

Case Report

The detours of pancreatic ducts, internal pancreatic fistulas: a rare complication of chronic pancreatitis

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ABSTRACT

Internal pancreatic fistula occurs due to the disruption of the pancreatic duct, resulting in communication with it and another epithelial surface. A rare variant is the pancreaticopleural and pancreaticogastric fistula, typically associated with chronic necrotising pancreatitis, resulting from posterior disruption of the pancreatic duct. It is a complex disease with different aetiologies, varied clinical presentations and multiple management options. Unlike postoperative pancreatic fistula, internal pancreatic fistula lacks guidelines for classification and management. Once an internal fistula is suspected, further imaging work-up and biochemical analysis needs to be performed. Here, we present an unprecedented case of pancreaticopleural fistula on a background of chronic necrotising pancreatitis, and an asymptomatic pancreatico-gastric fistula. To our knowledge, no such case has been previously reported.

Keywords: Pancreatic fistula, Pancreaticopleural fistula, Pancreatico-gastric fistula, Chronic necrotising pancreatitis

INTRODUCTION

Pancreaticopleural and pancreaticogastric fistulas are rare internal complications of chronic pancreatitis. Internal fistulas have termini located intracorporeally, constituting less than 1% of all complications of chronic pancreatitis.¹ We present a case of severe chronic necrotising pancreatitis complicating with both pancreaticopleural and pancreaticogastric fistulas, managed through a non-operative approach, reflecting the contemporary shift towards less invasive interventions.

CASE REPORT

A 35 year-old male with a history of extensive alcohol consumption presented following a fall resulting in left 7th-11th rib fractures, associated with a left haemothorax and pleural effusion. Two intercostal catheters were placed. His history included recurrent protracted

admissions of necrotising alcohol pancreatitis associated with a 3 mm pancreatic pseudocyst (Figure 1), decompensated cirrhosis, splenic artery pseudoaneurysm, splenic venous thrombosis, managed with apixaban.

The pancreas was shrivelled as a result of chronic necrotising pancreatitis. Due to a change in colour of the pleural effusions the chest drain fluid was tested for amylase which returned positive 7222 u/l (100-300 u/l) and 6324 u/l (100-300 u/l), suggesting a pancreaticopleural fistula. A magnetic resonance cholangiopancreatography (MRCP) confirmed a fistulous communication between the pseudocyst and left pleural fluid, confirming a pancreaticopleural fistula (Figure 2).

Endoscopic retrograde cholangiopancreatography (ERCP) was performed, and a 4 cm 5Fr plastic single pigtail stent was placed in the pancreatic duct.



Figure 1: Initial CT demonstrating chronic pancreatitis associated with pancreatic pseudocyst, measuring 3 mm.

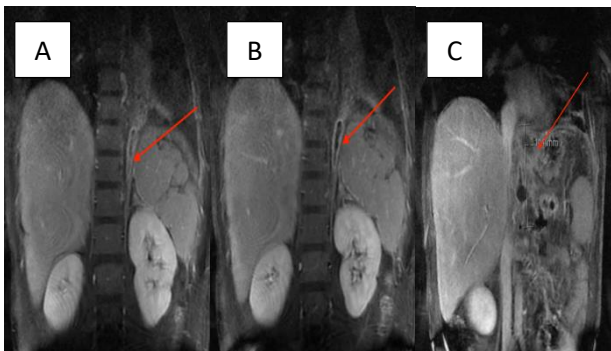


Figure 2: (A & B) MRCP demonstrating abnormal communication between pancreatic pseudocyst to left pleural cavity, (C) MRCP measuring the pancreaticopleural fistula of 11 mm.

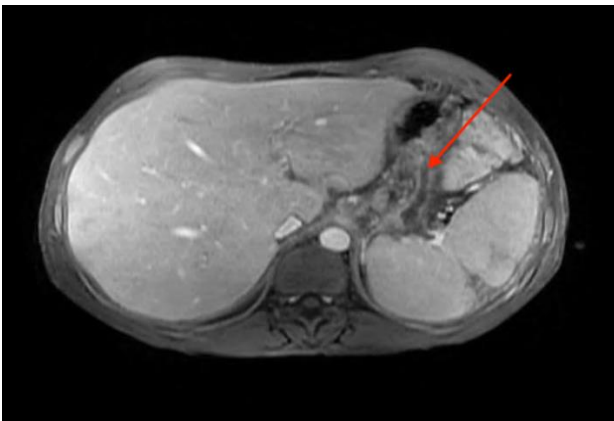


Figure 3: MRCP demonstrating pancreaticogastric fistula.

