Interesting Image

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Primary Pulmonary Liposarcoma: A Case Report

Primer Pulmoner Liposarkom: Bir Olgu Sunumu

Huimin Li[1], Zhehao Lyu[2]

[1]Inner Mongolia Autonomous Region People's Hospital, Clinic of Nuclear Medicine, Hohhot, Inner Mongolia Autonomous, People's Republic of China

[2]The First Afliated Hospital of Harbin Medical University, Department of Nuclear Medicine, Harbin, Heilongjiang, People's Republic of China

Abstract

Primary liposarcoma of the lung is extremely rare. To date, only 24 cases have been reported in the English literature. Herein, we present a case of well-differentiated pulmonary liposarcoma that was misdiagnosed as teratoma on positron emission tomography/computed tomography (CT) and contrast-enhanced CT. Radical surgery with left superior lobectomy and mediastinal lymph node dissection were performed. The patient experienced recurrence and distant metastases 33 months after surgery. He was alive at the time of writing this report (36 months postoperatively). To our knowledge, this is the first case report of pulmonary well-differentiated liposarcoma.

Keywords: Primary pulmonary liposarcoma, positron emission tomography/computed tomography, well-differentiated liposarcoma

Öz

Akciğerin primer liposarkomu son derece nadirdir. Bugüne kadar, İngilizce literatürde sadece 24 olgu bildirilmiştir. Bu olgu sunumunda, pozitron emisyon tomografisi/bilgisayarlı tomografi ve kontrastlı CT'de teratom olarak yanlış teşhis edilen iyi farklılaşmış bir pulmoner liposarkom olgusu sunulmaktadır. Sol üst lobektomi ve mediastinal lenf nodu diseksiyonu ile radikal cerrahi uygulanmıştır. Hastada operasyondan 33 ay sonra nüks ve uzak metastazlar görülmüştür. Bu olgu sunumu yazıldığı sırada hasta hala hayattaydı (ameliyattan 36 ay sonra). Bildiğimiz kadarıyla, bu olgu bildirilen ilk iyi farklılaşmış pulmoner liposarkom olgusudur.

Anahtar kelimeler: Primer pulmoner liposarkom, pozitron emisyon tomografisi/bilgisayarlı tomografi, iyi farklılaşmış liposarkom

Address for Correspondence: Zhehao Lyu, The First Afliated Hospital of Harbin Medical University, Department of Nuclear Medicine, Harbin, Heilongjiang, People's Republic of China

E-mail: lyuzhehao@hrbmu.edu.cn **ORCID ID:** orcid.org/0009-0005-3160-2623

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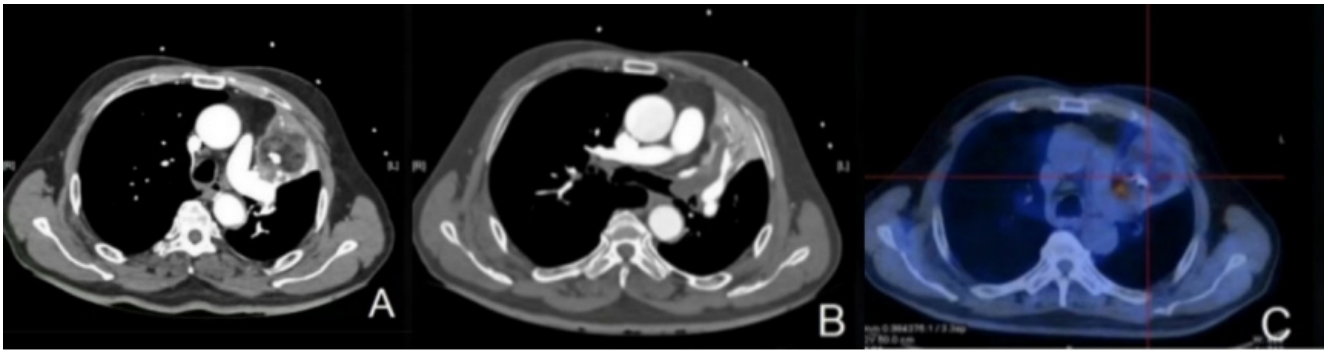

Figure 1. A 72-year-old male presented with complaints of shortness of breath for 2 weeks. Contrast-enhanced computed tomography of the chest (A and B) revealed an irregularly shaped, mixed-density mass with multiple components of soft tissue density, nodular calcification, and some areas of very low density (-51 H to -89 Hounsfield units), suggesting fat in the superior lobe of the left lung, involving the left main bronchus and left superior lobular bronchus, resulting in atelectasis of the left superior lobe. Positron emission tomography/computed tomography [PET/CT(C)] showed most of the mass to be non-fluorodeoxyglucose uptake, with hypermetabolic foci in the lateral portion with a maximum standardized uptake value of 6.2. PET/CT showed no distant metastases or other lesions.

