

Pancreatoduodenectomy for groove pancreatitis

Report of two cases



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Groove pancreatitis is a rare condition with patients having clinical characteristics similar to those of chronic pancreatitis. Differentiating on clinical and radiological basis between groove pancreatitis and paraduodenal head cancer can be extremely challenging. Due to diagnostic uncertainty and to poor response to medical treatment surgery may offer these patients the best chance of cure. As the main localization of the inflammatory process is at the groove between the duodenum and the head of the pancreas, pancreato-duodenectomy is proposed as the most reliable surgical procedure. We report about two patients presenting with clinical and radiological features suggesting a groove pancreatitis in which control of symptoms was achieved by pancreatoduodenectomy.

KEY WORDS: Groove pancreatitis, Paraduodenal pancreatic cancer

Introduction

The term “groove pancreatitis” was introduced in 1982 by Stolte and coll.¹ to describe a type of focal chronic pancreatitis affecting the groove between the head of the pancreas, the duodenum and the common bile duct. Groove pancreatitis is most seen in male patients aging 40-50 yrs, with a history of alcohol intake and smoking habit. Clinically, symptoms do not differ from those observed in the usual form of chronic pancreatitis although, due to the frequent involvement of the duodenum with stenosis, vomiting and significant weight loss are more likely. Imaging findings of groove pancreatitis, especially in the segmental form, may resemble

pancreatic adenocarcinoma arising from the groove with distinction between these two entities remaining a challenge². Moreover pancreatic carcinoma may be masqueraded by groove pancreatitis^{3,4}. Due to a poor response to medical management and to uncertainty of differential diagnosis with cancer, pancreatoduodenectomy may be proposed as effective method of cure.

Cases Report

Reports refer to two patients recently seen and treated for groove pancreatitis at our Department.

CASE N. 1

A 45-year-old man with smoking habit (20 cigarettes daily since 25 yrs) and a history of alcohol assumption was referred to our Surgical Unit after a 8-year history of recurrent episodes of acute pancreatitis without evidence of gallstone disease. Since the last 12 months he

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had been complaining of post-prandial upper abdominal pain with nausea and a body-weight loss of 8 kg. At admission serum pancreatic and hepatic enzymes were slightly elevated, CEA and CA19.9 levels were normal. Upper gastrointestinal endoscopy showed erosion and stenosis due to edema of the descending part of the duodenum (Fig. 1). The duodenal stenosis was confirmed by a contrast duodenography (Fig. 2). A CT scan of the abdomen revealed a thickened duodenal wall, an enlarged pancreatic head and a low-density area with cystic changes at the groove between the duodenum and the head of the pancreas (Figs. 3, 4). Cystic inflammatory changes at the pancreaticoduodenal groove were confirmed by MRI.

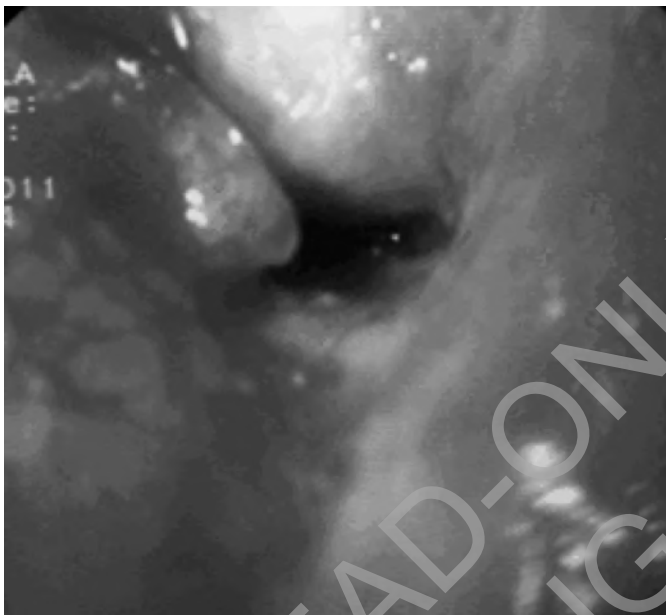


Fig. 1: Case 1. Duodenoscopy showing duodenitis with lumen stenosis.

