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# Multiple giant pancreatic pseudocysts, a rare complication of acute pancreatitis – A case report

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## ABSTRACT

A 34-year-old alcoholic male presented to our outpatient department with a complaint of persistent epigastric pain, radiating to the back with a swelling in the upper abdomen. He had 2 similar episodes in the past for which he was conservatively managed along the lines of acute pancreatitis. Now on physical examination, the patient had a massive lump in the upper abdomen reaching below the umbilicus. Examination findings were confirmed by computed tomography - abdomen (Plain and Contrast), two $13 \times 10 \times 09$ cm and $9 \times 8 \times 7.8$ cm, cystic lesions (Noncommunicating) were seen abutting the posterior wall of the stomach and into each other, suggestive of mature pseudocysts of the pancreas. The patient was admitted and after necessary investigations, surgical cystogastrostomy was done for the lower pseudocyst and cystocystostomy for the upper pseudocyst. The patient was discharged 5 days later with no complications. This case shows that multiple pseudocysts, a relatively rare complication of acute pancreatitis, are one of the differentials of acute abdomen. The treatment is a therapeutic challenge that depends on location, size, number as well as their relation to one another. Good drainage prevents resection procedures and further complications (exocrine and endocrine insufficiency).

**Key words:** Pseudocyst; Giant pseudocyst; Multiple pseudocyst; Multiplanar computed tomography; Surgical drainage

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## INTRODUCTION

A pancreatic pseudocyst is a false cyst lined by granulation tissue filled with amylase-rich homogeneous fluid and presents usually with vague symptoms, such as abdominal pain, nausea, or vomiting. They can be single or multiple and of different sizes. The prevalence is only 5%–16% in acute pancreatitis,[1] but from that only 5% present with multiple pseudocysts. The pseudocyst of the longest diameter of 10 cm is termed as giant pseudocyst.[2] A contrast-enhanced computed tomography (CT) scan of the abdomen is the diagnostic modality of choice and differentiates between the pseudocyst and cystic neoplasm of the pancreas. Percutaneous drainage, endoscopic ultrasonography (EUS) guided internal drainage or surgical drainage are few definitive management modalities.

## CASE REPORT

A 34-year-old male presented to our outpatient department with a complaint of persistent severe agonizing upper abdomen pain for 3 months, starting from the central part of the abdomen and radiating to the back. It was relieved on leaning forward, associated with nausea and vomiting. He had two similar episodes in the past for which he was managed conservatively as a case of acute pancreatitis.

He had also been complaining of swelling in his upper abdomen for 1.5 months. It was insidious in onset, and gradually progressive in size. Initially, it was around 5×5 cm and later progressed 3–4 times reaching below the umbilicus. Upon physical examination, the patient had a lump in the upper abdomen reaching below the umbilicus.

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It was associated with dull aching pain, early satiety, and loss of appetite for 1 month (Figure 1). There was no history of fever, trauma, jaundice, or any significant weight loss in these past 3 months.

The patient was alcoholic for 10 years with around 60 mL of country liquor (23–36.1G/100 mL).[3] He was also chewing tobacco for 10 years.

Upon examination, a lump of size 15×20 cm was felt in the epigastrium, umbilicus, and left hypochondriac region with no local rise in temperature and tenderness. It was smooth and non-tender, immobile with regular and well-defined borders. Transmitted pulsations were palpable. It had a dull note on percussion.

On the basis of history and clinical examination, a provisional diagnosis was made of a retroperitoneal swelling most likely to be a pseudocyst of the pancreas probably due to alcohol-induced acute pancreatitis.

Ultrasound sonography abdomen showed two echoic cystic lesions with larger of size 123×105 mm in the midline and smaller of size 113×68 mm in the left hypochondrium extending up to the umbilical with internal echoes and echogenic content suggestive of pseudocyst of the pancreas.

CT-Abdomen (Plain and Contrast) showed a large 13×10×09 cm sized peripherally enhancing cystic lesion seen in relation to the anterior aspect of the body and tail of the pancreas. It had 5–8 mm thick enhancing walls with no solid areas within. Cranially it extended along the posterior aspect of the stomach and displaced it further anteriorly. Another similar lesion of 9×8×7.8 cm was seen anteroinferior to the above cystic lesion-noncommunicating with it but slightly caudal and extending more anteriorly up to the inner aspect of the anterior abdominal wall. Both the lesions were suggestive of mature pseudocysts of the pancreas (Figure 2).

The patient was admitted and after necessary investigations, surgical cystogastrostomy was done for the lower pseudocyst and cystocystostomy for the upper pseudocyst (Figure 3). The patient was discharged 5 days later with no complications.

