Clinical Case Study

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A Rare Pancreatic Tail Metastasis from Squamous Cell Lung Carcinoma Diagnosed by EUS-FNB and a Small Review of the Literature

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Keywords
Lung cancer · Squamous cell · Pancreatic metastasis · EUS-FNB

Abstract
Differential diagnosis of pancreatic lesions is really challenging, especially when the patient is diagnosed with primary cancer at another site. In this case report, we managed to histologically confirm pancreatic metastasis from squamous cell lung carcinoma, which is a very rare entity, using endoscopic ultrasound fine needle biopsy.

Um caso raro de metástase na cauda do pâncreas de carcinoma de células escamosas do pulmão por EUS-FNB e uma pequena revisão da literatura

Palavras Chave
Cancro pulmão de células escamosas · Metástase pancreática · EUS-FNB

Resumo
O diagnóstico diferencial de lesões pancreáticas é desafiante, especialmente quando o doente é diagnosticado com cancro primário noutro local. Neste caso clínico foi possível confirmar histologicamente o diagnóstico de metástase pancreática de carcinoma de células escamosas do pulmão, que se trata de uma entidade muito rara, através de punção com agulha fina ecoguiada por ecoendoscopia.

Introduction

Secondary lesions in the pancreas are uncommon and difficult to discriminate from a primary pancreatic cancer. An accurate diagnosis can provide the appropriate treatment to the patient. In this case, the patient had synchronous pancreatic metastasis originating from a primary non-small cell lung cancer, and the pancreatic tumor was diagnosed using endoscopic ultrasound-guided fine needle biopsy (EUS-FNB). EUS has proven to be a safe and optimal diagnosing tool for evaluating pancreatic tumors [1].

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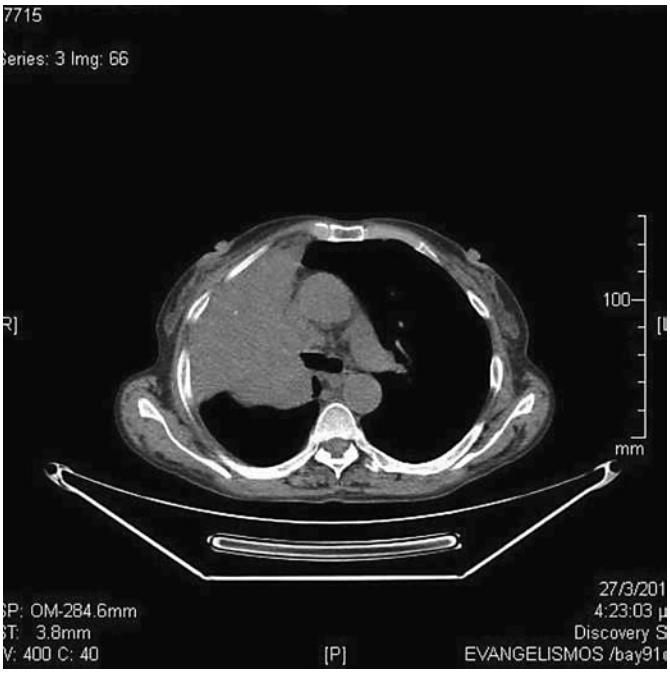

Fig. 1. A large tumor on the right upper lung lobe on computed tomography.

