

Chapter 25

**Surgery in chronic pancreatitis - the Chandigarh
experience**

Wig J D, Yadav TD, Gupta R, Gupta V

Summary

We discuss our experience with surgery for chronic pancreatitis. At our center the morbidity of surgical therapy is about 7%. There has been no mortality thus far. Surgery is an effective mode of therapy, and in our experience, Frey's operation gave good results. The choice of the operative procedure should be adopted individually for each patient depending on the clinical profile, particularly important considerations being morphological preservation of pancreatic tissue, obtaining relief of pain and minimizing the risk of bleeding complications.

Introduction

Chronic pancreatitis (CP) is a complex disease characterized by a progressive inflammatory disease of the pancreas often associated with complications. The advantages of surgical intervention are: relieves pain which is the most distressing symptom, drains all components of a chain of lakes pancreatic duct (PD), removes pancreatic ductal stones which are densely adherent to the duct wall, deals with complications of CP and is the final modality to diagnosis or rule out malignancy.

Indications for operative treatment- our experience

The indications for surgery in our experience are: intractable pain not alleviated by medical therapy, calculi in the pancreatic ductal system, head mass, with suspicion of malignancy and complications such as non-resolving biliary or duodenal obstruction, pseudocysts, pancreatic fistula, and left sided portal hypertension

Problems in surgical management

No single operation addresses all the structural abnormalities and complications associated with CP. When pain is the only symptom, selecting an operation is challenging.

Important steps in technique adopted

The goal of surgical treatment is preservation of exocrine and endocrine pancreatic function, pain relief, better long-term outcome, and

improvement of patient's quality of life. To achieve adequate pain relief it is important not to leave undrained any part of the obstructed ducts containing stone material, mainly in the head of the pancreas. A number of studies have shown that pancreatic head is the pacemaker of the disease in most patient with CP.

Local resection of the head of the pancreas combined with longitudinal pancreaticojejunostomy (LPJ) (Frey's procedure) has been our procedure of choice with good results in achieving pain relief. Important steps of the operation include:

- i) Resection of diseased tissue in the head of the pancreas and opening the main duct in the neck, body, and tail of the pancreas. Slices of pancreatic tissue are removed while coring out the head and uncinete process. We assess the thickness of remaining pancreas by palpation after Kocherization of the duodenum.
- ii) All the ducts in the head of the pancreas are decompressed- the duct of Santorini, the duct to the uncinete and the duct of Wirsung and the tributaries associated with all the three ducts in the head of the pancreas. Unsuccessful operation is due to failure to address disease in the duct of Santorini and the duct to the uncinete and tributary ducts.
- iii) Pancreatic head is resected nonanatomically leaving a rim of pancreatic tissue adjacent to the portal and mesenteric veins. It does not necessitate transection of the gland above the portal vein and thereby minimizes the risk of bleeding complication.
- iv) A minute portion of the pancreatic tissue along the medial wall of the duodenum and to the left of the intrapancreatic portion of the common bile duct is preserved. The location of the common bile duct is ascertained by palpation. We have not found it necessary to perform a choledochotomy and stenting for this maneuver.
- v) It should be possible to pass a probe freely into the duodenum through the duct of Wirsung opened close to the ampulla.
- vi) Leaving the posterior capsule of the pancreatic head intact permits drainage of the head of the pancreas in continuity with the Roux-en-Y

limb used to drain the body and tail of the pancreas. Thus only one anastomosis to a Roux-en-Y limb suffices.

