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Original Research Article

A study of 50 cases in different modalities of treatment of chronic pancreatitis

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Abstract

Background: Chronic pancreatitis was defined by features consistent with irreversible pancreatic inflammation, i.e., clinical, structural or functional abnormality of the pancreas. The presence of pancreatic calculi or ductal irregularity/parenchymal atrophy was determined at imaging using ultrasonography, CT scan, MRI, magnetic resonance cholangiopancreatography (MRCP), endoscopic retrograde cholangiopancreatography (ERCP) or endoscopic ultrasound (EUS).

Material and methods: The profile of 50 patients with chronic pancreatitis seen in the General Surgery, Gastro surgery Department of Civil Hospital, Ahmedabad, from May 2007 to September 2009 were included. The diagnosis of chronic pancreatitis was based on clinical, biochemical (serum amylase, serum criteria and anti-diabetic treatment requirement) and imaging. Various treatment modalities like conservative, endotherapy and surgical were evaluated.

Results: Out of 50 patients, 33 underwent surgery, 11 underwent endotherapy, 6 underwent external drainage via pigtail catheterization and 14 were kept on medical therapy that later on underwent surgery due to partial or no relief of abdominal pain. The indication for surgery was in these 33 patients and the surgical procedures were performed. 15 (10%) patients had postoperative complications; major among these being wound dehiscence (n=2), pancreatic fistula (n=1), gastrointestinal bleed (n=1) and intra abdominal bleed (n=1). There were four postoperative death (3 post whipple's and 1 post triple bypass).

Conclusion: Idiopathic pancreatitis is the most common form of chronic pancreatitis seen at our hospital, and in general, the majority of these subjects showed a good response to endotherapy and surgery of chronic pancreatitis. Pancreatic endotherapy is effective as short-term intervention, can be used at an early stage and has limited indications.

Key words

Chronic pancreatitis, Different treatment strategies, Results, Complications.

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Introduction

Chronic pancreatitis (CP) was defined by features consistent with irreversible pancreatic inflammation, i.e., clinical, structural or functional abnormality of the pancreas [1]. The presence of pancreatic calculi or ductal irregularity/parenchymal atrophy was determined at imaging using ultrasonography, CT scan [2], MRI, magnetic resonance cholangiopancreatography (MRCP) [3], endoscopic retrograde cholangiopancreatography (ERCP) [4] or endoscopic ultrasound (EUS) [5]. Ultrasound and CT were the usual initial investigations. Other imaging modalities were carried out when indicated. Diabetes mellitus was diagnosed if the fasting plasma glucose value was equal to, or greater than, 126 mg/dl confirmed on two occasions and/or a plasma glucose value equal to, or greater than, 200 mg/dl after a two-hour glucose load confirmed on two occasions, and/or requirements for insulin or oral hypoglycemic drugs. Alcohol intake was considered significant in chronic pancreatitis patients who had been taking the equivalent of 80 g or more ethanol/day for at least five years.

Material and methods

The profile of 50 patients with chronic pancreatitis seen in the General Surgery, Gastro surgery Department of Civil Hospital, Ahmedabad, from May 2007 to September 2009 were included. The diagnosis of chronic pancreatitis was based on clinical, biochemical (serum amylase, serum criteria and anti-diabetic treatment requirement) and imaging. Various treatment modalities like conservative, endotherapy and surgical were evaluated.

Results

The median age of our patients was 42 (10-62) years. There were 38 men and 12 women. The etiology of CP was idiopathic pancreatitis in, 32 (64%), alcoholic in 17 (34%) and hyperlipidemia in 12%. Pain (n=11; 22%), lump (n=19; 38%), weight loss (n=24; 32%), nausea/vomiting (n=15, 30%), gastrointestinal (GI) bleed (n=1; 0.5%) were usual symptoms with eighteen (36%) patients had diabetes and 7 (14%) had clinical steatorrhea.

Patients were evaluated with X-ray abdomen, ultrasonography (USG), contrast enhanced computed tomography (CECT), ERCP and MRCP depending upon the presentation and associated complications. On evaluation, biliary obstruction was diagnosed in 11 (22%), pseudocyst was present in 23 (46%) and pancreatic cancer in association with CP was diagnosed in 11 (22%) patients with dilated main pancreatic duct (MPD) in 15 (30%) and pancreatic calcifications in 7 (14%).

Treatment modalities

Out of 50 patients, 33 underwent surgery, 11 underwent endotherapy, 6 underwent external drainage via pigtail catheterization and 14 were kept on medical therapy that later on underwent surgery due to partial or no relief of abdominal pain.

Medical therapy

14patients were treated with pancreatic enzyme supplements for abdominal pain and followed for a minimum period of 6 months. None had complete relief of pain, 6 (42.85%) had partial relief and 8 (57.14%) did not respond to therapy.

Endotherapy

11 out of 50 patients (22%) underwent endotherapy for relief of abdominal pain. Eight (72.72%) had complete response and 3 (27.27%) had partial response as per **Table – 1** and **Table – 2**.