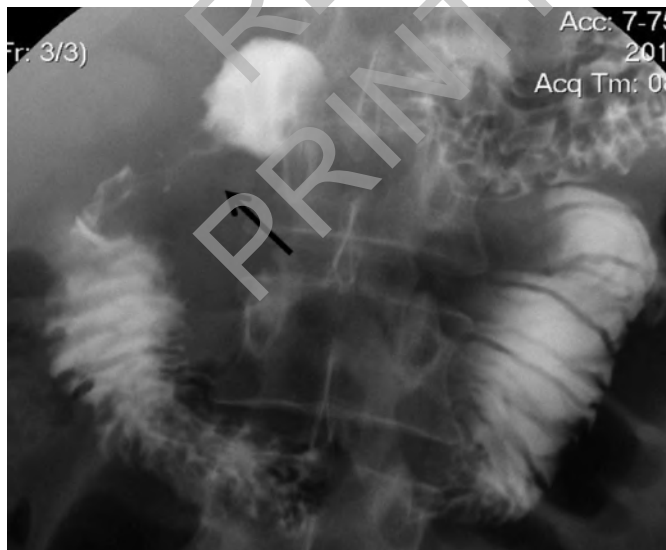


Fig. 2: Case 1. Duodenal stenosis as evidenced by contrast x-ray film.

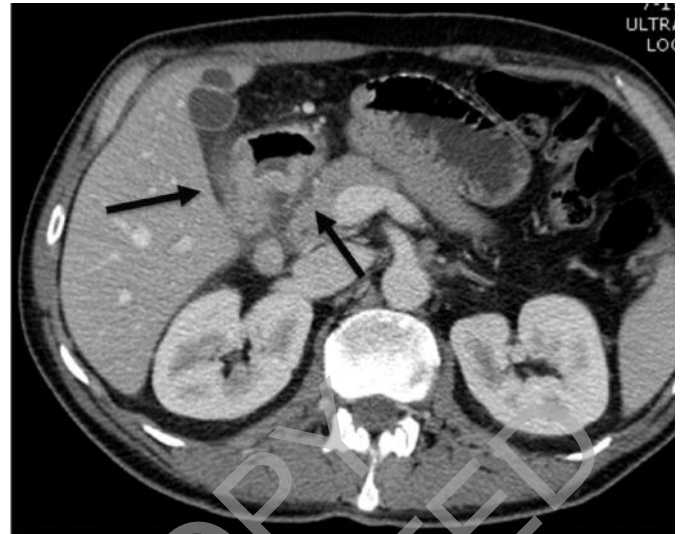


Fig. 3. Case 1. CT scan showing a thickened duodenal wall with hypo-intensity of a widened groove between the head of the pancreas and of the duodenum (arrows).

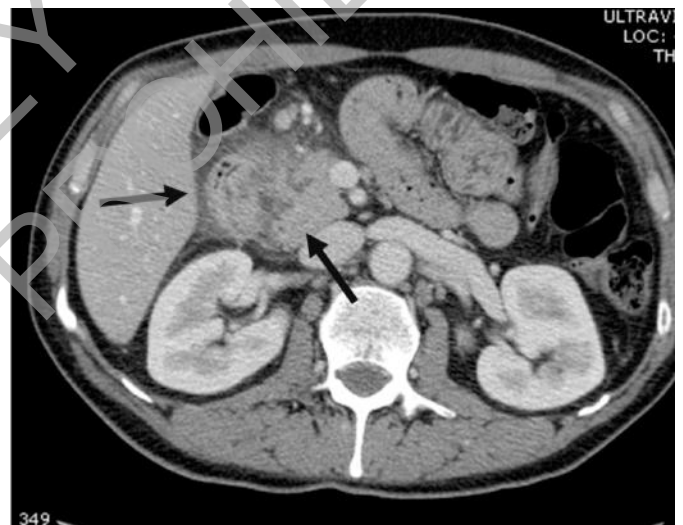


Fig. 4. Case 1. CT scan showing a mass-like lesion with cysts of the head of the pancreas obstructing the duodenal lumen (arrows).

