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Domestic violence and assault leading to isolated grade III pancreatic injury managed conservatively; A rare case report

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ABSTRACT

INTRODUCTION: Isolated complete pancreatic transection following blunt trauma abdomen is associated with very high mortality. Conservative management in such a scenario is a rare experience. Majority of the patients with American Association for Surgery of Trauma (AAST) grade III or IV pancreatic injury are treated with surgical options and have poor outcomes. As per the available literature we are reporting a rare case of isolated AAST grade III pancreatic injury managed conservatively in adult.
CASE PRESENTATION: A 37-year-old female presented with complaints of severe epigastric pain with the alleged history of domestic violence. CECT of the patient suggested isolated pancreatic injury with complete transection of pancreas. Considering the clinical and hemodynamic status of the patient a trial of conservative management was started. Serial assessment of biochemical and clinical parameters depicted improvement in the clinical status of the patient. She was doing well at 6 months of follow up.
DISCUSSION: Operative procedures in patients with high grade pancreatic injury are associated with high risk of mortality and morbidity. Emergency surgeries can be avoided in patient with stable clinical and haemodynamic status. In selected cases decision on the basis of radiology may lead to unnecessary surgeries, whereas conservative approach may have better outcomes.
CONCLUSION: Tailored approach in cases of high-grade pancreatic injury will augment the decision taking between operative and non-operative management. Clinical and haemodynamic status should play a pivotal role and radiology should be used as an adjunct for deciding the management.

1. Introduction

Pancreatic injury in an adult is a rare entity accounting 2–12% of abdominal trauma [1]. Isolated pancreatic injury is even rare up to less than 3% of cases [2]. Domestic violence and assault leading to higher grade of isolated pancreatic injury is considered to be a very rare condition. Conservative management of higher grade of isolated pancreatic injury is a topic of debate with very few cases reports suggestive of successful outcome. We report a case of 37-year-old female with isolated grade III pancreatic injury due to domestic violence and assault successfully treated with conservative management. Conservative management of grade III pancreatic injury have been reported by only few authors [3] but isolated grade IV pancreatic injury successfully managed conservatively was reported only by Mercantini P et al. [4]. This case report is in line with SCARE 2018 criteria [4].

2. Case presentation

A 37-year-old female homemaker by occupation presented to ED (Emergency Department) of our tertiary care centre with alleged history of domestic violence and assault by punching on abdomen by her husband. Patient was alert, awake and had sharp pain in upper abdomen for four hours. She was hemodynamically stable with pulse rate of 80 beats per minute, blood pressure 110/70 mm of Hg, spo2 99% at room air, respiratory rate of 20 cycles per minute. There was no significant medical, past or family history. Physical examination revealed tenderness in the right upper quadrant and epigastrium with guarding. Focused assessment with sonography for trauma (FAST) suggested trace of free fluid in the pelvis. Ultrasound whole abdomen revealed gross ascites with minimal fluid in the pouch of Douglas, bulky hypo echoic pancreas with altered echo texture and peripancreatic fluid collection. Her initial haemoglobin was 10.1 gm/dl, and total leucocyte counts $8.59 \times 10^3/\mu l$. Her comprehensive metabolic panel showed raised serum amylase 657.5 U/l, and serum lipase 260.6 U/l. Urgent contrast enhanced computed tomogram (CECT) of abdomen and pelvis was performed which suggested near to complete transection of head and body of pancreas, identified as a hypo dense area

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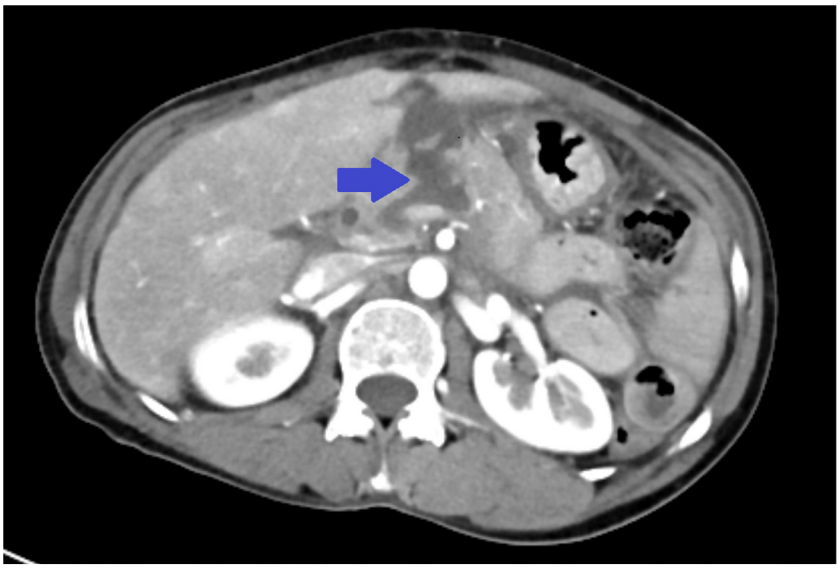

Fig. 1. CECT scan with arrow head showing complete transection of pancreas with peripancreatic fluid collection.

