

PLEURAL LIPOMA: A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

Lipomas are benign soft tissue tumors arising from mature adipocytes. Although they can be encountered almost anywhere in the body, their occurrence within the thoracic cavity in relation to the pleura is very rare. Most reported cases of pleural lipoma are of asymptomatic lipomas, which are accidentally discovered. Symptomatic pleural lipoma is a much more rare entity. This is a case of benign pleural lipoma causing mild chest symptoms and was successfully treated with video assisted thoracic surgery (VATS).

Case Report

A 50 year old obese woman presented to the pulmonologist with complaints of low grade fever and mild left sided chest discomfort on and off for 6 months. Her chest examination was unremarkable. Plain X-ray of the chest was advised that showed an abnormal radio-opacity with tapered margins in the left lung lower zone close to the retrocardiac shadow making an obtuse angle with the lung parenchyma (Fig 1). CT scan chest with contrast was recommended to rule out the possibility of any underlying mass lesion. CT revealed a well defined pleural based fat density lesion measuring 4.2 x 2.7 cm in the posterolateral aspect of the left lower thoracic cavity. It has convex and tapering edges making an obtuse angle with chest wall. No post contrast enhancement was present. Diagnosis of pleural lipoma was made (Fig. 2, 3, 4). Video Assisted thoracoscopic surgery (VATS) was done and lesion was removed. Histopathological examination of the specimen confirmed a benign pleural lipoma.

Discussion

Lipoma is a benign mesenchymal neoplasm of fat. Lipomas are rarely encountered in the thoracic cavity.

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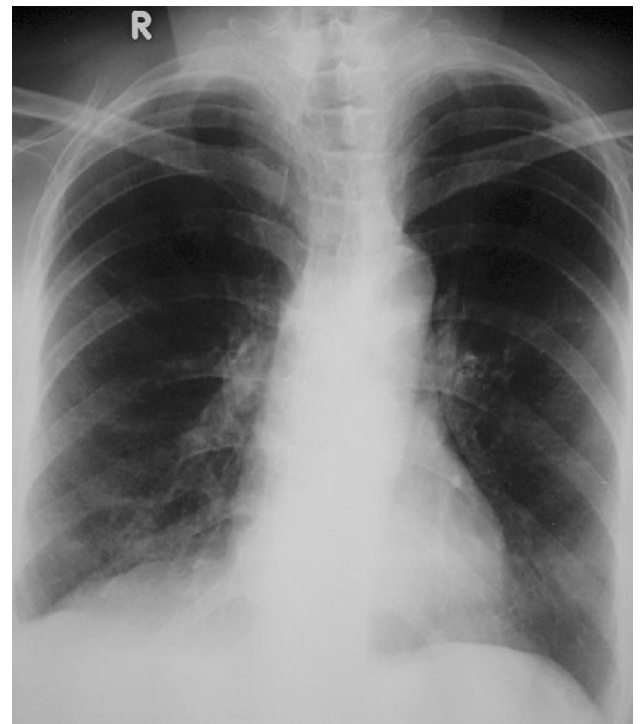


Figure 1: CXR PA projection showing an abnormal radio-opacity with tapered margins in the left lung lower zone close to the retrocardiac shadow making an obtuse angle with the lung parenchyma.

Intra-thoracic lipomas are classified as,¹

- Endobronchial lipoma: arising from the subcutaneous fat of the tracheobronchial tree.

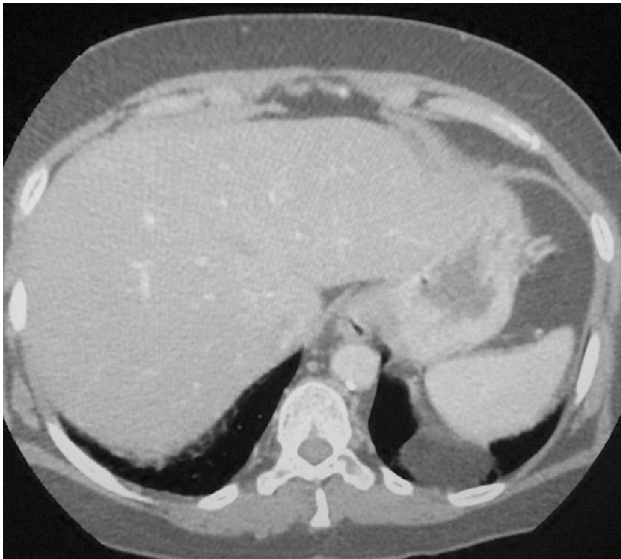


Figure 2: Axial section of CT Scan chest showing a well defined fat attenuation lesion in the postero-lateral aspect of left lower thoracic cavity. It is making obtuse angle with lung parenchyma with tapered edges.



