

## Case Report

# Early pancreaticogastrostomy: a better and novel approach for high grade traumatic pancreatic injuries - case report from tertiary care centre in India

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**Received:** 17 October 2021

**Accepted:** 09 November 2021

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### ABSTRACT

Traumatic pancreatic injury is a rare entity which is associated with severe morbidity and mortality. The management varies according to the American association for the surgery of trauma-organ injury scale (AAST-OIS) grading of injury, hemodynamic status and time of definitive diagnosis. Non-operative versus operative management has potential risks and benefits and long term debate on the ideal management is still ongoing. A 19-year boy, with severe, generalised pain abdomen was admitted after road traffic accident. Upon admission, the investigations: ultrasonography (USG) and computed tomography (CT) scan abdomen, showed traumatic pancreatic injury (AAST-OIS, grade V), was taken for exploratory laparotomy which revealed lacerated head of pancreas along with normal distal segment of pancreas with no associated injury to nearby hollow viscera, vascular structures. He underwent primary closure of head of pancreas with distal segment pancreaticogastrostomy. Postoperatively he recovered well with no complications. In the present case, as he had traumatic pancreatic injury (AAST-OIS, grade V) and there was no involvement of hollow viscera and vascular structures, the operative intervention can decrease morbidity as by pancreaticogastrostomy we have diverted the pancreatic fluid into stomach, subsequently decreasing the chances of pseudocyst, fistula, necrosis of pancreas. Thus we conclude, high grade blunt traumatic abdomen injuries should be managed with adequate resection and subsequent reconstruction and/or drainage procedure. Pancreaticoduodenectomy, distal pancreatectomy, pancreaticogastrostomy, pancreaticojejunostomy are the available options to be used according to the grading of injury and associated injuries.

**Keywords:** Traumatic pancreatic injury, Pancreaticogastrostomy, Pancreatic reconstruction procedures, Blunt abdominal trauma

### INTRODUCTION

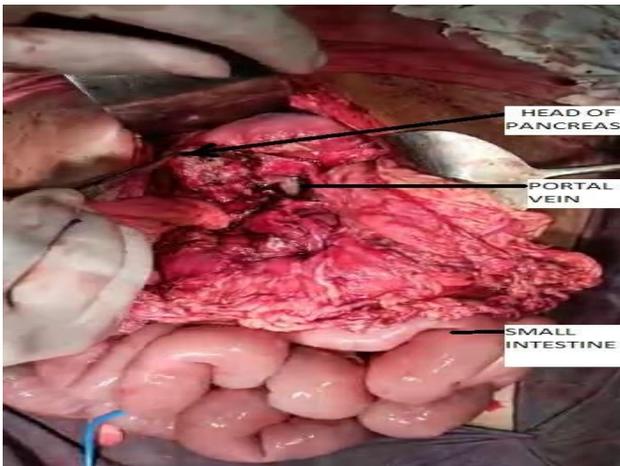
One of the leading causes of morbidity and mortality in the growing world are blunt trauma injuries. A rare entity like traumatic pancreatic injury, can be very challenging with respect to diagnosis and management for the surgeons as these if not treated can have various catastrophic complications like fistula, sepsis and death.<sup>1</sup> The management protocols throughout the globe varies and depends on mechanism of injury, severity of injury, associated injuries to gut and surrounding vascular structures, time of identification, general condition,

hemodynamic status and comorbidities of the patient.<sup>2</sup> The major factors which ascertain the outcome following injury include the time from injury to definitive diagnosis and subsequent treatment of pancreatic duct injury.<sup>3</sup>

### CASE REPORT

A 19-year gentleman, presented to us after a road traffic accident leading to blunt trauma to the abdomen after steering wheel injury. During primary survey, abdomen was distended, tenderness and guarding present. Fast scan was carried out which revealed free fluid with echoes in multiple areas in peritoneal cavity. Subsequently contrast

