

Introduction

Non-penetrating, isolated pancreatic injuries are rare, and the management is not well-established and challenging. Most injuries are managed by surgery, but recently several case reports discuss endoscopic therapy for treatment of main pancreatic duct disruption. We report a case of pancreatic injury from falling on a bamboo stump with complete pancreatic ductal disruption and complete pancreas divisum with a dominant dorsal duct that was successfully nonoperatively managed through endoscopic therapy.

Case Description

An 18 yo male transferred for worsening abdominal pain from a grade IV pancreatic injury complicated by pancreatic ascites and massive pancreatic fluid collections (PFCs) sustained a month prior after a non-penetrating fall onto a bamboo rod in the Caribbean. He had failed conservative therapy and two attempts with ERCP for pancreatic duct (PD) stent placement. CT A/P and MRCP showed a 13cm cyst consistent with hemorrhagic pancreatic pseudocyst (image A-B). Labs showed leukocytosis, elevated lipase and LFTs, but he was hemodynamically stable. US-guided paracentesis drained 250mL of fluid consistent with pancreatic ascites. To allow for pancreatic edema reduction, we elected for a two-step procedure with separate EUS and ERCP. EUS showed multiple PFCs s/p endoscopic cyst-gastrostomy with Axios stent (image C-D). Repeat CT A/P showed decrease in size of the PFCs (image E). He was discharged and returned in one week for ERCP that revealed a surprising complete pancreas divisum and total disrupted main dorsal PD, which was endoscopically treated with sphincterotomy of the minor papilla and a long PD stent across the disruption (image F-H). The Axios stent was removed a week later, and four weeks later we successfully removed the PD stents from both the major and minor papillae. He made an uneventful recovery and remains well.

Images

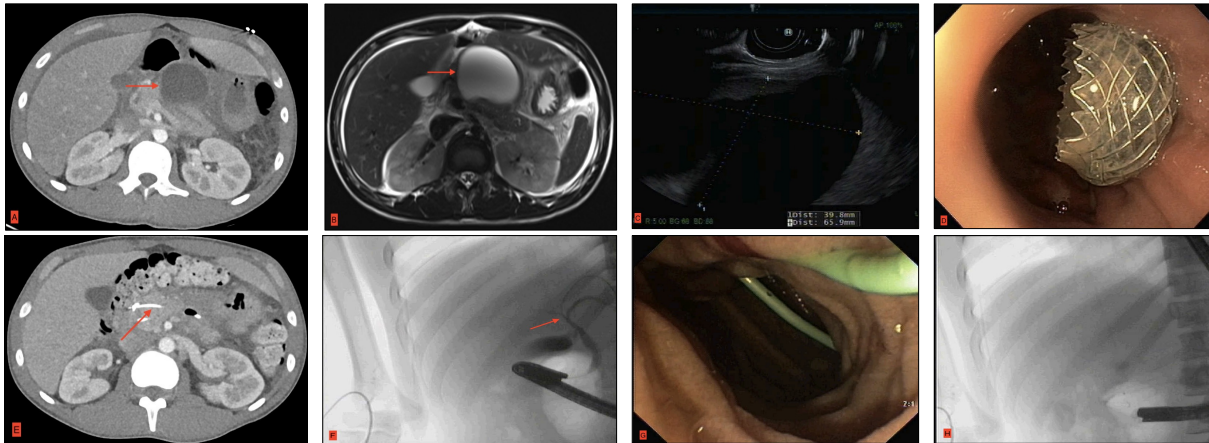


Image A: CT A/P (coronal) demonstrating edematous pancreas with significant peripancreatic fat stranding, with a peripherally enhancing hypodense fluid collection near the body and tail of the pancreas measuring approximately 4.0 x 4.8 x 13 cm in the maximum AP, RL and SI dimensions (red arrow).

Image B: MRCP (coronal) Abutting the pancreatic body is a multilobulated rim-enhancing complex fluid collection that extends from the level of the diaphragmatic hiatus to just above the level of the aortiliac bifurcation and measures 6.8 x 9.7 x 19.1 cm (AP by TR by SI, red arrow).

Image C-D: EUS demonstrating large pancreatic fluid collection and s/p Axios cyst-gastrostomy.

Image E: CT A/P (coronal) demonstrating cyst-gastrostomy placement with interval decrease in PFC.

Image F-H: Pancreatogram shows extravasation of contrast material at the junction of proximal 2/3 and distal 1/3 of the dorsal PD c/w disrupted dorsal PD (Complete Pancreas divisum, left). Placement of a 5 Fr 9 cm Zimmon PD stent with pigtail crossing the disruption at the minor papilla. Pancreatogram showing no extravasation of contrast material s/p PD stent placement.

Discussion

Pancreatic disruption syndrome or Disconnected Pancreatic Duct Syndrome (DPDS) is an interruption of pancreatic duct continuity, usually from necrotizing pancreatitis, but can occur with blunt or penetrating abdominal injury, as in our patient. Endoscopic management is a minimally invasive option for DPDS and pancreatic ascites. Our patient had severe pancreatic injury managed using two-stage endoscopic therapy, demonstrating a successful treatment strategy for pancreatic injury with total main DPDS. Further studies are required regarding the selection of patients, safety, and long-term outcomes.

References:

- Veazakis A, Koutoulidis V, Fragulidis G, Polymeneas G, Polydorou A. Complete traumatic main pancreatic duct disruption treated endoscopically: a case report. *J Med Case Rep.* 2014 May 31;8:173. doi: 10.1186/1752-1947-8-173. PMID: 24886125; PMCID: PMC4096521.
- Ghosh SK. One Stage Emergency Pancreatoduodenectomy for Isolated Injury to Pancreatic Head Following Blunt Abdominal Trauma: Case Report and Review of Literature. *Bull Emerg Trauma.* 2013 Jul;1(3):127-9. PMID: 27162840; PMCID: PMC4779174.