Solitary fibrous tumor of the pancreas

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Abstract A solitary fibrous tumor (SFT) originating in the pancreas is rare. We report a 55-year-old woman with an asymptomatic pancreatic mass incidentally discovered on abdominal ultrasonography. Contrast-enhanced computed tomography (CT) showed a well-demarcated exophytic mass in the pancreatic head with prolonged and delayed enhancement. The mass showed hypointensity on T1-weighted images and heterogeneous hypointensity with spotty hyperintensity foci on T2-weighted images. Fluorodeoxyglucose-positron emission tomography (FDG-PET)/CT showed no significant FDG uptake. The resected mass was composed of spindle cells that were positive for CD34; and hemangiopericytomatous vessels were focally detected. The mass was finally diagnosed as an SFT of the pancreas.

Key words Solitary fibrous tumor · Pancreas · CT · MRI · FDG-PET/CT

Introduction

Solitary fibrous tumor (SFT) is an uncommon mesenchymal neoplasm with fibroblastic/myofibroblastic differentiation characterized by a prominent hemangiopericytoma-like branching vascular pattern.1,2 SFT typically originates from the pleura. Although some have reported SFTs occurring in nonpleural tissue, only a few cases originating in the pancreas have been previously reported in the English-language literature.3–5 We report a case of SFT in the pancreas, focusing on imaging findings.

Case report

A 55-year-old woman was referred to our hospital for further evaluation of an asymptomatic pancreatic mass that had been discovered incidentally on ultrasonography (US) during a routine health examination. Physical examination and laboratory data were unremarkable. Tumor markers including carcinoembryogenic antigen (CEA) and carbohydrate antigen (CA) 19-9, were within normal ranges.

Abdominal US revealed a well-demarcated hypoechoic oval mass in the pancreas head measuring 6.0 × 4.0 cm (Fig. 1). The mass showed slight hypoattenuation on unenhanced computed tomography (CT) (Fig. 2a). On dynamic contrast-enhanced CT, the mass was heterogeneously enhanced on the arterial phase and showed prolonged, delayed enhancement on the portal venous phase (Fig. 2b,c). The surrounding vessels of the pancreaticoduodenal arcade were dilated, and the tumor showed the positive beak sign in its contact surface with the pancreas head, suggesting a tumor with exophytic growth from the pancreas head. Regional lymphadenopathy was not observed.

The mass was homogenously hypointense to the pancreas parenchyma on T1-weighted magnetic resonance...
whole body. Subtotal stomach-preserving pancreaticoduodenectomy was performed.

The pancreas head had a solid exophytic mass that measured 7.0 × 5.0 × 5.0 cm. The resected mass was well circumscribed and homogeneously white on the cut surface (Fig. 5a). Histologically, the mass was composed of spindle cells arranged in a fascicular pattern, and hemangiopericytomatous vessels were focally detected (Fig. 5b–d). Entrapped acinar and ductal tissues were noted in the lesion, and the surrounding pancreatic tissue revealed no remarkable change. Immunohistochemically, the spindle cells were positive for CD34 but negative for α-smooth muscle actin, S-100 protein, CD117, ALK, and cytokeratin (CAM5.2, AE1/AE3). The mass was finally diagnosed as an SFT of the pancreas.

Discussion

An SFT arising from pancreas is exceedingly rare, and reports of radiological images are limited.4–6 In the current case, the tumor showed a positive beak sign with the pancreas head, so we considered that the tumor arose from pancreas and showed exophytic growth.7 Although the tumor was well demarcated and had a capsule-like hypointense rim on T2-weighted MRI, the resected mass was noncapsulated and surrounded by normal pancreatic tissue. With the pathological-radiological correlation, the capsule-like rim reflected the stretched normal pancreatic tissue surrounding the tumor. On T2-weighted imaging (MRI). No significant signal change was observed between the in-phase and the opposed-phase of gradient echo images (Fig. 3a,b). On T2-weighted MRI, the mass was heterogeneously hypointense to the pancreas with spotty hyperintensity foci, which might reflect the different histological components (Fig. 3c). On dynamic gadolinium-enhanced T1-weighted MRI with fat suppression, the mass showed heterogeneous enhancement on the early phases and prolonged, delayed enhancement on the delayed phases. MR cholangiopancreatography (MRCP) showed no dilatation of the main pancreatic duct (Fig. 3d). Positron emission tomography (PET)/CT with 18F-fluorodeoxyglucose (FDG) showed no significant FDG uptake in the mass (Fig. 4). No other significant abnormal FDG uptake was observed in the whole body.