Case Report

Acute cholangitis due to pancreatic metastasis from squamous cell lung carcinoma: a case report and review of literature

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Abstract

Introduction: The pancreas is a well-documented but relatively uncommon site of non-small-cell cancer metastases. However, at the time of diagnosis the disease is usually locoregionally advanced, therefore therapeutic management is mostly palliative and symptomatic.

Case Presentation: We report the case of a 77-year-old Caucasian male patient who presented initially with a clinical picture of acute cholangitis approximately 2 years after a left lower lobectomy for a low-grade squamous lung carcinoma. CT scan imaging of the abdomen and chest revealed an abnormal growth of the pancreatic head and distention of both the intra- and extra-hepatic biliary tree, whereas osteolytic abnormalities were observed of the 5th left rib, consistent with secondary deposits. Initially an endoscopic retrograde cholangio-pancreatography (ERCP) and sphincterectomy was performed and a plastic stent was placed in the common bile duct to decompress the biliary tree. Cytological examination of the aspirate collected by FNA of the pancreatic lesion under EUS guidance revealed cells consistent with a low grade squamous lung carcinoma. Two months later an open cholecystectomy along with a gastrojejunostomy was performed to relieve the patient’s gastric outlet obstruction symptoms. Following remission of the patient’s attack of acute cholangitis and excessive vomiting he was released from the hospital and instructed to initiate chemotherapy with vinorelbine. The patient succumbed to disseminated disease almost 5 months later.

Conclusion: Symptomatic metastatic lesions of the pancreas from squamous cell carcinoma of the lung are infrequent. Typically, the patients remain asymptomatic until their disease reaches a fairly advanced stage and therapeutic options are limited to palliative measures. A high index of suspicion is the only way of early detection and potentially effective treatment for this rare localization of metastatic squamous lung carcinoma.

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Introduction
A variety of malignant tumors have been documented to metastasize to the pancreas. The most common primary site for pancreatic metastases is the lung (18-27%) [1,2]. However, this relatively high occurrence of solitary pancreatic metastases from lung cancer is mainly based on autopsy reports. These tumors are usually asymptomatic or present with vague symptoms that can delay the diagnosis of metastatic disease. When they become clinically evident, their most common manifestations are that of obstructive jaundice and/or acute pancreatitis [2,3]. These cases, usually involve patients with widespread, disseminated disease, so therapeutic management is mostly palliative and symptomatic. Nonetheless, there have been a few scattered reports of radical surgical interventions to selected patients.

In this report, we present the case of 77-year-old patient with non-small-cell lung carcinoma who presented with a metachronous solitary pancreatic metastases that became clinically evident with recurring episodes of cholangitis and obstructive jaundice, as well as symptoms of gastric outlet obstruction.

Case-Presentation
A 77-year-old Caucasian male patient, with a history of triscupid deficiency, coronary heart disease, arterial hypertension and a permanent pacemaker placement due to bradyarrhythmia was diagnosed with a solitary lesion of the lower lobe of the left lung on September 2006, an incidental finding in a routine chest x-ray. This finding was confirmed by a chest CT, which in turn revealed a 2.5 × 2 cm solitary lesion on the lower lobe of the left lung. At that time, no evidence of metastatic disease was demonstrated from the patient’s additional radiologic examination. Subsequently, he underwent a lower lobectomy of the left lung with an uneventful recovery.

Pathological examination confirmed a low-grade squamous carcinoma of the lung, with peripheral spots of adenocarcinoma with clear surgical margins and negative lymph nodes. Postoperatively the patient received a regime of adjuvant chemotherapy consisting of 4 cycles of Paclitaxel (Taxol) and Carboplatin.

For the following 2 years the patient did well without any evidence of local or systemic recurrence. On November 2008 a routine follow-up chest CT revealed osteolytic abnormalities of the 5th left rib, consistent with secondary deposits [Figure 1]. A few days later the patient was admitted to the hospital presenting with high fever (38.5°C), rigor, recurrent vomiting resulting in incapability to eat, right upper quadrant pain and jaundice. Radiological examination of the abdomen with both an ultrasound and a computed tomography revealed cholelithiasis and a highly suspicious, well circumscribed lesion of the pancreatic head, with both cystic and solid elements, resulting in distention of both intra- and extra-hepatic biliary tree and causing pyloric stenosis [Figure 2]. A protruding, distorted Vater ampulla with adenomatoid appearance, as well as distention of intra- and extra-hepatic biliary tree, secondary to stenosis of the distal common bile duct was revealed on a subsequent ERCP. Endoscopic sphincterectomy was performed and a plastic stent was placed in the common bile duct. Fine needle aspiration of the pancreatic head lesion under EUS guidance disclosed a low grade squamous carcinoma with immunohistochemical characteristics consistent with metastatic lung carcinoma [Fig-
Two months later the patient underwent a gastrojejunostomy and an open cholecystectomy due to persistent symptoms of gastric outlet obstruction.

