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Case Report

Focal Chronic Pancreatitis Mimicking Early Pancreatic Ductal Adenocarcinoma: A Report of Case

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Abstract

The differential diagnosis between an early stage pancreatic ductal adenocarcinoma and a focal chronic pancreatitis is difficult. We herein report a case with distal pancreatectomy for a focal chronic pancreatitis mimicking an early pancreatic ductal adenocarcinoma. A 43-year-old man was admitted to our hospital for treatment of a pancreatic tumor detected by Ultrasonography (US) of medical check-up. Enhanced computed tomography revealed 10mm of low-density area with no enhancement in pancreatic body. Magnetic resonance imaging demonstrated stenosis of main pancreatic duct and dilatation of the distal duct, while, no tumor could be detected by fat-suppressed T1-weighted images and diffusion-weighted images. US demonstrated a hypoechoic and avascular area with a diameter of 8 mm. Endoscopic retrograde cholangio-pancreatography revealed stenosis of main pancreatic duct and dilatation of the distal duct. With a diagnosis of pancreatic ductal adenocarcinoma of the pancreatic body, the patient underwent distal pancreatectomy and splenectomy with regional lymph node dissection. Histological examination revealed focal chronic inflammation of the pancreas.

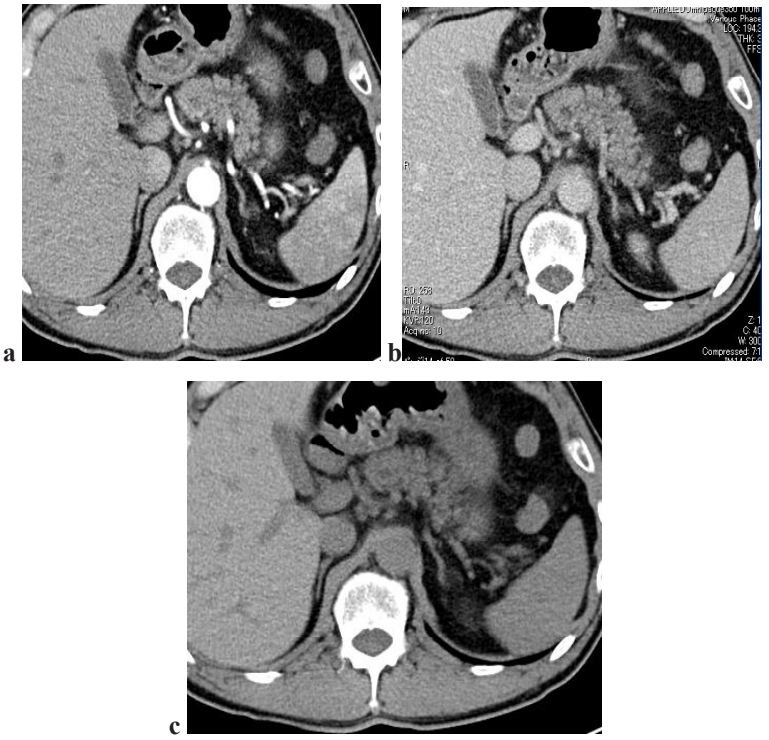
Introduction

Recent advances in diagnostic techniques including Ultrasonography (US), Endoscopic Ultrasonography (EUS), Computed Tomography (CT), and Magnetic Resonance Imaging (MRI), pancreatic ductal adenocarcinoma has been diagnosed easier [1]. However, the differential diagnosis between an early stage pancreatic ductal adenocarcinoma and a focal chronic pancreatitis is still difficult [1-3]. A recent report indicated that the false positive rate of pancreaticoduodenectomy for presumed malignancy to be as high as 5-11% [4]. We herein report a case with distal pancreatectomy for a focal chronic pancreatitis mimicking an early pancreatic ductal adenocarcinoma.

