



International Journal of Respiratory and Pulmonary Medicine

CLINICAL IMAGE

Pleural Lipoma

Pankaj Mathur¹, Vinod Namana^{2*}, Sushilkumar S Gupta², Barbara Berger³ and Elliott Bondi⁴

¹Department of Medicine, University of Arkansas for Medical Sciences, USA

²Department of Medicine and Cardiology, Maimonides Medical Center, USA

³Department of Medicine, Wycoff Heights Medical Center, USA

⁴Department of Pulmonary and Critical Care, Brookdale University Medical Center, USA

*Corresponding author: Vinod Namana, MD, MPH, Department of Cardiology, Fellow in Cardiovascular Medicine, 4802 10th Avenue, Brooklyn, NY 11219, USA, Tel: +718-283-6892, E-mail: vnamana@maimonidesmed.org

Keywords

Lipoma, Pleural lipoma, Liposarcoma, Fibroma

Case Description

A 31-year-old male presented with complaints of a mild non-productive cough for 2 months. He had no history of smoking, fever, chills, rigors, weight loss, dyspnea, chest pain and hemoptysis. There was no history of exposure to occupational hazards or medications use. He was hemodynamically stable and had no significant findings on physical examination. Postero-anterior radiography of the chest showed a pleural-based mass in the right upper lung field (Figure 1). Computed tomography (CT) of the chest was suggestive of a smooth, marginated mass in the right upper thorax, measuring 5.4 × 4.5 × 2.7 cms (Figure 2). The mass contained fat and soft-tissue density with no calcifications; there were no bony erosions. Fat planes between right intercostal muscles and pectoralis muscle were intact. CT-guided biopsy was performed and histopathology confirmed the diagnosis of pleural lipoma. The tissue consisted of mature adipose cells (Figure 3). The etiology of cough was not attributed to the pleural lipoma; neither there were any signs of bacterial infections. He was initially treated with antitussive dextromethorphan syrup, followed by inhaled corticosteroids which led to complete recovery from the symptom.

Discussion

Lipomas are the most common benign tumors of the

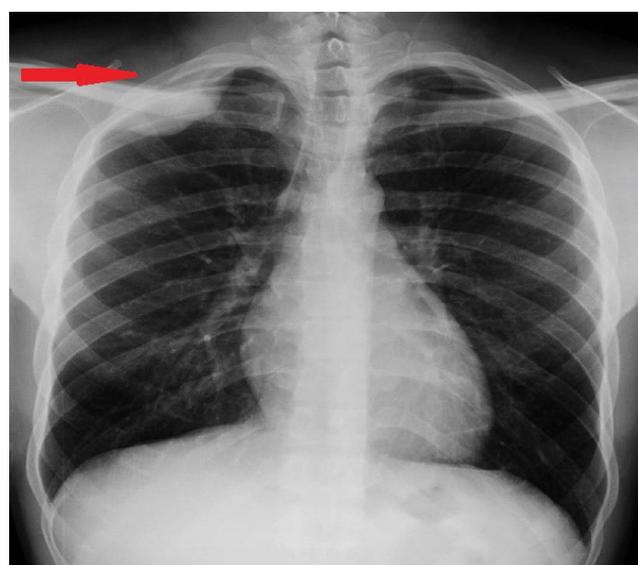


Figure 1: Postero-anterior radiography of the chest showing a pleural-based mass in the right upper lung field (red arrow).

skin and subcutaneous tissue; occurring with an annual incidence of 1 per 1000 persons [1]. Lipomas are histologically made up of abundant mature adipose tissue with no mitotic activity. Lipomas are uncommonly found in visceral locations such as stomach, kidney, brain, especially in the corpus callosum, and thoracic cavity [1,2]. Intrathoracic lipomas were first described by Fothergill in 1781 [3]. Clinically pleural lipomas and other intrathoracic lipomas are slow growing benign tumors, often diagnosed coincidentally. Sometimes they may grow to a large size and cause compression symptoms such as dyspnea and dysphagia.

