

# Our Experience with Surgical Treatment for Tropical Chronic Pancreatitis (TCP) in a Tertiary Care Hospital in Odisha.

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## ABSTRACT

**Background:** Tropical Chronic Pancreatitis (TCP) is a form of chronic calcific non-alcoholic pancreatitis seen mostly in developing tropical countries. This article gives an account of experiences with surgical management of TCP. **Methods:** Out of 454 patients of Tropical Chronic Pancreatitis (TCP), 98 patients have undergone surgical procedures according to the stage of the disease. In most of the cases, pain unresponsive to medical treatment seems to be the very important feature (98%). **Results:** It was evident that in most of the cases the presenting feature was pain with/without diabetes and a significant percentage of patients (74%) were found between 21 years to 50 years of age denoting that the disease affected during the prime period of life. Out of 454 numbers of patients of TCP referred to our department within a period of about sixteen years, 98 patients required surgical operations. However, in majority of cases who had undergone surgery, uncontrolled pain was the main complain. **Conclusion:** Frey's procedure is the best surgical option for TCP amongst other drainage procedures.

**Keywords:** Pancreatitis, Tropical, surgical.

## INTRODUCTION

Tropical Chronic Pancreatitis (TCP) is a form of chronic calcific non-alcoholic pancreatitis seen mostly in developing tropical countries.<sup>[1]</sup> When Diabetes is added to this condition, it is termed as Fibro-calculous Pancreatic Diabetes (FCPD) which is considered as later stage of TCP.<sup>[2]</sup> But many surgeons and physicians use the term TCP and FCPD synonymously. Although pancreatic calculi are the hallmark of TCP, there are other distinctive features like younger age of onset, aggressive disease course and high propensity of developing pancreatic cancer. The patients of TCP usually present at a younger age with features of abdominal pain, steatorrhea, emaciation and protein calorie malnutrition.<sup>[3]</sup>

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Diabetes when associated with TCP, it is diagnosed as FCPD as stated earlier and it is classified by the American Diabetes Association under the broad

category of other specific type of Diabetes. The most prominent characteristic feature of patients of FCPD is that despite requiring insulin for control, they rarely develop ketosis on withdrawal of insulin. In certain situations, TCP is misdiagnosed as Alcoholic Chronic Pancreatitis.<sup>[4]</sup>

## MATERIALS AND METHODS

A study was undertaken in the department of Surgical Gastroenterology, SCB Medical College & Hospital, Cuttack (Odisha) from 2000 to 2016 where total number of 454 patients of TCP being referred from Physicians, Gastroenterologists and General surgeons had been treated. Cases of chronic alcoholic pancreatitis were excluded in the present study although history of occasional intake of alcohol was found among 36 cases (7.92%) out of total number of cases in this series. Besides clinical history and physical examination, all these patients were sent for routine haematological and biochemical tests like LFT, FBS, PGBS-2 hours, serum Amylase, Lipase, Albumin, total protein, Urea, Creatinine & Calcium estimation in addition to ultrasonographic evaluation of abdomen. Except impaired GTT in 45 number of cases (10%) and

Diabetes in 50 number of cases (11.01%), all other biochemical and haematological parameters were found within normal limits. Although therapeutic endoscopic procedures like endoscopic dilatation, stenting and extraction of calculi from the dilated main pancreatic duct and extra corporeal shock wave lithotripsy are being employed in recent years for the treatment of TCP still then more number of patients are showing recurrence with distressing features of chronic pancreatitis requiring either second endoscopic procedure if feasible or surgical intervention as a means of relatively definitive treatment.<sup>[5]</sup> Moreover, due to paucity of skilled endoscopists in many centers of our country in addition to endoscopic procedural failures resulting from advanced disease in the pancreas, surgical treatment remains to be an important option of therapy in TCP.

In general, the following conditions require surgical intervention. 1. Intractable pain and failure of medical management, 2. Pain associated with Multiple ductal calculi, 3. Multiple ductal strictures with Ductal obstructions, 4. Pancreatitis associated complications like stenosis of distal CBD, Duodenal obstruction and left sided Portal Hypertension, 5. Pancreatic head mass, 6. Large Pancreatic Pseudocyst, 7. Progressive ill-health with malnutrition. Different surgical procedures are available for treating patients with different pathological changes of pancreas and its complications. They are broadly categorised as follows.

#### 1- Drainage Procedures:

- Caudal Pancreaticojejunostomy (DuVal's Procedures).
- Longitudinal Pancreaticojejunostomy (Partington & Rochelle's Procedures)
- Lateral Pancreaticojejunostomy with resection of the tail of pancreas and the spleen (Puestow & Gillesby's Procedures)

#### 2- Extended Drainage Procedures:

- Longitudinal Pancreaticojejunostomy with pancreatic head coring (Frey's Procedures)
- Pancreaticojejunostomy following longitudinal V-shaped excision of ventral pancreas (Izbicki's Procedures)

#### 3- Resectional Procedures:

- Classical pancreaticoduodenectomy (Whipple's Procedures)
- Pylorus preserving pancreaticoduodenectomy (Longmire & Traverso's Procedures)
- Duodenum preserving pancreatic head resection (Beger's Procedures)

#### 4- Surgery for Pancreatitis associated complications

- Cysto-jejunostomy
- Cysto-gastrostomy
- Cholecysto- jejunostomy etc.