**Figure 1:** On physical examination, the patient had a lump in the upper abdomen reaching below the umbilicus

## DISCUSSION

Pancreatic pseudocyst is usually sequelae of pancreatitis acute or chronic, which can be caused by numerous etiologies such as alcoholism, biliary stones, and trauma, or could be idiopathic.[4]

According to Revised Atlanta Classification 2012, the pancreatic pseudocyst is "An encapsulated collection of fluid with a well-defined inflammatory wall usually outside the pancreas with minimal or no necrosis."[5] The diagnosis of an acute pseudocyst can be made if an acute fluid collection persists for 4–6 weeks and is enveloped by a distinct wall.

Cross-sectional imaging with CT scan and magnetic resonance imaging (MRI) are the mainstay of assessment in pancreatic cysts. Based on the CT imaging findings, pancreatic cystic neoplasms can be eliminated as the cause since the cyst is well-defined and homogenous, and lacks calcifications and mural nodules.[6] Other investigations include transabdominal ultrasound, EUS, MRI, and biochemical and microbiological analysis of cyst fluid obtained by EUS-guided puncture.

Spontaneous resolution of pseudocysts is common (80%), especially for those that occur after an episode of acute pancreatitis. The gold standard for the treatment of uncomplicated pseudocysts is conservative management. This includes analgesics and antiemetics as needed and a low-fat diet.[7] According to Warshaw and Rattner, a pseudocyst is unlikely to resolve spontaneously if (a) it persists for more than 6 weeks, (b) chronic pancreatitis is evident, (c) there is a pancreatic duct anomaly (except for a communication with the pseudocyst) or (d) the pseudocyst is surrounded by a thick wall.

Over the years, a significant number of giant pseudocysts have been reported in the medical literature. Bozeman reported the largest recorded pancreatic pseudocyst in 1882, which weighed 10 kg.[8] There are only a handful of case studies in the literature regarding the management of multiple giant pseudocysts.

There is a study published by the Department of Gastroenterology, Post-Graduate Institute of Medical Education and Research, Chandigarh, India in which in over 3 years (2001–2004), endoscopic trans papillary naso pancreatic drainage (NPD) placement was attempted in 11 patients (age range 12–50 years, 10 men) with symptomatic communicating multiple pseudocysts of

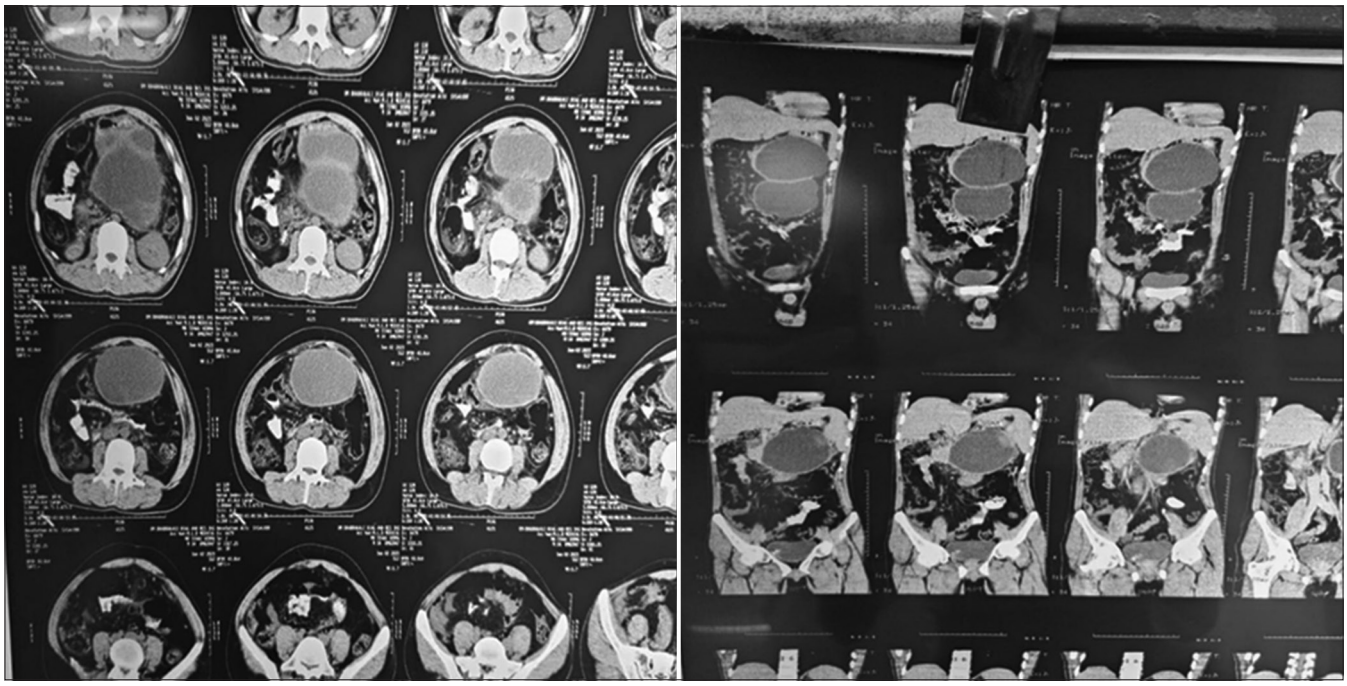

**Figure 2:** Computed tomography abdomen images suggestive of double mature pseudocysts of pancreas with no communication between the two cysts

