Journal of Digitive Diseases and Hepatology
André E, et al. J Dig Dis Hepatol 9: 212.
www.doi.org/10.29011/2574-3511.100212
www.gavinpublishers.com

Case Report

Peripancreatic Collection Surrounding the Portal Vein Extending to the Gallbladder in Acute-On-Chronic Pancreatitis: A Case report of a Rare Presentation of a Common Disease

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Citation: André E, Ksontini R, Piazza G (2024) Peripancreatic Collection Surrounding the Portal Vein Extending to the Gallbladder in Acute-On-Chronic Pancreatitis: A Case report of a Rare Presentation of a Common Disease. J Dig Dis Hepatol 9: 212. DOI: 10.29011/2574-3511.100212

Received Date: 1 August 2024; **Accepted Date:** 14 August 2024; **Published Date:** 16 August 2024

Abstract

Peripancreatic collections are common complications of acute pancreatitis and generally, they are located around the pancreas. Their occurrence in extra-pancreatic locations is rare. We report the case of a 68-year-old female that was admitted with an acute-on-chronic pancreatitis that developed a peripancreatic collection ascending along the portal vein and extending around the gallbladder. Initial diagnosis was suggested by MRI imaging and a percutaneous drainage confirmed the diagnosis. The patient recovered well post-procedure, with a 12-month follow-up showing no signs of recurrence.

This case highlights a rare extra-pancreatic presentation of peripancreatic collections in pancreatitis, emphasizing the importance of imaging in diagnosis and the efficacy of percutaneous drainage in management.

Keywords: Pancreatic fluid collection; Drainage; Acute-on-chronic pancreatitis

Introduction

Peripancreatic collections are a common complication following acute pancreatitis. According to the Atlanta criteria, these collections are classified as pseudocysts if they persist for more than four weeks [1]. They typically arise after an episode of acute pancreatitis due to a leakage from the pancreatic duct, allowing digestive enzymes to accumulate in surrounding tissues [2].

The prevalence of peripancreatic collections varies with the severity of the pancreatitis and the population studied. These collections are more commonly associated with alcoholic pancreatitis rather than biliary pancreatitis with an incidence approximatively of 21-30% *vs.* 8-18% respectively [3-5].

In general, complications occur more frequently in cases of chronic pancreatitis. This increased prevalence is attributed to the recurrent and persistent nature of pancreatic inflammation, which promotes the development of fluid collection and pseudocyst. Kim and al [6] reported that pancreatic pseudocyst develop in 14% of acute pancreatitis cases compared to 42% of acute-on-chronic pancreatitis.

While these complications, particularly peripancreatic collections, typically occur in close proximity to the pancreas, they can occasionally develop in more distant structures, such as the mediastinum [7,8], pelvis [9] and perihepatic spaces [10-13].

The case study presents a 68-year-old female with a history of alcoholic chronic pancreatitis who experienced an acute episode characterized by a collection ascending along the portal vein and extending around the gallbladder.

According to recent reviews of literature, the case of this 68-year-old patient was selected for its atypical and unique presentation.

Case presentation

A 68-year-old woman known for alcohol-related chronic pancreatitis, with a history of wall of necrosis (WON) which had been drained Endoscopically twice three years earlier, presented to the emergency department complaining of abdominal pain persisting for several days.

The patient was hemodynamically stable and presented a soft, depressible abdomen with tenderness to epigastric palpation with no sign of peritonism. Biological workup carried out in the emergency department confirmed a recurrence of pancreatitis with a lipase elevation of 1607 U/l and a CRP of 21 without leukocytosis or disturbance of liver function tests.

An abdominal CT scan shows an area of necrosis at the corporocephalic junction with a single collection in contact with the pancreas' tail as well as a suspicion of incipient cholecystitis. An ultrasound revealed a single 3 mm lithiasis with signs of acute cholecystitis, associated with the appearance of multiple fluid collections in the vesicular bed.

In this case, conservative treatment with antibiotic is started.

Following a lack of improvement and the persistent inflammatory syndrome and the emergence of cholestasis, an abdominal CT scan was repeated, showing persistent signs of pancreatitis and increased fluid collections around the gallbladder, extending along the hepatic hilum and around the portal vein to the pancreas. These findings suggested the presence of an abscess or an increase of the already known peripancreatic collection. For this reason, we decided to perform a cholangio-IRM to clarify the diagnosis. The cholangio-IRM suggested the presence of peri-pancreatic collection according to the Atlanta criteria (Figure 1 and 2).