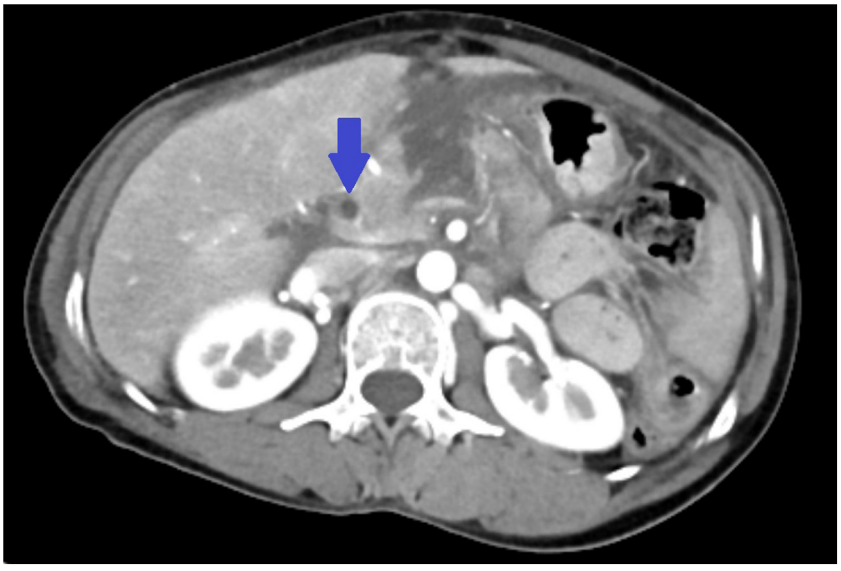

Fig. 2. CECT scan with arrow head showing dilatation of main pancreatic duct.

transecting the pancreatic parenchyma with adjacent moderate peripancreatic inflammatory changes noted, evidence of multiple linear hypo dense streaks seen in body region not reaching up to main pancreatic duct (Figs. 1 and 2). This was consistent with Grade III pancreatic injury without main pancreatic duct involvement according to AAST, with no other associated solid visceral injuries. As patient was haemodynamically stable, decision of conservative management was taken by an additional professor with experience of managing solid organ injury for 11 years. Patient was admitted in surgical Intensive care unit (ICU) with instructions to keep her nil by mouth, total parenteral nutrition (TPN) with intravenous fluid therapy for maintainance, octreotide injection prophylactic intravenous antibiotic, and serial monitoring of the haemoglobin (6 hourly) were done. Patient remained hemodynamically stable and gradually improved symptomatically. After 72 h her serum amylase level was decreased to 167.I4 U/L and serum lipase to 88.15 U/L. On Day 5 oral fluids was reintroduced gradually and intravenous antibiotics were stopped. Follow up ultrasonography was done on day 10, and showed the evidence of minimal free fluid in the abdomen. Patient became completely asymptomatic, tolerating regular oral diet, serum amylase and lipase level returned to normal level. Patient was discharged on day 17 with haemoglobin of 11.5 gm/dl. Patient was followed up in Out Patient Department (OPD) after 15 days, and she was absolutely fine. At 6 month of follow-up, she was doing well and her whole abdomen ultrasound showed a cystic lesion measuring 68 × 62 mm seen in head of pancreas. She is in our regular follow up.

3. Discussion

Domestic violence and assault causing higher grades of isolated pancreatic injury is a rare and life-threatening condition. Paediatric population are more vulnerable to traumatic pancreatic injury [2]. AAST has classified pancreatic trauma radiologically using CECT in to five grades [2]. Grade I and II pancreatic injury sparing duct are usually managed conservatively. Higher grades of pancreatic injury involving duct or transection of proximal or distal pancreatic parenchyma are often managed operatively [5]. Massive disruption of pancreatic head is considered as grade V injury, surgical treatment is mostly advocated for such injury [4]. Treat-

ment protocols for the management of main pancreatic duct injury are subjected to many controversies. Distal pancreatectomy is frequently done for grade III injuries [2]. Treatment options for grade IV pancreatic injury include percutaneous drainage, pancreatic duct stenting, surgical drainage and debridement, pancreaticoenterostomy, distal pancreatectomy, surgical procedures are associated with a higher risk of mortality and morbidity [5]. Amid of all the controversies expectant conservative management of grade III and grade IV injuries are extremely rare. Mercantini P et al. [6] have reported an entirely conservative management for grade IV pancreatic injury avoiding surgical, endoscopic or any interventional procedure like present case of grade III pancreatic injury. Duggan et al. [3] reported a case of successful conservative management in complete transection of pancreas at the body. Ho VP et al. [7] recommend surgical treatment for grade III/IV pancreatic injuries which are diagnosed on CT scan. We encountered a case of AAST grade III pancreatic injury with an alleged history of domestic violence and assault. We managed this case conservatively contrary to the EAST guidelines who conditionally recommend operative management [8]. The conservative management avoid the endoscopic or other interventional procedure including surgery in view of the stable clinical and hemodynamic parameters and to avoid associated mortality and morbidity with emergency pancreatic resection [5]. As per the available literature this is the rare case of isolated pancreatic complete transection managed conservatively. Dependence of operative decision making in a case of sever pancreatic injury solely on radiological AAST classification is not justified and should be augmented with clinical and hemodynamic parameters of the patient. Among patients under conservative management close monitoring of the clinical and biochemical parameters is necessary to decide the course of further treatment.

4. Conclusion

Tailored approach in cases of grade III/IV pancreatic injury will augment the decision taking between operative and non-operative management. Clinical and hemodynamic status should play a pivotal role. Decision making for operative and nonoperative management should not solely depend on radiological AAST grading system. A trial of conservative management should be given in such cases that are hemodynamically stable without any associated other solid visceral injuries.

Patient's perspective

Patient shared her experiences as "I am so grateful to the trauma team who have treated me without operating. As I was very fearful and worried to think about surgery and its complications".

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

There is no ethical approval was obtained as it's a case report.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Dr Hariprasad C P: study concept, design, writing the paper.
Dr Rohit Gupta: data collection, writing the paper.
Dr Anil Kumar: revising it critically for important intellectual content.

Registration of research studies

N/A.

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