Due to the development of acute respiratory distress syndrome, the patient was admitted in ICU for ongoing management. Continuous chest X-rays were used to monitor progress, and eventually the patient was stepped down to the ward, 30 days later. A progress MRCP

revealed resolution of the left-sided pancreaticopleural fistula, although the pleural effusion persisted. Additionally, a new fistulous communication between the stomach and the pancreatic tail was demonstrated, indicating a pancreaticogastric fistula (Figure 3). Non-surgical management was opted, as asymptomatic. The chest drain was removed upon complete cessation of output, and the patient experienced an unremarkable recovery, leading to discharge after 45-days, and on follow up 3 months later remained stable and asymptomatic.

DISCUSSION

Autodigestion initiates parenchymal necrosis with the release of pancreatic enzymes which extends through the peripancreatic region, retroperitoneum, mesocolon, small bowel mesentery, paracolic retroperitoneal gutters and extending to the skinforming internal and external pancreatic fistulas.² Pancreatitis complicating with pancreaticopleural fistula is reported to occur 0.4-4.5%, often resulting from rupture of the pancreatic duct.³ In our case, the fistulous formation was due to severe necrotising pancreatitis, although the pathology was superimposed by a traumatic injury. The associated pleural effusion is noteworthy for its size, persistence, and recurrence despite repeated thoracentesis. The literature describes a preponderance towards affecting the left pleural cavity (~76%), and less frequently the right side (~20%). Bilateral involvement is uncommon, occurring in around 15% of cases.^{4,5} While ERCP provides visualisation of the anatomy and endoscopic therapeutic interventions to avoid surgery, its initial diagnostic use is restricted due to potential complications, including the risk of introducing infection.⁶ MRCP is the preferred modality for confirming internal fistulas with a sensitivity of 78% ensuring precision in visualising the site and its anatomical relationship with the pancreatic ductal tree, especially when contemplating surgical interventions, without the additional risk of acute pancreatitis and introduction of infection.⁷ Traditionally a 2-3 week trial of medical management is recommended for pancreaticopleural fistula, and its failure warrants endoscopic or surgical intervention. In literature, medical therapy has been reported to range from 31-65%, however, it is opposed due to prolonged hospitalisation.⁴ Pleural effusions that are left undrained may lead to the formation of lung entrapment, sequestered pleural fluid collections or a pancreaticobronchial fistula. In our case, due to no improvement we proceeded to endoscopic stent placement.

Pancreaticogastric fistula, has commonly been reported in literature in association with intraductal papillary mucinous neoplasm (IPMN). Here we report the various fistulas that have formed as a result of chronic necrotising pancreatitis. The rare pancreaticogastric fistulas, are incidentally discovered and the traditional approach includes expectant management with nil by mouth and parenteral nutrition. Repeat imaging is recommended in

patients with chronic pancreatitis and failure of the pancreaticogastric fistula to resolve in 3 weeks or symptomatic improvement are indications for percutaneous drainage. Persisting fistulous disease is attributed to large duct disease prompting endoscopic transgastric drainage or surgical intervention.^{8,9} The successful non-operative management, guided by precise diagnostic modalities and a multidisciplinary approach, reflects the evolving paradigm favouring less invasive interventions.

CONCLUSION

This case of concurrent pancreaticopleural and pancreaticogastric fistulas in a patient with chronic necrotising pancreatitis exemplifies the intricate challenges posed by these rare internal complications. Non-operative management guided by imaging modalities that provide precise visualisation of the fistulous site and its anatomical relationship with the pancreatic ductal tree have led to a paradigm that favours less invasive interventions. The case underscores the importance of individualised strategies in addressing complex pancreatic conditions, emphasising the need for further evaluation of the benefits and complications of operative and non-operative intervention and to develop a standardised protocol.

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