

Chronic Pancreatitis and its Management in Thanjavur Medical College Hospital

S. Sri Hari¹, R. Syed Raj²

ABSTRACT

Introduction: Chronic pancreatitis is defined as a chronic inflammatory disease, characterised by irreversible, progressive destruction of pancreatic tissue, with dynamic progressive fibrosis of pancreas, leading to progressive loss of both exocrine and endocrine function. Study aimed to recognise the various causative factors responsible for the disease process and to evaluate the various indications for surgical interventions

Material and methods: The patients admitted in Thanjavur Medical College Hospital, Thanjavur, during the period from September 2016 to August 2017, and their subsequent follow up at our outpatient department were studied.

Results: Alcoholic chronic pancreatitis accounted for 66.6% of the cases (16/24). Tropical pancreatitis accounted for 16.6% of the cases (4/24). Pain was the outstanding symptom in the great majority (22) of patients (91.6%), 6 patients (25%) had diabetes mellitus, 2 patients had steatorrhoea (8.3%). 5 patients presented with abdominal pain and abdominal fullness / lump (20.8%). Plain x ray abdomen revealed pancreatic calcification in 9 patients (37.5%). Ultrasonogram and CT scan revealed a dilated main pancreatic duct in 9 patients

Conclusion: Though chronic pancreatitis is not a surgical disease primarily, surgery is indicated when medical treatment fails and/or complication arises.

Keywords: Pancreatitis, Chronic Pancreatitis, Pseudocyst, Alcohol, Cysto Gastrostomy, Pancreatico Jejunostomy, Diabetes Mellitus, Secretin, Exocrine, Ultrasonogram

INTRODUCTION

Chronic pancreatitis is defined as a chronic inflammatory disease, characterised by irreversible, progressive destruction of pancreatic tissue, with dynamic progressive fibrosis of pancreas, leading to progressive loss of both exocrine and endocrine function. Until the 1940s, it was thought to be a rare disease; knowledge of its natural history was fragmentary; and it was usually recognised only at autopsy. In 1946 and 1948 Comfort and his associates at the Mayo clinic gave the first, comprehensive clinical and pathological description of the disease and emphasized its association with diseases of the biliary tract and with alcoholism. The publication of these papers, along with the introduction of the secretin test of exocrine pancreatic function, led to the clinical diagnosis of increasing number of patients with chronic pancreatitis, and to a proliferation of various surgical procedures for this condition.¹⁻⁵

In a tropical country like India, the commonest cause for chronic pancreatitis is alcoholism. The disease is prevalent in Kerala and in northern parts of the country.

Aim of this study was to recognise the various causative factors responsible for the disease process, to analyse the various methods of presentation of chronic pancreatitis, to evaluate the various indications for surgical interventions, and to assess the results of surgical treatment.

Management

Not all patients with chronic pancreatitis require surgery and half of the patients in many reported series have been managed conservatively. But in our study only 9 out of 24 (37.5%) patients were treated conservatively. This may be because of referral bias to our surgical department, i.e., these patients were first treated medically and subsequently referred to surgical side following failure of medical management. Of the 24 patients, 9 patients had dilated main pancreatic duct. Of these 9 patients, 3 were managed conservatively and the rest (6 patients) underwentpancreaticojejunostomy. 8 patients with pseudocyst of the pancreas, with history and investigations suggestive of pseudocyst developing in chronic pancreatitis, underwent cystogastrostomy. Patients developing pseudocyst of the pancreas as a result of acute pancreatitis were not included in our study.

Percutaneous celiac plexus block was done in one patient with 6% phenol. Patient had good postoperative pain relief, but he developed paraparesis which resolved gradually. During our short follow-up of operated patients, almost all patients experienced appreciable pain relief. Our patients were not encouraged to expect significant improvement in exocrine and endocrine function after surgery.

Three of operated patients developed minimal wound infection, which was easily controlled. Resection operation was not done, as none of our patients suited the indications. In our series of 24 patients, we did not come across any case of chronic pancreatitis due to gallbladder disease.

MATERIAL AND METHODS

The patients admitted in Thanjavur Medical College Hospital, Thanjavur, during the period from September 2016 to August 2017, and their subsequent follow up at our outpatient department were studied. Their history, clinical

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presentation, investigations and management were recorded. From these data, the various aspects of chronic pancreatitis were studied.

The following investigations were done for diagnosis and evaluation of chronic pancreatitis.

- Urine sugar
- Blood sugar
- Serum calcium
- amylase
- Plain X-ray abdomen
- Ultrasonogram abdomen
- CT-abdomen

We present here, our data on chronic pancreatitis, as seen by our surgery department Thanjavur Medical College Hospital, Thanjavur.