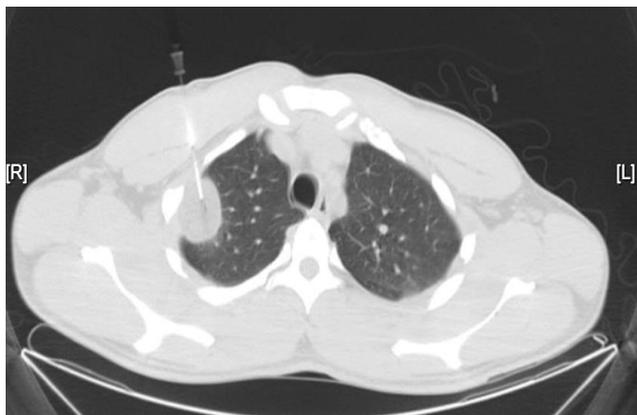


Figure 2: Computed tomography of the chest showing CT-guided biopsy of a smooth, marginated mass in the right upper thorax, measuring 5.4 × 4.5 × 2.7 cms.

Importantly, they have also been associated with complications such as cervical radiculopathy [4], rib fracture [5], pneumonia and empyema [6].

Investigations

CT of the chest is the initial investigation of choice, but biopsy of the tumor remains the gold standard. The differential diagnosis includes liposarcomas, fibromas and solitary fibrous tumor of the pleura (SFTP). Benign lipomas are usually smooth, marginated, have uniform fatty density, located peripherally in the chest wall and usually on CT scan have attenuation coefficients of -50 to -150 Hounsfield units [7], whereas Liposarcomas can be present anywhere in the thoracic cavity, but more frequently are found in the posterior mediastinum. Lipo sarcomas have attenuation coefficients of higher than -50 Hounsfield units [7]. Histologically, pleural and intrathoracic lipomas contain abundant mature adipose tissue with no mitotic activity, with normal fibro-connective tissue in between but sometimes may contain foci of calcification and fat necrosis especially in large tumors [8]. Lipo sarcomas, on the other hand, have adipose Cells of varying size with hyperchromatic nuclei and eosinophilic cytoplasm. Liposarcomas can also have mitoses associated with multinucleated histiocytes and fatty necrosis seen in 25% of cases [8,9]. SFTP is a rare, usually benign and indolent growing tumor that accounts for approximately 5% of all pleural neoplasms [10]. More than 50% of benign tumors are asymptomatic, and are incidentally discovered on routine chest x-rays performed for patient presenting with cough, chest pain or dyspnea [11]. Histologically they consist of ovoid or elongated spindle-shaped tumor cells with varying amounts of cytoplasm [12].

Management

Epler, et al. suggested, pleural lipomas can be managed conservatively and should be followed radiologically [7]. However, recently several authors such as Sakurai, et al. [2], Chung, et al. [13], and Jayle, et al. [14] advocated resection of the lipoma tumor by surgery or video-assisted tho-

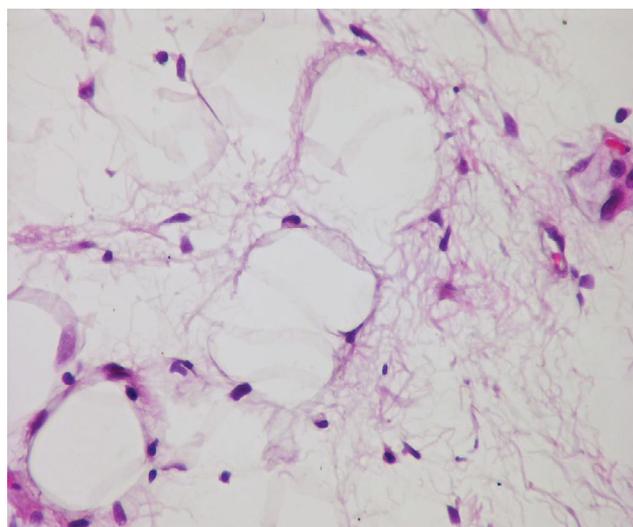


Figure 3: Histology shows normal mature adipose tissue, with no mitotic activity.