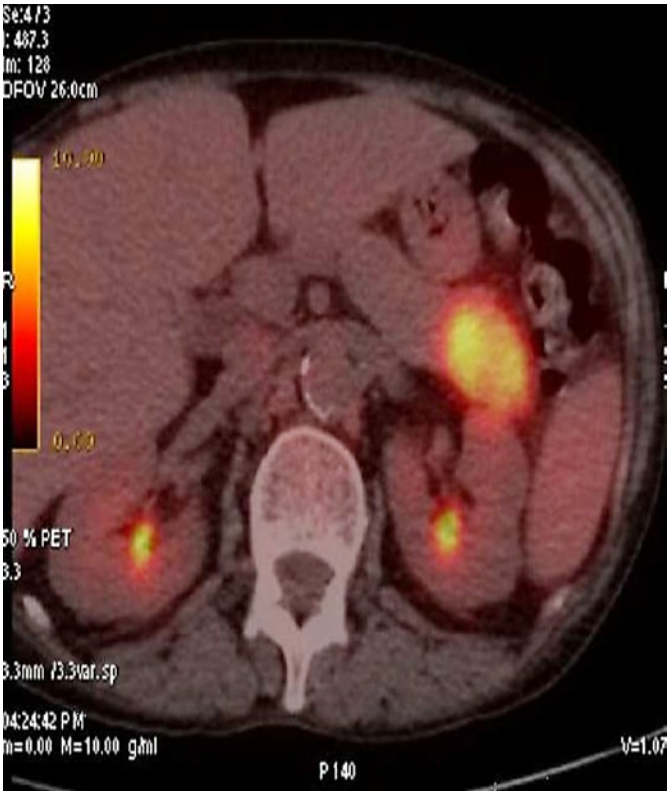

Fig. 2. Increased 18-FDG uptake in the pancreatic tail.

Case Report

A 60-year-old woman, a current smoker with >50 pack/years, was admitted to the General Hospital of Rethymnon on February 2018 due to fatigue, cough, and hemoptysis. She reported loss of appetite and a 10-kg weight loss during the past 6 months. Her blood count was low with iron deficiency anemia (Hgb 9.2 g/dL), but the rest of the blood tests were within normal limits. The tumor marker results were as follows (CEA 1.5 μg/L, Ca19-9 22.4 U/mL, and Ca15-3 30.6 U/mL).

During the medical workup, a chest X-ray depicted a large mass on the right upper lung lobe, which was confirmed on contrast-enhanced chest computed tomography (CT) scan (Fig. 1). CT scan also revealed 2 pathologically enlarged right hilar lymph nodes. Subsequent bronchoscopy revealed obstruction of the right superior lobar bronchus from a mass, and histopathology reported squamous cell carcinoma (SCC) of the lung. The physician ordered a positron emission tomography/CT, which showed increased 2-deoxy-2-[F-18]fluoro-D-glucose uptake in the right lung and pancreatic tail (Fig. 2).

Subsequently, the patient was referred for EUS, and a hypoechoic 4.5-cm pancreatic-tail round mass with slightly irregular borders was identified. The lesion was clearly separated from the left adrenal gland and the kidney, and EUS-FNB was performed using a 22-gauge needle (Acquire, Boston Scientific, Natick, MA, USA) (Fig. 3). Cytology stain slides revealed atypical squamous cells suggestive of the diagnosis of SCC (Fig. 4). Needle core fragments were collected separately and sent for histopathological evaluation, which revealed keratin debris, apoptotic keratinocytes, and few solid aggregates of atypical cells featuring focally intercellular bridges and intracellular keratinization (Fig. 5). Positive immunostaining with p40 supports the squamous phenotype (Fig. 6). Thus, this was diagnosed as a metastatic pancreatic tumor from lung cancer.

A programmed cell death-1 (PD-L1) biomarker test (22C3 PharmDx DAKO™ kit) was done using paraffin-embedded slides of the primary tumor which showed a Tumor Proportion Score of 5.801/6.408 (90.5%). After that, the patient was treated with the anti-PD-L1 antibody pembrolizumab, and she is still alive after 7 cycles of therapy without having any adverse events and with stable tumor burden after her last CT scans.

Discussion

The prevalence of pancreatic metastases, in large autopsy series of metastatic disease, has been described to range from 1.6 to 11% [2]. Metastatic tumors in the pancreas are uncommon neoplasms accounting for less than 3% of solid pancreatic lesions and are mainly related to advanced disease [3, 4]. Most common metastatic malignancies in the pancreas are those of the kidney, lung, melanoma, and breast. Lung cancers have the tendency to metastasize to adrenal glands, liver, brain,