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the analysis. Descriptive statistics like mean and percentages were used for the analysis.

RESULTS

The mean age of presentation in our study was 38.45 yrs, which correlates well with most others studies. The disease has a world wide distribution. In India, the state of Kerala has the highest incidence, accounting for 0.145% of the total hospital admission and 5.47% of all autopsies in Trivandrum district. It is also common in Tamilnadu. The incidence of the disease seems to taper off from the south towards the north.

Age

Chronic pancreatitis may occur at any age. The hereditary form manifests between 5-15 years whereas the late - onset idiopathic chronic pancreatitis usually manifests after 50 years.

In our study of 24 patients, the age wise distribution of patients was as follows:

1. 10-20 years - 2
2. 21-30 years - 5
3. 31-40 years - 5
4. 41-50 years - 9
5. >51 years - 3

In our study, the age of the youngest patient was 17 years and the oldest was 53 years.

Sex

In our study, there were 19 males and 5 females, giving a sex ratio of 4:1, in favour of males. The sex ratio of 4:1 was also confirmed by a study conducted by Anand B.S in Delhi.

Religion

Among the 24 patients, majority belonged to the Hindu community (22/24), one from Christian, and one from Muslim community.

Income

One of the causes attributed for chronic pancreatitis in the tropics was protein-energy malnutrition as the disease is found generally in the low income group. Almost all the

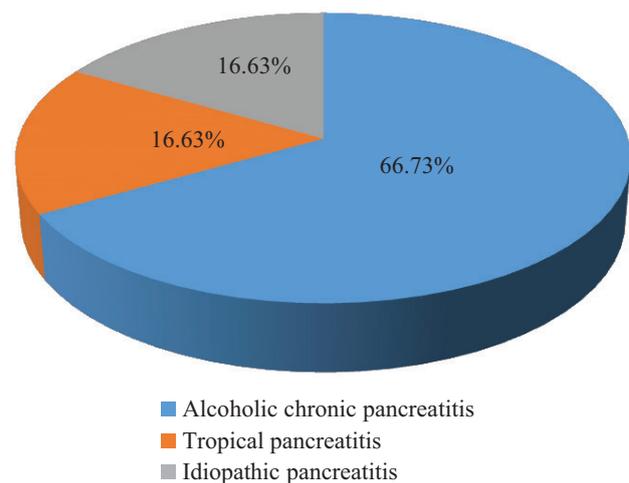


Figure-1: Etiological distribution

patients in our study belong to the lower socio economic group. This could be because of the referral bias, the affluent seeking treatment at private hospitals.

Alcoholic chronic pancreatitis accounted for 66.6% of the cases (16/24). Tropical pancreatitis⁷ accounted for 16.6% of the cases (4/24) (Figure 1). Tropical pancreatitis patients had recurrent abdominal pain since childhood, were diabetic and plain x ray abdomen revealed pancreatic calcifications.⁸ Hospital based studies⁹ from India showed a male predominance in tropical pancreatitis, but recent community based studies showed a female preponderance of 1.8:1. In our study, the sex ratio was 1:1. In the rest of the cases (4/24), since no etiological factors could be found out, these patients were grouped under idiopathic chronic pancreatitis. Pain was the outstanding symptom in the great majority (22) of patients (91.6%), 6 patients (25%) had diabetes mellitus, 2 patients had steatorrhoea (8.3%). 5 patients presented with abdominal pain and abdominal fullness / lump (20.8%) Plain x ray abdomen revealed pancreatic calcification in 9 patients (37.5%). Ultrasonogram and CT scan revealed a dilated main pancreatic duct in 9 patients

Management

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DISCUSSION

Clinical Features³

Clinical tetrad of abdominal pain, weight loss, diabetes mellitus and steatorrhea is a classic presentation in patients with chronic pancreatitis.

1. Pain
2. Steatorrhea
3. Constipation
4. Diabetes mellitus
5. Weight loss
6. Jaundice
7. Vomiting
8. Gastrointestinal bleeding

Complications

The complications of chronic pancreatitis⁴ are,
Pain

Exocrine insufficiency
Endocrine insufficiency
Pseudocyst of pancreas
Pancreato - cutaneous fistula
Pancreatic ascitis
Pleural effusion
Common bile duct obstruction
Duodenal obstruction
Colonic obstruction
Left sided portal hypertension
Pancreatic haemorrhage
Pancreatic carcinoma²

Investigations

No single test is sufficiently sensitive and specific to establish the diagnosis of chronic pancreatitis.⁶ Much depends on a careful history and clinical examination, supplemented by the selective use of investigations.⁵

Plain X-ray abdomen - This reveals pancreatic calcification in 30-50% of chronic pancreatitis patients. When calcification is present, the diagnosis of chronic pancreatitis is certain, even if there is no clinical evidence of pancreatic disease. Pancreatic calcification is 95% specific for chronic pancreatitis (Figure 2).

