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Rare Dual Complication: Splenic Extension and Gastric Rupture of A Pancreatic Pseudocyst in A Middle Age Patient with Acute Abdomen and Hematemesis

Dr. Pintu Biswas[1], Dr. Harshith R[2], Dr. Chandan Kumar Tripura[3], Dr. Prabhat Debbarma[4], Dr. Trilochan Tripura[5]

[1]Senior Resident, Department of Radiodiagnosis, Agartala Government Medical College & Gb Pant Hospital, Agartala, West Tripura
[2,5]Post Graduate Student, Department of Radiodiagnosis, Agartala Government Medical College & Gb Pant Hospital, Agartala, West Tripura
[3]Senior Resident, Department of Surgery, Agartala Government Medical College & Gb Pant Hospital, Agartala, West Tripura
[4]Associate Professor, Department of Radiodiagnosis, Agartala Government Medical College & Gb Pant Hospital, Agartala, West Tripura

Abstract

Pancreatic pseudocysts are a common complication of acute and chronic pancreatitis, yet rupture into adjacent organs, such as the stomach or spleen, remains a rare event. This case report details a 45-year-old man with a history of alcohol-induced acute pancreatitis who presented with acute abdominal pain and hematemesis. Imaging and endoscopic evaluation revealed a pancreatic pseudocyst in the tail extending into the spleen, and also with rupture into the stomach causing hematemesis. Conservative management was initially pursued, but clinical deterioration necessitated surgical intervention. An emergency laparotomy revealed ruptured splenic tissue with extensive peripancreatic inflammation. A splenectomy and gastro cystic anastomosis were performed, with a favorable postoperative recovery. This case highlights the rare presentation of pancreatic pseudocyst rupture into both the spleen and stomach, emphasizing the importance of a tailored, multidisciplinary approach to management. Conservative treatment can be effective in stable patients, but surgical intervention remains crucial for those with hemodynamic instability or significant complications.

Introduction

Pancreatic pseudocysts are a recognized complication of both acute and chronic pancreatitis, with an incidence rate of 14% following acute pancreatitis and 41% in chronic cases [1]. While these pseudocysts are generally found in the peripancreatic region, they may extend into distant areas, including the liver, spleen, mediastinum, and pelvis [2].

Due to the close anatomical and vascular relationship, pancreatitis can lead to splenic complications such as splenic vein thrombosis, subcapsular hematoma, infarction, rupture, and the formation of intrasplenic

pseudocysts [3]. However, splenic involvement remains a rare occurrence in complications related to chronic pancreatitis [4].

In addition to splenic extension, pancreatic pseudocysts can occasionally rupture into adjacent structures, such as the stomach, creating a direct communication [5]. This can result in spontaneous pseudocyst drainage into the gastric lumen, leading to symptoms such as gastrointestinal bleeding, infection, or sudden pain. This article presents an uncommon case of a pancreatic pseudocyst with both splenic and gastric extension and rupture.

Case Report

A 45-year-old man with a twenty-year history of heavy alcohol consumption was admitted to the emergency department with 48 hours of abdominal pain, primarily in the left hypochondrium, accompanied by fever, vomiting, and an episode of hematemesis. He reported intermittent abdominal pain over the past few years, which had worsened in the last month, leading him to stop drinking. On initial evaluation, he was hemodynamically stable. Laboratory investigations showed elevated C-reactive protein at 176 mg/dL, a white cell count of 16.7 × 10^9/L, a platelet count of 617 × 10^9/L, and serum amylase of 109 U/L.

A computed tomography (CT) scan revealed a multiloculated cystic lesion measuring 4.7 × 6.3 cm in the pancreatic tail with mild splenomegaly and multiple irregular hypodense areas consistent with a pseudocyst that had extended into the spleen and also a discontinuity in the posterior wall of greater curvature of stomach suggestive of rupture into the stomach. Endoscopic evaluation confirmed a gastric ulcer with irregular margins and necrotic material at its base, likely related to pseudocyst rupture into the gastric lumen.

