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CASE REPORT

Rapidly growing pleural liposarcoma masquerading as extrapleural hematoma

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Abstract

Intrathoracic liposarcoma can occur in the lung, mediastinum, pleura, and chest wall, and tends to remain clinically silent until becoming large enough to displace adjacent structures. Treatment usually includes sufficient surgical resection followed when necessary by adjuvant chemoradiotherapy. We report a case of an uncommon presentation of a rapidly growing pleural liposarcoma, the diagnosis of which may have been obscured by coexisting thoracic trauma with suspected extrapleural hematoma.

Introduction

Liposarcomas are soft tissue sarcomas that typically occur in the extremities and retroperitoneum, and are separated into four histologic subtypes: well differentiated, dedifferentiated, myxoid, and pleomorphic.[1] Primary intrathoracic liposarcomas are extremely rare and occur in the mediastinum, pleura, and lung. Moreover, pleural liposarcomas often reach large proportions as they grow insidiously in areas that are not accessible to physical examination.[2] Herein, we describe a case of a rapidly growing pleural liposarcoma, initially masquerading as extrapleural hematoma (EPH).

Case report

A 64-year-old woman presented with progressive exertional dyspnea and left chest pain after a fall. Her medical history included right thigh dedifferentiated liposarcoma that had been completely resected seven years prior, as well as chronic kidney disease related to polycystic kidney disease. Physical examination revealed no abnormalities in the chest, but marked peripheral edema and equal breathing sounds were noted upon auscultation. Chest radiography revealed a left sixth rib fracture with adjacent pleural-based opacity that was convex toward the lung (Fig 1a). Lab examination revealed anemia and severe azotemia. A diagnosis of advanced chronic kidney disease complicated by uremia and concomitant left sixth rib fracture with suspected EPH was made. Because the patient emphasized labored breathing more than left chest pain, urgent dialysis was initiated following establishment of vascular access through the right internal jugular vein. Ten days later, repeat chest radiography (Fig 1b) revealed a slightly larger persistent pleural mass and resolution of the cardiomegaly. The dyspnea and peripheral edema also improved after hemodialysis sessions. The patient was discharged and advised to attend outpatient follow-up