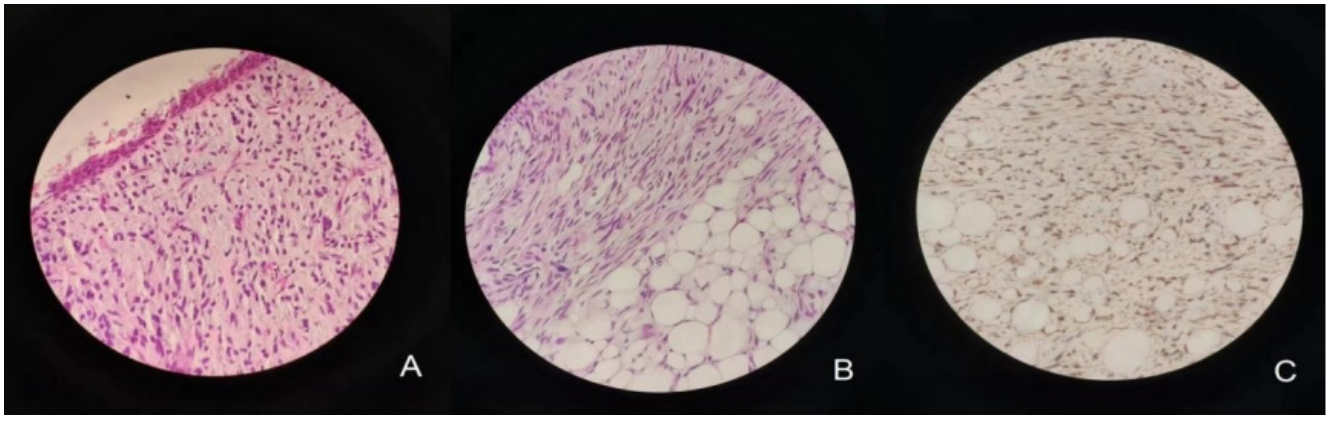

Figure 2. The patient underwent radical surgery, including left superior lobectomy and mediastinal lymph node dissection. Sudan III staining revealed that the tumor cells consisted of spindle cells and well-differentiated, nearly mature fat cells (A and B). Immunohistochemical staining of the tumor was positive for S-100 protein, Vimentin, Smooth muscle actin, and cyclin-dependent kinase 4 (CDK4) (C); scattered positive for MDM2 and CD34; and negative for cytokeratin, desmin, MelanA, and HMB45. The postoperative pathological diagnosis was well-differentiated spindle cell liposarcoma.

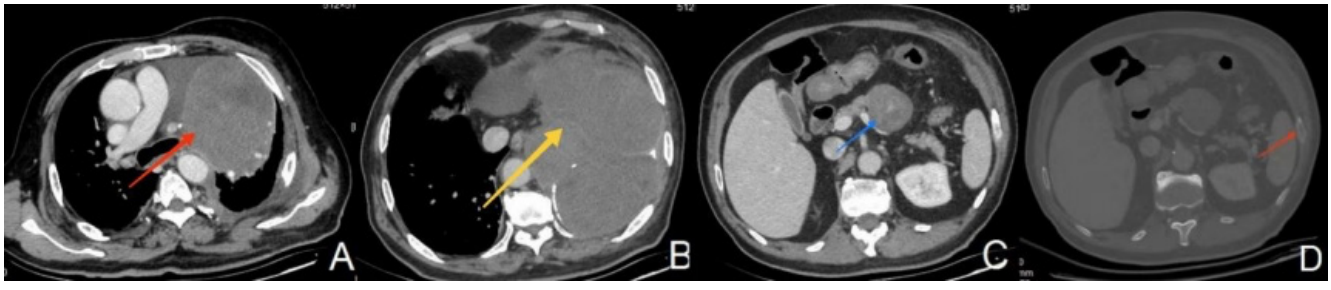

Figure 3. Local recurrence (A, red arrow), pleural metastasis (B, yellow arrow), pancreatic metastasis (C, blue arrow), and bone metastasis (D, red arrow) were found 33 months after the operation. The patient was alive at the time of writing this report (36 months postoperatively).

Primary liposarcoma of the lung is an extremely rare malignancy, accounting for approximately 0.2% of all pulmonary tumors (1). Lipomatosis and asbestosis may be pathogenic factors (2); According to the World Health Organization Classification of Soft Tissue Tumors (2020 edition), liposarcomas can be divided into five types: well-differentiated, dedifferentiated, myxoid, pleomorphic, and mixed (3); Well-differentiated liposarcoma tumors contain a large amount of fat, usually ≥ 75% of the tumor volume (4). Although well-differentiated liposarcomas have certain imaging characteristics, they still need to be differentiated from other lung tumors, especially those with fatty components such as teratomas, hamartomas, and other mesenchymal-derived tumors (5). Preoperative imaging examination is difficult to correctly diagnose, and the final diagnosis depends on the immunohistochemical results. Immunohistochemistry of well-differentiated liposarcoma was positive for Vimentin, S-100, MDM2, and CDK4 (2). The preferred treatment for primary pulmonary liposarcoma is radical resection and lymph node dissection (2,4). Well-differentiated liposarcoma was the least invasive of the five pathological subtypes. The 5-year survival rate of well-differentiated liposarcomas is 87.1% (6) and the recurrence rate is 40-50% (7). The median survival time of patients with primary intrathoracic liposarcoma according to the well-differentiated subtypes was 174 months (8).

Ethics

Informed Consent: An informed consent was obtained from the patient.

Authorship Contributions

Concept: H.L., Design: H.L., Data Collection or Processing: Z.L., Analysis or Interpretation: Z.L., Literature Search: Z.L., Writing: H.L.

Conflict of Interest: No conflicts of interest were declared by the authors.

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