

## CASE REPORTS

### Review of anatomy in managing complications of chronic pancreatitis-case report

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#### Abstract

The main problem of chronic pancreatitis is managing the chronic pain. When pharmacological means fail, ablative procedures like coeliac plexus ablation or bilateral splanchnicectomy becomes necessary. These procedures are designed based on anatomy. Pancreatic duct and common bile duct obstruction are known complications of chronic pancreatitis and methods of treatment are essentially based on interpretation of images. We present a case history of a patient with chronic pancreatitis who underwent bilateral thoracoscopic splanchnicectomy and later laparoscopic cholecysto-jejunostomy for common bile duct obstruction.

The importance of anatomy in diagnosis and treatment are highlighted.

#### Introduction

In chronic pancreatitis there is calcification and fibrosis of the gland (1). The main presentation is due to pain which is sensed by the splanchnic nerves. In addition there is loss of endocrine and exocrine function due to fibrosis and atrophy of gland. Fibrosis can cause obstruction of the pancreatic

duct which aggravates pain and functional impairment. As distal common bile duct travels through the pancreas gland it may also get involved in fibrosis leading to obstruction (1).

Bile duct stricture (also called biliary stricture) is an uncommon but challenging clinical condition. Most benign bile duct strictures are iatrogenic, resulting from operative trauma (2). Bile duct strictures may be asymptomatic but, if ignored, can cause life-threatening complications, such as ascending cholangitis, liver abscess, and secondary biliary cirrhosis (3,4). The common bile duct (CBD) and the ventral portion of the pancreas have a close relationship as both develop from the same anlage. In about 80 to 85 % of people, the lower CBD traverses the pancreatic head, and in 15 to 20 % cases, it is adjacent to the posterior surface of the pancreatic head (5). Thus, the lower bile duct may be involved in neoplastic as well as inflammatory processes of the pancreatic head. The stricture of the lower common bile duct in chronic pancreatitis is not rare. The reported incidence ranges from 3 to 46 % [6–13]. But symptomatic stricture develops in about 10 % of cases [14]. CBD stricture in chronic pancreatitis may be due to edema, pseudocyst



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formation, and encasement of the bile duct by fibrous processes. Management of such stricture is a matter of controversy. Once the patient develops symptoms related to biliary obstruction, some form of biliary drainage is necessary (15-17). Options for biliary drainage include endoscopic stenting and operative bypass (18). Stricture resolution was observed in the long term in 12 to 38 % of patients (19-23). In the long run, two thirds of the patients require surgical intervention for persisting stricture after stent removal. Repeated stent changing or use of metallic stent for this benign disease is associated with numerous hospital admissions and substantial morbidity. Currently, stenting is at best a temporizing procedure particularly for cholangitis. On the other hand, surgery offers long-term relief of symptoms related to biliary obstruction. So, surgery is the best option in good-risk patients, keeping endoscopic stenting for patients with serious comorbid conditions or those unwilling to undergo surgery.

Management of pancreatic pain is challenging, many not responding to oral analgesics and may get dependent to narcotics. In such situations splanchnicectomy provides satisfactory and long standing pain relief (24).

We present a case report of patient who underwent thoracoscopic splanchnicectomy for relief of pain and subsequently laparoscopic cholecysto-jejunoscopy for obstructive jaundice. In both interventions understanding anatomy is the key for successful performance of procedure.

## **Case Report**

38 year old male presented with episodic severe epigastric pain during past six months. He also had dyspeptic symptoms during past ten years. Analyzing symptoms anatomically pain has to be from a foregut structure. As the pain was radiating to back with relief from bending forwards it was more suggestive of pancreatic origin. He had diabetes which too favored chronic pancreatitis. He was used to consume alcohol a known etiological factor. Examination was unremarkable except mild epigastric tenderness. Ultra-sound scan of abdomen revealed chronic pancreatitis. Contrast enhanced computerized tomogram(CECT) confirmed the diagnosis. His pain was treated with multiple analgesics.

As the response to analgesics was poor he was planned for bilateral thoracoscopic splanchnicectomy. At thoracoscopy anatomy of the splanchnic nerves were identified. Nerve trunks were divided with diathermy hook. This provided a good pain relief with reduction for need of analgesics.

About one year later he presented with obstructive jaundice. Most likely anatomical site of the extra-hepatic bile duct obstruction was the intra-pancreatic part due to fibrosis by chronic pancreatitis, which was confirmed by imaging. Placement of a stent via the ampulla of Vater was attempted by endoscopically which failed. Therefore a biliary by pass was planned. Looking at the anatomy of the

obstructed system on CECT it was decided to perform a cholecysto-jejunoscopy, laparoscopically. At laparoscopy transverse colon was lifted up to identify the duodeno-jejunal flexure and jejunum traced down to identify a suitable loop. A loop cholecysto-jejunoscopy was performed.

## **Discussion**

Management of pain in chronic pancreatitis is challenging. In patients with a poor response to pharmacological treatment nerve ablation procedures need to be considered (24). The options according to nerve supply are either coeliac plexus ablation or bilateral splanchnicectomy(25). In the patient presented the latter was selected and produced a good pain relief. By performing by thoracoscopy other than a huge reduction of morbidity of bilateral thoracotomy, identification of the splanchnic nerves is easy due to the magnified clear image (26).

Biliary strictures as a consequence of CP have long been recognized. After pseudocyst formation, bile duct stricture is the second most common complication in CP. It is most commonly found in chronic pancreatitis with inflammatory head mass or when there is dense calcification in the pancreatic head (27). Noninvasive imaging of the hepatobiliary tree is important in evaluating a patient with presumed biliary tract obstruction. Ultrasonography will demonstrate bile duct obstruction in 80 % of cases (28).

The definitive evaluation of biliary obstruction can be done by cholangiography. ERCP or MRCP can outline both the pancreatic duct and bile duct. ERCP is more important when endoscopic stenting and brush cytology are required. Asymptomatic patients can be managed conservatively and monitored by 6-monthly liver function tests and biliary ultrasound. As there is no reliable means for predicting progression to secondary biliary cirrhosis (3), biliary drainage is indicated when the patients have symptomatic biliary stricture. Biliary drainage can be achieved by ERCP with stenting, percutaneous transhepatic biliary drainage, or surgery. Long-term success rate of surgery (failure rate <3 %) is much higher than that in endoscopic stenting (29). So, we think that surgery should be offered to all good-risk patients with symptomatic biliary obstruction. In the patient discussed ERCP and stent insertion failed and cholecysto-jejunoscopy was done.

## **Conclusion**

Anatomy plays a key role in making a clinical diagnosis, interpretation of anatomy and surgical treatment which is illustrated by the patient who had chronic pancreatitis and needed surgical treatment for relief of pain and obstructive jaundice

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