CASE REPORT

Groove Pancreatitis : A Case Report

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We are reporting on a case of groove pancreatitis. Groove pancreatitis is characterized by the formation of a scar plate in the ''groove'' between the pancreas head, duodenum and common bile duct. In the management of this disease, diagnostic imaging plays an important role in differentiating it from pancreatic cancer. In dynamic CT study, the ''groove'' showed poor enhancement in the early phase and inhomogeneous enhancement in the delayed phase. A fat-suppressed T_1-weighted image clearly demonstrated the groove hypointensity compared to the adjacent pancreatic parenchyma. MRCP demonstrated the pancreaticobiliary duct non-invasively and may replace ERCP, which can be technically difficult to perform.

INTRODUCTION

Groove pancreatitis is one subtype of chronic pancreatitis affecting the ''groove'' between the pancreas head, duodenum and common bile duct. Differentiation between groove pancreatitis and carcinoma in the pancreas head is often difficult. We report a case of groove pancreatitis cured by conservative therapy.

CASE REPORT

A 44-year-old male patient consulted our institute for epigastralgia, back pain and weight loss. He had a similar history two years ago and visited another clinic. He had a 20 year history of alcohol abuse. Laboratory data were as follows ; WBC 7900/μl, CRP 0.14 mg/dl (< 0.45), lipase 263 U/l (9–55), elastase1 1269 ng/dl (72–432), P-amylase 228 U/l (14–41), CEA 2.7 ng/ml (<2.5), CA19–9 33.2 U/l (< 37). Dynamic computed tomography (dynamic CT) revealed poor enhancement in the early phase and inhomogeneous enhancement in the delayed phase between the pancreas head, duodenum and common bile duct (Fig. 1). The lesion showed hypointensity on fat-suppressed T_1-weighted image and almost isointensity on T_2-weighted image, compared to the adjacent pancreatic parenchyma. MR cholangiopan-

Keywords groove pancreatitis, pancreatic cancer, computed tomography, magnetic resonance imaging

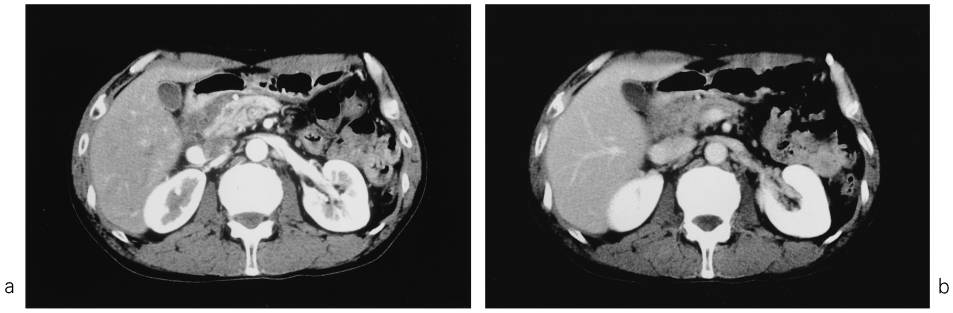

Fig. 1. A total of 100 ml of nonionic contrast medium was administered at the flow rate of 3 ml/s and helical scan were obtained at 30 s and 90 s. The ''groove'' shows poor enhancement in the early phase and inhomogeneous enhancement in the delayed phase.

Fig. 2. The ''groove'' shows hypointensity on fat-suppressed T_1-weighted image (a) and almost isointensity on T_2-weighted image (b), compared to the adjacent pancreatic parenchyma. MRCP reveals no obstruction nor dilatation of pancreatic duct and biliary system (c). (TR ms/TE ms/NEX) (a) ; SE : 616/9/2. (b) ; FSE : 7058/102/3. (c) ; FSE : 12000/201/2.

creatography (MRCP) revealed no obstruction nor dilatation of the pancreatic duct and biliary system (Fig. 2). On endoscopic retrograde cholangiopancreatography (ERCP), obstruc-

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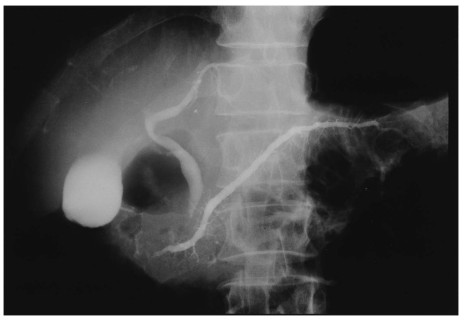

Fig. 3. ERCP. Obstruction of the biliary system and pancreatic duct is not evident but cystic dilatation of the branch of the pancreatic duct in the head is revealed.

tion of the biliary system and pancreatic duct was not evident but cystic dilatation of the branch of the pancreatic duct in the head was revealed (Fig. 3). Considering the overall clinical course, laboratory data and radiological findings, we suspected groove pancreatitis and started conservative medication. Drip infusion of gabexate mesilate (FOY) was started and his symptom were gradually relieved and laboratory data returned to within normal ranges. In the 3 months since being discharged, he has been free from symptoms.