## RESULTS & DISCUSSION

The mode of presentations of the patients with TCP is shown in [Table 1].

**Table 1: Mode of Presentation.**

Symptoms	Number of patients	Percentage
Pain	445	98
Diabetes	50	11
Steatorrhoea	9	2
Jaundice	18	4
Pseudocyst	22	5
Ascites	4	1
Malignancy	13	3

From the above [Table 1], it was evident that in most of the cases the presenting feature is pain with/without diabetes and a significant percentage of patients (74%) are found between 21 years to 50 years of age denoting that the disease affects during the prime period of life. [Table 2] In our study, males are more affected than females as evident from Table 3.

**Table 2: Age-wise distribution of patients.**

Age (Yrs)	Number of Patients	Percentage
<10	4	1
11-20	55	12
21-30	136	30
31-40	123	27
41-50	77	17
51-60	45	10
>60	14	3

**Table 3: Sex-wise distribution of patients.**

Gender	Numbers	Percentage
Males	355	78.2
Females	99	21.8
Total	454	100

### Basis of Surgical Treatment

Out of 454 numbers of patients of TCP referred to our department within a period of about sixteen years, 98 patients required surgical operations as detailed in Table 4. However, in majority of cases who had undergone surgery, uncontrolled pain was the main complain.

**Table 4: Procedures done.**

Procedures	No. of patients	Percentage
Partington & Rochelle	17	17.34
Frey	51	52.04
Whipple	4	4.08
Cysto – gastrostomy	14	14.28
Cysto - jejunostomy	6	6.12
Cholecysto-jejunostomy	2	2.04
Others (For GI Bleed, Int.Obst.,Hollow viscera perforation etc.)	4	4.08
Total	98	—

From the Table 4, it is evident that Frey's procedure is the commonly adopted procedure (52.04 %) although resectional procedure (Whipple's) has been done in 4.08% of cases due to pancreatic head mass. Cysto-gastrostomy (14.28 %) and Cysto-jejunostomy (6.12%) have been done for pancreatic pseudocyst. Moreover, Cholecysto – jejunostomy (2.04%) has been performed for surgical obstructive jaundice associated with TCP

The aims of any treatment should be to remove the cause, arrest the progression of disease and relieve the deleterious symptoms. Hence importance is given for early diagnosis to prevent disease progression by suitable treatment and determination of cause by appropriate investigations. Since the aetiology and the natural course of TCP are unclear, optimization of therapy remains difficult. However, certain aspects of this distressing disease (like

abdominal pain, pancreatitis associated complications involving adjacent organs) should be addressed effectively with preservation of exocrine as well as endocrine pancreatic functions.

Surgery in TCP is mostly palliative in nature. But it gives long term control of pain which is unresponsive to medical treatment and control of disease complications along with improvement of quality of life of patients. Hence it is quite necessary to select a procedure which is effective and long lasting.<sup>[6]</sup> In our series, there is no substantial relief of pain in 30% of cases following Longitudinal Pancreatico- jejunostomy (Partington & Rochelle) and hence in subsequent years Extended Drainage Procedure like Longitudinal Pancreatico – jejunostomy with Pancreatic head coring (Frey) has been adopted [Table-5].

**Table 5: Results of Various Procedures.**

Result	Partington & Rochelle (Total no.= 17)	Frey (Total No. = 51)	Whipple (Total =4)	Cysto- gastrostomy (Total No=14)	Cysto- jejunostomy (Total No=6)	Chole cysto Jejunostomy (Total no. =2)
Pain Relief	12/17 (70%)	47/51 (92%)	4/4	8/14	4/6	2/2
Morbidity	1/17	1/51	2/4	0/14	0/6	0/2
Mortality	0/17	0/51	1/4	0/14	0/6	0/2
Exocrine Insufficiency	0/17	0/51	2/4	0/14	0/6	0/2
Endocrine insufficiency	4/17	6/51	2/4	0/14	0/6	0/2
Quality of life	Good	Very Good	—	—	—	—

In Fray's procedure, relief of pain is noted in 92 % of patients with fairly lasting effect which is revealed by subsequent follow up.<sup>[7]</sup> there is also significant improvement of quality of life of patients receiving the same procedure in comparison to other surgical procedures.<sup>[8]</sup>

Whipple's procedure done for TCP with head mass in our series, is unsuitable for routine application in all cases of TCP due to its high morbidity & mortality.

Although there is no significant improvement in diabetic status of patients, there is no emergence of new cases of diabetes following drainage procedures.

## CONCLUSION

In our opinion, Frey's procedure is the best surgical option for TCP amongst other drainage procedures. However, pancreatic head mass in TCP requires Whipple's procedure.

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