


A rare case of pancreatic metastasis of lung adenocarcinoma

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Abstract

Metastases to the pancreas are rare in general and scares in cases of lungs primary lesion. They are discovered incidentally in most cases. Data on their incidence, diagnosis, prognosis and management remain insufficient. The discovery is usually made at an advanced stage of lung cancer with the presence of metastases to other organs. We reported the case of a patient undergoing oncology follow-up for lung adenocarcinoma with discovery of adrenal gland metastases and a solitary pancreatic metastatic mass. His management remains palliative chemotherapy. Surgical treatment is not yet codified in these cases and remains at the discretion of the multidisciplinary oncology teams.

INTRODUCTION

Lung cancers are diagnosed at a metastatic stage in 40–50% of cases [1]. Common metastases sites of lung cancers remain liver, adrenal, bone and kidney [1, 2]. Pancreatic metastases of lung cancers are rare and incidental. It is usually seen at an advanced stage of the disease with other associated metastases. Data on its incidence, prognosis, diagnosis and treatment remain poor. Its incidence is 12% in post-mortem patients [1]. Its prognosis remains guarded given the often advanced stage of the pathology. Several methods of treatment as surgery management, chemotherapy and/or preoperative radiotherapy were proposed [3].

These metastases may raise a diagnosis issue between a primary pancreatic or secondary lung cancer localization. In most cases, this diagnosis is made at a stage of multiple metastases in patients known to have primary lung cancer [3]. In the literature, most of the data have been provided by post-mortem examination of patients with primary lung cancer. However, studies are still needed to improve our knowledge of these pancreatic metastases and to improve the coding of their management. Imaging examinations, in particular the computed tomography (CT) scan, play an essential role in the discovery of these pancreatic metastases. It remains the routine imaging examination for monitoring patients in oncology.

CASE REPORT

We reported a case of 69-year-old male who was diagnosed since a year for lung adenocarcinoma. His

treatment based on chemotherapy according to the line treatment of medical oncology of the hospital. He was in good health without any symptomatology. During his follow-up, thoraco-abdominal-pelvic CT scan revealed a roughly rounded, poorly defined lung mass with irregular in shape, enhanced at the periphery after contrast media injection (Fig. 1).

Two bilateral adrenal masses were also discovered as hypodense, poorly defined, irregularly, and enhanced after injection of contrast medium (Fig. 2).

A hypodense pancreatic corporal mass, roughly rounded, with irregular contours, enhanced after injection of contrast medium, without dilation of the Wirsung. There is associated dilatation of the intrahepatic bile ducts and the main bile duct (Fig. 3). On ultrasound, this mass corresponds to a rounded, heterogeneous, echogenic lesion with discrete peripheral vascularization on color Doppler (Fig. 4). A endoscopic biopsy for pancreatic mass was performed to confirm the diagnostic of non-primary tumor of pancreas. Histology confirmed a metastatic mass of lung cancer.

The adrenal and pancreatic metastases were diagnosed. There were no surgical indications according to the multidisciplinary consultation. The patient changed the treatment line due to multiple metastases, essentially involving chemotherapy without any radiotherapy.

DISCUSSION

The most frequent metastases of lung cancer are liver, brain, adrenal and bone. Pancreatic metastases remain rare. There is not enough data on this issue. These

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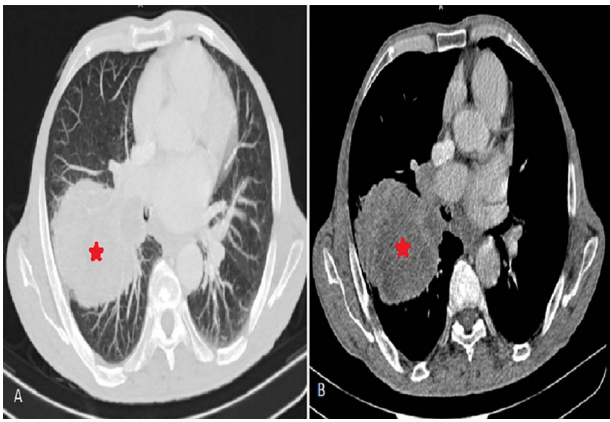


Figure 1. Chest CT scan injected (portal phase) in axial section in a parenchymal (A) and mediastinal (B) window showing a pulmonary mass with a necrotic center highlighted in the periphery in upper right lobe (red star).

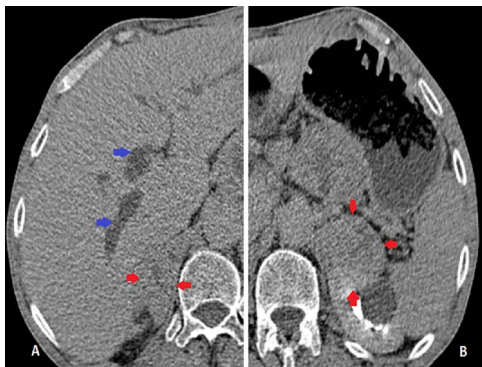


Figure 2. Abdominal CT scan injected (delayed phase: 10 min) in axial section (A and B) showing bilateral adrenal masses (red arrows). Note the dilatation of the bile ducts (blue arrow).