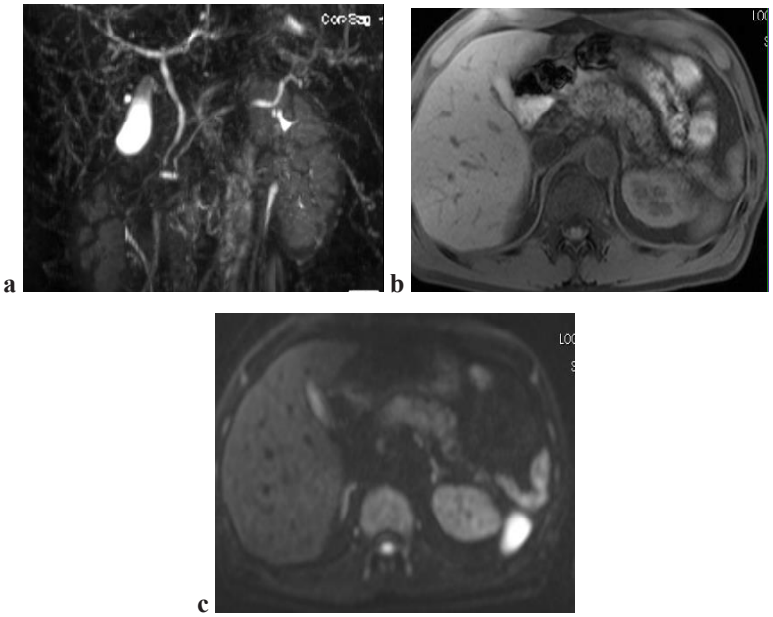
Case Report

A 43-year-old man was admitted to our hospital for treatment of a pancreatic tumor detected by US on medical check-up. The patient had no past history of serious illnesses, including any pancreatic diseases, diabetes mellitus, operations, or any hospitalization. Enhanced CT revealed a low-density mass of 10 mm in diameter with no enhancement in the pancreatic body (Figures 1a-c). MRI demonstrated stenosis of the main pancreatic duct and dilatation of the distal pancreatic duct (Figure 2a), while, no tumor could be detected by Fat-suppressed T1-weighted Images (FST1WI) and Diffusion-weighted Images (DWI) (Figures 2b,c). US revealed a hypoechoic and avascular area with a diameter of 8 mm (Figures 3a,b). However, EUS did not detect the tumor of the pancreas. Endoscopic retrograde cholangio-pancreatography (ERCP) revealed stenosis of main the pancreatic duct and dilatation of the distal duct (Figure 3c). Laboratory investigations included serum pancreatic amylase of 61 IU/L, serum carcinoembryonic antigen of 5.5 ng/ml, serum carbohydrate antigen 19-9 of 12 U/ml, and serum DUPAN-2 of 25 U/ml. With a diagnosis of pancreatic ductal adenocarcinoma of the pancreatic body, the patient underwent distal pancreatectomy and splenectomy with regional lymph node dissection. Histological examination revealed chronic inflammation of the pancreas which formed a fibrotic nodule with a diameter of 11 mm×10 mm. The fibrotic nodule included granulation, fat necrosis, and chronic inflammatory change of the main pancreatic duct which caused the stenosis. Because postoperative pancreatic fistula was developed, the patient underwent US-guided percutaneous drainage. The