The patient had an uneventful recovery and remained in good clinical condition for the following three months. Progressively he developed symptoms of disseminated disease and finally died five months post-laparotomy.

**Discussion**

The pancreas is a relatively infrequent site of distant metastasis. Moreover, metastatic tumors to the pancreas rarely become clinically evident, although their incidence has been reported to be approximately 12% in autopsy reports of patients suffering from other malignancies [4].

The most frequent sources of pancreatic malignant metastases originate from the lung, breast, kidney, gastrointestinal tract, thyroid, melanoma, and liver. Melanomas and osteosarcomas are also among the tumors that metastasize to the pancreas. The route of metastases is lymphatic (28%), vascular (27%), lymphatic - vascular (19%) and by direct invasion (18%) [1]. Such lesions usually appear in patients between 60-70 years of age [5]. The most common manifestation is that of a solitary mass, located in the head of the pancreas [5].

Primary lung cancer metastasizes to distant organs quite frequently. The most common sites of lung cancer metastases are the bones, liver and adrenal glands. The pancreas is a rather uncommon location of metastatic lung cancer. Evidence about it is based on scattered case reports in the literature that usually concern patients at an advanced stage of their disease, thus eligible only for palliative treatment. It is estimated that the incidence of secondary pancreatic deposits resulting from the various types of lung cancer range from 14.2% - 18.2% [1,6]. The majority of these cases arise from small cell lung carcinomas (63%), and only rarely from adenocarcinoma (11.4%), large cell carcinoma (5.7%), squamous cell carcinoma (5.7%) and anaplastic carcinoma (2.9%) [7].

Symptoms caused by metastatic pancreatic lesions are variable and most patients are free of organ-specific complaints. Metastatic disease is usually incidentally detected on abdominal CT scan during the follow-up period. Those patients that do have clinical manifestations may present with abdominal or back pain, nausea, weight loss, jaundice, gastrointestinal haemorrhage or intestinal obstruction [8]. Moreover, whenever the pancreatic metastatic lesion directly invades the pancreatic duct epithelium it may clinically mimic primary pancreatic adenocarcinoma or, less commonly, induce acute pancreatitis [9-11].

The diagnosis is usually confirmed by percutaneous fine needle aspiration of the pancreatic lesion under CT guidance or endoscopic ultrasound (EUS) or by cytological examination of brushing specimens obtained during endoscopic retrograde cholangiopancreatography (ERCP).

Treatment options for metastatic lung cancer lesions to the pancreas are mainly of palliative intent. They can be either non-invasive or invasive - surgical. Non-invasive
Symptomatic metastatic lesions of the pancreas from squamous cell carcinoma of the lung are extremely rare. Typically, the patients remain asymptomatic until their disease reaches a fairly advanced stage, and therapeutic options are then limited to palliative measures. FNA of the suspicious lesion is fundamental in order to achieve differential diagnosis from other primary pancreatic tumors. A high index of suspicion is the only way of early detection and potentially effective treatment for this rare localization of metastatic squamous lung carcinoma.

**Conclusion**

Symptomatic metastatic lesions of the pancreas from squamous cell carcinoma of the lung are extremely rare. The authors declare that they have no competing interests.

**Authors’ contributions**

MAK: designed and drafted the manuscript. CS: participated in the acquisition of data and preparation of the manuscript. MK: responsible for critical revision of scientific content.

TK: assisted in the preparation of the manuscript. CZ: assisted in the preparation of the manuscript. ET: performed histopathological, immunohistochemical and cytological analysis.

PD: participated in the acquisition of data and preparation of the manuscript. INN: the surgeon, approved the final version of the manuscript for publication. All authors read and approved the final version of the manuscript.

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