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Primary pancreatic leiomyosarcoma: a rare diagnosis obtained by EUS-FNA cytology

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To the Editor

Leiomyosarcoma of the pancreas is an extremely rare malignancy. A pathologic tissue diagnosis to guide appropriate clinical management can be established with EUS-FNA cytology. We believe this to be the first report of a primary leiomyosarcoma of the pancreas diagnosed by EUS-FNA cytology.

A 68-year-old man presented with persistent vague abdominal pain. Abdominal CT showed an 8-cm mass arising from the pancreas. EUS revealed a 9 × 7.5 cm heterogeneous mass replacing the pancreatic uncinate process, head, and neck (Fig. 1). Transduodenal FNA of the pancreatic head with a 22-gauge needle yielded blood. Because of stromal fibrosis, a flexible 19-gauge needle was used for subsequent passes. A malignant spindle cell lesion was confirmed on the second pass at on-site evaluation (Fig. 2). Needle rinses were made into the cell block, which contained multiple fragmented cores whose architecture was consistent with leiomyosarcoma. The diagnosis was supported by immunohistochemistry results that were positive for smooth muscle actin (SMA) and desmin, and negative for CD34, c-kit, and discovered on GIST-1 (DOG-1). The result of platelet derived growth factor- α (PDGFR- α) mutational analysis was negative. The patient died 8 weeks later, and autopsy revealed extensive disease throughout the abdomen and complete obliteration of the pancreas.

Sarcomas of the pancreas are exceedingly rare, representing less than 1% of all pancreatic malignancies.¹ Many cases initially thought to be primary leiomyosarcoma of the pancreas

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are later shown to originate in adjacent organs. We were able to confirm our diagnosis because the imaging showed no evidence of contiguous spread or metastatic disease.

Leiomyosarcomas are cystic and fibrous in nature,² and a diagnostic EUS-FNA aspirate can be difficult to obtain. The initial 22-gauge needle yielded hemorrhagic cyst fluid, and by changing to a flexible 19-gauge needle we were able to obtain several diagnostic solid tissue fragments. The exact nature of the stromal malignancy was confirmed by EUS-FNA cytology, avoiding the need for increasingly morbid, invasive tissue acquisition procedures in a patient with advanced disease.

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Figure 1.
EUS-guided FNA performed with a curvilinear echoendoscope, demonstrating a large hypoechoic mass in the pancreatic head region.

Figure 2. Cytologic features consisting of cohesive spindle-shaped cells in parallel arrangement, with large blunt-ended “cigar” nuclei, with pleomorphism, high nuclear-cytoplasmic (N/C) ratios, and mitotic figures embedded in thick metachromatic fibrotic stroma (Diff-Quik, $\times 200$).