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Endoscopic ultrasound-guided fine-needle aspiration diagnosis of secondary tumors involving pancreas: an institution's experience

Yanjun Hou, MD, PhD, Rulong Shen, MD, Dena Tonkovich, Zaibo Li, MD, PhD*

Department of Pathology, Wexner Medical Center at The Ohio State University, Columbus, Ohio

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KEYWORDS
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Introduction Metastases that present as pancreatic masses are rare. Understanding and recognizing this uncommon occurrence during endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) will help in making an accurate diagnosis and planning for clinical management. In this study, we reviewed our experience in diagnosing pancreatic secondary tumors.

Materials and Methods A pathology archive database search was performed for EUS-FNAs of the pancreas with a diagnosis of metastatic tumor at our institution. The corresponding clinical presentations, imaging studies, cytological diagnoses, ancillary studies, and surgical follow-up were collected.

Results A total of 30 cases were identified with 18 male and 12 female patients. Twenty-eight patients (93.3%) had a prior history of malignancy, with a latency ranging from 0 to 36 years. The secondary tumors included carcinoma (18 of 30), neuroendocrine tumor (5 of 30), melanoma (4 of 30), and sarcoma (3 of 30). The most common metastatic tumor was clear cell renal cell carcinoma (37%, 11 of 30). Correct diagnoses were rendered in 28 cases (93.3%). The remaining 2 cases failed to be accurately diagnosed: one pleomorphic carcinoma (reported as pleomorphic sarcoma) and one liposarcoma (reported as poorly differentiated malignant neoplasm). Both cases did not have immunohistochemistry performed because of a lack of diagnostic materials in cell blocks.

Conclusions Our data demonstrated that metastatic clear cell renal cell carcinoma was the most common secondary tumor involving the pancreas. Secondary tumors involving the pancreas can be accurately diagnosed by EUS-FNA. Knowing the prior history of malignancy, recognizing uncommon cytomorphologic features, and performing ancillary studies are keys to improve diagnostic accuracy.

Introduction

Metastasis to the pancreas is an uncommon occurrence and constitutes at least 2% of pancreatic tumors.[1-5] A diverse spectrum of malignancies including renal, lung, colon,

*Corresponding author: Zaibo Li, Department of Pathology, Wexner Medical Center at The Ohio State University, 410 W. 10th Ave, Columbus, OH 43210; Tel.: +614-366-4859.

E-mail address: Zaibo.Li@osumc.edu (Z. Li).

