

A clinical study of Pancreatic pseudocyst and its management: An institutional experience

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Abstract:

Background: Management of pancreatic pseudocysts is associated with considerable morbidity (15–25%). Traditionally, pancreatic pseudocysts have been drained because of the perceived risks of complications including infection, rupture or haemorrhage. We have adopted a more conservative approach with drainage only for uncontrolled pain or gastric outlet obstruction. This study reports our experience.

Patients and Methods: A consecutive series of 40 patients with pancreatic pseudocysts were treated over an 1-year period in Gauhati Medical College and Hospital, Guwahati. This study group comprised of 30 men and 10 women with a median age of 35 years (range, 15–75 years). Thirty patients had a preceding attack of acute pancreatitis whilst 10 patients had clinical and radiological evidence of chronic pancreatitis.

Results: All patients were initially managed conservatively and intervention, either by Radiological-assisted external drainage or cyst-enteric drainage (by surgery), was only performed for persisting symptoms or complications. Patients treated conservatively had 3 monthly follow-up abdominal ultrasound scans (USS) for 1 year. The aetiology comprised of alcohol (28/40, 70%) gallstones (5/50, 12.5%), trauma (4/40, 10%), and idiopathic (3/40, 7.5%). Twenty-five of the 40 patients (62.5%) were successfully managed conservatively, whilst 15 patients required intervention either by percutaneous radiological drainage (13), by open surgical cyst-enteric drainage (2). The most common indications for invasive intervention in the 15 patients were persistent pain (12), gastric outlet obstruction (2), jaundice (1). Although two patients required surgery for gastric outlet obstruction, no other patients required urgent or scheduled surgery for complications of untreated pancreatic pseudocysts. Two of the 13 patients treated by percutaneous radiological drainage had recurrence of pancreatic pseudocysts requiring surgery.

Conclusions: These results suggest pseudocysts improve spontaneously. A longer period of a “wait-and-see” policy for more than 6 weeks is suggested for asymptomatic pseudocyst, especially for a single lesion.

Keywords: Pancreatic pseudo-cyst, surgery, conservative treatment.

I. Introduction

The term pancreatic pseudocyst refers specifically to a fluid collection in the peri-pancreatic tissues (occasionally it may be partly or wholly intra-pancreatic). A pancreatic pseudocyst is surrounded by a well defined wall of fibrous or granulation tissues and contains essentially no solid material¹. Diagnosis can be made usually on these morphologic criteria. Pseudocysts can be classified as the “postnecrotic type,” which occurs as a result of extensive tissue necrosis after an episode of acute pancreatitis, or as the “retention type,” which is associated with ductal stricture in patients with chronic pancreatitis².

Pancreatic pseudocysts are usually complication of pancreatitis. Pancreatic pseudocyst accounts for approximately 75% of all pancreatic masses. In 1761, Morgagni first described pancreatic pseudocyst³ and internal drainage by cystogastrostomy was first performed in 1921⁴. Surgical drainage of pancreatic pseudocysts was the standard method of treatment for over half a century until the 1980s when the first successful radiology-assisted drainage was reported.^{5,6}

