

Case Report

Conservative management of grade IV pancreatic trauma in a 14-year-old boy: A case report

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Abstract

Introduction: Pancreatic trauma in children is rare and accounts for less than two percent of blunt abdominal injuries. High grade injuries such as grade four are usually treated surgically. Recent reports suggest that non operative management can be successful in selected stable patients.

Case Presentation: A 14 year old boy presented after blunt abdominal trauma. Contrast enhanced CT scan showed a grade four pancreatic injury with transection at the pancreatic neck. The patient was hemodynamically stable and was managed conservatively with bowel rest, nasogastric decompression, parenteral nutrition, intravenous antibiotics and close monitoring. He improved gradually, resumed oral feeding and was discharged in a stable condition. Follow up showed no evidence of pseudocyst, pancreatic fistula or endocrine dysfunction.

Discussion: Although surgery is the traditional approach for high grade pancreatic trauma, conservative treatment can be effective in carefully selected pediatric patients. This avoids the morbidity associated with pancreatic surgery when good monitoring and supportive care are available.

Conclusion: Conservative management of grade four pancreatic trauma in a child can be safe and effective. Careful patient selection and close follow up are essential for successful outcomes.

Keywords: Pediatric pancreatic trauma, Grade four pancreatic injury, Conservative management, Blunt abdominal trauma, Case report

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1. Highlights

1. Pediatric pancreatic trauma is rare, representing less than two percent of blunt abdominal injuries.
2. Grade IV pancreatic trauma is usually treated surgically due to ductal injury.
3. Selected hemodynamically stable children can be managed conservatively with good outcomes.
4. Conservative management avoids morbidity associated with major pancreatic surgery.
5. Close monitoring and multidisciplinary care are essential for successful non operative treatment.

2. Introduction

Pancreatic trauma is rare in children, accounting for only 0.3–0.6% of all pediatric trauma admissions and less than 2% of blunt abdominal injuries. It is most commonly caused by bicycle handlebar or sports-related impact. High-grade injuries (American Association for the Surgery of Trauma,

AAST, Grade IV–V) usually involve main pancreatic duct disruption and are traditionally managed surgically.¹⁻⁴

However, recent advances in diagnostic imaging, nutritional support, and intensive care have made non-operative management a viable option in selected hemodynamically stable patients. We present the case of a 14-year-old boy with a Grade IV pancreatic injury successfully treated conservatively.⁵

3. Case Presentation

A 14-year-old boy presented to the emergency department following blunt abdominal trauma [insert mechanism, e.g., bicycle handlebar injury]. On admission, he was conscious, alert, and hemodynamically stable. Abdominal examination revealed [tenderness/guarding in the epigastrium]. Laboratory evaluation showed elevated serum amylase and lipase levels.

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Contrast-enhanced computed tomography (CECT) demonstrated a Grade IV pancreatic injury with transection at the pancreatic neck and peripancreatic fluid collection. There was no evidence of associated solid organ injury or vascular compromise.

The patient was managed non-operatively. He was kept nil per os, a nasogastric tube was inserted for decompression, and total parenteral nutrition was initiated. Broad-spectrum intravenous antibiotics and analgesics were administered. Serial clinical examinations and laboratory monitoring were performed.

Over the next [number of] days, his abdominal pain gradually improved. Repeat imaging showed resolving peripancreatic collections without pseudocyst formation. Oral feeding was gradually reintroduced and well tolerated. He was discharged on day [X] in stable condition.

On follow-up at [X weeks/months], the patient was asymptomatic, with normal growth parameters and no signs of pancreatic insufficiency or complications.

4. Discussion

Pancreatic trauma poses a diagnostic and therapeutic challenge, particularly in children, where delayed diagnosis is common. Grade IV injuries, involving transection through the pancreatic neck or proximal body with main duct involvement, have traditionally been managed by surgical procedures such as distal pancreatectomy or pancreaticojejunostomy.⁶

However, accumulating evidence suggests that in hemodynamically stable pediatric patients, conservative management can be safe and effective. Non-operative management reduces surgical morbidity, preserves pancreatic function, and avoids risks of endocrine and exocrine insufficiency.⁶

Potential complications of conservative treatment include pseudocyst, pancreatic fistula, and pancreatitis, but these can often be managed with minimally invasive techniques such as endoscopic or percutaneous drainage.⁸

Our case adds to the growing body of literature supporting conservative management of high-grade pancreatic injuries in children. Careful patient selection, close monitoring, and availability of intensive supportive care are key to successful outcomes.⁹

5. Conclusion

Conservative management of Grade IV pancreatic trauma in children is feasible and effective in carefully selected hemodynamically stable patients. This approach can prevent the morbidity of pancreatic resection. Individualized decision-making and multidisciplinary care are crucial

6. Ethical Approval

Not applicable for single case reports as per institutional policy.

7. Patient Consent

Written informed consent was obtained from the patient's guardian for publication of this case report and accompanying images.

8. Conflict of Interest

The authors declare no conflicts of interest.

9. Source of Funding

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