Pancreatic metastasis in a case of small cell lung carcinoma diagnosed by EUS

ABSTRACT

Small-cell lung carcinoma represents a group of highly malignant tumors characterized by early and widespread metastasis even at the time of diagnosis. However, the pancreas is a relatively infrequent site of metastasis by this neoplasm. A 57-year-old patient was admitted with an intense cough and complaints of abdominal discomfort. A chest X-Ray showed no evidence of lung mass but did show signs of lymphadenopathy. In addition, there was little evidence for malignancy based on a transbronchial needle aspiration. In contrast, there was a mass in the head portion of the pancreas. We diagnosed a case of small-cell lung carcinoma metastasis in the pancreas by using an endoscopic ultrasound-guided fine-needle aspiration biopsy. This case demonstrates that endoscopic ultrasound-guided fine-needle aspiration biopsy is an important tool in the diagnosis of metastatic pancreatic neoplasms.

Keywords: EUS guided FNA, pancreatic metastasis, SCLC

INTRODUCTION

Small-cell lung carcinoma (SCLC) represents one quarter of all bronchogenic carcinomas (1) and has the worst survival. In addition, it is characterized by widespread metastasis even at the time of diagnosis. It can metastasize lymph nodes, brain, bones, and also the adrenal glands (2). However, the pancreas is a relatively infrequent site for metastasis. There are few reports which have been diagnosed based on endoscopic ultrasound (EUS) - guided fine - needle aspiration (FNA) cytology. The majority of pancreatic masses are due to primary neoplasms of the pancreas of which most are ductal adenocarcinoma. Intra-pancreatic metastases can occur, but the reported frequencies differ considerably in the literature ranging from 11% in autopsy series (3) to 4.5% in clinical series (3,4). In addition, a quarter of the metastatic lesions in the pancreas have originated from the lung. Occasionally, pancreatic metastases may occur following treatment of the primary neoplasm, which is why it is not considered on initial evaluation (5). Currently, there are few radiographic features able to separate pancreatic metastases from pancreatic primary carcinomas although dynamic computed tomography (CT) has got some value in separating the primary from the secondary neoplasm (6). In addition, Magnetic Resonance Imaging (MRI) should also be considered as a diagnostic tool. Despite radiographic information, the definitive separation of primary and secondary pancreatic neoplasms depends mostly on pathologic examination and most commonly, cytologic evaluation of EUS-guided FNA.

CASE PRESENTATION

A 57-year-old man was admitted to Gazi University Hospital complaining of an intense cough. He had an extensive, 30-year history of smoking and an evaluation of the chest X-ray showed mediastinal lymphadenopathy. A CT of the thorax was then performed, which showed involvement of the mediastinal lymph nodes. A transbronchial needle aspiration was performed, however cytological examination was suspicious for malignancy. Because the patient also complained of abdominal pain, an abdominal ultrasonography was performed which indicated a suspicious mass on the head of the pancreas. Then, CT of abdomen also was suspicious for this mass. An MRI subsequently confirmed the mass
on the head portion of the pancreas (Figure 1). An irregular-shaped, solid mass of approximately 2×2.5 cm was detected by EUS on the head of the pancreas. An aspirate for cytologic examination was obtained using an EUS-guided FNA (Figure 2). The hematoxylin-eosin- and pap-stained smears were hypocellular and contained loosely cohesive groups of small, rounded cells and spindle-shaped cells with little cytoplasm, “salt and pepper” nuclear chromatin, and inconspicuous nucleoli. Scattered apoptotic bodies and evidence of nuclear molding were also seen at 400× magnification (Figure 3). The transbronchial needle aspiration was suggestive of a SCLC. The treatment procedure began after the diagnosis of SCLC was confirmed with EUS-guided FNA cytology. Written and signed informed consent was obtained from patient who participated in this case.

**DISCUSSION**

Pancreatic metastases are a very rare entity especially for SCLC. Maeno et al. (7) identified 3% of patients with pancreatic metastasis. Yoon et al. (8) also reported 53 pathologically proven metastatic tumors of the pancreas. The primary malignancies were renal cell carcinoma (n=14), gastric cancer (n=11), colorectal cancer (n=5), lymphoma (n=4), non-SCLC (n=14), gastrointestinal stromal tumor (n=2), melanoma (n=2), SCLC (n=2), gallbladder cancer (n=2), and one case of hepatocellular carcinoma, thymic carcinoid, liposarcoma, cholangiocarcinoma, osteosarcoma, breast carcinoma, duodenal cancer, and ovarian cancer. Volmar et al. (9) also evaluated 20 non-hematologic metastases in the pancreas diagnosed by EUS-guided FNA: two of which were pulmonary small-cell carcinomas. Layfield et al. (10) reported on 17 metastatic pancreatic malignancies: two of which were squamous cell carcinomas (one from the lung and the other from the esophagus).

In our case, the patient was suspected to have clinical lung cancer. Histologic and immunohistochemical studies also favored the primary tumor as small-cell carcinoma. The pancreatic FNA cytology was diagnosed as metastatic SCLC. Specific cytopathological staining was also positive for pan-ck, neuron-specific enolase, chromogranin A, and synaptophysin; thus, confirming the diagnosis.

In this case, because the transbronchial biopsy was not exactly diagnostic, the value of EUS-guided FNA cytology was therefore important. In recent years, EUS-FNA has been established as a technique for mediastinal nodal staging and noted for its accuracy and safety in cytology and biopsy (11). Pancreatic metastasis has rarely been validated by cytology or biopsy before surgery or autopsy. EUS-FNA from the pancreas is safer than percutaneous FNA from the viewpoint of accessibility and visibility.

Small-cell lung carcinoma is an aggressive cancer characterized by rapid growth and early metastatic behavior. This case also demonstrated that, in patients with SCLC, other unusual metastatic sites of the abdomen beside the most common metastatic sites (e.g., adrenal glands and lymph nodes) should be carefully examined. Consequently, EUS-FNA is a safe and important method for the differential diagnosis of pancreatic cystic or solid mass lesions; thus, determining the establishment of a therapeutic strategy as in the case described herein.
Case Report

Karakan et al. Metastatic SCLC diagnosed by EUS

Ethics Committee Approval: N/A.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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REFERENCES


