CASE REPORT

Squamous cell carcinoma of pancreas: an unusual site of relapse from early-stage lung cancer: 12-month postsurgery

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SUMMARY

A 57-year-old man presented with abdominal pain and backache, weight loss of 10 kg and irregular bowel movements. He was previously diagnosed with Stage IB squamous cell carcinoma of lung and had undergone lobectomy 12 months previously. Investigations including imaging revealed a cystic mass in the body and tail of the pancreas which was biopsied and it was confirmed to be a recurrence of the squamous lung cancer involving the pancreas. He was treated with systemic chemotherapy and has shown a partial response on repeat imaging. This case illustrates a rare and unusual site of relapse in lung cancer after adjuvant therapy and a key message for follow-up surveillance for these patients.

BACKGROUND

Early detection of lung cancer is possible with the use of newer modalities of imaging, such as CT scan and positron emission tomography (PET-CT). Surgical resection of the pulmonary lesion is the only potential curative treatment for early-stage lung cancer. In spite of advances in surgical techniques, the 5-year survival for stage IB lung cancer is 60%.¹ Common sites of distant relapse in lung cancer after surgery are brain (51.4%), bone (18.9%), liver and contralateral lung (16.2% each).² There have been a very few cases of relapse in pancreas. We report a case of squamous cell carcinoma (SCC) of the lung, presenting as a mass in pancreas within a year after surgery. Squamous cell cancer of pancreas is a very rare tumour. Usually the pancreatic malignancies are adenocarcinomas. There have been only two cases published in the literature of squamous cell cancer of pancreas. Our case is important as it is an unusual site of lung cancer relapse and more so it is in a patient who had radical surgery. This case report has interesting images and histology slides. This article discusses the diagnostic and management challenges of this presentation and a brief review of the literature.

CASE PRESENTATION

A 57-year-old man, diagnosed with lung cancer underwent right-lower lobectomy. Staging scans including PET did not demonstrate any evidence of distant disease. Postoperative pathological staging was T2aN0M0 SCC. He received no adjuvant systemic or radiation therapy as per guidelines for early-stage disease.

He presented 12 months later with increasing epigastric pain and backache, weight loss of 10 kg

and irregular bowel movements. He stopped smoking since he was diagnosed with lung cancer, but had a 30-pack year history, and consumed 70 units of alcohol a week. He suffers from cardiomyopathy and medications included furosemide, aspirin, bisoprolol and trandopril. His performance status according to ECOG criteria³ was 1.

An ultrasound of the abdomen was performed which did not reveal any abnormality. A CT of the abdomen revealed a cystic mass in the body and tail of the pancreas (figure 1). A subsequent PET-CT confirmed a 4×4 cm pancreatic lesion along with two metastatic lesions in the liver. An endoscopic ultrasound-guided biopsy of the pancreatic lesion revealed morphological and immunohistochemical findings favouring an SCC similar to the lung primary (figure 2). The biopsy consisted of dysplastic squamous epithelium, which was positive for immunostaining with p63, cytokeratins (CK) CK5 and CK14 and negative for CK20, signifying a squamous cell origin. At the multidisciplinary team review, a diagnosis consistent with metastatic SCC of the lung was agreed and the patient was treated with Cisplatin and Gemcitabine-based chemotherapy. He has completed six cycles of Gemcitabine and Cisplatin regime and an end of the treatment CT scan has shown a partial response to the therapy (figure 3).

INVESTIGATIONS

An ultrasound of the abdomen was performed which did not reveal any abnormality. A CT of the abdomen revealed a cystic mass in the body and tail of the pancreas (figure 1). A subsequent PET-CT

Figure 1 Pretreatment CT of the abdomen demonstrating a large pancreatic mass (arrow).

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Figure 2 Histological images of the pancreatic lesion. (A,B) pancreatobiliary epithelium (*) and atypical squamous epithelium (↓) (H&E $\times 40$ and $\times 400$). (C,D) Squamous component strongly and diffusely positive with CK5 and p63 ($\times 400$).

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DIFFERENTIAL DIAGNOSIS

- ▶ Pancreatic adenocarcinoma
- ▶ Pancreatic carcinoid
- ▶ Pancreatic metastases
- ▶ Pancreatitis

TREATMENT

He has completed six cycles of Gemcitabine and Cisplatin regime and an end of treatment CT scan has shown a partial response to the therapy (figure 3).

