

CASE REPORT

A case of metastasis-induced acute pancreatitis in a patient with small cell lung cancer

Keiji Yamanashi^{1,2}, Satoshi Marumo^{1,2}, Motoh Saitoh² & Motokazu Kato²

¹Respiratory Disease Center, Tazuke Kofukai Foundation, Medical Research Institute, Kitano Hospital, Osaka, Japan

²Department of Respiratory Medicine, Kishiwada City Hospital, Kishiwada, Osaka, Japan

Correspondence

Satoshi Marumo, Respiratory Disease Center, Tazuke Kofukai Foundation, Medical Research Institute, Kitano Hospital, 2-4-20 Ohgimachi, Kita-ku, Osaka, Japan, 530-8480. Tel: +81-6-6312-8831; Fax: +81-6-6312-8867; E-mail: Marumo@kuhp.kyoto-u.ac.jp

Funding Information

No funding information provided.

Received: 6 August 2014; Revised: 28 August 2014; Accepted: 15 September 2014

Clinical Case Reports 2015; 3(2): 96–98

doi: 10.1002/ccr3.163

Key Clinical Message

We report a rare case of metastasis-induced acute pancreatitis (MIAP) from small cell lung cancer (SCLC) diagnosed on autopsy, indicating a diagnosis of MIAP with SCLC. Our case suggests that MIAP can arise as a complication of SCLC and has an extremely poor prognosis.

Keywords

Autopsy, neoplasm metastasis, pancreatitis, small cell lung carcinoma.

Introduction

Pancreatic metastases are a common autopsy finding in advanced lung cancer, especially in small cell lung cancer (SCLC), but metastasis-induced acute pancreatitis (MIAP) is unusual [1]. Therefore, little evidence is available regarding treatment strategies for MIAP with SCLC. We report a rare case of MIAP from SCLC in a 74-year-old man. The patient received conventional treatment alone because his Eastern Cooperative Oncology Group performance status (ECOG-PS) was poor.

Case Report

A 74-year-old man was admitted to our hospital with epigastralgia. Physical examination revealed that the patient had abdominal tenderness and guarding over the epigastrium. Laboratory data showed elevated levels of serum amylase (882 U/L; reference range: 37–125 U/L) and progastrin-releasing-peptide (proGRP; 5000 pg/mL; reference range: <81 pg/mL). Chest computed tomography (CT) showed massive right pleural effusion, a 100 × 83-mm mixed-density lung mass at the right lower lobe (Fig. 1A) and multiple masses in both lungs (Fig. 1B). Abdominal

contrast CT showed enlarged pancreas, a high-density area around pancreas, and a 27 × 22-mm tumor from the pancreas head to the pancreas body (Fig. 1C). Cytological examination of the pleural effusion revealed that the patient had small cell carcinoma. He had no history of excessive alcohol consumption, medication, or cholelithiasis. Thus, the clinical diagnosis was MIAP with SCLC.

Because the patient's ECOG-PS was 3, he received conventional treatment alone, which consisted of a fasting couplet with an antipancreatic exocrine enzyme (gabexate mesylate, 600 mg/day) and antibiotics (tazobactam piperacillin hydrate, 13.5 g/day). On the twentieth day after admission, he died of respiratory failure.

An anatomic pathological examination was performed. Macroscopic examination at autopsy showed a 100 × 80-mm tumor in the right inferior lobe of the lung (Fig. 2A) and a 30 × 22-mm tumor from the pancreas head to the pancreas body (Fig. 2B). Necrosis was observed in the pancreas and adipose tissue around the pancreas. Tumor cells from the right lung and the pancreas showed balls of small epithelial cells microscopically (Fig. 2C and D) and positive staining for thyroid transcription factor-1 immunohistochemically (Fig. 2E). The final diagnosis was MIAP with SCLC.

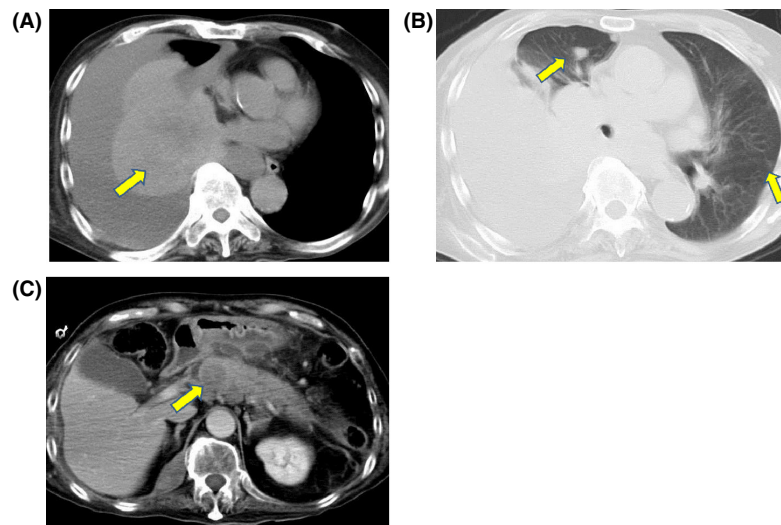


Figure 1. (A and B) Chest computed tomography images showing a massive right pleural effusion, a 100 × 83-mm mixed-density lung mass at the right lower lobe (A), and multiple masses in both lungs (B). (C) An abdominal contrast computed tomography image showing enlarged pancreas, a high-density area around the pancreas, and a 27 × 22-mm tumor from the pancreas head to the pancreas body.

