

Case Report

Metastasis-Induced Acute Pancreatitis Secondary to Small Cell Lung Carcinoma: A Case Report

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Abstract

Description

Metastasis-induced acute pancreatitis (MIAP) is a condition that occurs when patients develop acute pancreatitis secondary to metastatic malignancy. Most pancreatic cancers are adenocarcinomas that are primary malignancies. On the other hand, metastatic pancreatic lesions are rare, especially from primary pulmonary malignancies. Acute pancreatitis caused by metastatic carcinoma of the pancreas is a very rare presentation. Herein, we present the case of a 63-year-old male with history of small-cell lung carcinoma presenting to the hospital due to recurrent episodes of acute pancreatitis who was found to have metastatic pancreatic carcinoma. The patient was treated conservatively for his recurrent acute pancreatitis, had a stent placed in the common bile duct to relieve obstruction, and planned for outpatient palliative chemotherapy.

Keywords

neoplasms/secondary; pancreatitis; pancreatic neoplasms/secondary; small cell lung carcinoma; stents

Introduction

Metastasis-induced acute pancreatitis (MIAP) is a rare presentation in patients with primary pulmonary malignancies. Small-cell lung carcinoma (SCLC) is known to metastasize rapidly, commonly to the contralateral lung, brain, liver, adrenal glands, and bone.¹ Although unusual, SCLC has been previously observed metastasizing to the pancreas.² Patients with histories of SCLC presenting to the hospital with acute pancreatitis should be further investigated for the presence of new pancreatic lesions. The presence of metastatic SCLC to the pancreas often indicates advanced staging of the cancer and poorer prognosis for the patient.³ Treatment should be tailored to the patient's informed decision once properly educated on the disease and its prognosis.

Case Presentation

A 63-year-old male with a past medical history of recently diagnosed SCLC, who had been

treated with cisplatin, etoposide chemotherapy, and radiation therapy, presented to our emergency department with a 3-day history of intermittent non-radiating epigastric abdominal pain along with nausea and multiple episodes of non-bloody vomiting. The patient reported no alcohol consumption or history of cholelithiasis. On presentation, his vital signs were within normal limits. The physical examination was unremarkable. Initial laboratory studies including complete blood count, chemistry panel, and hepatic function panel were notable only for lipase of 4509 units/L. Alanine transaminase (ALT), aspartate transaminase (AST), and alkaline phosphatase (ALP) were within normal limits. Computed tomography (CT) of the abdomen and pelvis with IV contrast (**Figure 1**) demonstrated moderate peripancreatic edema characteristic of acute pancreatitis with no pancreatic mass or pseudocyst. The patient remained in the hospital for a total of 3 days, where he received



Figure 1. A CT of the abdomen and pelvis with IV contrast showed a moderate degree of peripancreatic edema surrounding the body of the pancreas (yellow circle).

IV fluids and pain medications, and was discharged after symptoms resolved.

Ten days later, the patient returned to the emergency department with complaints of persistent epigastric pain. Vital signs were within normal limits. Repeat laboratory studies including complete blood count, chemistry panel, and hepatic function panel were notable only for lipase 2782 units/L. Repeat AST, ALT, and ALP were within normal limits. Magnetic resonance imaging (MRI) without contrast and with magnetic resonance cholangiopancreatography (MRCP) of the abdomen (**Figure 2**) revealed a heterogenous pancreas with multiple focal pancreatic and peripancreatic lesions. Endoscopic ultrasound demonstrated multiple hypoechoic lesions in the pancreatic body, tail, and peripancreatic area. A fine needle biopsy was performed on the pancreatic body lesion,

which was positive for metastatic SCLC. The biopsy was also positive for CAM5.2, TTF-1, synaptophysin, and chromogranin tumor markers. The oncology team was consulted and the decision was made to start the patient on topotecan chemotherapy for the new metastatic pancreatic mass as an outpatient. The patient remained in the hospital for a total of 12 days and was discharged home after symptoms resolved.

Eight days following the second discharge, the patient returned to the emergency department with complaints of recurrent abdominal pain as well as new onset of jaundice. Vital signs were within normal limits. Repeat laboratory studies including complete blood count, chemistry panel, and hepatic function panel were notable for lipase 1443 units/L, AST of 94 units/L, ALT of 182 units/L, ALP of 1028 units/L, total bilirubin