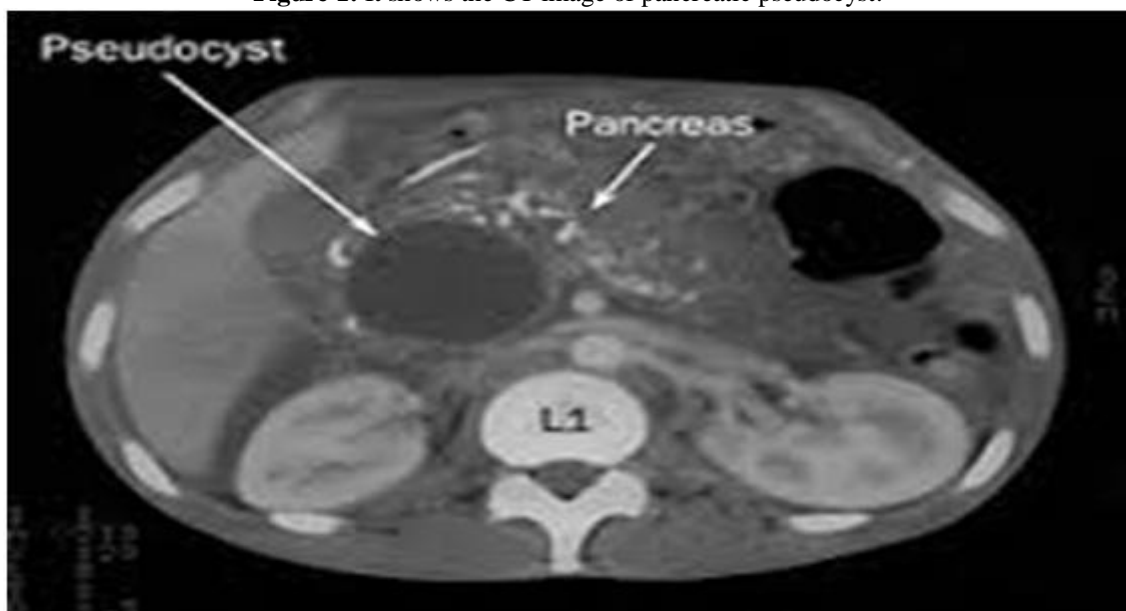
The management of pseudocyst has traditionally included a period of observation from 4 to 6 weeks for the cystic wall to mature, and the choice of therapeutic modalities such as endoscopic or radiologic intervention, or the surgical approach depends on the etiology, location, and size of the pseudocyst and the clinical course.^{7,8}

The aim of this study was to find out the relative frequency of the pancreatic pseudocyst in relation to age and sex; and to determine results of non-interventional, conservative management of pancreatic pseudocysts.

II. Patients And Methods

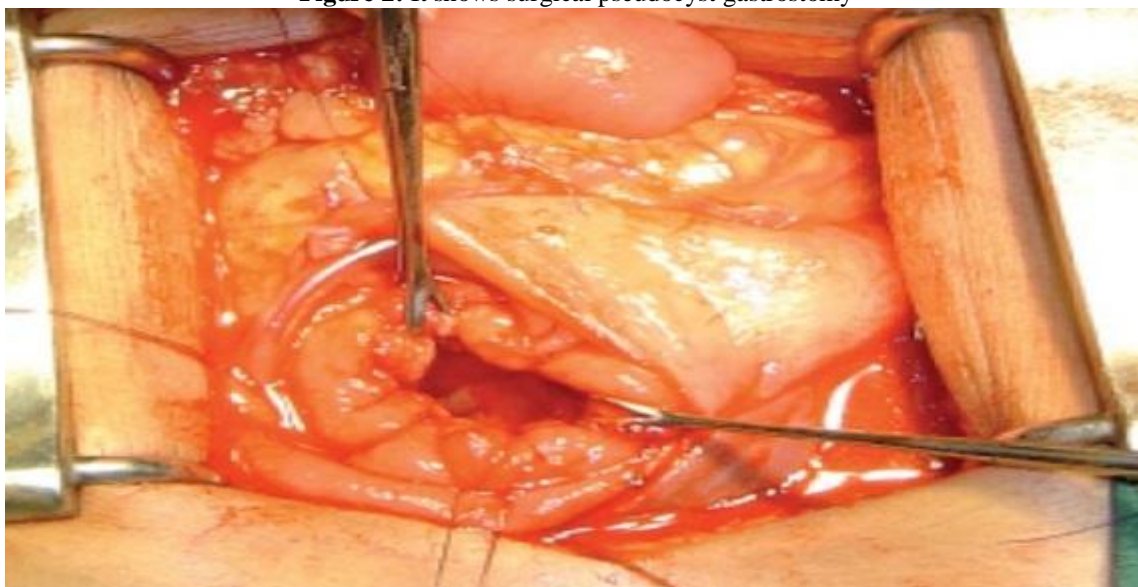
The present study comprises of 40 patients diagnosed as pancreatic pseudocyst, and treated in Gauhati Medical College and Hospital, Guwahati, during the period from June 2013 to May 2014. Out of the 40 patients, 10 cases where pseudocyst developed in patients having chronic pancreatitis and 30 cases where pseudocyst developed following an acute pancreatitis episode patient selection was based on the definition of Pseudocyst according to Revised Atlanta Classification (2012). The study group of 40 comprised of 30 men and 10 women with a median age of 35 years (range, 15–75 years) as shown in Table 1. Pseudocysts were documented by ultrasound (USS) and/or computed tomography (CT) scan (Figure 1) in all patients.

