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Pancreatic Pseudocyst Masquerading as Gastric Outlet Obstruction with Pancreaticopleural Fistula: A Case Report

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ABSTRACT

Pancreatic pseudocysts are localised fluid collections arising as a complication of acute or chronic pancreatitis. While most pseudocysts are asymptomatic or present with nonspecific abdominal discomfort, large pseudocysts situated in proximity to the head or body of the pancreas may exert extrinsic compression on adjacent hollow viscera, producing clinically significant obstruction. Gastric outlet obstruction (GOO) as a manifestation of pancreatic pseudocyst is distinctly uncommon and constitutes a well-recognised diagnostic pitfall. We describe a 24-year-old male who presented with a 20-day history of progressive upper abdominal pain, distension, non-bilious vomiting, and new-onset breathlessness. Clinical and radiological evaluation revealed a large pancreatic pseudocyst compressing the first part of the duodenum and an associated left-sided pancreaticopleural fistula with pleural effusion. The patient was successfully managed with endoscopic ultrasound (EUS)-guided cystogastrostomy using a lumen-apposing metal stent (LAMS) with downstream pancreatic duct (DPD) stenting, along with intercostal chest drainage (ICD) for the pleural effusion. Complete resolution of both the obstruction and the pleural effusion was achieved. This case underscores the importance of considering pancreatic pathology in the differential diagnosis of gastric outlet obstruction, particularly in young patients without an obvious aetiology.

Keywords: *Pancreatic pseudocyst; gastric outlet obstruction; pancreaticopleural fistula; EUS-guided cystogastrostomy; lumen-apposing metal stent; LAMS*

INTRODUCTION

Gastric outlet obstruction (GOO) is a clinical syndrome characterised by impaired gastric emptying, manifesting as nausea, non-bilious vomiting, epigastric fullness, and progressive abdominal distension. The aetiology in adults is commonly attributed to peptic ulcer disease with cicatrisation, malignancy of the gastric antrum, pylorus, or duodenum, or, less frequently, to extrinsic compressive lesions.[1] Pancreatic pseudocyst as a cause of GOO is uncommon, occurring when a large peripancreatic fluid collection positioned near the head or body of the gland exerts sufficient extrinsic pressure on the first or second part of the duodenum to impair luminal transit.[2]

Pancreatic pseudocysts complicate approximately 7–25% of episodes of acute

pancreatitis and 20–40% of cases of chronic pancreatitis.[3] They are defined as encapsulated peripancreatic fluid collections rich in pancreatic enzymes, bounded by a non-epithelialised fibrous wall, and arising as a consequence of disruption or leakage from the main pancreatic duct or its tributaries. Pancreaticopleural fistula, a rare complication resulting from direct communication between a disrupted duct and the pleural space, may further complicate the clinical picture with pleural effusion, typically left-sided.[4] We report a case where both complications co-existed and were managed successfully with minimally invasive endoscopic and thoracic interventions.

CASE REPORT

A 24-year-old male presented to the Department of General Surgery, SIMSRC, Bangalore, with a 20-day history of pain in the upper abdomen and abdominal distension. The pain was insidious in onset, gradually progressive, dull aching in character, and localised to the epigastric region. He additionally complained of non-bilious vomiting of 2 days' duration and progressive difficulty in breathing over the preceding 24 hours. There was no prior history of alcohol use, biliary disease, or abdominal trauma. He denied any history of fever, jaundice, or alteration of bowel habits.

Figure 1: Clinical Photograph

Gross abdominal distension with epigastric and bilateral hypochondrial fullness and visible gastric peristalsis.

On general examination, the patient was haemodynamically stable with mild tachycardia (pulse rate 96 bpm) and reduced oxygen saturation (SpO_2 92% on room air). Abdominal examination revealed marked distension with epigastric, left, and right hypochondrial fullness (Figure 1). Visible gastric peristalsis was observed. Palpation revealed a soft, yielding, mildly tender epigastric mass. Percussion elicited an impaired note over the epigastrium. Bowel sounds were present and normal. Respiratory examination revealed reduced air entry and dullness to percussion at the left lung base.

