

Accessory spleen mimicking a pancreatic neuroendocrine tumor

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ABSTRACT

A 60-year-old man underwent computed tomography as part of colorectal cancer follow-up. A hypervascular nodule was found within the pancreatic tail and subsequently proved to be positive on [¹¹¹In] DTPA-octreotide scan. A neuroendocrine tumor of the pancreas was supposed and a distal pancreatectomy performed. Heterotopic splenic tissue was finally proved by pathological examination. The present case suggests that intrapancreatic accessory spleen be considered in the differential diagnosis of pancreatic lesions positive on [¹¹¹In] DTPA-octreotide scan.

Introduction

Neuroendocrine tumors (NETs) are difficult to diagnose at earlier stages because of small size and multiplicity. Computed tomography (CT) and magnetic resonance imaging (MRI) are mostly of benefit in the detection of larger primary tumors and liver and lymph node metastases¹. Most NETs express somatostatin receptors, particularly receptor type 2, and thus somatostatin receptor scintigraphy can be used for the detection and staging of NETs. [¹¹¹In] DTPA-octreotide has been shown to be very successful in visualizing somatostatin receptor-bearing tumors by scintigraphy and related techniques such as single-photon emission tomography (SPET) and SPET/computed tomography (SPET-CT)^{1,2}. Particularly, [¹¹¹In] DTPA-octreotide imaging is highly sensitive for the detection and staging of gastroenteropancreatic neuroendocrine tumors (GEP-NETs); the detection rate of NETs has been reported to be somewhere between 80% and 100% in different studies². Positron-emission tomography (PET) and PET/computed tomography (PET/CT) with ¹⁸F-fluorodeoxyglucose (¹⁸FDG) can be used to differentiate aggressive tumors exhibiting greater deoxyglucose uptake from slow-growing tumors³. The overall sensitivity of ¹⁸FDG-imaging is low for well-differentiated NETs but better for poorly differentiated tumors; additionally, ¹⁸FDG-based imaging can be used to recognize patients who have a rapidly progressive tumor⁴. Reported and discussed here is a rare case of a [¹¹¹In] DTPA-octreotide-avid focus within the pancreatic tail due to an accessory spleen.

Case report

A 60-year-old man underwent CT as part of colorectal cancer follow-up. A round, homogeneous and hypervascular nodule of 1.3 cm was found in the pancreatic tail. The lesion showed an iso- to high-intensity pattern on T2-weighted MRI relative to the surrounding pancreatic tissue. While ¹⁸F-FDG PET/CT showed no abnormal uptake in the tail of the pancreas, [¹¹¹In] DTPA-octreotide (Octreoscan) SPET-CT revealed a moderate focal uptake along the pancreatic mass. The lesion was then diagnosed as a neuroendocrine tumor and a distal pancreatectomy was performed.

Key words: spleen, pancreatic neuroendocrine tumor.

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The final pathological examination revealed heterotopic splenic tissue demarcated by a thick fibrous capsule and surrounded by normal pancreatic tissue (Figure 1).

Discussion

Accessory spleens consist of structurally normal splenic tissue and have been demonstrated at different sites within the abdomen. They are usually located in the region of the splenic hilum, with almost 16-20% within the pancreatic tail⁵. Intrapancreatic accessory spleen can be mistaken for a hypervascular pancreatic tumor in both CT and MRI examinations and a definitive differential diagnosis is difficult on the basis of radiological findings^{6,7}. The [¹¹¹In] DTPA-octreotide scan is a pivotal tool to identify well-differentiated NETs, while aggressive NETs, pancreatic carcinomas

and metastasis are unlikely to be negative on ¹⁸F-FDG PET/CT^{8,9}. As a result, multimodality nuclear medicine procedures may be useful in differentiating enhancing pancreatic masses on CT or MRI. In our patient, however, the [¹¹¹In] DTPA-octreotide scan did not differentiate the physiological uptake in the accessory spleen from tumoral uptake. Physiological uptake of [¹¹¹In] DTPA-octreotide by the spleen is usually observed; the mechanism of the splenic uptake is not clearly understood and seems to be related to the presence of somatostatin receptors in lymphocytes¹⁰. All in all, the present case suggests to include intrapancreatic accessory spleen in the differential diagnosis of [¹¹¹In] DTPA-octreotide-positive pancreatic lesions, especially when located in the tail. If an accessory spleen is suspected, ^{99m}Tc colloid scintigraphy shows specific uptake for the liver and spleen, and may help differentiate an accessory spleen from a tumoral lesion¹¹.