Figure 1: It shows the CT image of pancreatic pseudocyst.



USS was performed in 40 patients (100%) and CT scan in 30 patients (75%). The size and location of the pancreatic pseudocysts was noted and, wherever possible, the aetiology of the pseudocyst determined. Patients were initially managed conservatively and intervention only performed for persisting symptoms such as pain, gastric outlet obstruction or cyst-related jaundice. Cyst-enteric drainage was done by surgery (Figure 2).

Figure 2: It shows surgical pseudocyst gastrostomy



The small number of patients in this study makes statistical comparison inappropriate. Therefore, the results were analysed retrospectively and are presented in descriptive form. Follow-up, to date, was by clinic appointments or telephone interview.

III. Results

Thirty patients had a preceding attack of acute pancreatitis, whilst 10 had clinical or radiological evidence of chronic pancreatitis. The etiology comprised of alcohol (28), biliary tract disease (5), trauma (4) and idiopathic (3). The indications for abandoning conservative treatment were persistent pain in 13 (81.25%), gastric outlet obstruction in 2 (12.5%) and jaundice in 1 (6.25%). The average time from diagnosis to treatment in patients with acute pancreatitis was 9 weeks and with chronic pancreatitis 3 weeks. The median size of the pseudocyst in patients with acute pancreatitis was 9 cm (range, 5–20 cm), whilst in patients with chronic pancreatitis it was 7 cm (range, 4–17 cm).

Conservative treatment was done in 25/40 patients (62.5%). One patient represented with recurrent pain and weight loss after 4 months of conservative treatment. He was then treated by surgical cyst-enteric drainage. The remaining patients continued pain-free on mean follow-up of 6 months. Pseudocyst disappeared in 15 cases (60%), and it decreased in size in 8 cases (32%), while 1 was lost in a follow up.

Thirteen patients required interventional management of pancreatic pseudocysts. Radiology-assisted percutaneous catheter drainage was done in 13 patients. It proved successful long term in 11 patients, but 2 patients developed symptomatic recurrence. These patients went on to have surgical cyst enteric drainage.

Early surgical drainage was employed in 2 patients for intractable pain and gastric outlet obstruction. There were no cyst recurrences on follow-up. No postoperative complication detected on follow-up.

Patient treated conservatively were regularly followed-up for 6 months. One patient could not be followed up as they did not turn up as asked. The remaining cases were regularly checked up in surgery outpatient department at intervals of 15 days to 3 months.

IV. Discussion

Pancreatic pseudocyst is one of the most frequent complications and it can be described as fluid cavities filled with pancreatic juice containing various pancreatic enzymes and necrotic debris in the pancreas, and these cavities are surrounded by a wall of fibrous or inflammatory tissues⁹.