DISCUSSION

Groove pancreatitis was first described in 1973 by Becker and some reports have been published[1)~4)]. This disease is characterized by the formation of a scar plate in the ''groove'' between the pancreas head, duodenum and common bile duct. This disease is classified into two forms ; pure form and segmental form. In the pure form, the head of pancreas is not involved, while segmental form involves the pancreas parenchyma in the groove. The pathogenesis remains unclear but the following factors are suspected to cause this disease : peptic ulcers, gastric resections, duodenal wall cysts, pancreatic hetrotopia in the duodenum and alcohol abuse. Histopathological examination revealed the proliferation of fibrous tissue in the groove[4)].

Many patients undergo pancreatoduodenectomy for suspected pancreatic cancer. In the management of this disease, diagnostic imaging plays a valuable role in differentiating it from pancreatic cancer[3),4)]. CT and MRI can reveal abnormality in the characteristic location. In dynamic CT/MRI study, the region between the pancreas head, duodenum and common bile duct shows poor enhancement in early phase and inhomogeneous enhancement in delayed phase. This enhancement pattern is considered to reflect the proliferation of fibrosis. The groove reveals hypointensity on fat-suppressed T_1-weighted images and shows various signal intensity on T_2-weighted images, reflecting fibrosis and inflammation with edema. These characteristic findings were noted in our case. ERCP is often used in the diagnosis of this disease, but is invasive and sometimes unsuccessful due to the stenosis of the duonenal wall. In our study, cystic dilatation of the branch of pancreatic duct and stenosis of common bile duct in the head may reflect chronic inflammation. In some previous study, MRCP has been useful to evaluate the pancreaticobiliary duct noninvasively[5)~7)]. In our case, we could evaluate extraductal soft tissue on fat-suppressed T_1- and T_2-weighted image, and MRCP added useful information about the pancreaticobiliary duct.

We report here a case of groove pancreatitis. His past history, laboratory data and radiological findings led us to suspect groove pancreatitis, and long-term follow up study is recommended. It is often difficult to differentiate

groove pancreatitis from pancreatic head cancer and a radiological approach plays an important role in differentiation. Fat-suppressed T_1- and T_2-weighted image reflects tissue character, and MRCP demonstrates the pancreaticobiliary duct noninvasively and may replace ERCP, which can be technically difficult to perform.

REFERENCES

1) Becker V. Bauchspeicheldruse. In : Doerr W, Seifert G, Uhlinger E, eds. Spezielle Pathologische Anatomie, Bd. VI. Hrsg Berlin : Springer, 1973
2) Stolte M, Weiss W, Rosch W, et al. : A special form of segmental pancreatitis : ''groove pancreatitis''. Hepatogastroenterology 1982 ; 29 : 198–208
3) Itoh S, Yamakawa K, Shimamoto K, Endo T, Ishigaki T : CT Findings in groove pancreatitis : corelation with hitopathological findings. J Comput Assist Tomogr 1994 ; 18 : 911–915
4) Irie H, Honda H, Kuroiwa T, Honda K, Yoshimitsu K, Tajima T, Jimi M, Yamaguchi K, Masuda K : MRI of groove pancreatitis. J Comput Assist Tomogr 1998 ; 22 : 651–655
5) Ueno K, Toki F, Kuwata T, Fukuda A, Hatori T, Harada N, Imaizumi T, Takasaki K : Chronic pancreatitis : imaging findings. Jpn J Diagnostic Imaging 2000 ; 20 : 1127–1144
6) Soto JA, Alvarez O, Lopera JE, Munera F, Resrepo JC, Correa G : Biliary obstruction : findings at MR cholangiography and cross-sectional MR imgaing. RadioGraphics 2000 ; 20 : 353–366
7) Kim MJ, Mitchell DG, Ito K, Outwater EK : Biliary dilatation : differentiation of benign from malignant causes-value of adding conventional MR imaging to MR cholangiopancreatography. Radiology 2000 ; 214 : 173–181