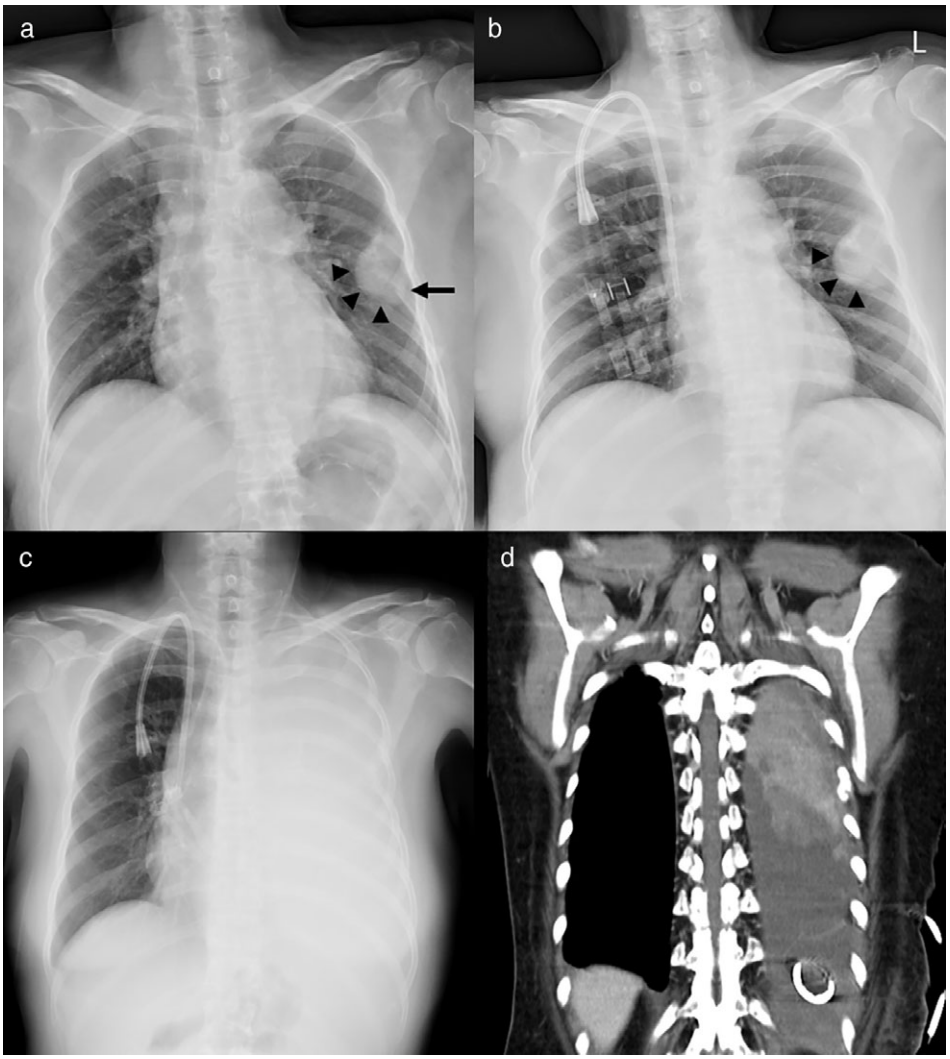

Figure 1 Chest radiography and computed tomography (CT) of the patient. (**a**) Chest radiography revealing a left sixth rib fracture (black arrow) with adjacent pleural-based opacity (black arrowheads) that was convex toward the lung. (**b**) Resolution of cardiomegaly after hemodialysis and a slightly larger persistent pleural mass lesion (black arrowheads). (**c**) Chest radiography revealing total opacity of the left hemithorax. (**d**) Coronal view of chest CT showing an indwelled chest drain without function.

for the left pleural-based lesion, which suggested possible EPH.

However, because the patient did not experience aggravated left chest pain, she did not follow the recommendation. Within two months, she presented again with progressively increasing breathing effort despite regular hemodialysis. Chest radiography revealed total opacity of the left hemithorax (Fig 1c). Ultrasound-guided thoracentesis followed by placement of a pigtail catheter were performed, and limited serosanguinous pleural effusion, rather than hemothorax, was noted. Additional chest computed tomography (CT) scanning revealed an indwelled chest drain without function, a large inhomogeneous mass occupying the left chest cavity with lateral mediastinal shift, and hypoattenuating multi-lobulation (Figs 1d, 2a,b). Thus, exploratory thoracotomy was initiated and an encapsulated mass originating from the parietal pleura without direct involvement of the lung, pericardium, or mediastinum was discovered (Fig 2c). Complete en-bloc resection of the tumor was accomplished (Fig 2d). Histopathological analysis revealed plump spindle tumor cells with eosinophilic cytoplasm and atypical enlarged hyperchromatic nuclei in collagenous background on microscopy (Fig 3a,b). Dedifferentiated liposarcoma was confirmed based on immunohistochemistry of CDK4 and P16 (Fig 3c,d) and MDM2 amplification through fluorescence in situ hybridization. Although the patient had remained free from recurrence during periodic follow-up over seven years, delayed metastasis from the previous right thigh liposarcoma was highly suspected. Other distant metastases were excluded based on postoperative positron emission tomography-CT scan results. The patient was discharged uneventfully. No evidence of recurrence has been identified as of six months following the operation.