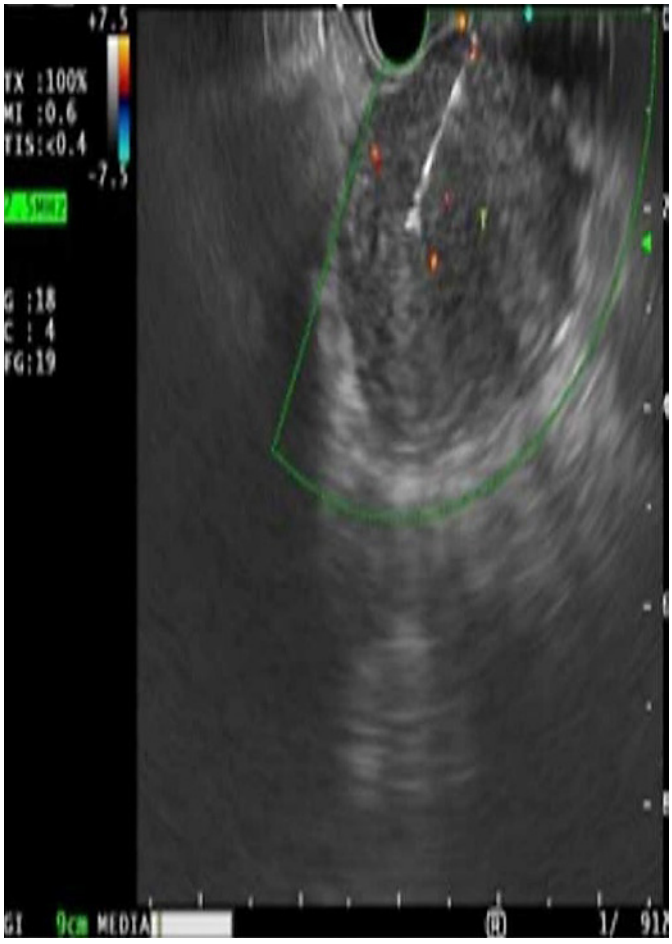

Fig. 3. Endoscopic ultrasound-guided fine needle biopsy of the pancreatic tail tumor.

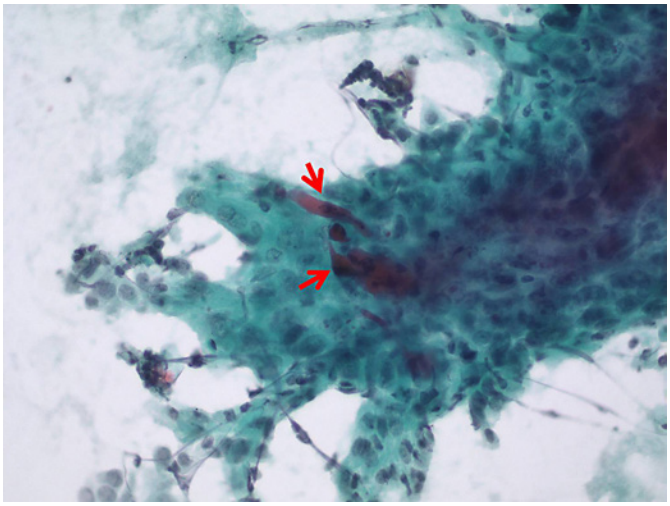

Fig. 4. Cytological examination of the endoscopic ultrasound sample: aggregate of malignant squamous cells focally (arrows) keratinized. Smear, Pap stain, ×40.

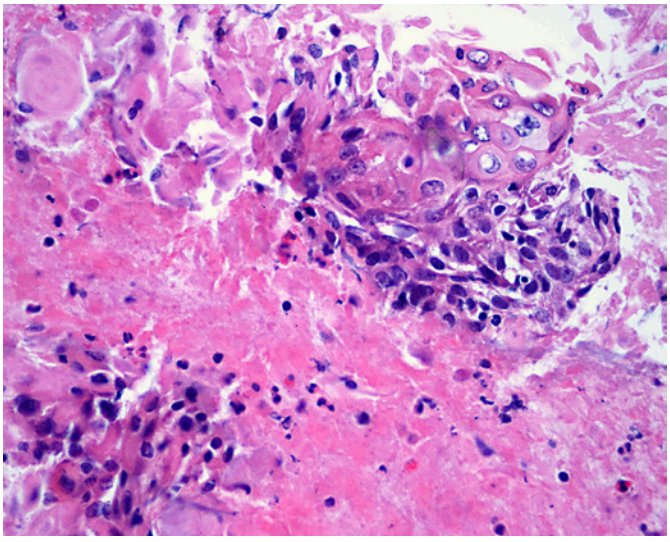

Fig. 5. Histopathological examination of the endoscopic ultrasound sample. Hematoxylin and eosin stain, ×40.