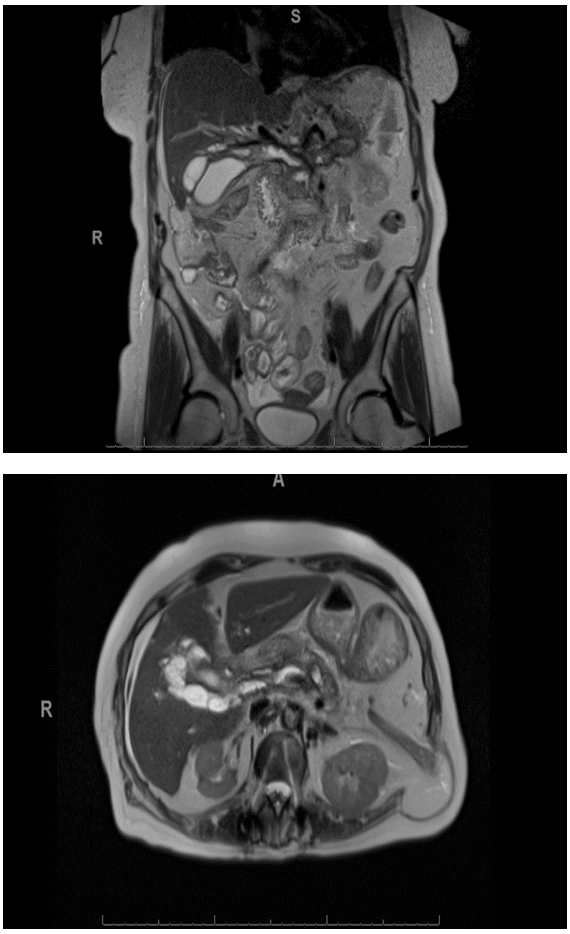

Figure 1 and 2: T2-weighted MRI of the abdomen in coronal and transverse sections showing acute fluid collections distributed in the anterior and posterior peripancreatic regions, extending around the gallbladder and the portal vein.

In the light of this atypical situation, radiological drainage was carried out and a lipase test on the fluid confirmed the diagnosis. Subsequently, with a good clinical-biological improvement, the patient was discharged after 6 days post-drainage without any drain, which was removed on the day of discharge. The patient did not develop any recurrence after 12 months of follow-up.

Discussion

The occurrence of extra-pancreatic collections is uncommon and can lead to potential diagnostic delays. These collections can migrate to various locations, including the mediastinum and hepatic regions [8,11,12]. The etiology of such migrations is not well understood, but possible mechanisms include anatomical proximity allowing the collection to erode adjacent structures, the ability to fistulize into other structures [14], and the presence of preexisting anatomical spaces that facilitate migration, such as the esophageal hiatus for mediastinal involvement [12]. Hepatic propagation may occur along gastrohepatic ligament into the liver or through the hepatoduodenal ligament [10,15], potentially leading to complications due to compression. Since the 1970s, there have been only about sixty reported cases of intrahepatic collections or pseudocysts, with a higher frequency in the left lobe of the liver [12,13].

Our patient presents a unique case of a collection following acute-on-chronic pancreatitis that extends from the pancreas to the region around the gallbladder, ascending along the portal vein. This specific presentation has not been documented in the literature before. The location of the collection leads to significant challenges, particularly concerning the compression of adjacent structures. In terms of diagnostic modalities, both CT and MRI were instrumental in guiding the diagnosis. The absence of diffusion restriction on imaging suggested a pseudocyst rather than an abscess. The definitive diagnosis was confirmed through fluid analysis, providing a conclusive result.

Most peripancreatic collection, approximately 70%, resolve spontaneously and do not necessitate specific treatment. Following pseudocyst formation, spontaneous resolution is 25-40%, depending on the study [5,16]. Intervention is warranted when there is a mass effect on adjacent structures, when patients are symptomatic, or in the presence of complications such as infection, hemorrhage, or rupture [17].

In our case, an extra-pancreatic collection in the periportal region was associated with biliary duct dilatation and early cholestasis, presenting in a symptomatic patient. Various therapeutic approaches have been delineated in the literature for managing these extra-pancreatic locations, including surgical drainage, endoscopic ultrasound-guided (EUS) drainage, and percutaneous drainage. No stringent and definitive guidelines have been established for the management of pseudocysts and collections [18,19].

Based on findings in the literature regarding intrahepatic pseudocysts, percutaneous drainage was proposed as treatment option. The patient experienced a positive outcome, with no recurrence observed during the 12-month follow-up period.

Conclusion

In conclusion, this case underscores a rare complication of a commonly encountered medical condition. These observations expand the differential diagnosis, leading to enhanced patient management. Percutaneous drainage can be an effective first-line, minimally invasive treatment for peripancreatic collections, offering both diagnostic and therapeutic benefits while being well-tolerated by patients.

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