UGI Scopy - This should be done to know whether the pain is produced only by chronic pancreatitis and not by duodenal ulcer.

Ultrasonography - USG is a valuable first step to outline pancreas, to define its size, contour and texture. It reveals calcification, ductal dilatation, cysts, pseudocysts, abscesses

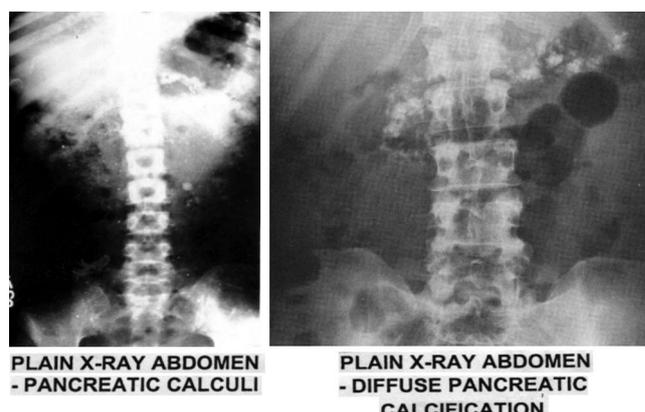


Figure-2: plain x ray abdomen findings in chronic pancreatitis

and abnormalities of liver, biliary tree and spleen, fluid collections and inflammatory masses.

CT scan - This is the best method of detecting pancreatic calcification and provides most precise information about the size and configuration of pancreas. It is regarded as complementary to USG. CT gives information about the morphological changes, ductal anatomy, vascular anomalies and presence of complications (pseudocysts). It is especially useful when used in conjunction with dynamic bolus contrast enhancement. Spiral CT gives clear, reproducible findings with a false negative rate of only 7%. When the duct is grossly dilated in CT scan, ERCP may be unnecessary. But considering the cost and hazards of radiation, it should be used sparingly. Ultrasonography or CT can be used for targeted percutaneous fine needle aspiration or biopsy of suspicious area, but exclusion of pancreatic cancer is frequently impossible without laparotomy and pancreatic resection.

Endoscopic retrograde pancreatography (ERP)¹⁰ - This is the single most effective method of detecting chronic pancreatitis and differentiating it from pancreatic cancer. It complements ultrasonography and CT, increasing the sensitivity and specificity of each investigation.

When all three investigations (USG, CT, ERP) are combined, a sensitivity of 95-97% and specificity of 100% have been reported for diagnosis of chronic pancreatitis and pancreatic cancer.

ERCP reveals typical findings - pancreatic and biliary ductal dilatation, defines filling defects caused by calculi, detects cysts and collections which communicate with pancreatic ductal system.

Magnetic resonance imaging (MRI) - MRI has so far not able to add anything that CT cannot provide. But with rapid sequence MRI, progress is expected.

Cytological examination

Percutaneous FNAC is indicated when carcinoma is suspected in patients with a inflammatory mass of head of pancreas, who are not fit for operation. Only the unequivocal detection of malignant cells is of any consequence. In patients who are fit for operation, doubt about the existence of cancer in an area of chronic inflammation is best resolved

Indirect procedures	Direct procedures
Gastric: Bilroth II gastrectomy Selective proximal vagotomy (SPV) Gastrojejunostomy	Drainage: External cyst drainage Internal cyst drainage (to stomach, duodenum or jejunum)
Biliary: Cholecystectomy Sphincteroplasty Bilioenteric anastomosis	Pancreaticojejunostomy (Figure 3) Retrograde drainage with splenectomy Lateral side-to-side drainage.
Denervation: Splanchnicectomy Celiac ganglionectomy Total denervation of pancreas Denervated pancreatic flap (Warren)	Resection: Distal Pancreatectomy(40-95%) Pancreatoduodenectomy Standard Whipple Pylorus preserving Total pancreatectomy Duodenum - preserving resections Partial resection of head of pancreas Total resection of pancreas Longitudinal V-shaped excision of the ventral pancreas (Izbicki) Resection with autotransplantation.