Surgery

33 out of 50 patients (66%) underwent surgery for abdominal pain. The operated patients were

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followed for 1 to 5 years. About 26 (78.78%) had complete relief of pain and 7 (21.21%) had partial response. The indication for surgery was in these 33 patients and the surgical procedures were performed. 15 (10%) patients had postoperative complications; major among these being wound dehiscence (n=2), pancreatic fistula (n=1), GI bleed (n=1) and intra abdominal bleed (n=1). There were four postoperative death (3 post whipple's and 1 post triple bypass). On follow up, all patients with jaundice, cholangitis and bleeding had relief of their symptoms. Patients underwent a prospective study to assess the effect of ductal decompression on pancreatic exocrine and endocrine function. Pancreatic endocrine function was evaluated by improvement in diabetic status. Patients underwent the evaluation preoperatively and on follow up at least after six months of surgery. In this study, there was some improvement in the status of beta cell function (in some patients, dose of insulin was reduced or patients on insulin were shifted on oral hypoglycemic drugs) on follow up of 6-12 months. (**Table – 3**, **Table – 4** and **Table – 5**)

Discussion

It is often difficult to differentiate recurrent acute pancreatitis from exacerbations of chronic pancreatitis. Even today, in certain situations, the correct diagnosis can often be achieved only on follow up of the patient. In all our patients, the diagnosis of chronic pancreatitis was confirmed by imaging studies. In contrast to western countries idiopathic pancreatitis is the leading etiology (41.8%), followed by alcoholism (34.9%) in this study [6]. Alcohol intake is quite uncommon in females, so all cases of pancreatitis due to alcohol were seen in men. However 37.2% of idiopathic pancreatitis occurred in females. Calcification was present in 51.1% of the idiopathic group and 38.8% of alcoholic patients. Majority of patients (95.1%) had pain [7]; however this could reflect selection bias as most patients with persistent pain were referred to our hospital.

Diabetes mellitus was significantly more common in calcific pancreatitis group as compared to the non-calcific group [8]. This may reflect that calcification develops in late stages of chronic pancreatitis associated with advanced endocrine deficiency. Patients with alcoholic pancreatitis had significantly shorter duration of symptoms as compared to idiopathic pancreatitis.

Surgery was the mainstay of therapy in most patients (n=33) [9]. Patients (n=14) were initiated with medical therapy but due to partial/no response were later on treated with surgery. Failure of conservative management in this study may due to presentation of patients in advance stages of the disease (huge cyst compressing surrounding structures, pancreatic mass, common bile duct (CBD) strictures due to pancreatitis, MPD calculi with dilatation) [10].

Endoscopic retrograde pancreatography followed by pancreatic endotherapy was done in 6 patients. Endotherapy was done via transpapillary route in all these patients with either a pancreatic stent or nasopancreatic drain. Extra corporeal shock wave lithotripsy fragmentation of pancreatic duct calculi in conjunction with endoscopic clearance of the main pancreatic duct is associated with maximum pain relief and least complication [11]. Pancreatic stone lithotripsy was done in 3 of our patients. Endoscopic cystogastrostomy/cystoduodenostomy was done in 5 patients with complete/partial relief in all patients. Timing of endotherapy is best delayed approximately 4 weeks to allow the pseudocyst to mature. Earlier intervention may be necessitated by complications such as

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infection, hemorrhage, enteric or billary obstruction [12].

Transmural drainage through the stomach (cystogastrostomy) is preferred for psedocyst in the body and tail of the pancreas while those in the head are drained into the duodenum (cystoduodenostomy). An important concern in transmural drainage is potential bleeding (n=1) from blood vessels interposed between the pseudocyst and gastroduodenal wall. Endoscopic ultrasound (EUS) or EUS-guided puncture of the pseudocyst eliminates this risk. When the cyst contains clear fluid, 10 Fr double pigtail stent will adequately drain the cyst. In the presence of necrotic debris, placement of a naso-cystic catheter for irrigation in addition of the tract using a controlled radial expansion (CRE) balloon followed by removal of necrotic material with a dormia basket prevents subsequent clogging of the stent.

Transpapillary cyst drainage is preferred when cyst-duct communication is evident [13]; complication rates are lower with transpapillary access (16%) than after the transmural approach (39%). Stents may be placed into the pseudocyst; when technically not feasible, the stents should be advanced to the site of ductal commumication as close as possible to the pseudocyst. In the presence of associated ductal disruptions, stents may either bridge the disruptions or be placed into the pseudocyst [14, 15, 16, 17].

Conclusion

Idiopathic pancreatitis is the most common form of chronic pancreatitis seen at our hospital, and in general, the majority of these subjects showed a good response to endotherapy and surgery of chronic pancreatitis. Pancreatic endotherapy is effective as short-term intervention, can be used at an early stage and has limited indications. The failure of ductal decompression to relieve pain in short term is consistent with the multifactorial etiology of pain in chronic pancreatitis. Surgical decompression provides immediate pain relief in 70-90% of patients. However surgery remains the mainstay of treatment of majority of our patients and had shown comparatively better results of endotherapy and conservative management.

