Pancreatoduodenectomy for groove pancreatitis
Report of two cases

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**Introduction**

The term “groove pancreatitis” was introduced in 1982 by Stolte and coll. 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 challenge. Moreover pancreatic carcinoma may be masqueraded by groove pancreatitis. 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 Departament.

**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...
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 pancreatoduodenal groove were confirmed by MRI.

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 pancreatico-duodenal interface and adjacent duodenal wall and pancreatic head with scarring and widening of the pancreatico-duodenal 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 lead 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 pancreateo-duodenectomy and was discharged 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. 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 duct. 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 Zamboni 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. 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. 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
La "groove pancreatitis" è una forma rara di pancreatite cronica interessante prevalentemente il solco duodenopancreatico. 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.

**Riassunto**

La "groove pancreatitis" è una forma rara di pancreatite cronica interessante prevalentemente il solco duodenopancreatico. 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.

**References**