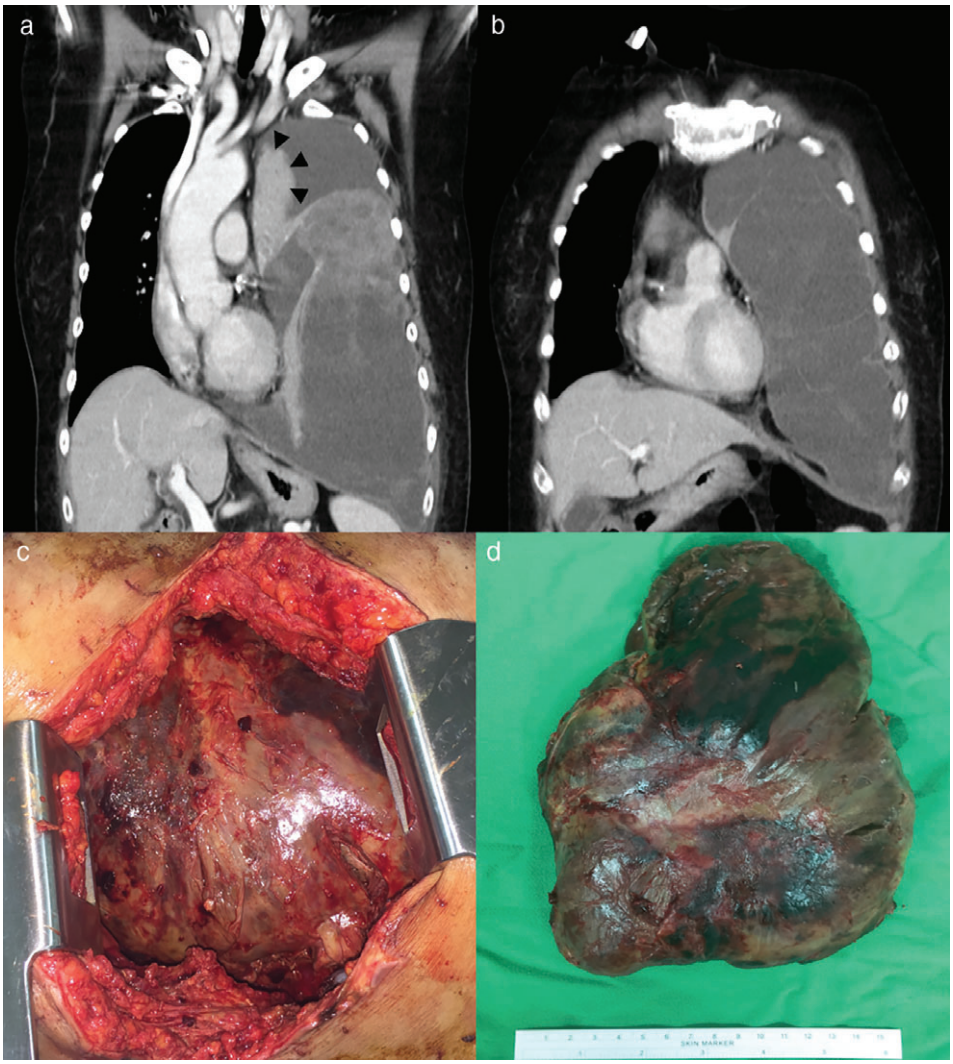

Figure 2 Radiographic and macroscopic features of the pleural liposarcoma. (**a**) Coronal view of chest computed tomography revealing (**a**) a giant inhomogeneous mass occupying the left chest cavity with lateral mediastinal shift and lobar atelectasis (black arrowheads) and (**b**) hypoattenuating multi-lobulation of the mass. (**c**) Encapsulating mass visualized via thoracotomy. (**d**) En-bloc intrathoracic pleural-based tumor (16 × 20 × 8 cm).

Discussion

Liposarcoma is one of the most common soft tissue sarcomas in adults; the anatomical distribution of liposarcoma is wide, and common locations are the extremities and retroperitoneum.[1] Intrathoracic liposarcomas, which are extremely rare, can occur in the lung, mediastinum, pleura, and chest wall and are classified according to histologic features.[2,3] They tend to remain clinically silent until large enough to displace adjacent structures. Imaging evaluation must be used to determine the extent of tumor involvement and the potential for resectability. Treatment usually includes sufficient surgical resection and adjuvant chemoradiotherapy, as appropriate.[3,4]

In the setting of blunt chest trauma, EPHs are a relatively rare complication. Concomitant rib fractures may increase the chance of intercostal or internal mammary vessel injury, which has been postulated to be the source of most EPHs.[5] Chest radiography may be useful to obtain a diagnosis; however, CT is the most effective imaging tool available. Treatment is often conservative. Current guidelines suggest medical therapy if the hematoma is small with few clinical symptoms. In the case of a larger hematoma causing respiratory or hemodynamic compromise, it is sometimes necessary to perform an invasive intervention.[6]

The present case involved an uncommon presentation of a rapidly growing pleural liposarcoma, the diagnosis of which may have been obscured by coexisting thoracic trauma with suspected EPH. Our case highlights the critical consideration of pleural liposarcoma as a possible diagnosis based on thorough radiographic study, analysis of patient history, and immunohistochemical examination.

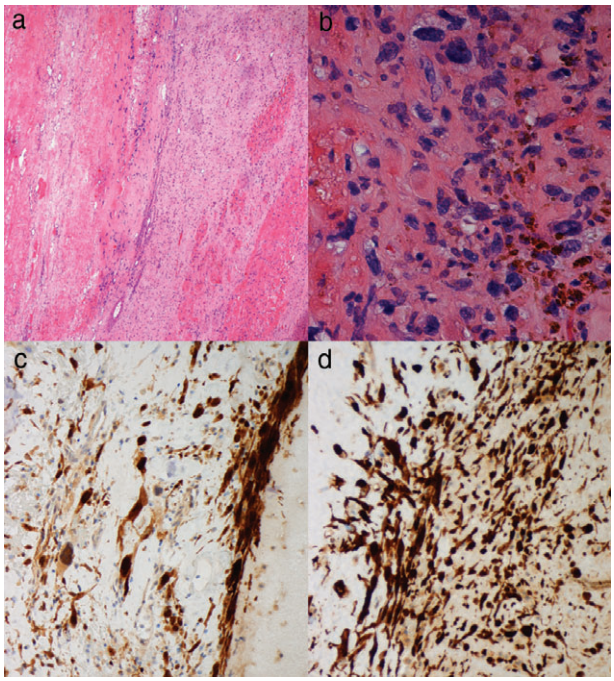

Figure 3 Microscopic features of the pleural liposarcoma. (**a**) Low power view of the resected specimen showing plump spindle tumor cells with eosinophilic cytoplasm (hematoxylin and eosin [H&E] staining ×40). (**b**) High power view showing atypical enlarged hyperchromatic nuclei in collagenous background (H&E staining ×400). (**c**) Immunohistochemical analysis revealing CDK4 (×200) and (**d**) P16 (×200) expression.

Disclosure

No authors report any conflict of interest.

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