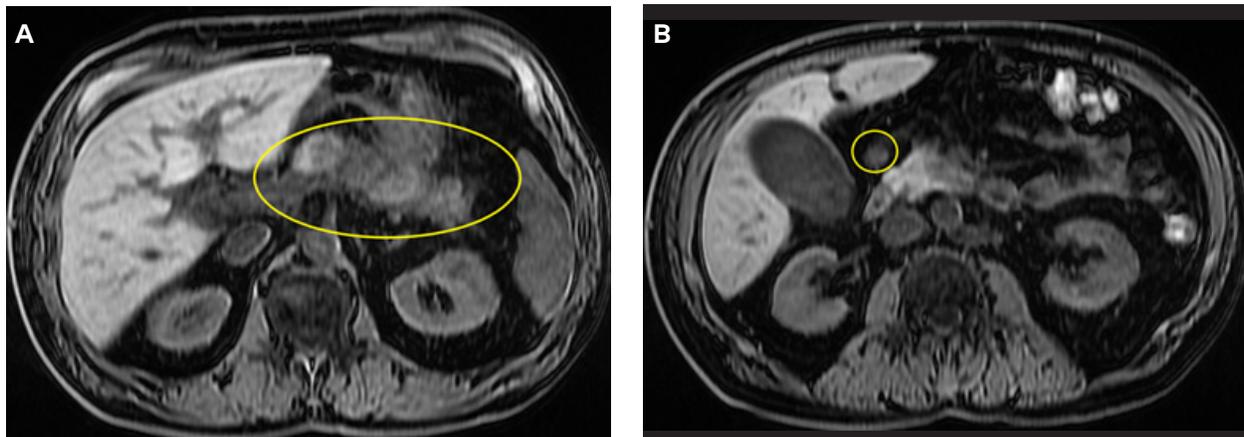


Figure 2. A. An MRI showed signal heterogeneity with multiple areas of hypointensity within the body of the pancreas (yellow oval). B. An MRI showed lesions on the peripancreatic lymph node (yellow circle).

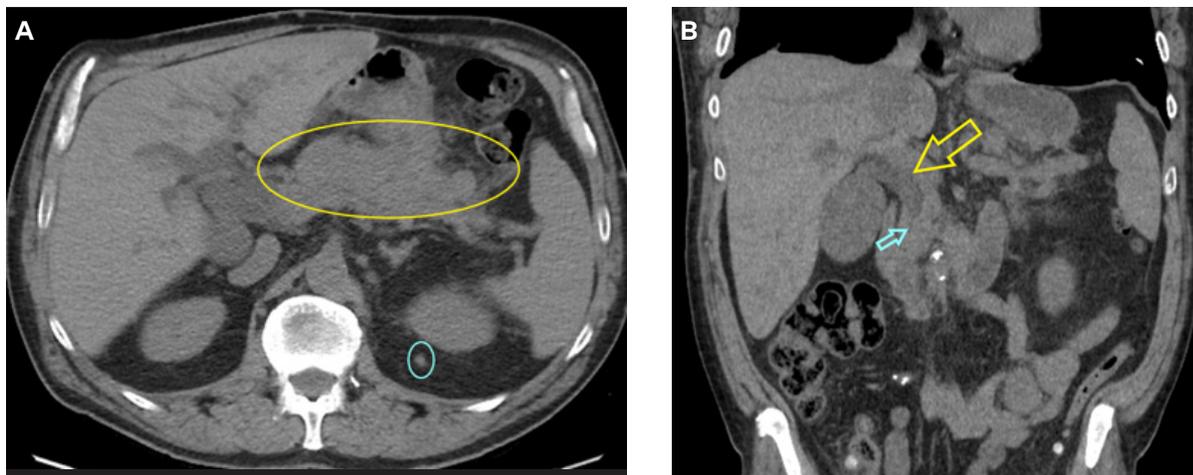


Figure 3. A. A CT of the abdomen and pelvis without contrast revealed mild inflammatory and edematous changes of the pancreas (yellow circle). B. A CT of the abdomen and pelvis demonstrated dilatation of the gallbladder and common bile duct (yellow arrow), with an area of focal narrowing within the distal common bile duct (blue arrow).

of 12.6 mg/dl, and direct bilirubin of 11.5 mg/dl. A repeat CT of the abdomen and pelvis without contrast (**Figure 3**) demonstrated mild inflammatory changes involving the pancreas, dilatation of the common bile duct and intrahepatic biliary tree, distended gallbladder, likely due to the obstructing neoplasm of the pancreas, and numerous soft tissue masses in the retroperitoneum. Endoscopic retrograde cholangiopancreatography (ERCP) (**Figure 4**) was performed with a successful sphincterotomy at the major ampulla and a placement of 10 mm x 60 mm metal stent in the common bile duct. The patient also received IV fluid and pain medications. His abdominal pain and jaundice resolved. AST, ALT, and ALP trended down. Given the rapid metastatic SCLC progression, the patient

decided to undergo palliative chemotherapy and was discharged home.