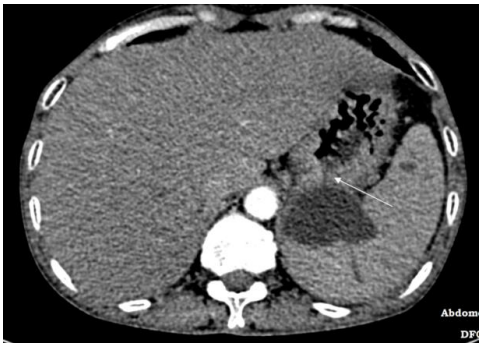

Fig. 1: Axial section showing defect in posterior wall of stomach and pancreatic tail pseudocyst extension into stomach (thin arrow)

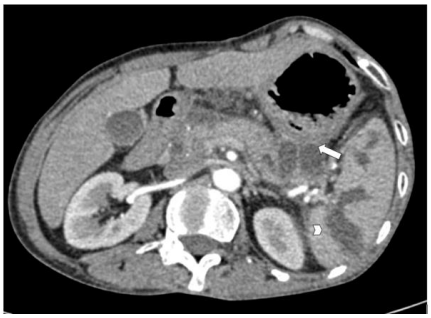

Fig. 2:Oblique axial section showing pancreatic tail multilocular pseudocyst near posterior stomach wall (thick arrow) and rupture of pseudocyst into spleen (thick arrow head)

Given the patient's initial stability, conservative management was pursued, including analgesics, antibiotics, and nutritional support. During the first 48 hours, he remained stable with minimal pain and no fever. However, on the fourth day, he developed tachycardia and severe abdominal pain, with physical examination findings indicating peritoneal irritation. Repeat laboratory tests revealed an increased white cell count of 41 × 10^9/L. Ultrasound showed diffuse abdominal free fluid.

An emergency laparotomy was performed, revealing 1.5 liters of dark, serohematic, and purulent fluid in the peritoneal cavity, with an amylase level of 3000 U/L. A pseudocyst in the pancreatic tail and multiple clots in the left subphrenic space were identified, consistent with a ruptured spleen. Due to significant peripancreatic inflammation, dissection was challenging. An ulcer was also noted in the greater curvature of stomach. A splenectomy was performed, removing fragmented splenic tissue. Analysis of the cystic fluid confirmed an amylase level of 13,000 U/L, diagnosing a pancreatic pseudocyst.

A double-layer hand-sewn gastro cystic anastomosis was created using 2-0 silk, with one drain placed near the anastomosis and two in the splenic bed. The patient had a smooth postoperative recovery, with normalized amylase levels in the drainage fluid, and was discharged in stable condition on the 11th postoperative day.

Discussion

Pancreatic pseudocysts, which arise from localized collections of pancreatic fluid as a result of acute or chronic pancreatitis, are lined by granulation tissue rather than true epithelial lining, hence the term "pseudocyst" [1]. Pseudocyst rupture is a rare complication, typically occurring in under 3% of cases, with rupture into the stomach or spleen being even less common [6]. Rupture may occur spontaneously due to the close anatomical relationships and vascular connections surrounding the pancreas, especially in the tail where it closely abuts the splenic hilum. In chronic alcohol-related pancreatitis, pseudocysts are most commonly associated with splenic vein thrombosis, splenic infarction, or rupture [2].

Mechanism of Rupture into the Spleen and Stomach

The anatomical proximity of the pancreatic tail to the splenic hilum allows for direct extension of pseudocysts into the spleen, leading to erosion, hemorrhage, infarction, or rupture [3]. The splenic artery and vein, enveloped by the splenorenal ligament alongside the pancreatic tail, further increase the risk of vascular complications. Mechanisms such as leakage of pancreatic enzymes, tryptic erosion, or inflammation-induced disruption of splenic vessels have been postulated [7]. Similarly, pseudocyst rupture into the stomach can occur when pseudocyst fluid erodes through adjacent tissues, forming a fistulous connection. This often presents with gastrointestinal symptoms such as hematemesis, nausea, vomiting, and may be visible as a gastric ulcer with necrotic tissue, as seen on endoscopy [6].

