Paraduodenal Pancreatitis: A Case Report

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ABSTRACT: Pancreatitis of the groove, or paraduodenal pancreatitis, is a rare form of chronic segmental pancreatitis, located between the head of the pancreas, the inner wall of the duodenum, and the common bile duct. Alcohol abuse is misoften found in the history. The diagnosis is made on the basis of CT and MRI data. Clinical signs usually regress under symptomatic medical treatment. The main differential diagnosis is pancreatic carcinoma, which sometimes requires surgical exploration. We report the case of a 51 years old man presenting paraduodenal pancreatitis with heterotopic pancreas revealed by epigastric pain.

KEYWORDS: Paraduodenal pancreatitis, cystic dystrophy, groove pancreatitis

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Introduction

Paraduodenal pancreatitis is a rare pathology affecting mostly middle-aged, alcoholic men. Several factors are incriminated in this pathology. Chronic alcohol consumption increases the viscosity of the pancreatic juice, causing the formation of protein plugs and stones. On the other hand, the formation of cysts is caused by the obstruction or absence of Santorini's duct which is due to the presence of aberrant pancreatic tissue in the duodenal wall. The clinical signs are those of chronic pancreatitis. Imaging, in particular CT and MRI, allows the diagnosis, which will be confirmed by echo-endoscopy with biopsy and anatomopathological study.[1,2]

Case Report

A 51-year-old man, alcoholic, presented with epigastric abdominal pain with back irradiation and weight loss estimated at 8 kg in 1 month.

Clinical examination revealed mild epigastric tenderness with no other associated signs. Laboratory data showed an elevated lipasemia at 450 IU/L.

Contrast enhanced CT scan (Figure 1) showed thickening of the inner wall of the second duodenum with multiple contiguous subcentimetric cystic formations intramurally and in the duodeno-pancreatic groove. The head of the pancreas was swollen with no other pancreatic abnormalities, duct of wirsung was thin.

Pancreatic MRI was performed confirming intramural and inter duodenal-pancreatic cysts (Figure 2). It also showed the presence of aberrant pancreatic tissue in the inner wall of the second duodenum (Figure 3).

The diagnosis of paraduodenal pancreatitis on heterotopic pancreas was made, later confirmed by echo-endoscopy. Endoscopic examination showed thickening of the mucosa and submucosa of the duodenal wall, containing cysts, aspiration revealed hematic fluid with increase in amylase. The patient has been rehydrated and received analgesic treatment with a good clinical evolution initially, but he came back 3 months later with disabling epigastralgia, for a recurrence of pancreatitis. A cephalic duodenopancreatectomy (Whipple surgery) was scheduled 2 months later with simple postoperative follow-up. Control CT scan was performed showing no complications (Figure 4).

Discussion

Paraduodenal pancreatitis, formerly called Groove pancreatitis, or cystic dystrophy of duodenum, is a focal chronic form of pancreatitis in the duodeno-pancreatic groove, located between the medial border of the first, the second part of duodenum, and the right border of the pancreaticisthmus.[1,2]

It is due to the presence of aberrant pancreatic tissue in the duodenal wall.

Pathophysiologically, it is likely that a dysfunction of the minor papilla, either anatomical or functional in origin, is the primum movens, causing local pancreatitis, with a characteristic cystic transformation.[2,3]

Although the origin of the cysts is controversial, the main hypothesis would argue for the presence of aberrant pancreatic tissue in the duodenal wall. Other known predisposing factors are the absence of a Santorini duct, obstruction of the minor papilla by cysts, and alcohol-induced viscosity of pancreatic secretions. The pure form is located only at the pancreatico duodenal groove, while segmental form affects the groove and the pancreatic head.[2-4]

The clinical signs are those of chronic pancreatitis: epigastralgia, jaundice, weight loss, which may be associated with vomiting in case of duodenal compression.[1-3]

Histopathologically, paraduodenal pancreatitis is characterized by the presence of thickening of the internal duodenal wall with hypertrophy of the folds, sessile polypoid lesions, and submucosal cysts of variable size.[3]

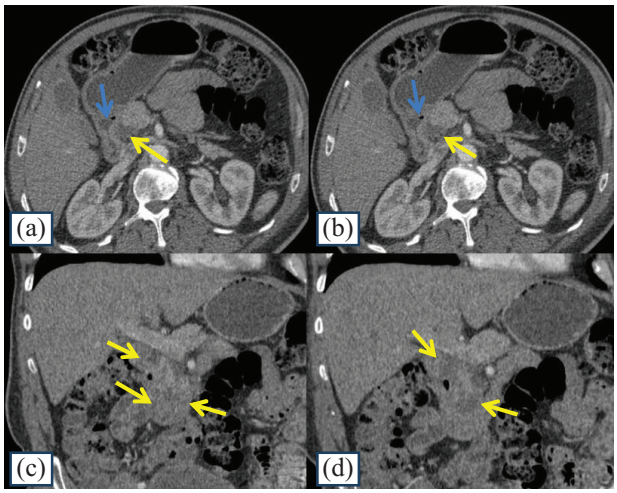

Figure 1. Abdominal CT scan axial (a, b) and coronal (c, d) images with contrast injection showing thickening of the inner wall of the second duodenum, lately enhanced (blue arrow), with multiple subcentimetric cystic formations in the wall of the duodenum and in the duodeno-pancreatic groove (yellow arrow).