Based on clinical and imaging features a diagnosis of “groove pancreatitis” was suggested. The patient underwent a pylorus-preserving pancreato-duodenectomy and was discharged ten days after surgery. Specimen examination showed chronic inflammation of the pancreaticoduodenal interface and adjacent duodenal wall and pancreatic head with scarring and widening of the pancreaticoduodenal groove. A 23 x 18 mm pseudocyst extended into the duodenal wall. Histologically, findings were consistent with a diagnosis of groove pancreatitis. At thirty months follow-up the patient has remained asymptomatic, with normal glucose tolerance and has re-gained his body-weight.

CASE N. 2

A 49-year-old man with a previous history of alcohol assumption and smoke habit, gallstones and two episodes of acute pancreatitis in the last two years was referred to our surgical unit for transient obstructive jaundice and post-prandial upper abdominal pain dating back from months. Impairment in food intake due to pain had led to a body-weight loss of 10 kg since 6 months. Bilirubin and pancreatic enzymes were slightly elevated. The CT scan of the abdomen revealed an inhomogeneous aspect and a dimensional increase of the pancreatic head and uncinate process with several cystic areas; the duodenal wall was thick and presented areas of cystic dysplasia. The common bile duct and the main pancreatic duct were enlarged above the lesion. MRI confirmed the TC findings. (Figs. 5, 6) The patient underwent a pylorus-preserving pancreatico-duodenectomy and was discharged

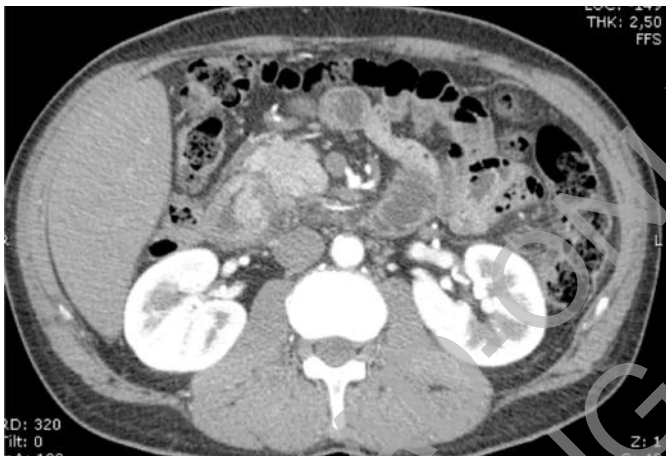


Fig. 5. Case 2. MRI scan showing mass-like lesion with cysts of the groove.



Fig. 6. Case 2. MRI scan, the cyst-like lesion of the groove is enhanced by contrast (arrow).

nine days after surgery. The specimen examination showed a Brunner cells hyperplasia, infiltrating lymphocytes and cystic dilatations in the duodenal wall; the pancreatic parenchyma was characterized by ductal dilatations full of amorphous material, diffuse fibrosis and lympho-histiocytic infiltration. The pathologist concluded with the diagnosis of groove pancreatitis. At 15-month-interval after surgery, the patient has become asymptomatic, with an excellent nutritional status and he has regained his body weight.

Discussion

Groove pancreatitis is a rare condition consisting of a segmental chronic pancreatitis that extends into the anatomical area between the pancreatic head, the duodenum, and the common bile duct, which is referred to as the groove area^{1,5}. In the pure form the pancreatic parenchyma is spared whereas in the segmental form the inflammatory process extends from the groove to the pancreatic head with stenosis of the pancreatic duct and upstream dilatation of the Wirsung duct⁵. A variety of terms has been used in Literature to name this form of pancreatitis including paraduodenal pancreatitis, paraduodenal wall cysts, cystic dystrophy of heterotopic pancreas, pancreatic hamartoma of duodenum. Recently Adsay and Zamboni⁶ proposed to group under the term paraduodenal pancreatitis all types of chronic pancreatitis involving the duodenal wall close to the minor papilla, the so-called groove area. Groove pancreatitis presents more frequently in males, in their fourth and fifth decade, smokers and with a history of alcohol intake.

