of the main pancreatic duct. A distal pancreatectomy was carried out, surgical drains were placed, and the abdominal cavity was closed.

The postoperative course was uneventful. The patient resumed oral intake on the third postoperative day and was discharged on the eighth day in good condition.

At his three-month follow-up visit, the patient reported no abdominal discomfort, fever, or other gastrointestinal symptoms. Follow-up laboratory results demonstrated normal pancreatic enzyme levels. An abdominal ultrasound confirmed the absence of fluid collections or pseudocyst formation. The patient expressed satisfaction with his recovery and the treatment he had received.

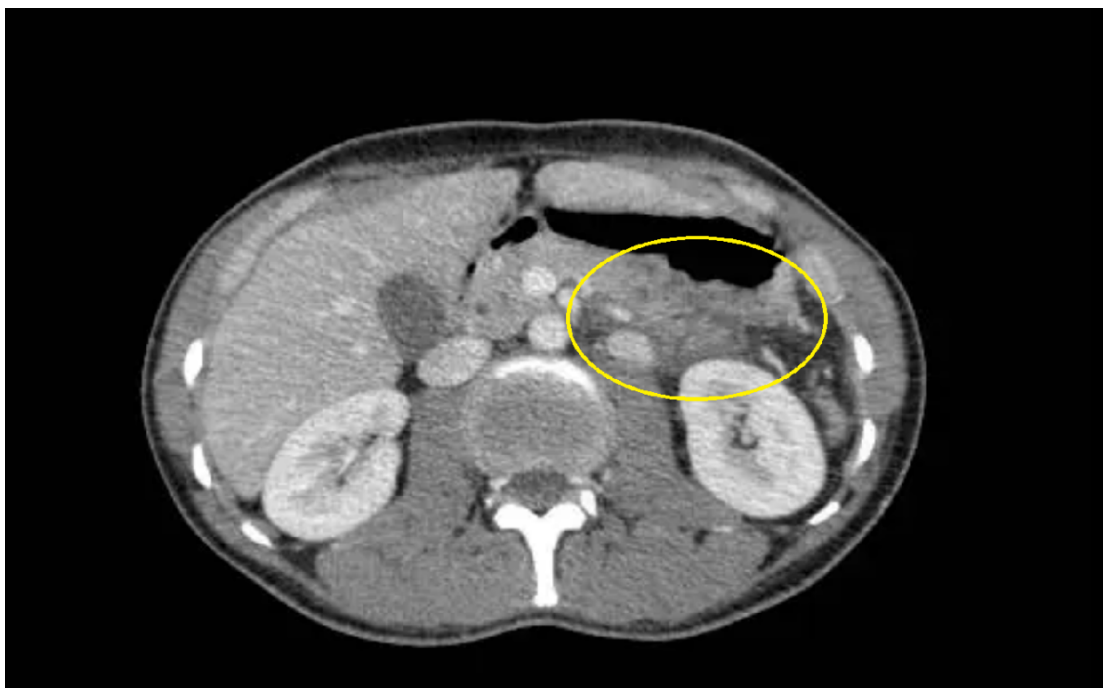


Fig. 1. Axial image of abdominopelvic CT demonstrated a full-thickness linear hypodense area in the tail and lateral body of the pancreas.

Discussion

Pancreatic injuries are uncommon in blunt abdominal trauma, with an incidence of less than 2% among abdominal trauma cases. They occur most frequently in young adult males and are typically caused by high-energy mechanisms such as motor vehicle accidents, motorcycle collisions, or falls from significant height [1,2].

The pancreas is a retroperitoneal organ, and its fixed position makes it susceptible to injury when compressed against the vertebral column during trauma. The most vulnerable region is the body of the pancreas, which lies anterior to the spine. Injury severity can range from minor contusions to full-thickness lacerations with pancreatic duct involvement. The retroperitoneal location of the pancreas can also delay the onset of symptoms, thereby complicating early diagnosis [3].

Symptoms of pancreatic injury can be nonspecific. Patients may present with epigastric pain, nausea, vomiting, and occasionally referred pain to the back. Physical examination findings may be normal or reveal only mild tenderness. Laboratory markers such as serum amylase and lipase may be elevated, but they are neither sensitive nor specific for pancreatic trauma [4,5].

CT imaging with intravenous contrast is the most commonly used modality for the initial assessment of abdominal trauma. However, early CT scans may miss ductal injuries or underestimate the severity of injury, particularly within the first 12 hours [6]. Magnetic resonance cholangiopancreatography (MRCP) or endoscopic retrograde cholangiopancreatography (ERCP) may be required to evaluate ductal integrity when clinical suspicion remains high despite inconclusive CT findings [7,8].

The American Association for the Surgery of Trauma (AAST) has classified pancreatic injuries from Grade I to Grade V. Injuries not involving the main pancreatic duct (Grades I–II) can often be managed conservatively with close monitoring, intravenous fluids, and analgesics. In contrast, injuries involving the duct (Grades III–V) generally require operative management to prevent complications such as pseudocyst formation, pancreatic fistula, or abscess. Surgical treatment typically consists of distal pancreatectomy for injuries to the body or tail of the pancreas, whereas more complex procedures may be necessary for injuries to the pancreatic head or cases with extensive tissue loss. Nonoperative management has been successful in selected patients but requires

careful selection and close follow-up [9].

The patient expressed that he had initially underestimated the seriousness of his condition but felt reassured by the clear communication and prompt treatment he received. He appreciated the coordinated care provided and was pleased with the overall outcome. At follow-up, he reported feeling fully recovered and expressed satisfaction with his current health status.

Conclusion

Pancreatic trauma resulting from blunt abdominal injury is rare and often difficult to diagnose promptly due to subtle initial symptoms. This case highlights the importance of early imaging, vigilant clinical monitoring, and timely surgical intervention when pancreatic ductal injury is suspected. Appropriate and timely management can significantly reduce morbidity and improve patient outcomes.

Ethical Considerations

Ethical considerations: “All data, including photo and X-ray materials, was rendered anonymous. I certify that I understand the journal’s ethical publication requirements and that this case-based review satisfies them.

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Conflict of Interests

The authors have no conflict of interest to declare.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images or data.

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