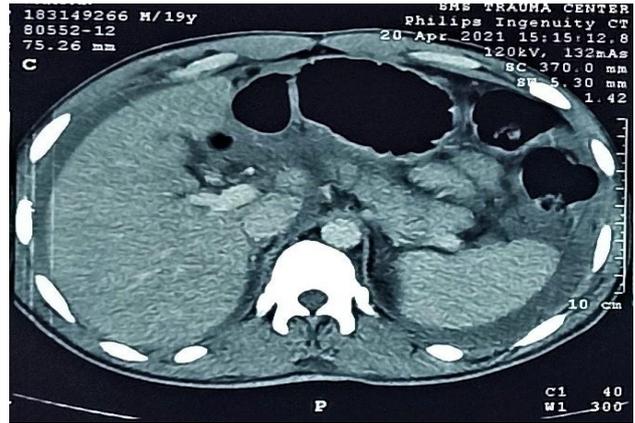
enhanced computed tomography (CT) abdomen revealed contusion with complete laceration of head–neck of pancreas with marked peripancreatic contusion with normal surrounding vascular structures, hollow viscera according to the American association for the surgery of trauma-organ injury scale (AAST-OIS grade V).<sup>4</sup> Patient was taken for exploratory laparotomy which showed there is complete transection of the head of pancreas with distal body and tail of pancreas appeared normal. The method used was enveloped double purse-string pancreatico-gastrostomy technique (EDPSPG), in which the head of pancreas along with the duct was closed with figure of 8 sutures and distal part i.e. body and tail of pancreas was mobilised, posterior gastrostomy made, pancreatic stump telescoped into the stomach with 2 purse string sutures tied around with additional, anterior and posterior transfixing sutures to envelop the anastomosis and pancreaticogastric anastomosis done with monofilament sutures (PDS 4-0).<sup>5</sup> The patient had an uneventful recovery and was discharged on postoperative day 9. During follow up patient was asymptomatic with no complications.



**Figure 1: Intra-operative picture showing lacerated head of pancreas, portal vein and small intestine.**



**Figure 2: Intra-operative picture showing distal segment of pancreas and posterior surface of stomach.**



**Figure 3: Axial contrast enhanced abdominal CT image showing traumatic pancreatic laceration (ASST @OIS grade 5 injury).**

## DISCUSSION

Blunt traumatic abdominal injuries can cause compression to pancreas against the lumbar vertebrae leading to severe, high grade pancreatic injury.<sup>4</sup> Retroperitoneal location of the pancreas prevents it from significant injuries i.e. <2% of blunt abdominal trauma injuries are of pancreatic in origin. The physical examination is usually not significant and thus making the diagnosis difficult, requiring a multidisciplinary team approach.<sup>7</sup>

The diagnostic challenge, and further classification according to severity makes management of pancreatic trauma an arduous task.<sup>2</sup>

Pancreatic trauma is classified and graded according to the OIS developed by the AAST.<sup>7</sup> The injury mechanism plays a key role in identification of traumatic pancreatic injuries.<sup>8</sup> Pancreaticogastrostomy is one of the operative intervention which involves placing the distal segment of transected pancreas into the stomach thus diverting the pancreatic secretions into stomach causing improved and early recovery of the patient with decreased morbidity and mortality.<sup>8</sup> The prognostic determinants include the time from of traumatic injury to start of definitive treatment and the status of main pancreatic duct.<sup>9</sup>

## CONCLUSION

High grade traumatic pancreatic injuries, not associated with injuries to hollow viscera, vascular structures, if the patient is stable, the safer option may be doing an early pancreaticogastric anastomosis which can reduce the morbidity and mortality. However large randomised controlled trials should be done to assess its efficacy in various grades of traumatic pancreatic injuries.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

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**Cite this article as:** Vyas S, Porwal P. Early pancreaticogastrostomy: a better and novel approach for high grade traumatic pancreatic injuries - case report from tertiary care centre in India. *Int Surg J* 2021;8:3735-7.