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"OUTCOME OF FREY'S PROCEDURE FOR CHRONIC PANCREATITIS"

General Surgery

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ABSTRACT

Background:- Chronic pancreatitis is (CP) is a progressive inflammatory disease of the pancreas associated with disabling abdominal pain and gradual deterioration of exocrine and endocrine function. Up to 50% of patients with CP may require surgery during the course of the disease. The main indication for surgery is intractable abdominal pain not amenable to medical and endoscopic therapy. The type of surgery depends on pancreatic ductal diameter and associated parenchymal pathology like inflammatory head mass. Frey procedure (FP) is an effective method for control of pain in patients with enlarged pancreatic head. FP can be performed with a very low mortality and an acceptable morbidity. Compared with pancreaticoduodenectomy (PD), FP has favourable outcomes in terms of operation time, blood loss, morbidity, post-operative hospital stay, intensive care unit stay, and quality of life. FP has shorter operation time and lower morbidity in comparison to Beger procedure. But, long-term pain control and exocrine and endocrine dysfunctions are comparable between PD, Beger and FP. FP is technically easier than PD and Beger procedure. FP is thus a widely acceptable procedure for CP with enlarged pancreatic head in absence of a neoplasia. **Methods:** Prospective observational study conducted in R. D. GARDI MEDICAL COLEGE UJJAIN (M.P.) 1AUGUST 2018 TO 1 AUGUST 2019. The diagnosis of chronic pancreatitis was based on the findings of clinical history, physical examination and radiological investigation. Radiological investigation consisted of a combination of ultrasonography (US), computed tomography (CT) and MRCP.Surgically treated cases of Chronic Pancreatitis who underwent Frey's procedure and had minimum 3 months and maximum 12 months of follow up were included in the study A total number of 17 patients were studied in one year. **Results:** Post-operatively all patients were asked to classify their pain as mild, moderate and severe or no pain. Patients were also asked to repeat endocrine and exocrine function tests. Only patients with at least 12 months of post-operative follow-up were included. At the time of the last follow-up visit, 91%(n = 15) of patients described complete pain relief, 7% (n = 2) described occasional episodic pain but did not take analgesics routinely. Only one patient had pain recurrence 1year after surgery; he had been abusing alcohol and drugs. **Conclusions-** The results of the study confirmed that local resection of the head with longitudinal pancreatojejunostomy as proposed by Frey has high effectiveness in the treatment of pain in long-term follow-up, combined with little interference in the disease course (endocrine and exocrine function).Frey's procedure should be considered as the primary operation in patients with disabling pain as a result of CP because it is safer, easier and presents less morbidity and mortality than alternative techniques.

KEYWORDS

Chronic pancreatitis, Frey procedure, Surgery, Outcome,

INTRODUCTION

Chronic pancreatitis (CP) is defined as an inflammatory disease of the pancreas characterized by persistent and often progressive fibrosis and irreversible morphological changes, leading to epigastric pain and/or exocrine and endocrine insufficiency.

Classical triad of Chronic Pancreatitis includes:

Abdominal pain Exocrine pancreatic insufficiency (steatorrhea, weight loss, deficiency of fat-soluble vitamins)Diabetes. Chronic pancreatitis (CP) is defined as an inflammatory disease of the pancreas characterized by persistent and often progressive fibrosis and irreversible morphological changes, leading to epigastric pain and/or exocrine and endocrine insufficiency.

Classical triad of Chronic Pancreatitis includes :Abdominal pain, Exocrine pancreatic insufficiency (steatorrhea, weight loss, deficiency of fat-soluble vitamins),Diabetes.

The management of patients with chronic pancreatitis remains a challenge because of the limited understanding of the pathophysiological process of the disease, the unpredictability of clinical evolution and the controversies between diagnostic criteria and therapeutic options.

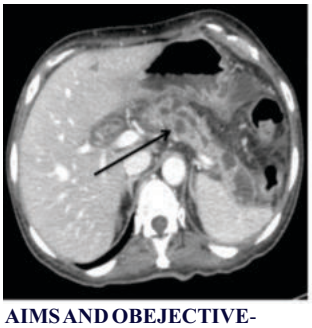
Worldwide the main aetiological factor is alcohol abuse, and the most common symptom is relentless chronic abdominal pain. After optimization of symptoms with analgesics and enzyme supplementation, patients with persistent symptoms are candidates for invasive treatments Previous studies have shown that surgical treatment of chronic pancreatitis reduces pain and subsequent complications, so that patients return to their prior work activities as well as improved quality of life.

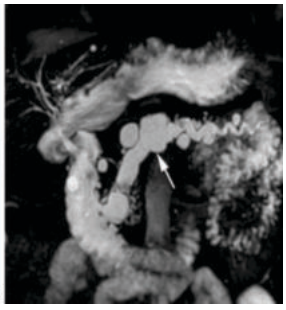
Diagnosis-

The diagnosis of chronic pancreatitis based on the findings of clinical history, physical examination and radiological investigation. Radiological investigation consisted of a combination of ultrasonography (US), computed omography (CT), magnetic resonance (MR) or endoscopic retrograde cholangiopancreatography (ERCP).Irregular dilated MPD with pancreatic and intraductal calculi associated with atrophy of pancreas. A characterstic "*chain of lakes"* of main pancreatic duct seen in these patients.