- vii) In a patient with small duct disease, a longitudinal V- shaped excision of the ventral part of the pancreas into the pancreatic duct (Izbicki's modification of Frey procedure) has been found effective and allowed an efficient pancreaticojejunostomy. This was performed in one patient in the present study. Main duct was decompressed and Roux-en-Y limb was sewn to the capsule of the pancreas.
- viii) Local resection of the head of the gland removes diseased tissue associated with the ducts and their tributaries in the head of the pancreas.
- ix) LPJ drainage addresses the problems of obstructing calculi and strictures in the main pancreatic duct only. The advantage of this procedure is that pancreatic tissue in the neck, body and tail of pancreas is preserved.
- x) The cored out tissue is subjected to histopathological examination. This procedure provides sufficient material to rule out malignancy on histopathological examination.
- xi) When the coring out process was complete, we were able to palpate a shell of pancreatic tissue between the index finger held behind the head of the pancreas and the thumb in the cored out head of the pancreas. We prefer to employ cautery to accomplish head coring.
- xii) Side to side Roux-en-Y pancreaticojejunostomy is constructed.
- xiii) End to side jejunojejunostomy is placed approximately 40 cm below the pancreaticojejunostomy.

Complications of chronic pancreatitis

In our series, we encountered common bile duct stricture, duodenal obstruction, vascular abnormalities (splenic vein thrombosis with portal hypertension, pseudoaneurysms), and pancreatic ascites. One of our patients after head coring and extended drainage turned out to have a pancreatic carcinoma on histopathological examination.

Our experience

Thirty patients were seen in a two year period -24 males and six females, mean age was 38 years (15- 66). Alcohol abuse was present in 58% and cause could not be determined in 30%. Intractable abdominal pain was present in 90% of patients. Two patients had jaundice and five had portal hypertension. Six patients were diabetic at the time of presentation, weight loss was present in 14 patients, steatorrhea in nine, pseudocyst in seven, and duodenal dystrophy in one.

Investigations

Imaging studies: X-ray abdomen showed calcification in nine patients. Contrast enhanced tomography scan was done in all patient and showed calcification in 26 patients. In most of our patients, calcification was predominantly in head and uncinata process. Dilated pancreatic duct was present in 29 patients. Associated pseudocyst was found in seven, and portal vein obstruction in five. Endoscopic pancreaticography was performed in five patients (ERCP) and magnetic resonance cholangio pancreaticography (MRCP) in five patients. ERCP showed deformed papilla in one and narrowed papilla in another patient, mild narrowing at D1 and D2 segment was present in one patient, dilated MPD with short segment of ventral duct was present in one suggestive of pancreas divisum, deformed and strictured MPD with leak from side branch was found in one patient with evidence of stones in MPD and side branches also. Endopancreatic stenting has been done in one patient.

MRCP showed grossly dilated MPD with stones in three patients, atrophic pancreas in one and disease confined to only head area including uncinata process in two patients. Dilated PD with stricture with evidence of large pseudocyst was found in one patient.

Operative procedures performed

Frey's procedure was performed in 14 patients, Izbicky's in one, head excavation in one, lateral pancreaticojejunostomy (LPJ) in one and distal pancreatectomy with devascularization procedure was performed in one patient.

Additional procedures

Roux-en-Y hepaticojejunostomy was performed in four patients, splenectomy in two, choledochojejunostomy in one, cholecystojejunostomy in one, cystogastrostomy in one, cysto pancreaticojejunostomy in one, and gastrojejunostomy in one patient. In four patients with portal hypertension no additional procedure was performed, two of these were diagnosed on operation table and the procedure was deferred. Two patients had associated biliary stricture and Roux-en-Y hepaticojejunostomy was done. One patient had chronic pancreatitis with biliary stricture and only choledochojejunostomy was done because she did not have pain.

Morbidity and mortality

Total morbidity was 7%. One patient had intraabdominal bleed associated with upper gastrointestinal bleed. He was managed conservatively with blood transfusion and injection Octreotide 100 μ g subcutaneously thrice a day. Average hospital stay was 8.3 days (range 5-13 days). There was no mortality in our series.

Conclusion

In our experience Frey's operation gave good results. However, the choice of the operative procedure should be chosen- individually for each patient depending on the morphological preservation of pancreatic tissue, the need for pain relief always aiming to minimized risk of bleeding complication.