

# Conservative management of a case of traumatic pancreatitis in childhood: a case report

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**Abstract.** – Acute pancreatitis (AP) is relatively uncommon in pediatric age group. Traumatic injury is an important cause of AP in children. Ductal disruption resulting from pancreatic trauma usually needs surgical intervention. A three-and-a-half year old child presented with complaints of abdominal pain and distension following blunt trauma abdomen. Computed tomography of abdomen revealed presence of grade III pancreatic injury with fluid collection in lesser sac. The patient was managed with antibiotics and pigtail drainage and he improved. Therapy for traumatic pancreatitis in paediatric patients must be individualised. Even high grade injuries can be managed non-operatively.

*Key Words:*

Acute pancreatitis, Traumatic injury.

## Introduction

Acute pancreatitis is uncommon in children and the usual etiologies are different from the adult population. Traumatic pancreatitis is one of the important causes of acute pancreatitis, especially in children. Trauma, systemic disease, structural anomalies and drugs are the most common implicated causes<sup>1,2</sup>. Trauma may account for around one-fifth of all cases of acute pancreatitis in childhood<sup>3</sup>. The management of pancreatic trauma includes workup to exclude other visceral injuries. In presence of other visceral injury laparotomy may be indicated for related conditions and pancreatic injury may be handled simultaneously. In cases of sole pancreatic injury presence of ductal disruption usually warrants surgery<sup>4</sup>.

## Case Report

A three-and-a-half year old child presented with history of pain abdomen for two weeks and abdominal distension and vomiting for a week. The

pain in abdomen had occurred after he was hit on his abdomen by the bicycle handlebar. The pain was severe, not associated with vomiting initially, non-radiating and was managed with parenteral analgesics elsewhere. However, the pain reappeared and was associated with occurrence of distension in upper abdomen. This was followed by multiple episodes of vomiting which arose immediately after taking anything orally. These were non-bilious and contained ingested material and did not improve with anti-emetics (Intravenous Ondansetron). There was no history of previous such episodes of pain or any history of drug intake prior to the pain. At presentation the patient had a blood pressure of 110/70 mm of Hg, tachycardia (Pulse: 113/min). He was febrile (101°F) and was pale but maintained his saturation on ambient air. On palpation of abdomen an ill-defined lump, soft in consistency was palpable in the upper abdomen. Rest of the physical examination was non-contributory. On evaluation he had anaemia (Hb: 8.4, normal: 12-14 gm/dL), but normal leukocyte count (Total leukocyte count: 7900, normal: 4000-1100/mm<sup>3</sup>) and thrombocytosis (platelet count: 765,000, normal: 150,000-450,000 mm<sup>3</sup>). The ESR at one hour was elevated at 65 mm (normal: < 14 mm). The serum amylase was elevated at 761 IU/ml (Normal: 30-90 IU/mL). The renal function tests and the liver function tests were normal. The ultrasonography of abdomen revealed a fluid collection in the lesser sac, normal biliary system but the pancreas was obscured by bowel gas. The contrast enhanced computed tomography (CECT) of abdomen revealed evidence of pancreatic laceration with fluid collection in the lesser sac which was compressing the stomach (Figure 1A). In view of fever the fluid was tapped and revealed fluid albumin of 2.7 gm/dL (serum-ascites albumin gradient of 0.8 gm/dL), random sugar of 74 mg %, amylase value of 160,000 IU/mL, 2000 cells which were predominantly polymorphs. The cultures grew *Staphylococcus aureus* and *Es-*



Figure 1.

*cherichia coli*. A pigtail was inserted in the lesser sac and the patient was started on intravenous meropenem and vancomycin as per sensitivity pattern. This resulted in defervescence of fever and improvement in general condition. The abdominal distension as also the symptoms of gastric outlet obstruction improved and patient started accepting per orally. The pigtail output gradually decreased and the pigtail was removed 15 days later. Repeat CECT done a month later revealed resolution of the fluid collection and normal pancreatic morphology (Figure 1B). At six months follow-up the patient remains symptom free.

### Discussion

Traumatic pancreatitis is an important cause of acute pancreatitis in childhood<sup>3</sup>. The trauma resulting in pancreatic injury may include pene-

trating or non-penetrating trauma and may even be trivial as the abdominal muscles may not be as well developed as in adults. Usual mechanisms reported include bicycle handlebar injury, road traffic accidents, child abuse, falls and even trivial trauma<sup>5,6</sup>. The diagnosis in absence of a penetrating injury may be delayed. CT is help in determining the site of injury and deciding further therapy<sup>2,6</sup>. The laceration is usually visualised as a linear area of low attenuation, and other findings may include presence of fluid collections, ascites, and glandular enlargement as also evidence of other visceral injuries. Endoscopic retrograde cholangio-pancreatography (ERCP) is the gold standard for diagnosis but is invasive. However, it provides chance for therapeutic interventions like pancreatic stenting<sup>6</sup>. Therapeutic modalities include non-operative management with catheter/pigtail drainage, pancreatic endotherapy with stenting and surgery<sup>5</sup>. Pancreatic injury has been classified by the American Association for the Surgery of Trauma into five grades I-V (Minor Contusion without pancreatic duct injury, Major Contusion without pancreatic duct injury, Distal ductal transection, Ampullary injury or proximal transection and Major disruption of pancreatic head respectively)<sup>7</sup>. Non-operative care is the standard of therapy in grade I and II injuries as no ductal disruption has occurred<sup>4,8</sup>. Reports have suggested that in patients with ductal injury surgery or endoscopic intervention is usually warranted. Some Authors have even recommended early surgical intervention in such cases<sup>4</sup>. In a large Australian study in paediatric age group the majority of patients with higher grade of injury required surgical intervention<sup>8</sup>.

### Conclusions

Our case is interesting for the fact that in spite of a delayed presentation and a high grade (III) injury non-operative management with pigtail and antibiotics was successful. We suggest that therapy for children with sole pancreatic trauma be individualized and as in acute pancreatitis resulting from other causes, non-operative interventions may prevent surgical interventions.

### Conflict of Interest

We have no conflicts of interest, financial or otherwise.

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