

Case Report

Chronic Calcific Pancreatitis in a 9-Year-Old Boy

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Abstract

Chronic pancreatitis is defined as continuing inflammatory disease of pancreas, characterised by irreversible morphological changes leading to pancreatic insufficiency. Chronic pancreatic insufficiency without pancreatitis is also seen in children suffering from cystic fibrosis which is a disease with congenital enzyme deficiency. Mean age of chronic pancreatitis is about 40 years. We present a case of a 9-year-old boy who was diagnosed as a case of chronic calcific pancreatitis. He was admitted with the complaints of paraumbilical pain and vomiting and was found diabetic. Diagnosis was established by X-ray, USG and CT scan of abdomen and ERCP. He was treated surgically in the form of lateral pancreaticojejunostomy (Puestow's procedure).

Key Words: Calcific pancreatitis, Children

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Introduction

Chronic pancreatitis is a disease of unknown aetiology, but multiple factors are involved in the aetiopathogenesis of the disease. No exact statistics on incidence and prevalence of this disease is available. It commonly affects younger people. Though presentation is variable, pain is the major initial symptom in over 90% of patients.¹

Regner de Graaf in 1664 made the first reference to pancreatic lithiasis. Later Baron had shown the relation of islets of Langerhans to diabetes with special reference to the cases of pancreatic lithiasis.²

Pain may vary in degree from mild to severe form and characteristically it is sudden in onset. The patient tends to bend forward to obtain relief of pain. Pain is usually located in the mid epigastrium³, but can occur or radiate anywhere. Sometimes

it may be diffuse or entirely confined to the back. Other symptoms are nausea, vomiting, jaundice, weight loss, malabsorption, diabetes etc. Enzyme deficiency leads to steatorrhoea and malnutrition and insulin deficiency leads to diabetes. The diagnosis of chronic pancreatitis depends on history, physical examination and some investigations. The common investigations are plain X-ray abdomen in anteroposterior view, ultrasonography of hepatobiliary system and pancreas, ERCP, liver function tests and CT scan of abdomen etc.

The patients of chronic pancreatitis are managed by both surgical and medical treatment. Exocrine and endocrine deficiencies are managed by medical treatment. The surgical management is the treatment of choice in chronic pancreatitis with pancreatic calculi. Incapacitating pain is the primary indication for operation in these patients.³ Various surgical procedures have been proposed to correct this problem, but only decompression of pancreatic duct and resection of pancreatic tissue are widely accepted.⁴ There are two operations commonly performed for relief of pain – one is parenchyma saving drainage procedure which aims to reduce duct pressure and another is to remove the inflammatory,

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cystic or fibrotic tissue which is thought to be the origin of pain. Drainage should be done if the pain is due to obstruction and pressure is raised within the pancreatic duct.⁵ If the site of disease are in the small ducts and parenchymal tissues, resection of a portion or whole of the pancreas may be necessary to control pain. Pancreatic duct drainage is usually done in patients with dilated pancreatic duct and thus exocrine and endocrine functions could be preserved.

Case Report

A 9-year-old boy had presented with history of paraumbilical pain since 3 years. The pain was intermittent, colicky in nature lasting for about 5-7 days and occurring 3-4 times a year. Pain was radiating to the back and was associated with vomiting. The patient had history of weight loss. He was diabetic. He did not have any family history of similar complaints. On examination, he was a very lean built boy with gross pallor. Per abdominal examination revealed localized rigidity in the epigastrium.

Radiography of abdomen revealed radioopaque shadow in the region of pancreas and the left kidney. Ultrasound confirmed the diagnosis of pancreatic calculi with dilated pancreatic duct (11 mm) and areas of calcification in the head of the pancreas. Endoscopic Retrograde Cholangiopancreatography (ERCP) showed ductal obstruction and CT scan of abdomen showed marked dilatation of the pancreatic duct. The blood examinations showed elevation of sugar and low haemoglobin. Hence a diagnosis of chronic calcific pancreatitis was done based on clinical findings and investigations.