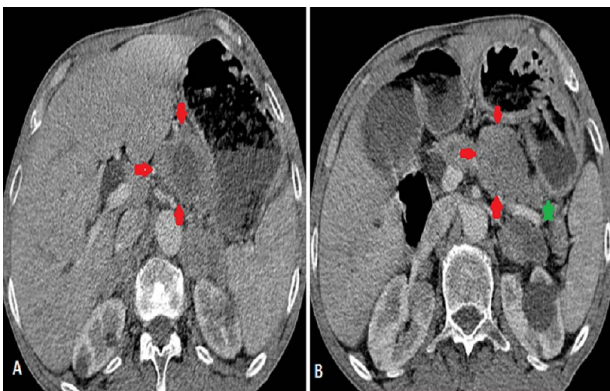


Figure 3. Abdominal CT scan injected (venous phase) in axial section (A and B) showing a well-limited, rounded, enhanced pancreatic corporal mass (red arrow). Note the healthy tail of the pancreas (green star).

pancreatic metastases of lung cancers would represent <5% in patients living with a pancreatic tumor [3]. According to Adsay *et al.*, in autopsies performed on 4955 patients with metastases, the rate of pancreatic metastases was 1.6% and the primary sites in order of increase were renal cell carcinoma followed by lung cancer and colorectal cancer [4]. In Japan, Maeno *et al.* found 26 cases of pulmonary metastases (3%) in

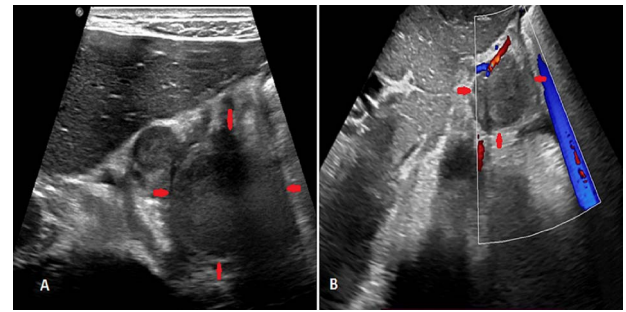


Figure 4. Abdominal ultrasound (A and B) showing a round, heterogeneous, echogenic, well-limited pancreatic mass with discrete peripheral vascularity on color Doppler.

850 patients with lung cancer. In order of frequency, pancreatic metastases involved the following histological types: small cell carcinoma 10.5% and only 2.3% of adenocarcinomas [5]. The diagnosis of these metastases remains difficult clinically, especially in patients with a history of abdominal surgery for other cancers, and is in most cases discovered on imaging, most often on CT scan. The other major difficulty is the distinction between primary and secondary pancreatic tumors. For Klein *et al.*, the CT features that may point to a pancreatic metastasis are the presence of other organ metastases, then often well-limited and more hypodense compared with a primary tumor and the intense enhancement indicative of the hypervascular nature of the metastasis [6]. This distinction is even more difficult in solitary pancreatic masses. In their series, Maeno found that the usual pattern of pancreatic metastasis involved a solitary nodule in 73%, multiple nodules in 11.5% and diffuse swelling in 15.4% of the patients [5]. Most metastatic lesions are located in the head of the pancreas, leading to obstruction of the bile ducts and jaundice. For some authors in the case of lung cancers, the majority are located in the head or the body of the pancreas with ~76% locating in the head in small cell lung carcinomas, followed by the body in 15% of cases [7].

Generally, three aspects have been described most commonly a solitary pancreatic mass between 50 and 80%. The second aspect is that of diffuse infiltration of the pancreas through the glandular septa between 15 and 44% and the third aspect is that of multiple pancreatic nodules resulting in extensive destruction of the lobules of the pancreatic parenchyma [8].

From a therapeutic point of view, there is no real consensus on the management of these pancreatic metastases. Indeed, the discovery of pancreatic metastasis is made at an advanced stage of primary cancer, lung cancer. Very few cases of surgery are performed. It would be better indicated in cases where the primary lung tumor is well controlled and with a solitary pancreatic mass. In a Japanese study of patients with pancreatic metastases of lung cancer, only eight cases of resection of pancreatic metastases were recorded from 1998 to 2006. All of these cases were with metastases from other organs (liver, adrenals and brain) after satisfactory control of

these metastases by chemotherapy and/or preoperative radiotherapy [9]. Adler *et al.* found a low rate of pancreatic resection for pancreatic metastasis of lung cancer with only eight cases of surgery out of 399 patients; this is due to the poor prognosis but also the late discovery of these metastases from lung cancers [10]. The surgical management of metastases would be an excellent therapeutic, that means to improve the survival of patients outside adjuvant treatments, but no data on this management are yet known in this indication, and therefore needs further study. Roland *et al.* found a survival time after the discovery of pancreatic metastases from lung cancer of ~8.7 months (1–28 months) and only 4 of the 27 patients had received surgical treatment [11]. Radiotherapy and/or chemotherapy, therefore, have an essential role in the management of these patients with metastases, particularly because of the late stage of the disease with the presence of metastases to other organs.

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All procedures performed in studies involving human participants were done in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

INFORMED CONSENT

Written informed consent for publication was obtained from patient for submission of this manuscript for publication.

GUARANTOR

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