

Original Research

Surgical management of pancreatic ascites complicating chronic pancreatitis

Shashank Mittal

Assistant Professor, Department of General Surgery, Mayo Institute of Medical Sciences, Barabanki, UP, India

ABSTRACT:

Background: Pancreatic ascites is a rare but serious condition characterized by the accumulation of fluid in the abdominal cavity due to a leakage from the pancreatic duct or a pseudocyst. The present study was conducted to assess surgical management of pancreatic ascites complicating chronic pancreatitis. **Materials & Methods:** 46 cases of pancreatic ascites of both genders underwent ultrasound of the abdomen, multidetector computed tomography (MDCT), MRI abdomen. Patients with a dilated MPD more than or equal to 5 mm and with good cardiopulmonary reserve were selected for primary surgery. Patients without a dilated MPD were subjected to an ultrasound guided percutaneous catheter insertion for continuous drainage of the ascitic fluid. **Results:** Out of 46 patients, males were 30 and females were 16. Common symptoms were abdomen pain+ distension in 15, abdomen pain alone in 10, abdominal distention alone in 7, abdominal distension and weight loss in 5, steatorrhoea in 3, loss of appetite in 4 and diabetes in 2 cases. Procedure done was distal pancreatectomy+ splenectomy and LPJ to the remnant in 10, lateral pancreaticojejunostomy (LPJ) in 32, cystogastrostomy in 4, and conservative management in 2 cases. The difference was significant ($P < 0.05$). The mean serum amylase level was 395.2 IU/L, ascitic fluid amylase was 5872.4 IU/L and ascitic fluid albumin level was 3.2 gm/dL. **Conclusion:** In certain individuals with CP and PA, primary early direct surgery guided by the MPD morphology (duct diameter >5 mm) expedites the patient's recovery and treats the underlying pathology.

Keywords: ascitic fluid amylase, Pancreatic ascites, pancreatic duct

Corresponding author: Shashank Mittal, Assistant Professor, Department of General Surgery, Mayo Institute of Medical Sciences, Barabanki, UP, India

This article may be cited as: Mittal S. Surgical management of pancreatic ascites complicating chronic pancreatitis. J Adv Med Dent Sci Res 2018;6(6):244-247.

INTRODUCTION

Pancreatic ascites is a rare but serious condition characterized by the accumulation of fluid in the abdominal cavity due to a leakage from the pancreatic duct or a pseudocyst. This fluid is rich in pancreatic enzymes, which can lead to significant complications if not properly managed.¹ Pancreatic ascites typically results from long-term inflammation of the pancreas can cause ductal disruptions and pseudocyst formation, leading to leakage. Severe inflammation can cause rupture or leakage of pancreatic ducts. Injury to the pancreas can result in ductal disruption. Post-surgical complications can lead to leakage of pancreatic fluid.²

PA may develop as a side effect from acute or chronic pain. Either anterior disruption of the MPD or a leaky pseudocyst interacting with it could be the cause in either scenario.³ Since PA is a rare complication, its precise incidence is unknown. It is observed in 6–14% of individuals with pseudocysts and 3.5% of people with chronic pancreatitis.⁴ It was most common in CP

patients in the Broe and Cameroon series, and it was typically connected to a pseudocyst. Instead of causing tissue digestion, the inactive pancreatic enzymes in the ascitic fluid induce inflammation and exudation, which results in a fluid that is rich in albumin. Ascitic fluid albumin levels in patients with severe hypoproteinemia may be less than 3 gm/dL.⁵ The present study was conducted to assess surgical management of pancreatic ascites complicating chronic pancreatitis.

MATERIALS & METHODS

The present study was conducted on 46 cases of pancreatic ascites of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Laboratory parameters such as complete blood count (CBC), renal function test (RFT), liver function tests (LFT), serum amylase, ascitic fluid amylase and albumin levels etc. were recorded. Ultrasound of the

abdomen, multidetector computed tomography (MDCT), MRI abdomen was also performed. Patients with a dilated MPD more than or equal to 5 mm and with good cardiopulmonary reserve were selected for primary surgery. Patients without a dilated MPD were

subjected to an ultrasound guided percutaneous catheter insertion for continuous drainage of the ascitic fluid. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 46		
Gender	Male	Female
Number	30	16

Table I shows that out of 46 patients, males were 30 and females were 16.