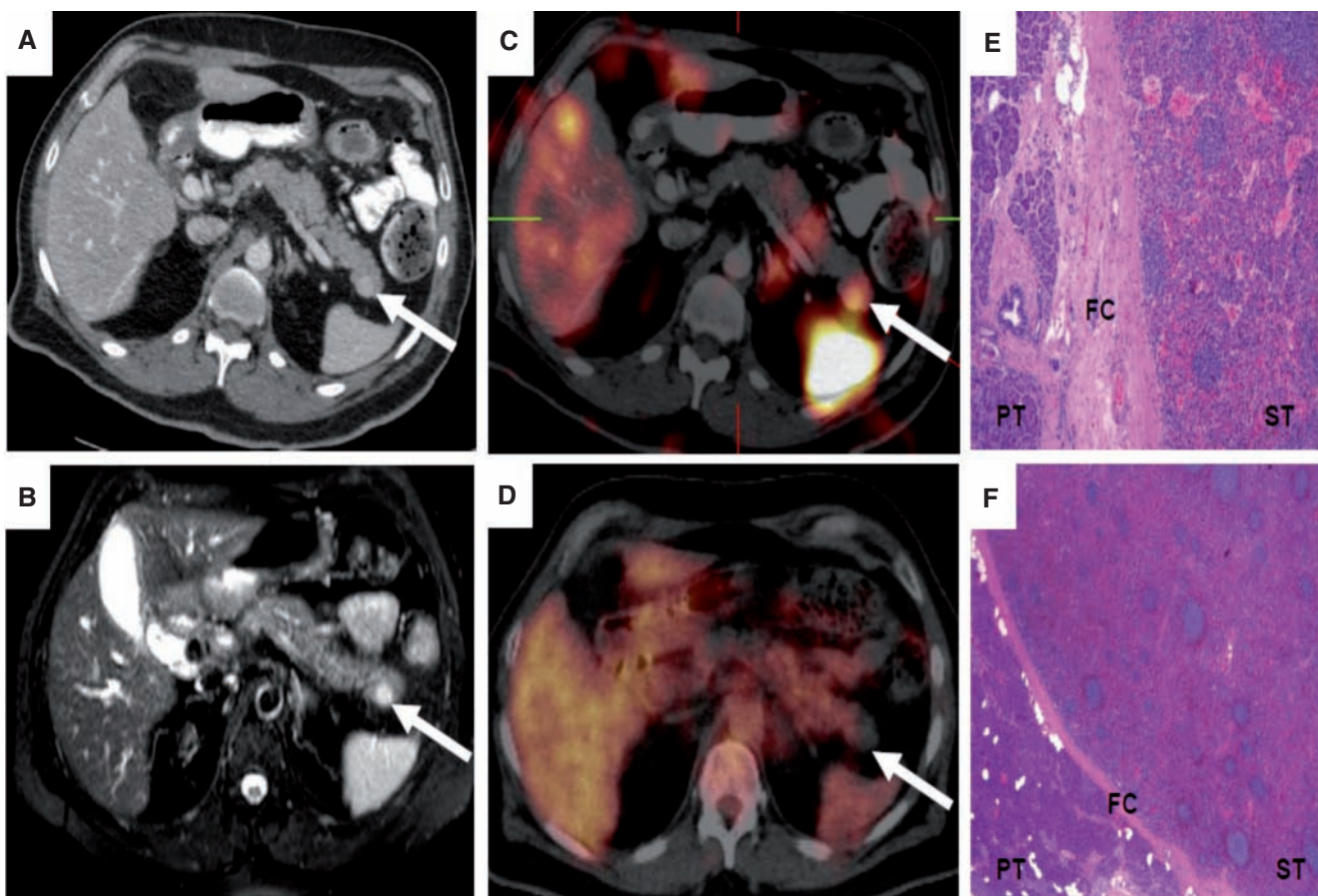


Figure 1 - Multimodality imaging and pathology of intrapancreatic accessory spleen. A) Computed tomography shows a round, homogeneous and hypervascular nodule in the pancreatic tail (arrow). B) Magnetic resonance reveals an iso- to high-intensity pattern on T2-weighted sequences (arrow). C) ¹⁸F-FDG PET/CT shows no abnormal uptake in the tail of the pancreas (arrow). D) [¹¹¹In] DTPA-octreotide scan shows focal uptake along the pancreatic mass (arrow). E-F) Histological examination reveals heterotopic splenic tissue (ST) demarcated by a thick fibrous capsule (FC) and surrounded by normal pancreatic tissue (PT) (E: HE, $\times 2.5$; F: HE, $\times 10$).

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