

Blunt Traumatic Pancreatitis in Pediatric Patient After Wrestling Injury

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Introduction

- Traumatic Pancreatitis from blunt abdominal injury in a pediatric patient is rare
 - Incidence is estimated to be 0.3%, according to the National Trauma Data Bank.
 - The pancreas is the fourth most injured solid organ in pediatric blunt abdominal trauma behind spleen, liver and kidneys. (2)
 - Pancreatic injury in trauma carries a high morbidity rate of 60% with more significant injuries (pancreatic injury grade >3) correlating with both operative repairment and mortality. (3)
 - Main mechanisms for pancreatic injury in the pediatric population include: motor vehicle accidents being the large majority followed by bike injuries (24%) and struck injuries (17%). (2)
- This case describes the presentation, diagnosis and stabilization of an adolescent male who presented with a blunt pancreatic injury after being struck in the abdomen during a high school wrestling meet.

Case Presentation

- **Patient** is a 15-year-old male who presented to the Emergency Department with chief complaint of epigastric and left upper quadrant abdominal pain after being slammed on his abdomen during a high school wrestling match. Patient described the injury pattern as being tossed onto his stomach with his opponent's hands located just above his umbilicus. He subsequently developed worsening epigastric abdominal pain that increased to a 10/10 in severity. He was nauseous but denied any vomiting. He denied head injury and loss of consciousness. No shortness of breath, pleuritic chest pain or hemoptysis. No previous abdominal surgeries reported.
- **Physical Exam Findings:**
 - Chest: tenderness to palpation over left lower chest wall, no bruising/ecchymosis, no subcutaneous emphysema
 - Abdomen: soft, tenderness to palpation diffusely but mainly in the epigastrium and left upper quadrant, voluntary guarding, no rebound tenderness
- **Pertinent Lab Findings:** WBC:18.0; Hgb: 15.0; Hct: 57.7 H; Plt: 382; Na 137; K 4.3; Cl 107; CO2 23; AST 31; ALT 36; Lipase: 5492 (73-39U/L)
- **Pertinent Imaging Findings:** Computed Tomography of the Abdomen and Pelvis with intravenous contrast
- **Findings:** Prominent peripancreatic edema with mild hypoattenuation of the pancreatic parenchyma, suspicious for pancreatitis. Small lucency along the inferior aspect of the right sacrum adjacent to the sacroiliac joint, suspicious for fracture, either acute or subacute.