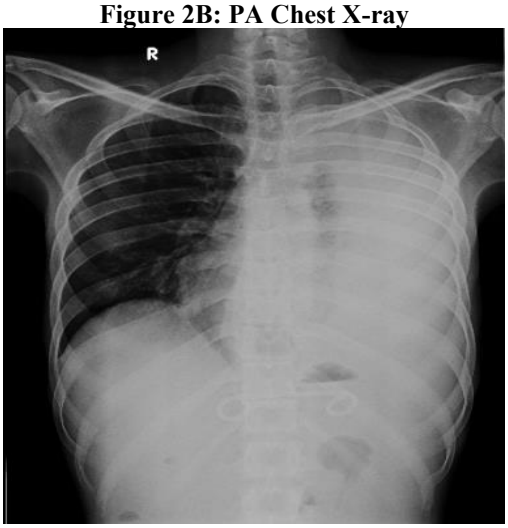
Based on the clinical findings, a provisional diagnosis of gastric outlet obstruction was made. Relevant investigations were subsequently undertaken.

INVESTIGATIONS

Figure 2A: Erect X-ray Abdomen

Markedly distended stomach with a large gastric bubble (arrow), consistent with gastric outlet obstruction.

Figure 2B: PA Chest X-ray

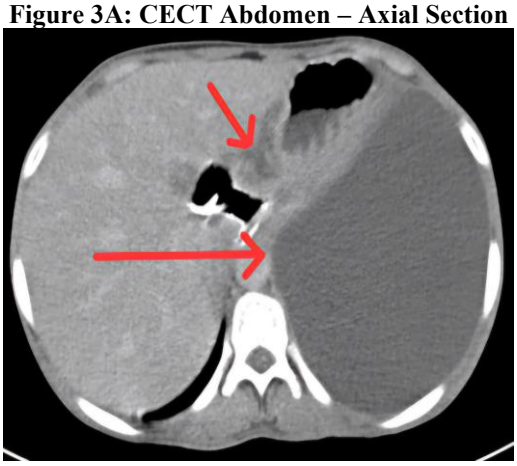


Homogeneous opacity obliterating the left costophrenic angle indicating left-sided pleural effusion.

Erect X-ray of the abdomen demonstrated a markedly enlarged gastric shadow with a prominent gastric air bubble, consistent with gastric outlet obstruction (Figure 2A). PA chest radiograph revealed a moderate left-sided pleural effusion with blunting of the left costophrenic angle and an elevated left hemidiaphragm (Figure 2B), raising the suspicion of a pancreaticopleural communication. Haematological investigations showed leucocytosis (TLC 14,200 cells/cumm) and an elevated serum amylase of 480 U/L (normal < 100 U/L) and lipase of 620 U/L (normal < 160 U/L), confirming active pancreatic enzyme release.

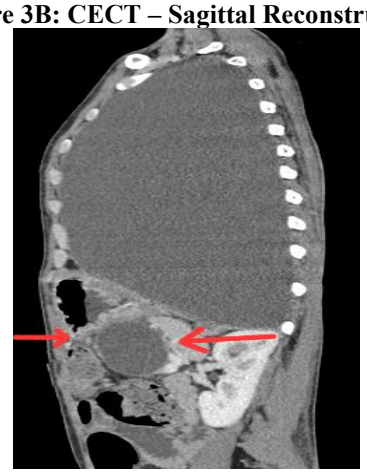
Contrast-enhanced computed tomography (CECT) of the abdomen and thorax was performed and demonstrated a large, well-defined, hypodense, non-enhancing pseudocyst arising from the head and body of the pancreas (maximum dimension approximately 12 cm), exerting significant extrinsic compression on the first part of the duodenum. The CECT also revealed the pseudocyst tracking superiorly through the aortic hiatus into the left pleural space, consistent with a pancreaticopleural fistula. Moderate left-sided pleural effusion was confirmed.

Figure 3A: CECT Abdomen – Axial Section



Large pancreatic pseudocyst (arrows) compressing the first part of the duodenum, causing extrinsic gastric outlet obstruction.

Figure 3B: CECT – Sagittal Reconstruction



Sagittal view showing the pseudocyst (arrows) abutting the duodenum and extending superiorly towards the diaphragm.