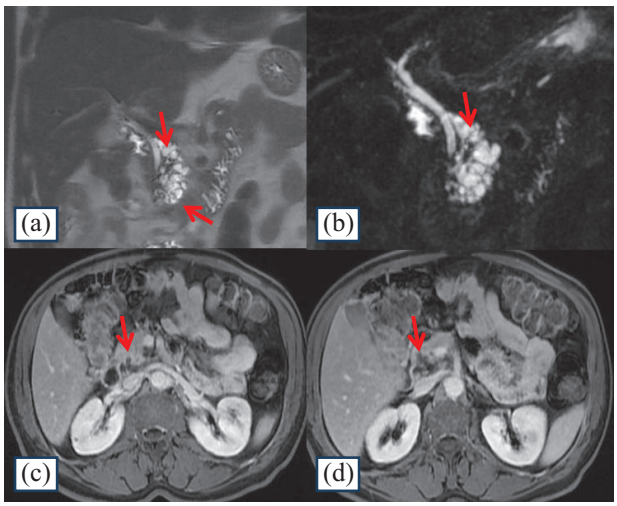

Figure 2. Pancreatic MRI in T2 coronal WS (a), MRCP (b), axial T1 with contrast enhancement WS (c, d) confirming intramural and inter duodenal-pancreatic cysts (red arrow).

The biological data may show an inflammatory syndrome or cholestasis in case of compression of the main bile duct. Lipasemia may be elevated but in case of normality it does not eliminate the diagnosis.

The positive diagnosis is assured by imaging combining CT scan, MRI and echo-endoscopy, showing parietal thickening of the pancreatic side of the second duodenum with the presence of cystic images in the duodeno-pancreatic groove or in the duodenal wall. Lesions of chronic pancreatitis of the duodeno-pancreatic groove are often associated, including calcifications, late enhancement of the groove, or a focal pseudotumor mass mimicking adenocarcinoma of the pancreatic head.[3,4]

The 3 main radiological diagnostic criteria are focal wall thickening of the second duodenum, late contrast enhancement of its wall, and the presence of intramural or sulcus cysts.[3-5]

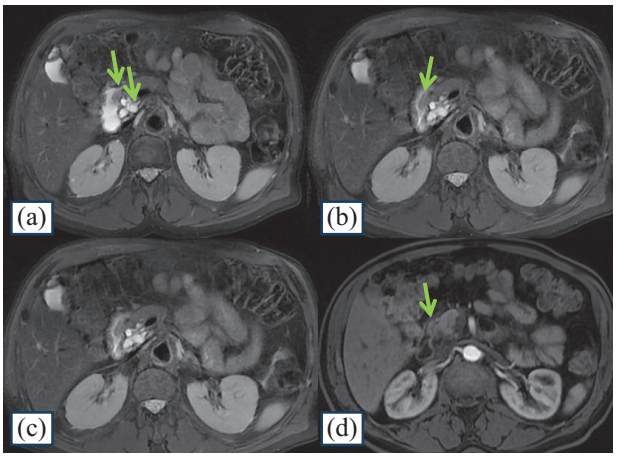

Figure 3. Pancreatic MRI in T2 axial FS WS (a, b, c) and T1 after contrast enhancement WS (d) showed the presence of aberrant pancreatic tissue in the inner wall of the second duodenum (green arrow).

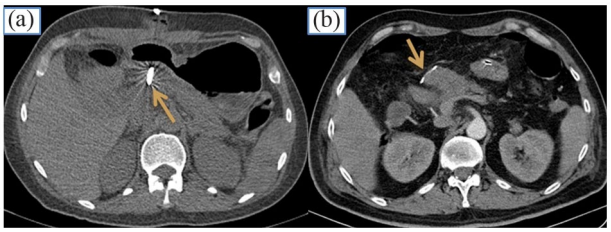

Figure 4. Post surgery CT scan control without contrast (a) and after contrast enhancement (b) showing anastomoses of WHIPPLE surgery: the jejunal loop is anastomosed to the right of the remaining pancreas and to the anterior surface of the superior mesenteric artery (orange arrow).

Other signs may be present such as dilatation of the common bile duct, stenosis of the portal trunk, which are due to compression by cysts or a stasis stomach in case of stenosis of the duodenal lumen.

The differential diagnosis is with pancreatic adenocarcinoma. Some radiological signs help to orientate the diagnosis, but sometimes it is very difficult to make the difference.

Paraduodenal pancreatitis is associated with a thickening of the duodenal wall, with the presence of inter duodenal-pancreatic cysts, which is not the case with pancreatic adenocarcinoma. Contrast is heterogeneous in paraduodenal pancreatitis, whereas adenocarcinoma is often hypodense and homogeneous. Finally, pancreatic adenocarcinoma often leads to downstream pancreatic atrophy.[4,5]

Treatment is initially symptomatic aimed at pain, vomiting and dehydration with cessation of smoking and drinking alcohol. Echo-endoscopic treatment can be used to evacuate the cysts. In case of failure, a surgical treatment is considered consisting of a cephalic duodeno-pancreatectomy.[6]

Conclusion

Paraduodenal pancreatitis is a particular and rare form of pancreatitis. The main differential diagnosis is ductal adenocarcinoma of the pancreas. A good knowledge of the radiological

signs of this pathology, which is still poorly understood, allows the diagnosis, which can avoid unnecessary surgery.

Author Contributions

KI wrote the case report collected imaging of the patient and wrote the discussion with all the radiology features; NMB collected clinical informations, corrected the article as a radiology professor; IN corrected the article being a radiology professor.

Consent

Informed consent of the patient was obtained for publication of this case report.

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