Table II Assessment of parameters

Parameters	Variables	Number	P value
symptoms	Abdomen pain+distension	15	0.05
	Abdomen pain alone	10	
	Abdominal distention alone	7	
	Abdominal distension and weight loss	5	
	Steatorrhoea	3	
	Loss of appetite	4	
	Diabetes	2	
Procedure	Distal pancreatectomy+splenectomy and LPJ to the remnant	10	0.01
	Lateral pancreaticojejunostomy (LPJ)	32	
	Cystogastrostomy	4	
	Conservative management	2	

Table II shows that common symptoms was abdomen pain+ distension in 15, abdomen pain alone in 10, abdominal distention alone in 7, abdominal distension and weight loss in 5, steatorrhoea in 3, loss of appetite in 4 and diabetes in 2 cases. Procedure done was distal pancreatectomy+ splenectomy and LPJ to the remnant in 10, lateral pancreaticojejunostomy (LPJ) in 32, cystogastrostomy in 4, and conservative management in 2 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters

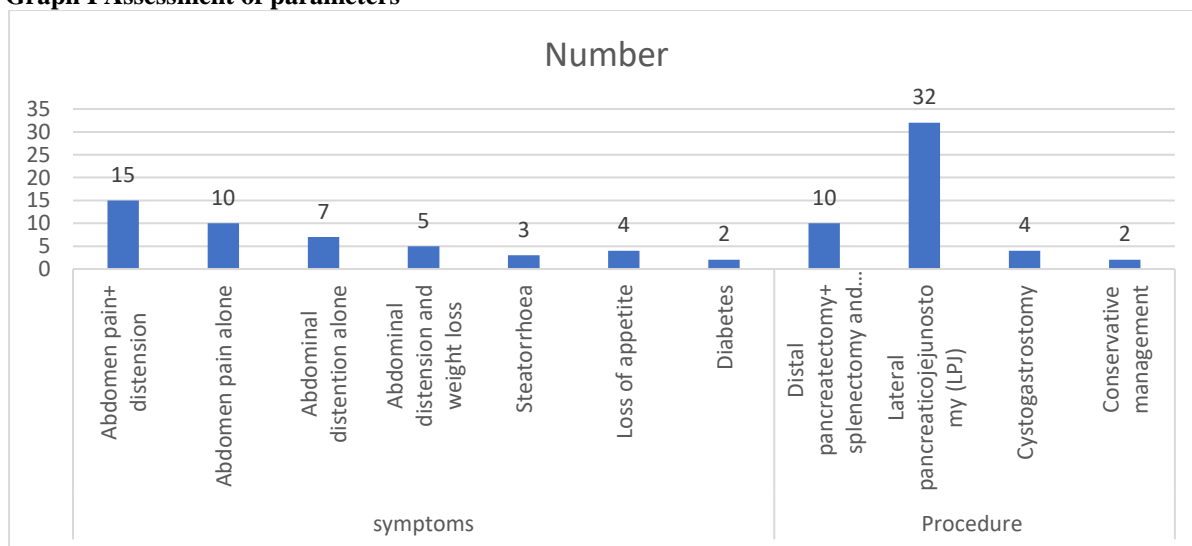


Table III Laboratory parameters

Laboratory parameters	Mean	SD
Serum amylase (IU/L)	395.2	26.8
Ascitic fluid amylase (IU/L)	5872.4	45.4
Ascitic fluid albumin (gm/dL)	3.2	0.5

Table III shows that mean serum amylase level was 395.2IU/L, ascitic fluid amylase was 5872.4IU/L and ascitic fluid albumin level was 3.2gm/dL.

DISCUSSION

It is described as an exudative ascites that results from a non-malignant pancreatic condition and is characterized by an albumin concentration of more than 3 gm/dL and an extremely high amylase concentration in ascitic fluid (often > 1000 IU/L).^{6,7} These individuals are being treated using three different strategies: a) a conservative therapy trial that involves repeated paracentesis; b) Total Parenteral Nutrition (TPN); and c) the use of octreotide. b) surgery; c) endotherapy. Reading through the research that is now available reveals a consistent tendency toward the initial trial of conservative therapy first, with endotherapy and surgery saved for when conservative care fails.⁸ A conservative therapeutic effort at first is unlikely to be successful in cases of CP because the MPD is already damaged and blocked. The availability of knowledge and practicality are two additional difficulties associated with endotherapy for ductal disturbances in CP. Patients with intraductal calculi or numerous ductal strictures may not respond well to endotherapy.⁹ The present study was conducted to assess surgical management of pancreatic ascites complicating chronic pancreatitis.

We found that out of 46 patients, males were 30 and females were 16. Somasekar RD et al¹⁰ in their study 15 cases of CP with PA managed over a three years period. Of the observed 15 cases, imaging showed a dilated main pancreatic duct (MPD) 5-10 mm in 11 cases, ductal disruption in 4/11 cases and pseudocyst in 8/11 cases. These 11 cases underwent primary early direct surgery. Surgery was tailored to the individual case with a combination of internal ductal/pseudocyst drainage and/or distal resection. Resolution of PA and relief of symptoms occurred in all patients in the primary surgery group. The mean duration of hospital stay was 16 days in the primary surgery group with a range of nine to 23 days with no mortality and no disease recurrence after one year of follow up.