Discussion

Metastatic tumors to the pancreas are extremely uncommon and only account for 2% of pancreatic malignancies.¹ Tumors such as renal cell carcinoma, breast, melanoma, colon, and lung are all known to spread to the pancreas.² SCLC is known to have an aggressive metastatic pattern due to its lymphatic and hematogenous spread. More often, SCLC metastasizes to the contralateral lung, brain, liver, adrenal glands, and bone.³ In rare occasions, SCLC can metastasize to the pancreas and is consistently associated with other intra-ab-

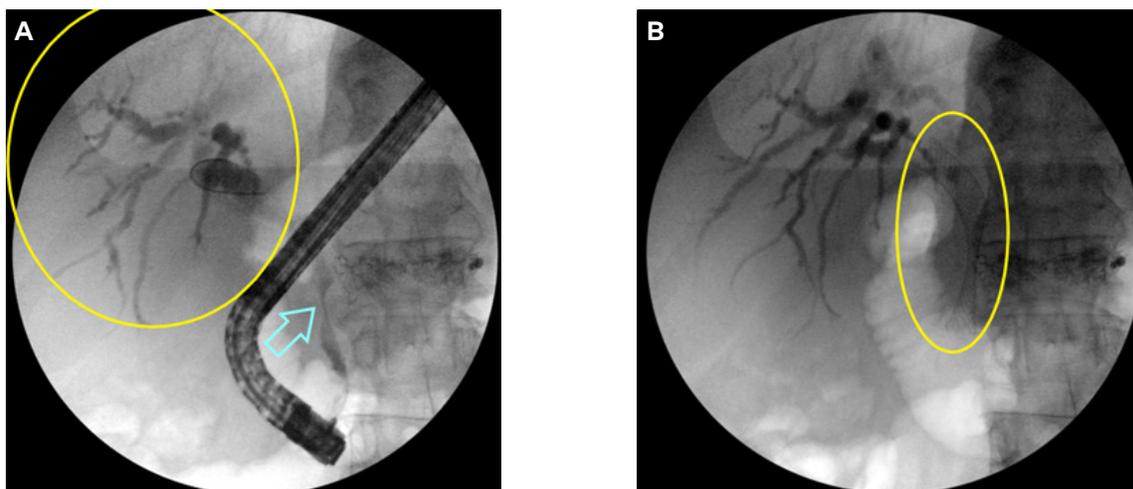


Figure 4. A. An ERCP showed dilatation of the intrahepatic biliary tree (yellow oval), with focal narrowing within the common bile duct (blue arrow). B. An ERCP showed successful placement of stent within common bile duct (yellow oval).

dominal metastatic sites such as the liver and adrenal glands.⁴ SCLC metastasizing solely to the pancreas is unique and can lead to complications such as recurrent acute pancreatitis and ductal obstruction. On initial presentation, our patient was found to have an acute pancreatitis episode with no evidence of pancreatic neoplasm on a CT of the abdomen and pelvis. The patient's symptoms resolved with IV fluid and pain medications and he was discharged home. On the second admission, the patient's recurrent acute pancreatitis warranted further evaluation given the recent history of being diagnosed with SCLC and no other known etiologies for his recurrent acute pancreatitis. An MRI of the abdomen and pelvis demonstrated multiple pancreatic lesions. The endoscopic ultrasound with free needle aspiration demonstrated that SCLC metastasized to the pancreas. A PET scan performed during outpatient treatment was negative for any other intra-abdominal tumors at that time, which provided strong evidence that the patient had a SCLC that had metastasized initially only to the pancreas.

The initial approach to treatment of MIAP is mainly conservative, consisting of IV fluid, pain medications, and bowel rest. If the pancreatic lesion compresses the pancreatic duct, an ERCP with a pancreatic duct stenting has a role in improving clinical symptoms.⁵ In the patient's third presentation to the emergency room, he was found to have new onset jaundice with elevated T-bilirubin, indicating a blockage to the common bile duct. ERCP was able to detect a stricture in the common bile duct, which was likely a malignant stricture secondary to the pancreatic metastatic neoplasm. After placement of the stent in the common bile duct, the patient's symptoms improved and the jaundice resolved. Unfortunately, SCLC carries a poor prognosis. In addition, the presence of metastatic SCLC to the pancreas indicates a very poor prognosis and often an advanced SCLC stage. Patients with advanced SCLC on chemotherapy that develop MIAP have a survival time that varies from 4 to 6 months.^{6,7}

Conclusion

Acute pancreatitis can occur due to multiple different etiologies. Patients with a history of lung malignancy presenting to the hospital with acute pancreatitis should be further eval-

uated for the possibility of a metastatic cause of pancreatitis. If a metastatic lesion is found in the pancreas, treatment is typically directed at symptomatic control but should be tailored to each patient's situation. Common managements include stent placement in the pancreatic duct and/or the common bile duct to relieve the obstruction as well palliative chemotherapy for patients with a rapidly progressing metastatic pancreatic lesion. While these approaches to management have shown benefits, patients with metastatic pancreatic lesions from SCLC have very guarded prognoses.

Conflicts of Interest

The authors declare they have no conflicts of interest.

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