and bones and less frequently to other sites [5]. Regarding lung-related pancreatic metastases, the frequency is mostly related to the histological type, with small cell carcinoma being the most common, followed by adenocarcinoma, large cell carcinoma, and lastly SCC, being the least frequent, occurring only in 1.1% of these tumors [4]. To our knowledge, only 4 cases of metastatic lung SCC in the pancreas have been reported worldwide, but 3 of them were lesions identified several months after the diagnosis and treatment of lung cancer and were not a concomitant diagnosis of primary and metastatic site as in our case [3, 4, 6, 7]. Pancreatic SCC could be of primary origin, but this constitutes a rather questionable entity, as the pancreas is devoid of squamous cells, and, thus, in such cases, an extensive workup should be performed to rule out possible metastasis from the lungs, esophagus, and cervix [8].

EUS is now considered the gold standard examination for diagnosing and differentiating pancreatic tumors [1]. Over the last few years, a new trend has been developed for solid abdominal and especially pancreatic lesions regarding the type of tissue acquisition needle used. FNB needles have gained ground as they are now considered delivering a more accurate diagnostic sample and with fewer passes needed compared to fine aspiration needles in EUS [9–11].

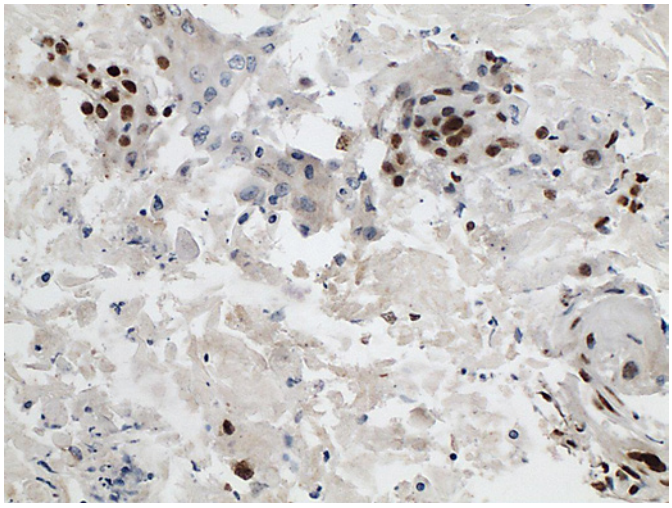

Fig. 6. Histopathological examination of the endoscopic ultrasound sample. Immunostaining with p40.

There are no defined criteria for the management of metastases in the pancreas, but the prognosis is poor and, often, a more conservative approach is preferred. In conclusion, when faced with pancreatic solid lesions, physicians should always keep in mind the likelihood of metastasis from tumors with unusual site and histology. EUS with FNB remains the optimal diagnostic tool for these kinds of lesions.

Statement of Ethics

We state that the subject of this case has given her written informed consent to publish her case (including publication of images).

Disclosure Statement

There are no conflicts of interest.

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Author Contributions

Ioannis Stoupis: manuscript writer, medical oncologist in charge of making the treatment plan for the patient. Evangelos Voudoukis: manuscript writer, has done the EUS-FNB to the patient. Emmanouil Mastorakis: manuscript writer, contributed to immunohistochemistry and histological diagnoses of the EUS-FNB specimen. Georgios Kazamias: manuscript writer, contributed to cytological diagnoses of the EUS-FNB specimen. Panagiotis Ieromonachou: manuscript writer, contributed to immunohistochemistry and histological diagnoses of the EUS-FNB specimen. Charalampos Pappas: manuscript writer, contributed to bronchoscopy, staging procedures, and diagnoses of the primary tumor.

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