



ORIGINAL RESEARCH PAPER

Gastroenterology

PANCREATIC INTERNAL FISTULA - AN EXPERIENCE FROM A TERTIARY CARE CENTRE

KEY WORDS:

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INTRODUCTION-

Pancreatic ascites and pancreaticopleural effusion are known as internal pancreatic fistulas and result from disruption of the pancreatic duct or leakage from a pseudocyst. Internal pancreatic fistula (IPF) are an uncommon but well-recognized complication of chronic pancreatitis (CP) that are associated with significant morbidity and mortality(1).Alcohol-related CP is considered the main cause of IPF. It is a distinct clinical entity characterised by markedly elevated levels of amylase and protein levels in the ascitic or pleural fluid. As many patients are alcoholics, IPF is often misdiagnosed initially.Many patients are wrongly diagnosed as cirrhotic ascites or tuberculous ascites or tuberculous effusion or peritoneal carcinomatosis (2). Hence recognition of this distinct clinical entity is important.

It usually is a result of leaking pancreatic duct or pseudocyst. Patients have an appreciable amount of weight loss and may appear chronically ill. Diagnosis is clinched on finding high amylase levels in ascitic or pleural fluid, usually over 1,000 IU/L, with protein levels usually over 3.0 g/dL (2,3).Serum amylase levels are also usually found to be high, and is attributed to enzyme diffusion across the peritoneal or pleural surface.Contrast-enhanced computed tomography pancreatic protocol provides data regarding the morphological changes which may contribute to diagnosis in 80% of the cases. Findings may include delineation of the site of duct disruption, as well as factors precluding response to conservative therapy, such as obstructing proximal calculi, strictures, or frank ductal discontinuity. CT scanning allow improved visualization of the gland and detection of abnormalities, including focal pancreatic enlargement, parenchymal atrophy, pancreatic ductal dilatation, calcification, and pseudocysts, as well as to detect complications, including fluid collections, ascites, and pleural effusions (4).

Since the pancreas normally produces >1 L of fluid a day, ascites and effusions are typically massive, and the absence of an appropriate inflammatory response in patients who are quite often malnourished means that spontaneous closure of internal pancreatic fistula may not occur. In addition, the management of internal pancreatic fistula is still controversial because sufficiently powerful studies to evaluate the importance of each possible therapeutic modality are as rare as the disease itself. Conservative treatment depends on proper diagnosis and minimization of pancreatic secretion. This goal has been achieved by restricting the patient to clear liquids or keeping the patient nil per oral along with the use of long-acting somatostatin analogues, and nasojejunal feeding or total parenteral nutrition. Other recommendations include multiple paracentesis or thoracentesis or even placement of an indwelling chest tube. The degree of response to conservative treatment depends on both the intensity of baseline metabolic alterations on admission and ERCP or imaging. Traditionally, medical therapy has usually

been continued for 2 to 3 weeks before another intervention is believed to be warranted(5). Conservative treatment is reported to have an efficacy of 30% to 60%, a recurrence rate of 15%, and a mortality rate of 12%.Interventional therapy may be endoscopic or surgical. Endoscopic treatment is based on the concept that main pancreatic duct disruption arises as a consequence of an increase in intraductal pressure or within a pseudocyst, and aims at the reduction of the pancreatic-duodenal pressure gradient (5,6).This is achieved through the endoscopic placement of a transpapillary pancreatic duct stent . In most patients, a pancreatic sphincterotomy via the major papilla is performed to facilitate placement of stents.Surgical treatment can be performed by several techniques but its main end points include economic resections of the pancreatic parenchyma and drainage of pseudocysts or the main pancreatic duct through a pancreatico enteric anastomosis.

AIM -

To analyse the clinical profile and parameters in patients diagnosed with pancreatic ascites and pleural effusion over a period of 5 years at a university hospital and tertiary care referral centre

METHOD -

Retrospective analysis of prospectively maintained database of all pancreatic ascites and pancreatic pleural effusion patients at a tertiary care referral centre Sri Ramachandra medical college and hospital from September 2017 to September 2022. All patients included in the study had radiological support of diagnosis in the form of ultrasound or contrast enhanced CT abdomen pancreatic protocol. All patients included in the study had elevated levels of fluid amylase >1000 IU and elevated fluid protein >3 g /dL. All patients with other causes of ascites were excluded. Patients with underlying malignancy were excluded. The therapeutic approach to each patient was selected according to the above findings and clinical picture. Conservative treatment consisted of withholding of oral feedings, total parenteral nutrition, octreotide 100 µg subcutaneously *t.i.d.*, nasojejunal feeding and multiple paracentesis or thoracentesis.