Figure 3: Coronal section of CT Scan chest showing fat attenuation lesion in left lower thoracic cavity measuring approximately 4.2 x 2.7cm.

- Parenchymal lipoma: located peripherally within the lung parenchyma.

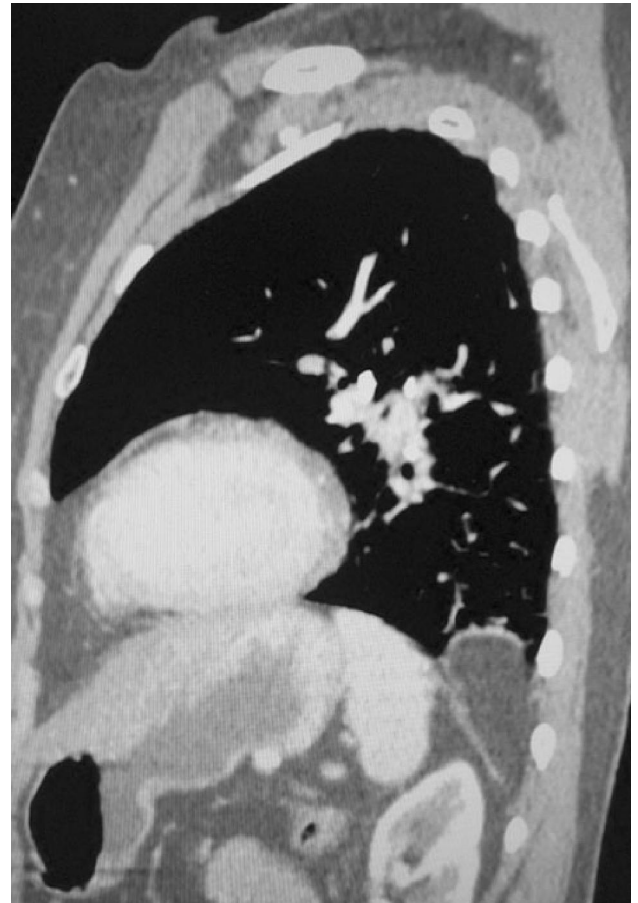


Figure 4: Sagittal section of CT Scan chest showing pleural lipoma with tapered margins

- Pleural lipoma: originating from the submesothelial parietal pleura which may extend into subpleural, pleural or extrapleural spaces.²
- Mediastinal lipoma.
- Cardiac lipoma.

Lipomas can be also divided into two classes: (1) hourglass or dumbbell lipomas that pass through intercostal space or the thoracic inlet; and (2) purely intrathoracic lipomas. Our case belong to the latter type, since it was entirely within the right thorax.^{3,4} They are usually solitary and have no association with other extra-thoracic locations; they involve both sides with the same frequency. They are most commonly detected between the ages of 40 and 60 years, frequently in obese individuals. The intrathoracic lipoma arises most frequently in the parietal pleura and may exhibit hemispherical sessile or pedunculated

forms.^{5,6} Pleural lipomas also may cause complications such as intratumoral haemorrhage with pain and fever, moreover they can invade intercostal spaces and induce rib lysis.⁷

Although the tumor is usually detected incidentally in a chest X-ray, CT scan has replaced conventional x-ray and ultrasound scan for accurate detection of thoracic lipomas. CT allows a definitive diagnosis when it demonstrates a homogeneous fat attenuation mass (-50 to -150 Hounsfield units, or HU) which formed obtuse angles with the chest wall and displaced adjacent pulmonary parenchyma and vessels.⁸ The typical characteristics of a malignant tumor include invasive growth, infiltration of surrounding structures, rather than displacement, inhomogeneous enhancement after intravenous contrast medium application, attenuation values greater than -50 HU, poor delineation of the lesion and the occurrence of metastases.⁹ On PET/CT, pleural lipomas show low FDG uptake similar to other benign lesions, liposarcomas show increased FDG uptake fusing to regions of soft tissue.¹⁰ Magnetic Resonance Imaging (MRI) is only useful if there is a doubt in CT scan diagnosis. MRI provides a better analysis of the lipoma fatty density, its heterogeneity and its relationship with contiguous organs.¹¹

Surgical resection can easily be performed via an open typical or muscle-sparing thoracotomy. Video-assisted thoracoscopic surgery (VATS) has become a more common technique for thoracic tumor operations. Recently, successful extirpation of a pleural lipoma with a single-port VATS has been reported.¹² The outcome of resection of lipomas is usually good. Recurrence rates after surgical excision have been reported to be less than 5%.¹³

Conclusion

Pleural lipomas are considered to be very rare entity. CT scan is a very helpful diagnostic tool in clinical diagnosis of pleural lipoma and to differentiate it from liposarcoma. Surgical resection, with thoracotomy or VATS, remains a valuable procedure for establishing a firm diagnosis and complete excision.

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