Clinical Presentation and Diagnostic Imaging

Patients with pseudocysts extending into the spleen or stomach can present with non-specific symptoms like abdominal pain, fever, nausea, weight loss, and a palpable mass [5]. Hematemesis, especially in cases of gastric involvement, may occur due to active bleeding from erosion into the stomach lining [5]. Laboratory values, such as elevated amylase or lipase, may indicate a pseudocyst but are not specific to splenic involvement [6]. CT imaging is the preferred diagnostic method, allowing clear visualization of pseudocyst size, location, and any potential rupture or communication with adjacent structures, such as the stomach or spleen [8].

Management Approaches

Management of pancreatic pseudocysts with rupture into the stomach or spleen depends on the patient's stability and the presence of active bleeding or infection [6]. Initial conservative treatment with analgesics, antibiotics, and nutritional support may be appropriate for stable patients, as spontaneous resolution is possible but uncommon [7]. If there is active bleeding or worsening symptoms, intervention is necessary.

Endoscopic Management

For pseudocyst rupture into the stomach, endoscopic options include transpapillary or transmural drainage, which may be indicated when there is communication with the pancreatic duct [9]. Endoscopic clipping or embolization may be used to control active bleeding, especially in cases where conservative treatment is insufficient [8]. Success is high in pseudocysts with partial ductal communication and no solid debris, achieving resolution in over 70% of cases [6].

Surgical Management

Surgery is often reserved for cases unresponsive to conservative or endoscopic methods, or for patients presenting with hemodynamic instability or acute abdomen [10]. Splenectomy with distal pancreatectomy may be required for pseudocysts with significant splenic involvement, as this approach reduces the risk of recurrent fistula and bleeding [7]. In the case of rupture into the stomach, cystogastrostomy—a surgical connection between the cyst and stomach—may also be considered, providing effective drainage while minimizing extensive dissection [6]. For ruptured intrasplenic pseudocysts, splenectomy alone may suffice if the pancreatic tail is not extensively involved [5]. Postoperative complications include infection, fistula formation, and hemorrhage, but outcomes are generally favorable with appropriate intervention [10].

Conclusion

In summary, while pseudocyst rupture into the spleen and stomach is rare, it necessitates a careful, tailored approach depending on patient stability and the extent of involvement. Endoscopic and minimally invasive techniques are preferred for controlled bleeding and drainage, with surgery as a definitive option in complicated cases.

References

1. Bradley EL 3rd. Complications of acute pancreatitis and their management. Pancreas. 1991; 6(6):589-598.
2. Bradley EL. A clinically based classification system for acute pancreatitis. Summary of the International Symposium on Acute Pancreatitis, Atlanta, Ga, September 11 through 13, 1992. Arch Surg. 1993; 128(5):586-590.
3. Yeo CJ, Cameron JL, Maher MM, et al. Pancreatic pseudocysts and their complications. Gastroenterol Clin North Am. 1991; 20(3):509-522.
4. Beattie GC, Mason J, Swan N, Imrie CW. Intrasplenic pancreatic pseudocyst with intracystic hemorrhage: a case report and review of the literature. World J Gastroenterol. 2002; 8(1):189-190.
5. Maringhini A, Uomo G, Patti R, et al. Pseudocysts in chronic pancreatitis: Clinical findings and treatment. Eur J Gastroenterol Hepatol. 1999; 11(3):237-242.
6. Gumaste VV, Pitchumoni CS. Pancreatic pseudocysts. Gastroenterologist. 1996; 4(1):33-43.

7. Banks PA, Bollen TL, Dervenis C, et al. Classification of acute pancreatitis--2012: revision of the Atlanta classification and definitions by international consensus. Gut. 2013; 62(1):102-111.
8. Andriulli A, Leandro G, Federici T, et al. Pancreatic pseudocysts: clinical presentation, natural history and risk factors for complications. Pancreas. 2004; 28(3):217-222.
9. Binmoeller KF, Shah JN, Bhat YM, Kane SD. Endoscopic management of pancreatic pseudocysts. Endoscopy. 2009; 41(11):1069-1073.
10. Frey CF, Child CG 3rd. Pancreatic pseudocysts. Management by combined internal and external drainage. Ann Surg. 1974; 180(5):579-584.