Medical therapy was continued for a maximum period of 3 weeks. Interventional therapy was either endoscopic or surgical. Treatment failure was considered when ascites or pleural effusion did not resolve or relapsed after an initial improvement, or when the patient died as a result of complication. Clinical end points were complete resolution of ascites or pleural effusion and improvement in patient condition.

RESULTS -

We had 20 patients satisfying the inclusion criteria for the study. All relevant data were analysed including clinical presentation , radiological findings, biochemical parameters ,management and overall clinical progress

Table 1 - mean serum amylase levels

Mean amylase levels	Serum	Ascitic fluid	Pleural fluid
IU/L	401	21455	26988

Table 2 - clinical presentation

Presenting symptoms	
Pain	6
Dyspnoea	6
Distension	9
Fever	2
Steatorrhoea	1

Both the serum amylase levels and the fluid amylase levels were found to be elevated. However the fluid amylase level values were much higher compared to the serum amylase levels. The mean serum amylase levels in our series was 401 IU/L whereas the mean ascitic fluid and pleural fluid amylase levels were 21455 IU/L and 26988 IU/L (table -1).

The most common presenting symptom was pain abdomen (table 2) Few patients presented with a combination of symptoms like pain with fever or pain with dyspnoea . Patients with fever showed features of sepsis and needed more admission days and fared poorly with more dependence on parenteral nutrition and high dependency unit care.

Majority of patients who presented with dyspnoea had left sided pleural effusion whereas two patients had right sided and one patient had a bilateral pleural effusion.

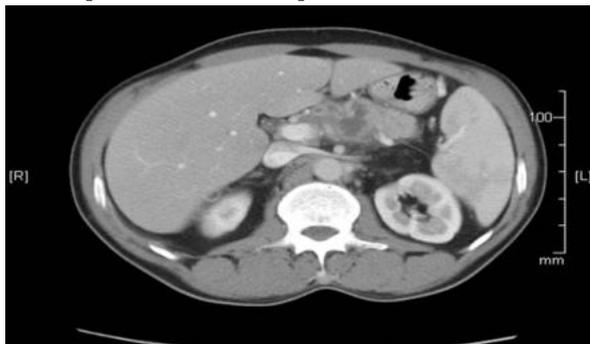


Figure 1- Intra pancreatic pseudocyst with posterior rupture

Table 3- etiological factors

Etiology	Number of patients
Chronic calcific pancreatitis	10
Ethanol related acute pancreatitis	4
Biliary pancreatitis	3
Trauma	1
Idiopathic	2

Ten patients had imaging features of chronic calcific pancreatitis making it the predominant etiology of internal pancreatic fistula in our series. Alcohol related acute pancreatitis emerged as the second most common etiology (table 3). We also had a case of a young male with traumatic pancreatic duct disruption which was managed with endoscopic transpancreatic stenting.

Table 4 -management modalities

Management	
Total Conservative	3
Tapping/intercostal drain	6
Surgical	3
Endoscopic transpancreatic stenting	8

Majority of patients needed a combination of conservative management, drainage, supportive care and endotherapy/ surgery. Eight patients underwent endotherapy in the form of endoscopic transpancreatic stenting. All the patients who

were on total conservative management also required the use of octreotide therapy with either total parenteral nutrition or nasojejunal feeding. The requirement of total parenteral nutrition and hospital days were significantly more in patients in sepsis and those on a total conservative management.

Three patients needed surgical intervention in the form of distal pancreatectomy and thorascopic drainage (table 4). There was no mortality noted in the series.



Figure -2 ERCP showing leak with percutaneous drain in situ

DISCUSSION

Smith et al first described the term internal pancreatic fistula in 1953 but this term became used commonly after the work of Cameron et al in 1976 (7). IPF is usually seen in the setting of chronic pancreatitis in 70-90 % of patients. There is a male preponderance described in literature as is seen in our series.

For the diagnosis of IPF to be clinched a high degree of suspicion on part of the clinician is warranted. In IPF presenting as ascites , an incorrect suspicion of cirrhotic or tubercular ascites is not uncommon as is the differential of lung pathologies in pancreatic pleural effusions with abdomen not being contemplated as a source.

However once the diagnosis is suspected it's relatively easy to confirm the diagnosis by the high fluid amylase levels usually above 1000 IU/L and elevated serum protein levels above 3 g /dL(2,3). Contrast enhanced computed tomography and magnetic resonance cholangio pancreatography images are usually complimentary in determining the characteristic morphological features and in deciding the management options. Nutrition is an important consideration in the management of these patients.

There are no clear guidelines on management and the scientific evidence available to us are based on case reports and case series as no randomised controlled trials are available due to the uncommon nature of this condition. Patients can be managed with either conservative management or endoscopic or surgical modalities with each having their own merits and to be opted by the clinician on a case to case basis.

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