We found that common symptoms were abdomen pain+ distension in 15, abdomen pain alone in 10, abdominal distention alone in 7, abdominal distension and weight loss in 5, steatorrhea in 3, loss of appetite in 4 and diabetes in 2 cases. Procedure done was distal pancreatectomy+ splenectomy and LPJ to the remnant in 10, lateral pancreaticojejunostomy (LPJ) in 32, cystogastrostomy in 4, and conservative management in 2 cases. Pai et al¹¹ analyzed the data on patients with pancreatic ascites and/or pleural effusion treated endoscopically over a ten-year period. Of the 28 patients included (22 men), 17 (60.7%) had chronic pancreatitis. The causes were tropical pancreatitis (13, 46.4%), alcohol abuse (10, 35.7%), idiopathic acute pancreatitis (4, 14.3%) and resective surgery for gastric cancer (1, 3.6%). Ascites alone was seen in 15, pleural effusion alone in 6 and both in 7 patients. Ten patients (35.7%) had 14 pseudocysts. Endotherapy was successful in 27 (96.4%). Twenty-six (92.8%) patients had complete resolution of ascites/effusion

over a median 5 weeks. The stents were removed 3-6 weeks later without any recurrence over the next 6-36 (median = 17) months. Complications (7, 25%) included severe pain in 2 (7.1%) and fever in 5 (17.8%) of which 3 (10.7%) had infection of residual fluid collections. No patient died.

We found that mean serum amylase level was 395.2 IU/L, ascitic fluid amylase was 5872.4 IU/L and ascitic fluid albumin level was 3.2 gm/dL. Dhar et al¹² in their study the records of 12 patients who had surgery for an internal pancreatic fistula and had underlying chronic pancreatitis were retrospectively evaluated in order to evaluate surgical care options. There were pancreatic ductal calculi in seven cases. Three of the cases had external drainage done. Three patients had cystojejunostomy-en-Y in response to leaky pseudocysts. For distal disease, three patients had caudal pancreatectomy and three cases of lateral pancreaticojejunostomy due to ductal dilatation or calculi. All symptoms in eight patients were fully controlled, and there were no aftereffects. Ascites and recurrent pancreatitis were present in one case each, but no additional surgery was needed. Two people died: one from major haematemesis and the other from sepsis and pre-existing multi-organ failure. The shortcoming of the study is small sample size.

CONCLUSION

Authors found that in certain individuals with CP and PA, primary early direct surgery guided by the MPD morphology (duct diameter >5 mm) expedites the patient's recovery and treats the underlying pathology.

REFERENCES

1. Segal I, Parekh D, Lipschitz J, Gecelter G, Myburgh J. Treatment of pancreatic ascites and external pancreatic fistulas with a long-acting somatostatin analogue (Sandostatin). *Digestion*. 1993;54(1):53-58.
2. Subramanian A, Dente C, Feliciano D. The management of pancreatic trauma in the modern era. *Surgical Clinics of North America*. 2007;87(6):1515-32.
3. Bhasin D, Rana S, Siyad I, Poddar U, Thapa B, Sinha S, et al. Endoscopic transpapillary nasopancreatic drainage alone to treat pancreatic ascites and pleural effusion. *J Gastroenterol and Hepatol*. 2006;21(6):1059-64.
4. Bracher G, Manocha A, DeBanto J, Gates L, Slivka A, Whitcomb D, et al. Endoscopic pancreatic duct stenting to treat pancreatic ascites. *Gastrointestinal Endoscopy*. 1999;49(6):710-15.
5. Chebli J, Gaburri P, Meirelles de Souza A, Ornellas A, Junior E, Chebli L, et al. Internal pancreatic fistulas. *J Clin Gastroenterol*. 2004;38(9):795-800.
6. Kozarek R, Jiranek G, William Traverso L. Endoscopic treatment of pancreatic ascites. *The Am J Surg*. 1994;168(3):223-26.
7. Cicek B, Parlak E, Oguz D, Disibeyaz S, Koksall A, Sahin B. Endoscopic treatment of pancreatic fistulas. *Surgical Endoscopy*. 2006;20(11):1706-12.
8. Miyachi A, Kikuyama M, Matsubayashi Y, Kageyama F, Sumiyoshi S, Kobayashi Y, et al. Successful treatment of pancreaticopleural fistula by

- nasopancreatic drainage and endoscopic removal of pancreatic duct calculi: a case report. *Gastrointestinal Endoscopy*. 2004;59(3):454-57.
9. Halttunen J, Weckman L, Kemppainen E, Kylänpää M. The endoscopic management of pancreatic fistulas. *Surgical Endoscopy*. 2005;19(4):559-62.
 10. Somasekar RD, Prabhakaran RA, Amudhan A, Gnanasekar MU, Sivakumar KA, Raman Senthilkumaran G. Primary early surgical management of pancreatic ascites complicating chronic pancreatitis- a single centre experience. *J Clin Diagn Res*. 2018 Feb 1;12(2):1-7.
 11. Pai C, Suvarna D, Bhat G. Endoscopic treatment as first-line therapy for pancreatic ascites and pleural effusion. *J Gastroenterol and Hepatol*. 2009;24(7):1198-1202.
 12. Dhar P, Tomey S, Jain P, Azfar M, Sachdev A, Chaudhary A, et al. Internal pancreatic fistulae with serous effusions in chronic pancreatitis. *ANZ Journal of Surgery*. 1996;66(9):608-11.