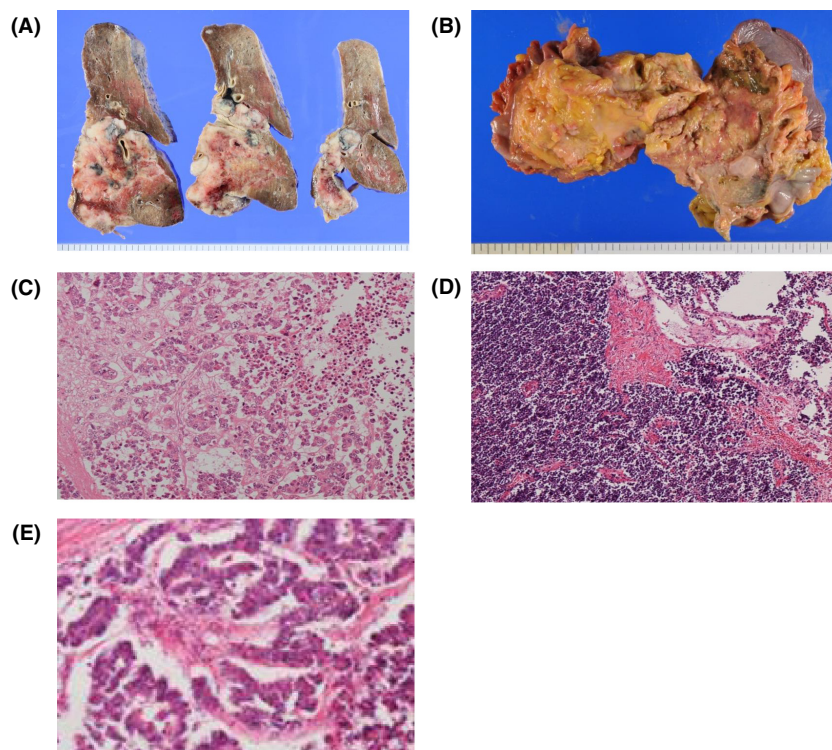


Figure 2. (A, B) The specimen at autopsy shows a 100 × 80-mm tumor in the right inferior lobe of the lung (A) and a 30 × 22-mm tumor from the pancreas head to the pancreas body macroscopically (B). (C and D) Tumor cells from the right lung (C) and pancreas (D) show balls of small epithelial cells microscopically. (E) The tumor cells are immunopositive for thyroid transcription factor-1.

Discussion

Lung carcinoma has a progressive character with a poor prognosis. Maeno *et al.* have reported the features of 26

cases of pancreatic metastases from lung carcinoma. These cases arose from SCLC (50.0%), adenocarcinoma (34.6%), squamous cell carcinoma (11.5%), and large cell carcinoma (3.9%) [2]. At postmortem examination,

metastasis to the pancreas is found in 24–40% of patients with SCLC [1]. On the other hand, MIAP occurred in only 0.12% of the patients with lung carcinoma who were investigated in a study by Stewart et al. [3]. Thus, pancreatic metastases with SCLC are relatively common, but MIAP with SCLC is unusual. The diagnosis of MIAP is difficult to confirm prospectively in the absence of endoscopic ultrasonography-guided fine needle aspiration (EUS-FNA) or exploratory laparotomy with pancreatic biopsy [4]. In the present case, EUS-FNA and exploratory laparotomy with pancreatic biopsy were not performed because of the patient's poor ECOG-PS. The presence of MIAP was initially suspected when the following observations were made: the patient showed signs of abdominal tenderness and guarding over the epigastrium, laboratory findings included elevated serum amylase and proGRP, CT imaging revealed a mixed-density lung mass with pleural effusion and a tumor from the pancreas head to the pancreas body, and other causes of acute pancreatitis were excluded.

There is no established treatment strategy for MIAP with SCLC. However, a few retrospective studies have reported that aggressive chemotherapy plus conventional treatment for acute pancreatitis prolonged overall survival, especially in patients with good ECOG-PS [1, 3–5]. However, these studies were subject to some limitations. First, they had retrospective designs. Second, they included insufficient numbers of patients. Third, some of the studied chemotherapy regimens followed guidelines that are no longer up-to-date. Amrubicin and other recently developed chemotherapy options may provide outcomes that are more favorable for patients who have MIAP with SCLC and poor ECOG-PS. Therefore, further studies are necessary to establish effective treatment strategies. Ideally, these studies should include a larger number of cases and new chemotherapy options for SCLC.

In conclusion, this case demonstrates that acute pancreatitis can occur as a manifestation of a metastasis of SCLC. Although MIAP is an uncommon complication of SCLC, physicians should be aware of this disease because of its extreme poor prognosis.

Acknowledgments

This case report was approved by our institutions review board. The patient's next of kin provided written informed consent for the publication of the report.

Conflict of Interest

None declared.

References

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