Table-1: Surgical procedures in chronic pancreatitis

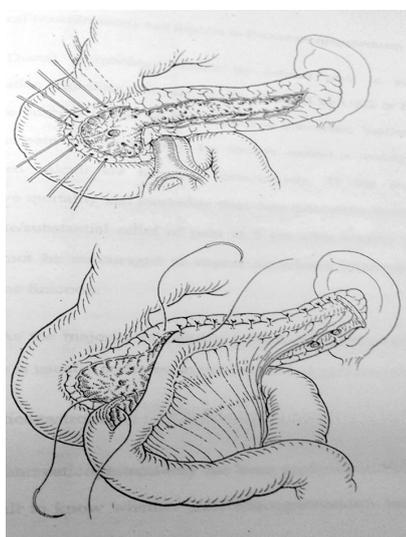


Figure-3: Pancreatico jejunostomy

by resection, given the sampling error inherent to needle aspiration / biopsy.

Serum enzymes

Serum and urinary amylase and lipase levels frequently remain within the normal range in chronic pancreatitis, even during exacerbations, particularly when the disease has been present for several years. This is because the progressive destruction limits the amount of enzyme available and the chronic fibrosis limits permeability of ducts to enzymes.

Treatment

Management of chronic pancreatitis patients may be either conservative or surgical. The clinical team usually includes a surgeon, gastroenterologist, radiologist, skilled nursing staff, diabetologist, psychiatrist, dietician and a social worker. The central role is played either by the surgeon or a gastroenterologist. About half the patients in most reported series have been managed conservatively.

Conservative management of chronic pancreatitis

Before embarking on conservative management, it is

essential to

- (i) Confirm, patient indeed has chronic pancreatitis
- (ii) Establish cause, and if possible, eradicate it.
- (iii) Assess the severity of disease, its complications, defining morphological and functional changes.
- (iv) Exclude presence of accompanying disease, especially pancreatic cancer.

Management of pain

Abstinence from alcohol

Dietary considerations

Treatment of Steatorrhea

All currently available pancreatic enzyme supplements consists of crude extracts of porcine pancreas, known as ‘pancreatin’. A major drawback is that some 90% of the enzyme activity is lost during passage through the stomach, the enzymes being rapidly and irreversibly inactivated at pH values below 5. Preparations are available in which tablets or granules are coated in an enteric coating which dissolves above pH 6.

Treatment of Diabetes mellitus

A fasting blood sugar > 250mg% requires treatment with insulin. Rigid control of blood sugar is not advisable. It is sufficient to maintain a fasting blood sugar around 200 mg%. Dietary control of DM has to be supplemented by oral hypoglycemic drugs and ultimately by insulin.

Treatment of Complications

Duodenal and colonic obstruction can often be treated conservatively, unless it is obvious that a fibrotic stricture has developed. Biliary tract obstruction is rarely an isolated indication for surgery, but operation is indicated if there is persistent obstructive jaundice for more than 4 weeks or cholangitis. Intervention is usually recommended when a pseudocyst fails to resolve after 6 weeks of conservative management. Percutaneous drainage offers an alternative to surgical or endoscopic drainage of persistent pseudocysts. Pancreatic ascitis and pleural effusions are relatively rare spontaneous complications of chronic pancreatitis

Surgical treatment for chronic pancreatitis¹ (Table-1)

Indications for operation:

1. Intractable pain
2. Complications of chronic pancreatitis
 - (a) Biliary obstruction
 - (b) Duodenal stenosis (colonic stricture)
 - (c) Pancreatic duct stenosis
 - (d) Pseudocysts
 - (e) Pancreatic ascitis, pleural effusion
 - (f) Portal venous compression
 - (g) Pancreatic haemorrhage
3. Suspicion of pancreatic carcinoma

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CONCLUSION

Though chronic pancreatitis is not a surgical disease primarily, surgery is indicated when medical treatment fails and/or complication arises. There is no single ideal operation for chronic pancreatitis. More important is the selection of an appropriate method of management for a particular patient.

Broadly, patients with chronic pancreatitis can be divided into (i) those with dilated duct disease >7mm in diameter and (ii) those with parenchymal disease. For those patients with dilated pancreatic duct, pancreatic drainage procedure is the apt one. For patients with localised parenchymal disease and normal sized duct, resection procedures are indicated. For patients with diffuse parenchymal disease and normal sized duct, denervation procedures are the best option.

In our analysis of 24 patients of chronic pancreatitis, 16 patients were alcoholics, 4 had Tropical pancreatitis and the rest of the 4 patients suffered from Idiopathic chronic pancreatitis. 22 patients had predominant abdominal pain, 6 patients had diabetes mellitus and 2 patients had steatorrhea. 18 patients had either glandular or ductal calcification. 8 patients underwent cystogastrostomy with good pain relief.

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