Exocrine pancreatic insufficiency defined as the presence of more than 10 g of fat in faeces collected for 3 days after ingestion of 100 g of fat per day during this same period.

Endocrine pancreatic insufficiency was determined according to the American Diabetes Association, which determines the diagnosis of diabetes for glucose levels >126 mg/dl and glucose intolerance for levels between 100 and 126 mg/dl.





AIMS AND OBEJECTIVE-

TO study outcome in patients of chronic pancreatitis undergoing frey's procedure in our institute.

Inclusion Criteria:

Patients coming with chronic pancreatitis undergoing frey's procedure.

Exclusion Criteria:

Patients of chronic pancreatitis managed by other Modalities

Obejective-
TO study outcome in patients of chronic pancreatitis undergoing frey's procedure in our institute.

METHODOLOGY-
Prospective observational study conducted in our institute.The diagnosis of chronic pancreatitis was based on the findings of clinical history, physical examination and radiological investigation. Radiological investigation consisted of a combination of ultrasonography (US), computed tomography (CT) and MRCP. Surgically treated cases of Chronic Pancreatitis who underwent Frey's procedure and had minimum 3 months and maximum 12 months of follow up were included in the study. A total number of 17 patients were studied in one year.

Indication of Surgery-
- Intractable pain .
- Intractable pain with pseudocyst.
- Intractable pain with pseudoaneurysm .
- Dilatation of main pancreatic duct in CT scan.
- Calcifications in pancreas in CT scan.

Managment-
The management of CP requires multidisciplinary approach involving pain management specialists, gastroenterologist, radiologist, surgeons, dietitian and psychiatrists. Gastroenterologists usually opt for endoscopic treatment before considering surgical treatment as it is less invasive and without major complications. Endoscopic treatment is warranted in patients with CP who have intraductal stones in the region of the pancreatic head, main pancreatic duct (MPD) stricture, and symptomatic pseudocyst.

As endoscopic treatment requires frequent hospital admissions, inadequate pain relief, increasing the risk opioids dependence and most importantly rural located populations, surgical option preferred more often as compared to repeated endoscopic therapy.Surgical treatment can improve the quality of life of patients not only by **relieving** pain and retaining the internal and external secretion of pancreatic function but also by effectively removing the risk factors for cancer.

Frey's procedure is a surgical technique used in the treatment of chronic pancreatitis in which the diseased portions of the pancreas head are cored out. A lateral pancreaticojejunostomy (LRLPJ) is then performed in which a loop of the jejunum is then mobilized and attached over the exposed pancreatic duct to allow better drainage of the pancreas, including its head.

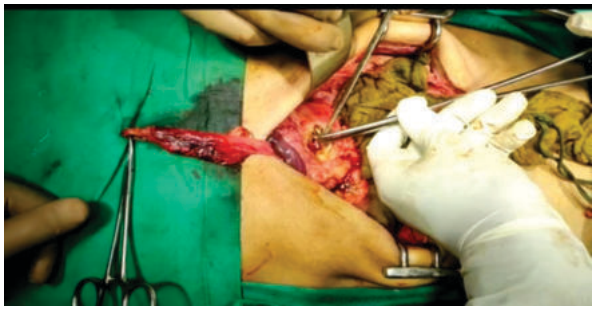
Frey's procedure was first described by Frey and Smith in 1987 which is a hybrid procedure that includes resection of the head of the pancreas anterior aspect (coring) combined with drainage of the MPD using longitudinal pancreatojejunostomy.

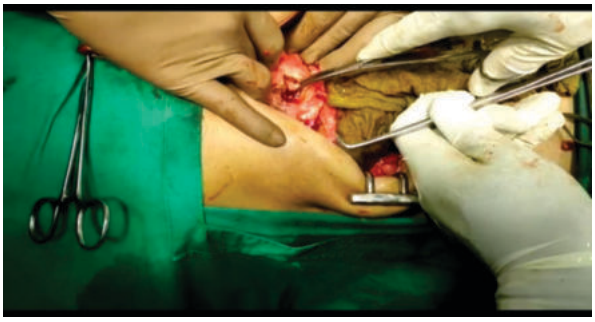
Surgical procedure entails midline laparotomy with a careful assessment followed by ligation of right gastroepiploic vessels and full exposure of the anterior surface of the pancreas from head to tail. After confirming the dilated MPD by fineneedle puncture or occasionally by ultrasonography.

