Disrupted Pancreatic Duct with Necrotic Fluid Collection, Treated with Endoscopic Management

Introduction

There have been continued changes to the treatment approach for pancreatic duct trauma, with there being a combination of surgical, endoscopic and interventional approaches.[1] Imaging modalities for assessing injuries include CT, and for the pancreatic duct (PD) more specifically, MRI or MRCP. Notable, there is difficulty in assessing pancreatic injury, as the full extent may not show on initial imaging.[2] Therefore, it is important to perform serial imaging, with changes in the patient's clinical status. The following case involves initial surgical management, with further endoscopic management of pancreatic injury, after a motor vehicle accident.

Case Presentation

A 28-year-old female was admitted after motor vehicle accident leading to blunt force trauma. Patient was found to have grade IV pancreatic injury, lacerations to her liver and rib fractures. Patient initially underwent exploratory laparotomy with drainage of pancreatic hematoma, peripancreatic drain placement and cholecystectomy. A few days later, the patient began to have pyrexia, worsening leukocytosis and increased total bilirubin. CT A/P showed a large acute necrotic collection along the head of the pancreas (Image A). MRI abdomen showed fluid collection in the head/neck of the pancreas directly communicating with the PD, concerning for laceration.

Decision was made to proceed with EUS/ERCP. EUS showed unorganized fluid collection from the head of the pancreas to the body of the pancreas, with no evidence of walled off necrosis. The PD was 3mm in size. ERCP performed with proximal PD cannulation. After cannulation, there was evidence of contrast extravasation near the pancreatic body, indicating disconnected PD. There was purulent exudate and blood draining from the major papilla. Pancreatic and biliary sphincterotomy performed. A 5Fr x 8cm PD stent and 10Fr x 7cm plastic biliary stent were placed for decompression (Image C). The next day, patient's leukocytosis and total bilirubin improved. Repeat CT A/P showed improving fluid collection. CT scan 1 week later showed resolved fluid collection, with edema around the pancreatic head (Image B).

Images

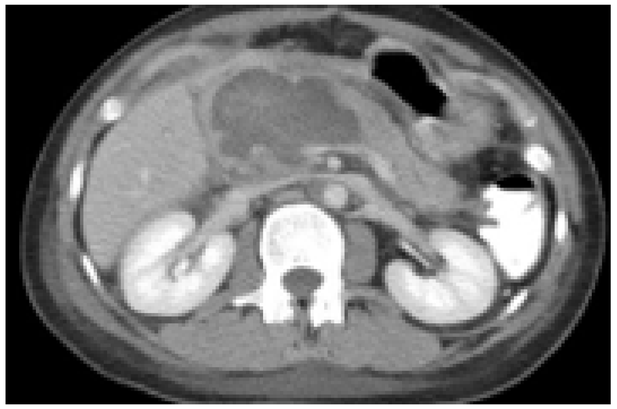

Image A: CT A/P (coronal) demonstrating large acute necrotic collection along the proximal pancreas.

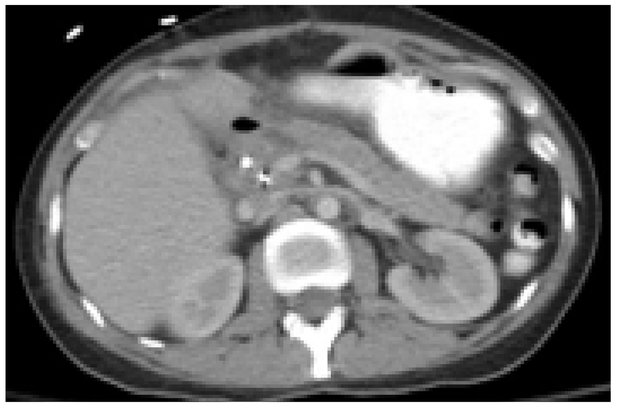

Image B: CT A/P (coronal) 1 week after PD and biliary stent were placed, demonstrating resolved fluid collection.

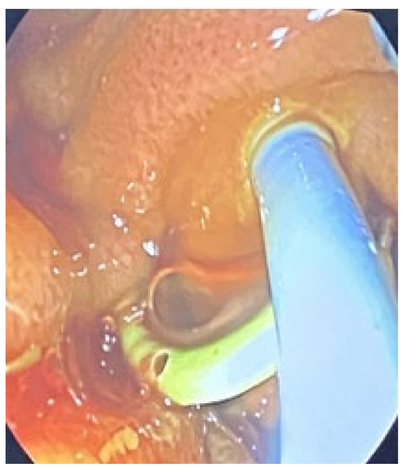

Image C: Drainage after 5Fr x 8cm PD stent placed in the fluid collection.

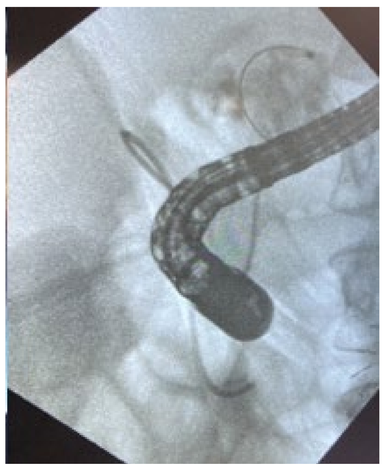

Image D: ERCP, with wire coiling in fluid collection.

Discussion

Endoscopic management is a minimally invasive approach to management of transected PD and is an alternative to surgical evacuation of necrotic pancreatic fluid collection. Our patient had improvement in symptoms and laboratory values, demonstrating a successful treatment strategy for this type of pancreatic injury. Endoscopic transpapillary drainage has wide utility and may be used to heal duct disruptions early on in pancreatic trauma and, at later points in time, be used to treat potential complications of pancreatic duct injuries, such as pseudocysts and fistulas.[3] In this case, upon discharge, the patient was instructed to follow up in 4-6 weeks, for further management and potential stent removal.

Conclusion

Pancreatic fluid collection drainage in the case of a transected pancreatic duct via EUS/ERCP is a less invasive endoscopic option. This case serves as an example of one of the many continued advances in the field of advanced endoscopy.

References

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