Symptomatic pleural lipoma - case report

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SUMMARY

Symptomatic pleural lipoma is an extremely rare clinical entity that can occur in all age groups and involve both sexes equally. The treatment can be done using video-assisted thoracoscopic surgery. We report a case of symptomatic pleural lipoma that was successfully removed using video-assisted thoracoscopic surgery.

Key words: *lipoma, video-assisted thoracoscopic surgery*

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INTRODUCTION

Lipomas are benign, encapsulated soft tissue tumors composed of mature adipocytes (1,2). Although lipomas are ubiquitous, they are rarely encountered in intrathoracic cavity. Pleural lipomas (PL) are originating from the submesothelial layers of parietal pleura and may extend into the subpleural, pleural or extrapleural spaces (3,4). Most patients with PL are asymptomatic and the tumor is usually detected incidentally on a chest X-ray (5).

We report a case of symptomatic PL, which was removed by video-assisted thoracoscopic surgery (VATS).

CASE REPORT

A 53-year-old non-smoker female patient with chest pain was admitted to our hospital. She had a past history of high blood pressure, hypothyroidism and underwent cholecystectomy seventeen years ago. No other significant medical history data were found.

A CT scan of the thorax revealed a 3.5 x 2.5 cm sized well-circumscribed lesion with fat attenuation suggestive of PL in the lower lobe of the right lung (Figure 1). The lesion was 1.5 x 1 cm in size nine months prior and was originally described as a pleural effusion.

The patient underwent VATS with four-port. Resection of atypical lower and middle lobe (dimension 8 x 3.5 x 2 cm) and successful extirpation of subpleural localized mass was performed. The extirpated tumor was round, yellowish, and soft with a smooth surface measuring 3.5 x 2.5 cm (Figure 2). Malignancy was excluded by histopathological examination of frozen sections. A microscopic examination indicated an encapsulated tumor with abundant mature adipose tissue without cell pleomorphism, necrosis or mitotic activity and suggestive of PL (Figure 3). After 4 days of hospital stay, patient was released. There were no complications and no recurrence in the nine-month postoperative period.

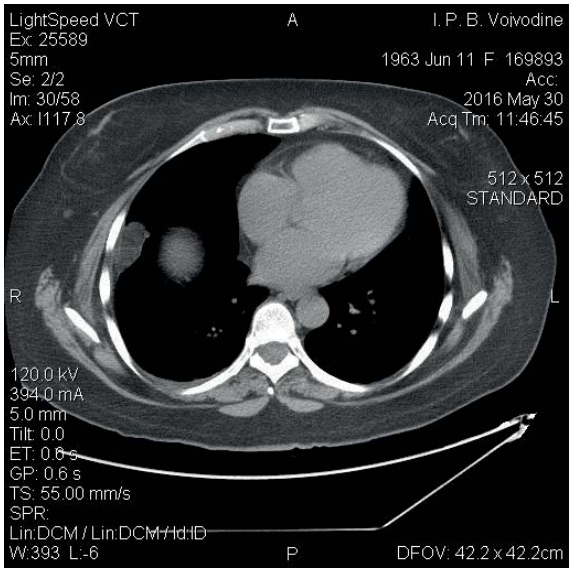

Figure 1. Chest CT scan with attenuation measurements of 18 HU demonstrating mass in the right pleural cavity

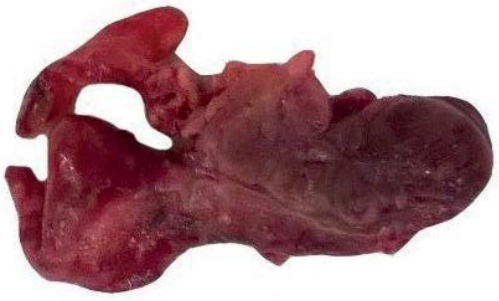

Figure 2. Macroscopic image of extirpated tumor

DISCUSSION

Lipomas are benign mesenchymal tumors that could develop all over the body. They are composed of mature adipocytes and are rarely found in the thoracic cavity (3,6). In contrast to the frequently found multiple subcutaneous lipoma, intrathoracic lipomas are usually single lesions (7). In accordance with their origin, intrathoracic lipomas are classified as endobronchial lipoma if originating from the submucosal fat of tracheobronchial tree; parenchymal lipoma when located peripherally within lung parenchyma and originating from interstitial adipocytes; pleural lipoma if originating from the submesothelial layer of parietal pleura; pericardial (cardiac) lipoma if originating from layers of pericardium; mediastinal lipoma: that represents approximately 0.3% of all mediastinal tumors (1,3,6).

