Endoscopic ultrasound-guided fine needle aspiration diagnosis of a focal fatty mass in the pancreas

Focal fatty masses of the pancreas, which include focal fatty infiltration, lipoma, and liposarcoma, are rare entities [1]. A well-differentiated lipogenic liposarcoma can mimic a benign lesion on radiologic examination and only cytohistology can resolve the doubt [2].

A 60-year-old woman was referred to our department because of an incidental ultrasound diagnosis of a lesion in the head of the pancreas. The patient was asymptomatic. An unenhanced computed tomography (CT) scan showed a 43-mm homogeneous, hypodense lesion at the pancreatic head (Fig. 1a). Abdominal magnetic resonance imaging (MRI) showed the lesion to be hypointense on fast imaging employing steady-state acquisition (FIESTA) with fat saturation (Fig. 1b) and hyperintense on T2-weighted fast-spin echo (FSE) acquisition without fat saturation (Fig. 1c). No clear contact with abdominal fat was seen.

An endoscopic ultrasound (EUS) showed a lobulated, ill-defined, heterogeneous lesion, which was slightly hypoechoic compared with the surrounding pancreatic parenchyma but with internal hyperechoic strands (Fig. 2a). The appearance was compatible with both a pancreatic lipoma and focal fatty infiltration, but even a liposarcoma could not be excluded. For this reason, we decided to perform an EUS-guided fine needle aspiration (FNA) with a 19-gauge needle (one passage) (Fig. 2b), which revealed clearly visible fat globules on the smears (Fig. 3a).

Cytohistologic examination showed mature adipocytes characterized by large fat droplets and eccentrically placed small nuclei without atypia. The adipocytes were interspersed with islands of normal pancreatic tissue (Fig. 3b, c). Immunohistochemical staining for Ki-67 showed no mitotic activity (Fig. 3d).

This focal fatty mass of the pancreatic head had some of the characteristics of a lipoma (no clear contact with abdominal fat on imaging), and some of focal fatty infiltration (no clear cytohistologic demarcation from pancreatic parenchyma) [1, 2]. This difficulty in distinguishing between these nosologic entities has been previously reported, but a clear distinction is not necessary because conservative treatment is indicated for both types of lesion. EUS-FNA, on the other hand, permits clear classification of such lesions where the differential diagnosis includes liposarcoma, which has a surgical indication. Only three other cases of EUS-FNA of a focal fatty mass of the pancreas have been reported [3–5], but considering the

Fig. 1 Imaging of the lesion in the pancreatic head. a Computed tomography (CT) scan showing a hypodense lesion (*) in the pancreatic head. b Magnetic resonance imaging (MRI) scan showing the lesion is hypointense on fast imaging employing steady-state acquisition (FIESTA) with fat saturation in axial view; and c hyperintense on T2-weighted fast-spin echo (FSE) acquisition without fat saturation.

Fig. 2 Endoscopic ultrasound (EUS) images showing: a a lobulated, ill-defined, heterogeneous lesion, which is slightly hypoechoic compared with the surrounding pancreatic parenchyma but with internal hyperechoic strands; b EUS-guided fine needle aspiration (FNA) being performed with a 19-gauge needle.
low probability of complications and the potential benefit for the patient, EUS-FNA should be considered for such pancreatic lesions.

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Fig. 3 Histocytological appearance showing: a on Hemacolor staining of the smear, several round empty spaces, both singly and in groups (most likely adipose tissue), with no atypical cells; b on a hematoxylin and eosin (H&E)-stained section, adipose tissue (white arrow) without atypia, interspersed with islands of normal pancreatic acini (black arrow); c on an S100-stained section, adipose tissue and islands of normal pancreatic acini; d on Ki-67 staining, the adipose tissue is negative, indicating no mitotic activity.