References

1. Mayerle J, Hoffmeister A, Werner J, Witt H, Lerch MM, Mössner J. Chronic pancreatitis - Definition, etiology, investigation and treatment. Dtsch Arztebl Int, 2013; 110: 387-93.
2. Grözinger G, Grözinger A, Horger M. The role of volume perfusion CT in the diagnosis of pathologies of the pancreas. Rofo, 2014; 186: 1082-93.
3. Liu K, Xie P, Peng W, Zhou Z. Magnetic resonance cholangiopancreatography: Comparison of two- and three-dimensional sequences for the assessment of pancreatic cystic lesions. Oncol Lett, 2015; 9: 1917-1921.
4. Pericleous S, Smith LI, Karim MA, Middleton N, Musbahi A, Ali A. Endoscopic retrograde cholangiopancreatography in Ayrshire, Scotland: A comparison of two age cohorts. Scott Med J, 2015. Mar 16. pii: 0036933015576695.
5. Rana SS, Vilmann P. Endoscopic ultrasound features of chronic pancreatitis: A pictorial review. Endosc Ultrasound, 2015; 4: 10-4.
6. Muniraj T, Aslanian HR, Farrell J, Jamidar PA. Chronic pancreatitis, a comprehensive review and update. Part I: Epidemiology, etiology, risk factors, genetics, pathophysiology, and clinical features. Dis Mon, 2014; 60: 530-50.

ISSN: 2394-0026 (P)
ISSN: 2394-0034 (O)

7. Olesen SS, Juel J, Nielsen AK, Frøkjær JB, Wilder-Smith OH, Drewes AM. Pain severity reduces life quality in chronic pancreatitis: Implications for design of future outcome trials. Pancreatology, 2014; 14: 497-502.
8. Davison LJ. Diabetes mellitus and pancreatitis--cause or effect? J Small Anim Pract, 2015; 56: 50-9.
9. Niedergethmann M, Nephuth O, Hasenberg T. Chronic pancreatitis. Operation indications and procedures. Chirurg., 2014; 85(12): 1123-31.
10. Kwek AB, Ang TL, Maydeo A. Current status of endotherapy for chronic pancreatitis. Singapore Med J., 2014; 55(12): 613-20.
11. Ahmed Ali U, Pahlplatz JM, Nealon WH, van Goor H, Gooszen HG, Boermeester MA. Endoscopic or surgical intervention for painful obstructive chronic pancreatitis. Cochrane Database Syst Rev, 2015; 3: CD007884.
12. Bouwense SA, de Vries M, Schreuder LT, Olesen SS, Frøkjær JB, Drewes AM, van Goor H, Wilder-Smith OH. Systematic mechanism-orientated approach to chronic pancreatitis pain. World J Gastroenterol, 2015; 21: 47-59.
13. Ergun M, Aouattah T, Gillain C, Gigot JF, Hubert C, Deprez PH. Endoscopic ultrasound-guided transluminal drainage of pancreatic duct obstruction: Long-term outcome. Endoscopy, 2011; 43: 518-25.
14. Matsubayashi H, Kakushima N, Takizawa K, Tanaka M, Imai K, Hotta K, Ono H. Diagnosis of autoimmune pancreatitis. World J Gastroenterol, 2014; 20: 16559-69.
15. Tandan M, Nageshwar Reddy D. Endotherapy in chronic pancreatitis. World J Gastroenterol, 2013; 19: 6156-64.
16. Muniraj T, Aslanian HR, Farrell J, Jamidar PA. Chronic pancreatitis, a comprehensive review and update. Part II: Diagnosis, complications, and management. Dis Mon, 2015; 61: 5-37.
17. Ni Q, Yun L, Roy M, Shang D. Advances in surgical treatment of chronic pancreatitis. World J Surg Oncol, 2015; 13: 430.

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Table – 1: Endotherapy.

Type	No.	Percentage	Complication
Sphincterotomy + stenting	2	4	---
ESWL + Stenting	3	6	Acute pancreatitis
Sphincterotomy + Stone removal + Stenting	1	2	---
Endoscopic CD/CG	5	10	Gastrointestinal bleed

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Table – 2: Results of endotherapy.

Results	Shincterotomy + stenting	ESWL + Stenting	Sphinterotomy + Stone removal + Stenting	Endoscopic CD/CG
Complete pain relief	2	2	---	4
Partial pain relief	---	1	1	1
None	---	---	---	---

Table – 3: Complications of surgery.

Complication	**No.**	**Percentage**
Wound dehiscence	2	4
Pancreatic fistula	1	2
G.I. bleed	1	2
Biliary leakage	-	-

Table – 4: Surgical procedures.

Surgery	**No.**	**Percentage**
Whipples	6	12
LPJ (Partington, Rochelle)	9	18
Frey's	1	2
Distal Pancreatectomy	2	4
Triple bypass	5	10
Cystogastrostomy/Roux-en-y cystojejunostomy	9	18
Spleenectomy	2	4
Biliary procedures	3	6

Table – 5: Results of surgery.

Result	LPJ	Whipples	Frey's	CG/RCJ	DP	TBP
Pain relief	9	3	1	9	2	4
Morbidity	1	1	---	2	---	1
Mortality	---	3	---	---	---	1
Endo insufficiency status	---	---	---	---	---	---