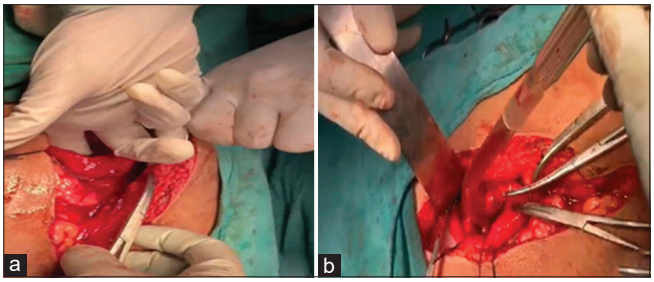


**Figure 3:** Intraoperative images (a) gloved figure reaching up to the lower cyst and (b) internal drainage of both cysts through posterior wall of stomach

the pancreas (three in two and two in nine cases). Nine patients had a partial disruption and two patients had complete disruption of the pancreatic duct. The NPD was successfully placed in 10 of 11 (90.9%) patients. All pseudocysts resolved in 4–8 weeks in 7 of 7 patients with successful bridging of the most distal ductal disruption. There was no recurrence of the pseudocysts in a mean follow-up of 19.4 months. Two patients, in whom there was a complete disruption and the NPD could not bridge the disruption, required surgery for the non-resolution of pseudocysts. In one patient with partial ductal disruption that could not be bridged, there was complete resolution of one pseudocyst and a decrease in the size of the other pseudocyst from 12 to 4 cm. The NPD was replaced by a stent and both the pseudocysts resolved in 20 weeks.[9]

There was a case reported in the American Journal of Gastroenterology that showed giant pancreatic pseudocysts measuring 16.8 cm×6.4 cm and 10.6 cm×6.19 cm compressing the stomach. EUS was performed and cystogastrostomy was attempted with resultant gastric bleed. Repeat CT showed increased size of pseudocysts to 20.6 cm×5.24 cm and 12.3 cm×6.59 cm. The gastric bleed stopped spontaneously. The patient underwent CT-guided percutaneous drainage of the pseudocysts with the insertion of two pigtail catheters that drained serosanguinous fluid. Repeat imaging showed shrinking pseudocysts. The drains were removed after 5 days.[10]

Bradley and Austin. Published an article showing 14 multiple pseudocyst patients all electively treated with surgical intervention. Ten out of 14 patients with contiguous pseudocysts underwent internal cystocystostomy (two with double internal cysto-cystostomy). In two patients with no continuous pseudocysts, each cyst was drained into a single Roux-en-Y limb of the jejunum (double cystojejunostomy Roux-en-Y). In two patients, operative cystography and aspiration were done.[11]

Development of mediastinal pancreatic pseudocysts is a rare complication of pancreatitis and there is no consensus for optimal treatment. Journal of the Pancreas published a case report of 2 patients, one showed multiple loculated collections extending from the left upper quadrant to just behind the left kidney and further collections extending into the left iliac fossa and the largest pseudocyst was shown to be passing the gastroesophageal junction and extending above the diaphragm. These pseudocysts seemed to be

connected. It was decided to perform a cystogastrostomy and cystojejunostomy with a 70 cm Roux-en-Y loop. Another one revealed a large cyst arising from the body and tail of the pancreas extending posteriorly to the stomach and tracking behind the esophagus and into the mediastinum. A surgical cystogastrostomy and a feeding jejunostomy were performed.[12]

Management of multiple pseudocysts poses a therapeutic challenge for the surgeon. The procedures may range from percutaneous drainage, endoscopic drainage, laparoscopic, or even open surgical drainage. Depending on the site, they may require separate drainage into the gastrointestinal (GI) tract (such as cystogastrostomy, Roux-en-Y cysto-jejunostomy, and cystoduodenostomy), or into the other cyst itself (after draining a cyst into GI tract) (like cystocystostomy), or even resection (like distal pancreatectomy).[4]

## CONCLUSION

This case shows multiple pseudocysts, a relatively rare complication of acute pancreatitis. The treatment is a therapeutic challenge that depends on location, size, number as well as their relation to one another. Good drainage prevents resection procedures and further complications (exocrine and endocrine insufficiency).

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