There have been several studies in the literature warning of serious, life-threatening complications related to conservative non-interventional treatment of pancreatic pseudocysts³⁻⁵. We acknowledge the possibility of real life-threatening complications with pancreatic pseudocysts; however, surgical or other interventional drainage methods are associated with significant morbidity and, in reality, all patients with pancreatic pseudocysts do not develop complications. There are many different opinions on the timing and methods for the treatment of pancreatic pseudocysts associated with acute pancreatitis, and this difference in opinion may be due to lack of knowledge about the natural history of the pseudocyst. Unless there was an associated symptom or size increment, conservative management with close follow-up for longer than 4 to 6 weeks, which has been the general recommendation, might be feasible. Two prospective studies reported impressive rates of spontaneous resolution with conservative management with close follow-up for more than 6 weeks from the detection of pseudocyst^{10,11}. In addition, recent studies have suggested long-term conservative management with close follow-up rather than an early operation or drainage because of the potential risk of complications¹². In our study, spontaneous resolution, including disappearance and a size decrement, was achieved in 57.5% of the total cases. Our experience of conservative management of pancreatic pseudocysts in selected patients during our study period of 1 year has been similar to the results reported by Vitas *et al* and by Yeo *et al*.^{10,11} The major difference between our study and those in the literature is the management of asymptomatic pancreatic pseudocysts persisting over 6 weeks. Twenty-three of the twenty five (%) patients who were successfully managed conservatively for the first 6 weeks continued to maintain good health without complications on a median follow-up of 6 months. Pseudocyst disappeared in 15 cases (60%), and it decreased in size in 8 cases (32%). The remaining 2 patients developed recurrent pain. One required surgical drainage at 4 months, but pain in the other was not considered by patient or surgeon to require intervention.

Twenty three of the 25 patients managed conservatively had remained symptom-free after a mean follow-up of 6 months, so pancreatic pseudocysts which persist over 6 weeks are not associated with increased risk of morbidity. Second, pancreatic pseudocysts of over 6 cm in size need not mandate interventional treatment, as the median size of the pancreatic pseudocysts in the conservative group was 7 cm (range, 4–15 cm).

Although there have been some different results concerning spontaneous resolution of pseudocysts according to the study, size, detection time, and etiology of the underlying pancreatic disease were reported as predictive factors^{13,14,15}.

The only predictor of spontaneous resolution in our study appeared to be a single lesion, and this was consistent with the report of Aranha *et al*¹⁵, stating that multiple cysts had a low chance of spontaneous resolution. Multiple pseudocysts are more likely to be associated with multiple pancreatic ductal disruptions, which may lead to a more complicated clinical course. Correction of pancreatic ductal disruption is one of the most important factors for the resolution of pseudocyst, and the possibility of correcting the pancreatic ductal disruption is higher for a single lesion than that for multiple cysts.

Interventional radiological procedures, in addition to a morbidity of 10–30% and a mortality of 2–6%, are associated with a recurrence rate of 6–22%. Percutaneous catheter drainage was used in 13 patients. It proved successful long term in 11 patients, but 2 patients developed symptomatic recurrence. These patients went on to have surgical cyst enteric drainage after 2 months. Guided percutaneous catheter drainage was done in cases of pseudocyst present in tail of pancreas, with immature wall or infection, and patients with poor performance status.

Early surgical drainage was employed in 2 patients for intractable pain and gastric outlet obstruction and one with CBD obstruction as well. There were no cyst recurrences on follow-up. Despite huge advances in the field of radiology and the current knowledge of the natural history of the pancreatic pseudocyst, it is difficult to predict complications in individual patients. The conservative treatment can be successful in a selected group of patients. The size or duration of the pancreatic pseudocysts is not the prime indicators for surgical intervention, but the symptoms of persisting pain, weight loss, jaundice or obstruction necessitates surgical intervention.

V. Conclusion

Positive diagnosis is suggested by the clinical picture but abdominal ultrasound, computed tomography is necessary for a correct pathological classification of Pseudocyst, with implications in the choice of therapeutic procedure. Most important complications are compression of the biliary or gastrointestinal tract & infection. These complications require immediate therapeutic intervention. Pancreatic pseudocysts which are uncomplicated, regardless of their size, benefit from conservative medical treatment until their spontaneous resolution.

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Table 1: It shows the clinical, etiological and treatment characteristics

Age group	Numbers	Percentage
15-25	8	20
26-35	15	37.5
36-45	10	25
46-55	4	10
56-65	1	2.5
66-75	2	5
Gender	Numbers	Percentage
Male	30	75
Female	10	25
Risk Factor	Numbers	Percentage
Alcohol	28	70
Biliary tract disease	5	12.5
Trauma	4	10
Idiopathic	3	7.5
Management	Numbers	Percentage
Successful conservative treatment	25	62.5
Radiological percutaneous catheter drainage	13	32.5
Cyst-enteric drainage	2	5