Imaging

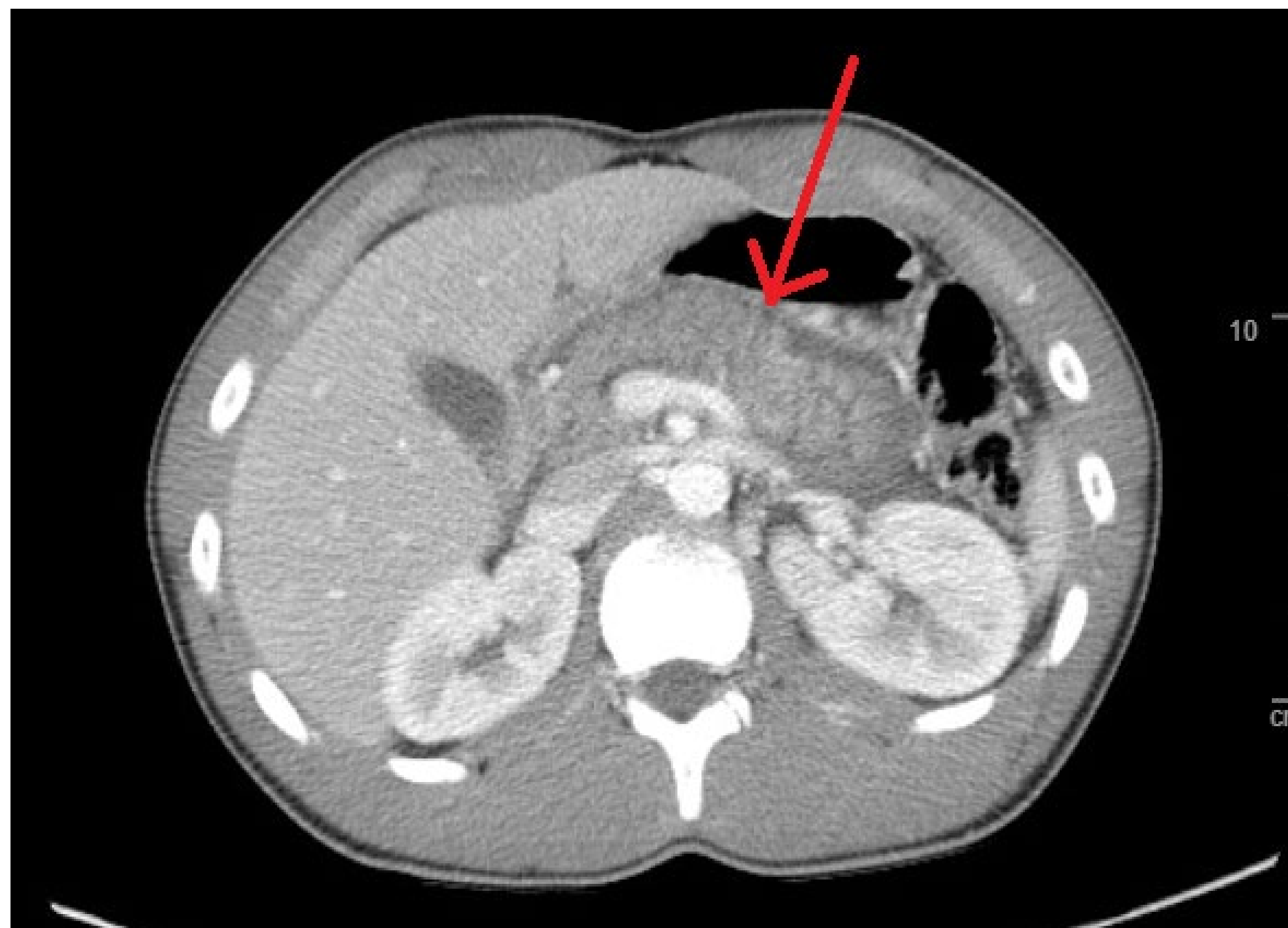


Figure 1. Computed tomography scan with intravenous contrast showing peripancreatic edema and contusion (red arrow).

ED and Hospital Course

- **ED Course:** Patient was given multiple rounds of parenteral analgesics and antiemetics. He was kept NPO and started on maintenance IV fluids. He was subsequently transferred to a local pediatric trauma center for further evaluation, monitoring and management.
- **Hospital Course:** Patient was managed conservatively with GI decompression, IVF, analgesics and antiemetics. Early enteral feeding was accomplished with nasogastric tube feeds. Patient had no evidence of ductal injury and went home with GI and primary care follow up.

Discussion

- History and physical evaluation of a patient with suspected pancreatic injury after blunt abdominal trauma should make note of a history of any blow, crushing mechanism and handlebar-type injury. (1) Our patient had a history of both crushing mechanism and a direct blow to the epigastric region.
- Lab analysis may show elevated lipase and amylase but neither are specific enough to establish or exclude the diagnosis. (3)
- Diagnosis is mainly made by imaging, most often beginning with contrast enhanced CT scan and can be augmented with MRCP or ERCP.
- Low grade pancreatic injuries in blunt abdominal trauma (i.e., grade I and II) can be treated with conservative management, as with our patient, and is safe and can be suggested if the grade of injury is determined with certainty by imaging and patient hemodynamically stable (4).
- Operative management is considered in all penetrating pancreatic injuries and higher grade blunt pancreatic injuries. Pancreas should be visualized in all patients undergoing exploratory surgery for other associated abdominal injuries. Parenchymal injuries should be managed with debridement of devitalized tissue, repair of lacerations and closed-suction drainage. Ductal injuries depend on the location. Distal main pancreatic duct injuries are usually managed with distal pancreatectomy. Proximal main pancreatic ductal injuries can be managed with selective debridement and extensive drainage. Complex injuries which involve high grade pancreatic head injuries or severe combined injuries of the adjacent duodenum, a staged resection and reconstruction can be considered. (1)

Conclusion

- Blunt pancreatic injuries continue to be a rare diagnosis in both the pediatric and adult populations. Suspicion for pancreatic injury should remain high in patients with significant tenderness and concerning mechanism. Management of higher-grade injuries can be controversial but there appears to be a trend towards conservative measures.

Reference

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