PL is extremely rare and diagnosed in less than 1% of all operated thoracic lipoma (8, 9). While PL of diaphragmatic origin is predilective posterobasally in the left lung, the rest are equally localized in both lungs (1,8). Bıçakçıoğlu et al. analyzed retrospectively 19,236 patients in which thoracic surgery was performed between 1990 and 2012. PL was detected in 11 cases but only 8 cases were included in this study (5.7 cases per 10,000) (8). PL association with increased body mass index (BMI) and cholecystectomy is controversial and it was rarely associated

with pleural effusion (8,10). In our case, the patient had increased BMI and underwent cholecystectomy 17 years ago.

PL can occur in all age groups, with mean age of 60.1 years (range from 27-75 years) and involve both sexes equally (8,11). Most patients with PL are asymptomatic. These tumors can enlarge and lead to compressive symptoms such as chest pain, cough, shortness of breath, neck swelling, dyspnea, bone erosion, cortical thickening, hyperostosis and rib lysis (1,8,9,11,12).

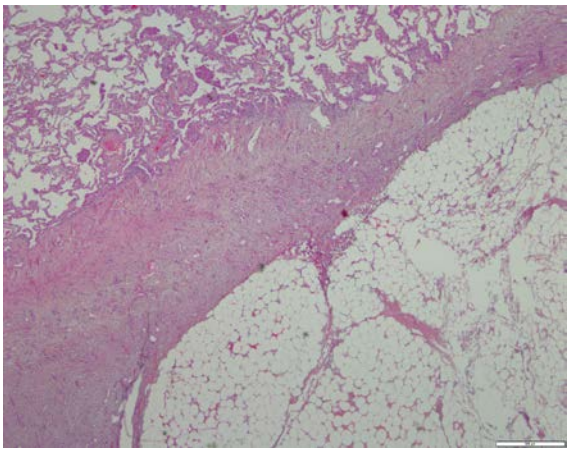

Figure 3. Encapsulated tumor with abundant mature adipose tissue (Hematoxylin-eosin; magnification ×40)

Today, PL are detected incidentally in chest X-ray or CT scan where they are visible as homogenous fat attenuation mass (-50 to -150 Hounsfield units) (2). Lipomas localized in the subcutaneous tissue are limited and usually grow slowly, although there were published cases of fast growing PL (3,11). Invasive growth and inhomogeneous enhancement after intravenous contrast application could suggest the possibility of a malignant lesion (13).

The average size of PL is 7.6 cm (range from 1-25 cm) (8,9). Since differential diagnosis may include different pleural diseases such as: hernias, other primary benign pleural lesions, metastatic cancers, malignant mesothelioma, poorly differentiated synovial sarcoma, liposarcoma and lipoblastoma, correct diagnosis of PL is possible only upon histopathologic examination after surgical removal(14, 15). Lipomas histologically mostly consist of uniform, mature adipocytes with no mitotic activity, pleomorphism or necrosis, as was the case in this report.

The treatment strategy of asymptomatic lipoma with radiological follow-up remains controversial and surgical excision is recommended (3). Where tumor size makes it feasible VATS excision is advisable for PL, as was in the case reported here. After surgical resection, the average hospital stay length is approximately five days (11). PL may recur locally in less than 5% of all lipomatous tumors and recurrence is probably caused by incomplete resection (8, 9).

CONCLUSION

Due to difficult preoperative differentiation between lipoma and well-differentiated liposarcoma it is advised to perform complete surgical excision of the tumor. VATS followed by histopathological examination should be primary method of treatment of PL.

Declaration of Interests

Authors declare no conflicts of interest.

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