Pancreatic outflow obstruction at the Santorini, peptic ulcers, gastric resection, true duodenal-wall cysts, and pancreatic heterotopia in the duodenal wall have all been advocated to explain the pathogenesis of groove pancreatitis that still remains unclear^{3,6,7}. It is believed however that heterotopic pancreas has a determinant role in the pathogenesis of the process. Under alcohol and smoking stimulation the heterotopic tissue develops relapsing episodes of ischemic pancreatitis that with time are responsible of tissue changes in the groove area. Cystic change in the thickened duodenal wall is a characteristic feature and intraduodenal cysts are identified in 49% of patients with groove pancreatitis. Lymphocyte infiltration, fibrosis or scarring in the groove area are also significant.

The clinical manifestations of groove pancreatitis include upper abdominal pain, weight loss, postprandial vomiting and nausea due to duodenal stenosis. Obstructive jaundice is not common and it is observed in 20% of patients^{6,8}.

Diagnostic investigations are based on endoscopy with or without endoscopic ultrasound (EUS) and CT/MRI imaging. Upper gastrointestinal endoscopy can reveal duodenitis with erosion and stenosis. The differential

diagnosis between fibrous scarring typical of groove pancreatitis and pancreatic carcinoma is difficult with EUS, CT and MRI^{9,10,11}. Cystic changes at the pancreatoduodenal interface and mass-like enlargement of the head of the pancreas with contrast enhancement at dynamic CT are specific diagnostic features for a preoperative diagnosis of groove pancreatitis. MRI hallmarks for a diagnosis of groove pancreatitis include a sheetlike mass between the head of the pancreas and the C-loop of duodenum, the hypointensity of the pancreatic parenchyma close to the groove area, the cysts and the thickened of the duodenal wall, and a widening of space between distal pancreatic and common bile ducts and duodenal lumen.¹² Nonetheless in absence of cystic lesions within the groove and/or the thickened duodenal wall the diagnostic dilemma between pancreatitis and cancer remains unsolved. In our patients the clinical history of significant body-weight loss associated to an enlarged head of the pancreas at radiologic work-up with duodenal compression in one case had risen a strong suspicion of pancreatic malignancy. Thus, surgery was offered due to uncertainty to obtain a definitive diagnosis.

Patients in which a diagnosis of groove pancreatitis is reasonably supported by imaging studies may be offered a period of conservative treatment with a careful monitoring of the lesions. Medical therapy includes cessation of smoking and alcohol abstinence, adequate pain control, resting the pancreas, and in selected cases stenting of the minor papilla. In most cases these measures have only a temporary effect and surgery becomes inevitable when symptoms fail to resolve or when diagnosis is uncertain.¹³ Duodenal by-pass surgery has proved to be ineffective.¹⁴ Surgical procedures comprise Whipple's pancreatoduodenectomy and pylorus-preserving pancreatoduodenectomy being the latter not advisable in case of inflammation around the pylorus ring.^{4,7,15,16,17,18} Risks of cephalic pancreatoduodenectomy may be counterbalanced by the effectiveness of the procedure in achieving control of symptoms and by the goal of excluding a pancreatic malignancy. In our patients, due to chronic inflammation, we found at surgery a hard pancreatic texture with an enlarged pancreatic duct, two factors that keep the pancreatoduodenal anastomosis at low risk for complication. After resection pain relief and weight gain has been reported in 74% of patients with the remainder having occasionally relapsing abdominal pain.⁷

Riassunto

La "groove pancreatitis" è una forma rara di pancreatite cronica interessante prevalentemente il solco duodeno-pancreatico. La sua diagnosi differenziale con i tumori maligni della testa del pancreas può essere estremamente difficile. In considerazione della incertezza diagnostica differenziale con i tumori della testa e della scarsa risposta alla terapia medica, la chirurgia può offrire il

risultato terapeutico migliore. Poiché il processo infiammatorio coinvolge l'area duodeno-cefalopancreatica, l'intervento di pancreato-duodenectomia è proposto come migliore strategia chirurgica. Nel report sono presentati due casi di pazienti con quadro clinico-radiologico suggestivo di "groove pancreatitis" curati con successo mediante intervento di pancreato-duodenectomia con conservazione del piloro.

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