TREATMENT

Following multidisciplinary discussion involving gastroenterology and interventional endoscopy teams, the patient was planned for endoscopic drainage of the pseudocyst. Endoscopic ultrasound (EUS)-guided cystogastrostomy was performed using a lumen-apposing metal stent (LAMS) placed across the posterior gastric wall into the pseudocyst cavity, facilitating internal drainage of the pseudocyst contents into the stomach. Downstream pancreatic duct (DPD) stenting was performed concurrently to decompress the disrupted pancreatic duct and seal the fistulous communication (Figure 4).

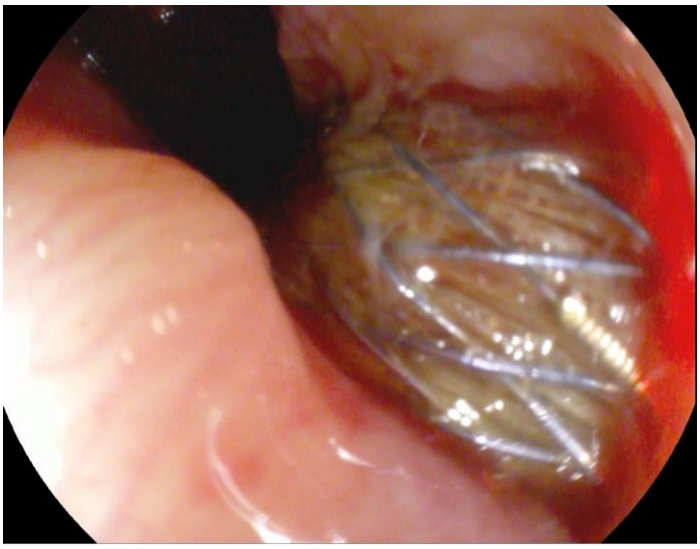
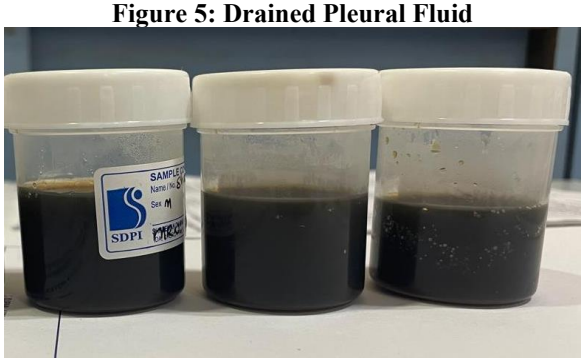


Figure 4: EUS-Guided Cystogastrostomy – Endoscopic Image

LAMS stent deployed across the posterior gastric wall into the pseudocyst cavity, with active drainage of pseudocyst contents into the stomach.

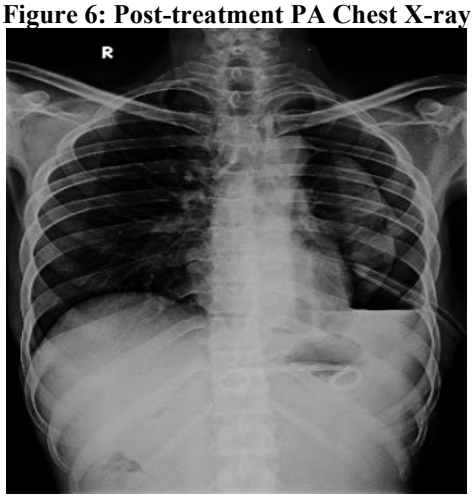
For the left-sided pancreaticopleural fistula and associated pleural effusion, intercostal chest drainage (ICD) was performed. Approximately 1.2 litres of dark haemorrhagic pleural fluid was drained (Figure 5). Pleural fluid analysis confirmed a markedly elevated amylase of 1,099 U/L and lipase of 14,820 U/L, consistent with pancreaticopleural fistula.

Figure 5: Drained Pleural Fluid



Dark haemorrhagic pleural fluid obtained following intercostal chest drainage; fluid amylase 1,099 U/L and lipase 14,820 U/L confirming pancreaticopleural fistula.

Figure 6: Post-treatment PA Chest X-ray



Resolution of the left-sided pleural effusion following ICD insertion and endoscopic pseudocyst drainage, with clear costophrenic angles bilaterally.