Figure 3 CT of the abdomen after treatment showing a reduction in the size of the pancreatic mass (arrow).

OUTCOME AND FOLLOW-UP

The patient is currently in remission and follow-up imaging has revealed stable disease.

DISCUSSION

The identification of metastasis in any cancer has important prognostic indications. Brain and bones are the most common sites of relapse in lung cancer after adjuvant treatment.² The most important risk factors for the relapsing disease are positive lymph nodes and high-grade (poor differentiated) tumours.⁴

Isolated metastases to the pancreas in the absence of any visceral involvement are a rare occurrence. However, when lung cancers do metastasise to the pancreas, they are often small cell lung cancers.^{5–7} Our case is an unusual presentation in a patient who had lobectomy performed for a T2N0M0 squamous cell lung cancer. Only two other cases have been identified in the English literature of patients with a previous diagnosis of SCC of the lung presenting with a pancreatic metastasis (table 1). Both patients had undergone surgical resection and no chemotherapy, as reported in our case. Interestingly, in a patient series reported by Itani *et al*,⁸ the diagnosis of primary SCC of the pancreas was made and the lung lesions considered to be metastatic disease, although, they did raise the possibility of the lung carcinoma being the primary but this had not been reported at the time of their publication.

The presentation of metastatic pancreatic disease from lung cancer can be non-specific. Commonest-reported symptoms are anorexia, weight loss, upper abdominal pain, back pain and jaundice.^{11–13} Of note, SCC of the pancreas can present with upper gastrointestinal bleeding.¹⁴ Blood-borne, intra-abdominal metastasis from lung cancers are usually to the liver and adrenal glands.¹⁵ As carcinoma of the lungs infrequently metastasises to the pancreas, autopsy findings have been the source of the numbers of these cases, with a reported incidence of 14%.^{15–17} Primary cancers of the pancreas are mostly adenocarcinomas with SCC being a rare entity (incidence of between 0.005% and 2%).^{12 18 19} The clinical presentations of both types of tumours are similar. SCC of the pancreas affects various parts of the pancreas equally.^{8 12} Histologically however, pancreas lacks squamous cells. They tend to be found during inflammation

Table 1 Studies reporting SCC of the lung metastasising to the pancreas (in English literature)

Authors	Year	No. of cases	Country	Lung cancer stage	Treatment	Survival (months)	Location of metastasis on the pancreas
Mockli and Silversmith ⁹	1997	1	USA	T1N0M0	Surgery	NS	Head and body
Liratzopoulos <i>et al</i> ¹⁰	2006	1	Greece	NS	Surgery	0.7	Head

NS, not stated; SCC, squamous cell carcinoma.

such as pancreatitis, hence the importance of excluding the presence of SCC of the pancreas as a metastatic lesion with endoscopic and radiological investigations.^{8 20}

The theories behind the pathogenesis of pancreatic SCC remain unproven; they nonetheless include pre-existing adenocarcinoma being the source of squamous cells, malignant transformation to the theory of tumour collision.^{8 21} The surgical management of patients with identified pancreatic metastasis range from by-pass surgery in the form of pancreatoduodenectomy, choledochojejunostomy, cholecystojejunostomy and gastrojejunostomy or Whipples surgery.

The prognosis of primary SCC of the pancreas is poor, with a median survival ranging from 7 months (range 6–16) for patients who underwent curative resections and 3 months (range 0.25–9) for patients with non-resectable tumours,^{11 15} with a 5-year survival rate of 1%.^{20 22}

The optimal staging of lung cancer includes CT scan supplemented by a PET scan,²³ which in this patient was not useful in diagnosing the pancreatic lesion at the preoperative stage. In conclusion, pancreatic metastases in lung cancer, is a rare site for relapse, and management is similar to other distant metastatic sites. This case illustrates the importance of imaging, in the postsurgical follow-up of patients with lung cancer.

Learning points

- Squamous cell cancer in pancreas is a very rare site of relapse in lung cancer.
- Follow-up of patients with lung cancer should include imaging including abdominal CT scans.
- Early diagnosis and treatment of metastatic disease is important in managing pancreatic relapse in lung cancer.
- Lung cancer can metastasise to unusual sites.

Competing interests None.

Patient consent Obtained.

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