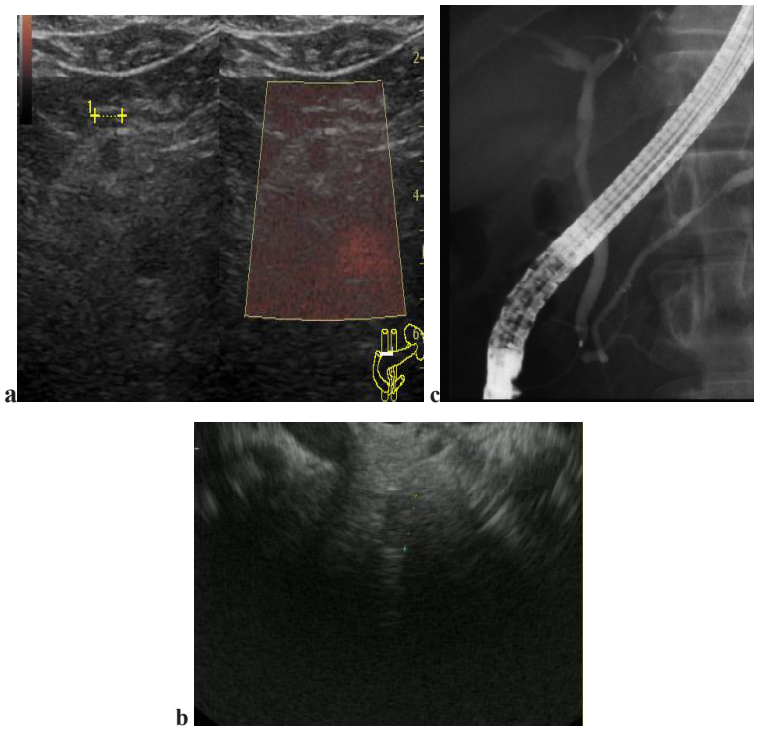
patient made satisfactory recovered after drainage, discharged on the 39th postoperative day, and remains well.



Figures 1(a-c): Enhanced (**a, b**) and plane (**c**) computed tomography (CT) revealed a low-density area of 10 mm in diameter. No enhancement was seen in the early (**a**) or delayed (**b**) phase of enhanced CT.



Figures 2(a-c): Magnetic resonance imaging (MRI) (**a**) demonstrated stenosis of the main pancreatic duct (arrowhead) and dilatation of the distal duct. No tumor could be detected in the pancreas by fat-suppressed T1-weighted images (FST1WI) (**b**) and diffusion-weighted images (DWI) (**c**).



Figures 3(a-c): US (**a**) and endoscopic ultrasonography (**b**) demonstrated a hypoechoic and avascular area with a diameter of 8 mm (arrowheads). Endoscopic retrograde cholangio-pancreatography (ERCP) (**c**) revealed stenosis of the main pancreatic duct with distal dilatation (arrowhead).

Discussion

Focal pancreatitis is defined as a focal inflammatory process in the pancreas that may mimic pancreatic ductal adenocarcinoma [5,6]. The differential diagnosis between early pancreatic ductal adenocarcinoma and focal pancreatitis is one of the important points for better therapeutic outcome of pancreatic ductal adenocarcinoma. Enhanced CT indicates high sensitivity for the diagnosis of pancreatic carcinoma and is useful for differential diagnosis between early pancreatic carcinoma and focal chronic pancreatitis [1,7]. Because pancreatic carcinoma is characterized by abundant fibrous stroma and hypovascularity, typical features of pancreatic cancer by enhanced CT include poor enhancement of the tumor compared with surrounding normal pancreatic tissue in the early phase and gradual enhancement in delay phase [1]. In small lesion, delayed enhancement of pancreatic adenocarcinoma is predominantly observed [8]. In dynamic CT, pancreatic ductal adenocarcinoma shows increasing enhancement value, while chronic pancreatitis demonstrates delayed-washout pattern [9]. Recent reports indicate that apparent diffusion coefficient (ADC) of MRI quantification of the pancreatic ductal adenocarcinoma is significantly lower than that of pancreatitis [2,10]. In addition, DWI and FST1WI are useful for detecting small (≤2cm in diameter) pancreatic ductal adenocarcinoma, which cannot be detected by dynamic CT [11,12]. In present case, focal pancreatitis lesion was detected by US and enhanced CT. However, EUS, MRI including FST1WI and DWI could not detect pancreatic tumor. These negative findings may be clue for correct diagnosis in our patient.

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