Following the combined endoscopic and thoracic intervention, the patient demonstrated progressive clinical improvement. Vomiting resolved within 48 hours and the patient was able to tolerate oral feeds by the third post-procedure day. Repeat chest radiograph confirmed complete resolution of the left pleural effusion (Figure 6). The patient was discharged on the tenth post-procedure day with outpatient follow-up instructions. A repeat CECT at six weeks showed near-complete resolution of the pseudocyst.

DISCUSSION

Gastric outlet obstruction in a young adult without a background history of peptic ulcer disease or malignancy should prompt the clinician to consider less common extrinsic causes, among which pancreatic pseudocyst holds particular importance. The index case illustrates several instructive clinical points.

Pancreatic pseudocysts develop as a consequence of main duct or branch duct disruption, allowing enzyme-rich pancreatic juice to accumulate and become encapsulated by granulation tissue and fibrous reaction over three to four weeks. Pseudocysts situated near the head of the gland are in close anatomical proximity to the first and second parts of the duodenum and the gastric antrum; progressive enlargement may therefore produce significant extra-luminal compression. Sahu et al. [2] previously documented GOO as a direct consequence of a large pancreatic pseudocyst and emphasised that successful drainage of the pseudocyst results in complete resolution of the obstructive symptoms, as was observed in the present case.

The concurrent finding of a pancreaticopleural fistula is an uncommon but well-characterised complication of pancreatic duct disruption. When the path of least resistance for leaking pancreatic juice leads superiorly - through the aortic or oesophageal hiatus or directly through the diaphragm - a communication with the pleural space is established, producing a pleural effusion that is biochemically characterised by markedly elevated amylase (typically > 1,000 U/L) and lipase levels.[4] The pleural fluid findings in this case (amylase 1,099 U/L; lipase 14,820 U/L) were diagnostic.

Endoscopic management has evolved as the preferred approach for uncomplicated and accessible pancreatic pseudocysts, largely supplanting surgical drainage in appropriately selected patients. EUS-guided transmural drainage using LAMS offers the advantage of a wide-bore anastomosis between the pseudocyst and the gastric or duodenal lumen under real-time ultrasound guidance, with high technical and clinical success rates (>90%) reported in contemporary series.[5] Concurrent DPD stenting, by decompressing the disrupted duct, accelerates pseudocyst resolution and reduces the risk of recurrence. This combined approach addresses both the luminal obstruction and the underlying ductal pathology in a single endoscopic session.

Suleman et al. [6] similarly reported resolution of GOO following pseudocyst drainage, reinforcing the principle that thorough evaluation of the pancreas — including cross-sectional imaging — is essential in all patients presenting with gastric outlet obstruction without an immediately apparent aetiology. Given the broad differential diagnosis of GOO - encompassing chronic duodenal ulcer stenosis, gastric or duodenal carcinoma, congenital anomalies such as annular pancreas or duodenal web, and enteric duplication cysts - a systematic approach to imaging is indispensable.

The breathlessness in this patient, attributable to the pancreaticopleural fistula and resultant left pleural effusion, highlights that pancreatic disease may present with predominantly respiratory symptoms, and the possibility of a pancreatic aetiology must be borne in mind when evaluating pleural effusions of uncertain origin, particularly in younger patients.

CONCLUSION

Pancreatic pseudocyst is a rare but treatable cause of gastric outlet obstruction and should be included in the differential diagnosis of GOO, especially in young patients presenting without the classical risk factors for peptic ulcer disease or malignancy. Concurrent pancreaticopleural fistula, while uncommon, may coexist and manifest as unexplained pleural effusion with markedly elevated pleural fluid amylase and lipase. CECT of the abdomen and thorax is essential for delineating the full extent of the disease. EUS-guided cystogastrostomy with LAMS combined with DPD stenting and pleural drainage is a safe, effective, and minimally invasive strategy yielding complete clinical resolution. A high index of suspicion for pancreatic pathology in atypical presentations of GOO is the key lesson from this case.

Declaration by Authors

Informed Consent: Written informed consent was obtained from the patient for publication of this case report and all accompanying clinical images. Patient anonymity has been maintained throughout.

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Conflict of Interest: The authors declare no conflict of interest.

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