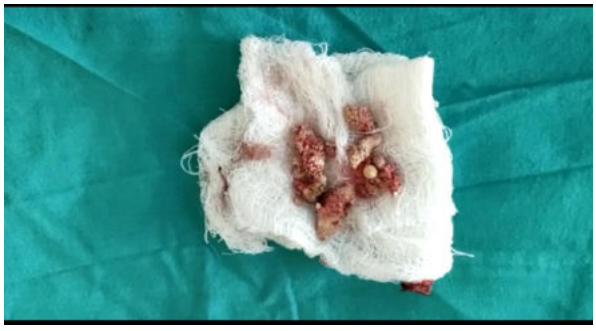
MPD is fully incised from anterior aspect approaching from tail up to head. Anterior branch of the gastroduodenal artery is ligated and hemostatic suture placed over, maximum coring (excision) of pancreatic parenchyma in the head & uncinate region is done leaving a thin rim of tissue around duodenum. Stones cleared from duct and parenchyma in the head region along with all parenchymal calcifications.

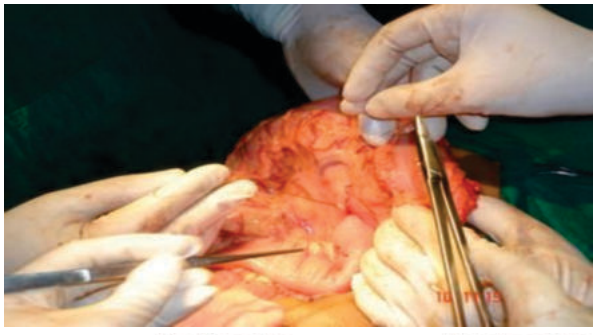
After this jejunum is dissected 20 cm distal to Treiz ligament and opened up longitudinally along the antimesenteric side, and longitudinal side- side pancreatojejunostomy is performed by nonabsorbable monofilament suture, followed by end-side jejunojejunostomy.

Careful hemostasis is very important in the Frey's procedure following which a single abdominal drain is kept. It is advised that to prevent recurrence, complete decompression of the pancreatic ducts in the head of the pancreas and full-length drainage of the MPD from the head to the tail is the most important part of the surgery.

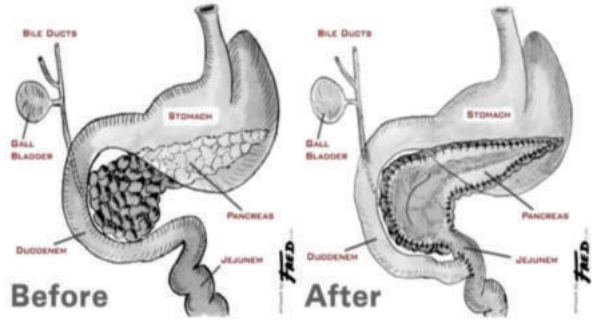








Frey Procedure Frey Procedure



RESULT-
1. Intraoperative-

MPD diameter	11+_2.0mm
Ductal stone (multiple)	15 (n=17)
Parenchymal calcification	12 (n=17)
Bulky head	16 (n=17)

2. POST OPERATIVE COMPLICTIONS -

COMPLICATION	NUMBER OF PATIENTS (n=17)
Haemorrhage	2
Pancreatic leak	1
Biliary leak	0
Intraabdominal abscess	2
Wound infection	2
Pneumonia	0
Ileus	3
Intestinal obstruction	1
Biliary stenosis	1

3. Outcome-

	PREOPERATIVE	POSTOPERATIVE
Pancreatic function		
Diabetes mellitus	7/17	5/17
steatorrhea	2/17	2/17
Pain	17/17	2/17

Post-operatively all patients were asked to classify their pain as mild, moderate and severe or no pain. Patients were also asked to repeat endocrine and exocrine function tests. Only patients with at least 12 months of post-operative follow-up were included. At the time of the last follow-up visit, 91%(*n* = 15) of patients described complete pain relief, 7% (*n* = 2) described occasional episodic pain but did not take analgesics routinely. Only one patient had pain recurrence 1year after surgery; he had been abusing alcohol and drugs.

Seven of 17 patients with pre-operative diabetes maintained glycaemic control with the same treatment before surgery whereas five patients required an escalation in their treatment.

The effect of exocrine insufficiency of the patients who presented pre-operatively with exocrine insufficiency at surgery (*n* = 2) required an escalation in the dosage of supplemental enzymes. The overall morbidity rate was 28.7% (*n* =9).

There was one patient with pancreatic leak treated conservatively with total parenteral nutrition and antibiotics. Two reoperations as a result of bleeding were performed, the first one was in post-operative day 2 because of bleeding in the retroperitoneum, and the other one was in post-operative day 6 because of bleeding from the pancreatic excised head (no fistula). In these two patients the pancreatojejunostomy was taken down, the haemorrhage controlled and anastomosis was redone. One patient developed stenosis of the distal biliary tract which was treated endoscopically.

Postoperative ileus was the most frequent minor complication. There were no deaths. The median hospital stay was 10 days. While analysing intra- operative intercurrences were associated with increased post-operative complications and infections.

CONCLUSION-

The results of the study confirmed that local resection of the head with longitudinal pancreatojejunostomy as proposed by Frey has high effectiveness in the treatment of pain in long-term follow-up, combined with little interference in the disease course (endocrine and exocrine function).Frey's procedure should be considered as the primary operation in patients with disabling pain as a result of CP because it is safer, easier and presents less morbidity and mortality than alternative techniques.

Declarations

Conflict of interest: None

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Ethical approval: approved

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