He underwent Puestow's procedure (lateral pancreaticojejunostomy). During this operation pancreatic duct was found dilated and multiple calculi were removed from it. He had an uneventful recovery and showed marked symptomatic improvement. His weight increased steadily and his blood sugar became normal during his staying in the hospital. He was advised and discharged from hospital with counselling for regular follow-up. Three years

follow-up did not reveal any complication related to surgery except one episode of subacute intestinal obstruction which was treated conservatively.

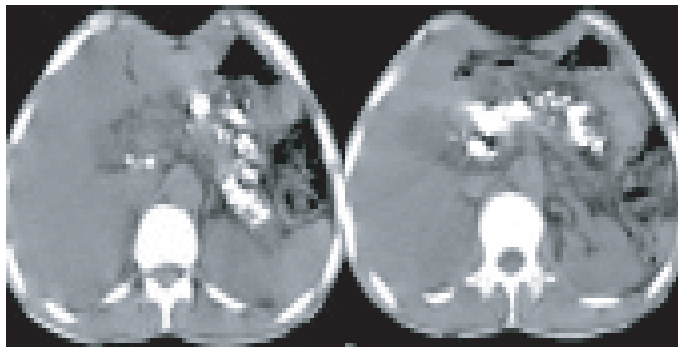


Fig 1. CT scan of abdomen showing multiple calcific foci involving entire pancreas

Discussion

Chronic pancreatitis is defined as continuing inflammatory diseases of pancreas, characterised by irreversible morphological changes and typically causing pain and/or permanent loss of function. The exact incidence of chronic pancreatitis in Bangladesh is not available. A recent Japanese study estimated a prevalence of 12 cases per 100,000 women and 45 cases per 100,000 men.⁵ Malabsorption and steatorrhea are late features in about 10 to 15 percent of patients with chronic pancreatitis.⁶

Though exact aetiology of tropical chronic pancreatitis is not known, malnutrition with protein deficiency, cassava (tapioca) toxicity, impaired immune response, viral infection and genetic susceptibility have been considered as various factors in the aetiopathogenesis.² Pain is due to increased duct pressure. Steatorrhea is due to exocrine deficiency and diabetes is due to insulin deficiency.

Treatment modalities of chronic calcific pancreatitis include control of diabetes, relief of pain with analgesics and coeliac plexus block, pancreatic enzyme replacements, endoscopic or surgical decompression of dilated ducts and removal of pancreatic calculi.⁵ Despite improvements in diagnostic and operative techniques, surgery for patients of chronic pancreatitis due to pancreatic calculi is still regarded at the end of the road and is largely reserved for the patients with complication or in whom medical management has failed. Surgical procedure for relief of pain in chronic pancreatitis is most likely to be effective than various endoscopic techniques.

The operation should be individualised. The aim should be adequate decompression of the whole pancreas. This can be achieved by lateral pancreaticojejunostomy if the pancreatic duct is dilated.⁸

Resection of head of the pancreas can be performed without resection of the duodenum either by Beger or Fery procedure. The remaining body of pancreas should be adequately drained by lateral pancreaticojejunostomy if there is stricture of the main pancreatic duct. Gastric outlet obstruction is usually relieved by an adequate head resection even with preservation of the duodenum. However in case of duodenal involvement, the surgeon can perform a formal pancreaticoduodenectomy.⁸

Therapeutic indications for ERCP include treatment of symptomatic stones, strictures, and patients without pancreatic duct dilatation. Ductal decompression by sphincterotomy or stent placement offers pain relief in most patients.⁷ Extracorporeal Shock Wave Lithotripsy (ESWL) followed by ERCP for obstruction is another option of treatment. Trial evidence shows that endoscopy of duct obstruction may delay surgery, but operation has greater long-term success.

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