racoscopic surgery (VATS). The proponents of early surgical intervention suggest that surgical procedure is easier if performed earlier as there are less neighboring adhesions and tissue infiltration. Besides, these tumors have a variable growing rate and may cause compression of the lung parenchyma and intra parenchymal bleeding [14]. In the studies of Sakurai, et al. [2] 8 out of 10 patients were asymptomatic and in Jayle, et al. [14] 4 out of 5 patients were asymptomatic. The CT scan guided biopsy was performed in only 1 patient by Sakurai, et al. [2] and in 2 patients by Jayle, et al. [14]. In our case, we found that CT scan guided biopsy was clearly beneficial as it diagnosed the benign nature of the tumor, besides in patients undergoing surgical resection there is always a chance of local recurrence albeit small < 5% [2] and incomplete removal leading to the complicated surgical procedure [2,14]. Therefore for an asymptomatic patient, we think before going for more invasive procedures like postero-lateral thoracotomy or VATS, CT scan guided biopsy should be considered. However, for large size tumors, surgical resection or video-assisted thoracoscopic surgery (VATS) is preferred to prevent compressive symptoms [2].

All the options were discussed with our patient in detail and he chose conservative management, due to the absence of clinical signs and symptoms secondary to pleural lipoma, the low risk profile for malignancy, availability of the confirmed diagnosis, and he also did not want to take the unnecessary risk of surgery.

References

1. Rydholm A, Berg NO (1983) Size, site and clinical incidence of lipoma. Factors in the differential diagnosis of lipoma and sarcoma. *Acta Orthop Scand* 54: 929-934.
2. Sakurai H, Kaji M, Yamazaki K, Suemasu K (2008) Intrathoracic lipomas: their clinicopathological behaviors are not as straightforward as expected. *Ann Thorac Surg* 86: 261-265.
3. Fothergill J *Medical and Philosophical Works*. John Walker Printer, London, 1781: 508-528.
4. Rao N, Dworecka F, Hermann G (1982) Cervical radiculopa-

- thy caused by lipoma. Patient with multiple congenital skeletal anomalies and intraspinal and intrathoracic lipomas. *N Y State J Med* 82: 222-225.
5. Buxton RC, Tan CS, Khine NM, Cuasay NS, Shor MJ, et al. (1988) Atypical transmural thoracic lipoma: CT diagnosis. *J Comput Assist Tomogr* 12: 196-198.
 6. Ouadnoui Y, Bouchikh M, Bekarsabein S, Achir A, Smahi M, et al. (2009) Endobronchial lipoma a rare cause of pleural empyema: a case report. *Cases J* 2: 6377.
 7. Epler GR, McLoud TC, Munn CS, Colby TV (1986) Pleural lipoma. Diagnosis by computed tomography. *Chest* 90: 265-268.
 8. Hagmaier RM, Nelson GA, Daniels LJ, Riker AI (2008) Successful removal of a giant intrathoracic lipoma: a case report and review of the literature. *Cases J* 1: 87.
 9. Weiss SW, Enzinger FM, Goldblum JR (1994) Histological Typing of Soft Tissue Tumours. *Lipomatous Tumours* 23-26.
 10. Lee CE, Zanariah H, Masni M, Pau KK (2010) Solitary fibrous tumour of the pleura presenting with refractory non-insulin mediated hypoglycaemia (the Doege-Potter syndrome). *Med J Malaysia* 65: 72-74.
 11. Campbell NA, Antippa PN (2006) Solitary fibrous tumour of the pleura. *Heart Lung Circ* 15: 400-401.
 12. Robinson LA (2006) Solitary fibrous tumor of the pleura. *Cancer Control* 13: 264-269.
 13. Chung JH, Moon DS, Oh HE, Park CS, Choi JE (2005) A case of pleural lipoma treated with video assisted thoracic surgery (VATS) *Tuberc Respir Dis* 59: 556-560.
 14. Jayle C, Hajj-Chahine J, Allain G, Milin S, Soubiron L, et al. (2012) Pleural lipoma: a non-surgical lesion? *Interact Cardiovasc Thorac Surg* 14: 735-738.