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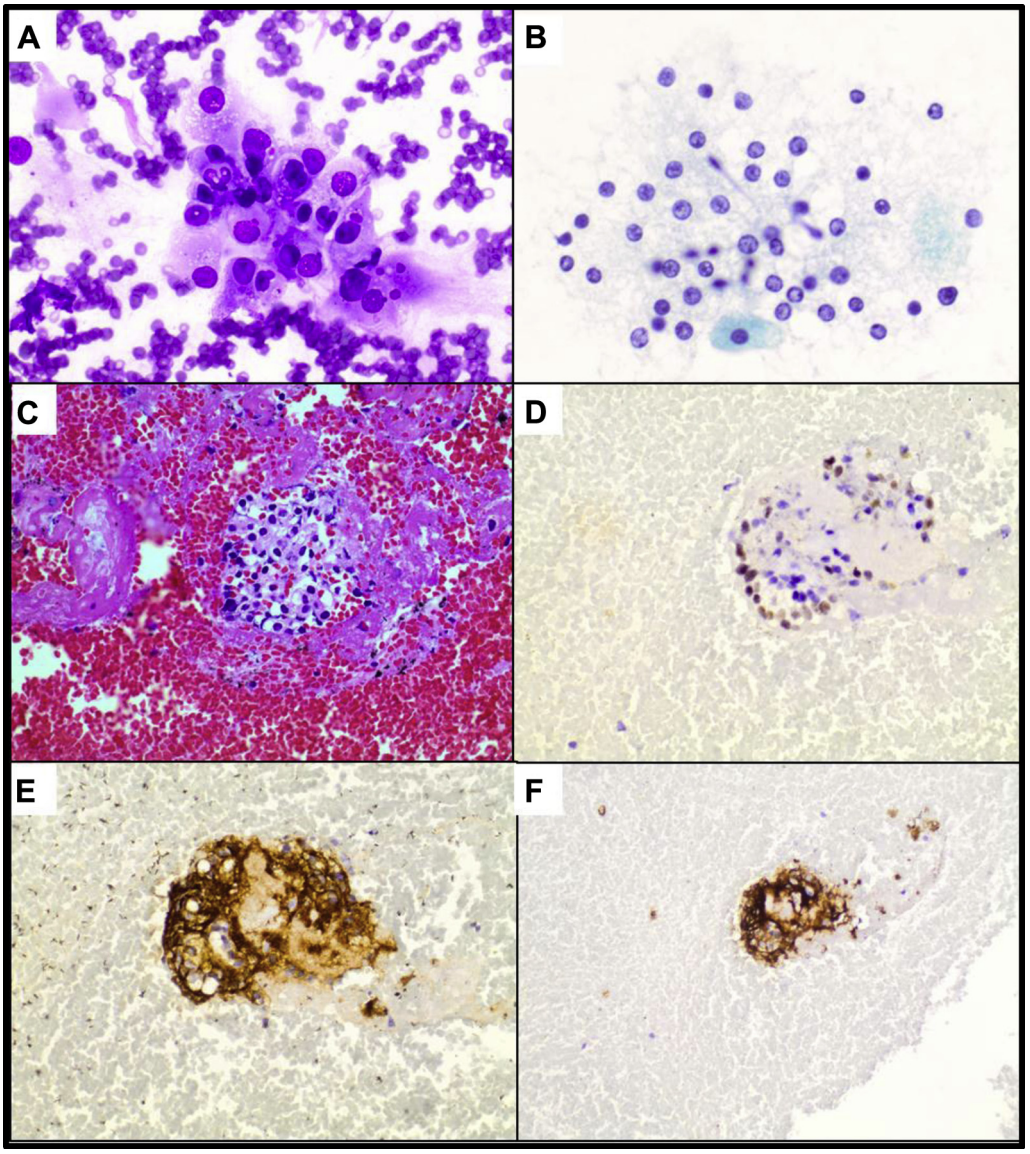

Figure 1 Metastatic clear cell renal cell carcinoma. A, Diff-Quik stain, 400×; B, Papanicolaou stain, 400×; C, Cell block, hematoxylin and eosin stain, 100×; D, Positive PAX8 immunostain, 100×; E, Positive CA IX immunostain, 100×; F, Positive CD10 immunostain, 100×.

breast, liver, ovarian, melanoma, lymphoma, sarcoma, neuroendocrine tumor, and thyroid has been documented as a secondary tumor involving the pancreas.[1-7] Metastasis involving pancreas is commonly present as a widespread disease, in comparison with an isolated single mass with irregular borders of the primary pancreatic tumors.[4] Metastasis to the pancreas can present as a solitary mass years after the primary malignancy was diagnosed or as the initial manifestation of an extrapancreatic primary.[4,6,8] Radiographic distinction between primary and secondary pancreatic neoplasm is often limited and tissue examination is necessary.

Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) cytology is widely used to evaluate pancreatic lesions preoperatively. EUS-FNA is relatively safe and is the least invasive and most cost-effective approach for pancreatic sampling;[1,9] it has been shown to be accurate in the diagnosis of pancreatic metastases.[1,3-6,8,10,11] Accurate diagnosis of metastases in pancreas is extremely important for clinical staging and appropriate management.

In this study, we reviewed our experience in diagnosing secondary tumors involving the pancreas by FNAs as documented by the clinical characteristics, imaging studies, cytological diagnoses, ancillary studies, and surgical follow-ups.

Materials and methods

Patient selection and data collection

After institutional review board approval at the Ohio State University, a pathology archive database search was