International Journal of Medicine and Pharmacy
December 2014, Vol. 2, No. 2, pp. 37-43
ISSN 2372-5087 (Print) 2372-5095 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/ijmp.v2n2a3
URL: http://dx.doi.org/10.15640/ijmp.v2n2a3

Case Report of Pleural Lipoma: "Wait and see" or Surgery?

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Abstract

Lipoma is a rare benign mesenchymatous neoplasm that originates from adipocytes. The most of lipomas are found within the subcutaneous areas of the body and intrathoracic localization is very rare and usually affects the lung parenchyma, the bronchial tree or the mediastinum. The pleural location is extremely rare. We present a case of pleural lipoma diagnosed with CT scan examination and discuss the utility of follow-up and surgery treatment.

Introduction

Lipoma is a benign solid tumor most frequently observed in adults. It originates from adipose tissue and may occur in any location of the body. In the chest that can be formed in the mediastinum, bronchial and parenchymal levels. The pleural localization, however, is rarely described. Most patients remain asymptomatic, but since lipomas are able to grow to a large size and may cause compression symptoms'. The diagnosis is made by detection on CT scan of a mass in the pleural origin with a density between -50 and -150 Hounsfield Unit (HU), comparable with subcutaneous fat. The pleural lipoma is a stable neoplasm, slow growth, for which surgical removal is not necessary and, in fact, the wait-and-see policy is common. We present a case of pleural lipoma diagnosed with CT scan examination and discuss the utility of follow-up and surgery treatment.

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Presentation of Case

We report the case of 60-year-old female patient with pleural lipoma. The first admission in March 2010, the patient comes to our observation in radiology department for the appearance of weight loss in the past few months (6 kg in three months) mild dyspnea, cough and discomfort left hemithorax. Physical examination of the chest was negative. The laboratory tests were normal. Chest X-Ray was performed showing a pleural opacity in the lingular region (fig. 1). The patient then performs a CT scan examination that also highlights a well circumscribed mass (43 x 24 x 31 mm) to the level of the lateral segment of the lingula, which is reconciled to the pleura with which it formed obtuse angles and fat density (-103 HU) (fig.2). In agreement with colleagues from the surgery it was decided to monitor the lesion with CT examinations without contrast medium which will be executed after 6 months and then in subsequent years. At the first check after six months, the patient reported a worsening of respiratory symptoms, particularly shortness of breath and feeling of chest weight that now the patient was referring to the entire left hemithorax. However, the CT scan showed the same finding in size and worsening of symptoms was attributed to anxiety of the patient. On this occasion we failed to provide more information to the patient, reassuring her further on the benignity of this injury and the inability of malignant transformation. Despite all, the patient returns to our observation after a year reporting a further worsening of symptoms that had driven her to start drug therapy with anxiolytics. The patient requested a consultation with colleagues in surgery for more information about the possibility of surgery.

Discussion

Lipoma is a rare benign mesenchymatous neoplasm that originates from adipocytes. The vast majority of lipomas are found within the subcutaneous areas of the body and intrathoracic localization is very rare and usually affects the lung parenchyma, the bronchial tree or the mediastinum. The pleural location is extremely rare [1-2]. Classification of thoracic lipoma distinguishes: endobronchial lipoma (arising from the sub-cutaneous fat of the tracheobronchial tree); parenchymal lipoma (located peripherally within the lung parenchyma); pleural lipoma (originating from the submesothelial parietal pleura which may extend into subpleural, pleural or extrapleural spaces); mediastinal lipoma and cardiac lipoma) [3]. Lipomas can be also divided into two classes: (1) hourglass or dumbbell lipomas that pass through intercostals space or the thoracic inlet; and (2) purely intrathoracic lipomas [4].

It is rather difficult to assess pleural lipoma incidence; however, in a review of 3502 cases of thoracic tumours, Jensen reported only three cases of intrathoracic lipoma [5]. This tumor affects people of both sexes and of all ages [5]. In the most of cases the pleural lipoma is asymptomatic and its uncovered occurs accidentally through a survey X-ray or CT scan examination performed for other reasons. When it reaches large, however, the tumor can induce symptoms by compression of lung parenchyma resulting in restrictive syndrome, bronchial obstruction or mediastinal deviation [6]. Other symptoms may result from compression of adjancent structures such as the esophagus resulting in dysphagia [4]. Buxton et al also report a possible evolution of the parietal tumor with invasion of the intercostal spaces with rib lysis [7]. In a few cases it was also been described as a intratumoral hemorrhage complication with pain and fever [8]. The radiological diagnosis is based on CT or MRI finding of a mass in fat content (from -50 to -150 HU), homogeneous and without calcifications. The tumor form obtuse angles with the chest wall and shows no enhanchement following injection of contrast medium [9]. The density may not be entirely uniform because lipomas often contain fibrous stroma [4]. Hagmaier et al. [10] reported a case which CT scan revealed several areas of dystrophic ring-type calcifications within a field of scattered dense soft tissue elements. In these cases the differential diagnosis of lipoma and liposarcoma can be very difficult. MRI provides a better analysis of the lipoma fatty density, its heterogeneity and its relationship with contiguous organs [11]. In doubtful cases it is necessary the fine-needle biopsy but this procedure is not without risks. Pleural lipoma is a slow-growing tumor. Following the tumor evolution you can opt for surveillance with periodic imaging methods or surgical removal may proceed, depending mainly of the location and size of tumor aas well as the patient's age. In 1988 Pinton et al reported cases operated due to anxiety, particularly in patients with a previous history of treated neoplasia [11].

On the other hand the surgical treatment is generally definitive and the incidence of recurrence is extremely low and essentially related to incomplete removal of the lesion. [12]. In cases where you do not opt for the surgical treatment, it is imperative to control the evolution of the tumor. In young age is estimated, on pathophysiological basis, that the growth is more rapid than in old age, as is the case for the majority of neoplastic lesions. Therefore, in young subjects, the follow-up should be performed more frequently. For this reason, MRI would be the best imaging modality.

However, the possibility of an analysis of the lesion with MRI is currently available in a few centers and pleural lipoma, in clinical practice, today it continues to be monitored by CT scan examination (without injection of contrast medium) posing the problem of excessive exposure to ionizing radiation.

Conclusion

Pleural lipoma is a rare benign neoplasm that however, depending on the size and location, can give rise to several complications. The lesion also can not always be differentiated from liposarcoma with the imaging methods and diagnosis of certainty is pathologic. In order to avoid the complications of the disease, frequent exposure to ionizing radiation and even anxiety problems that may arise in patients following the discovery of the tumor in such a delicate localization, in our opinion and in agreement with many authors, the best solution is to remove the lesion as early as possible in order also to avoid more extended interventions.

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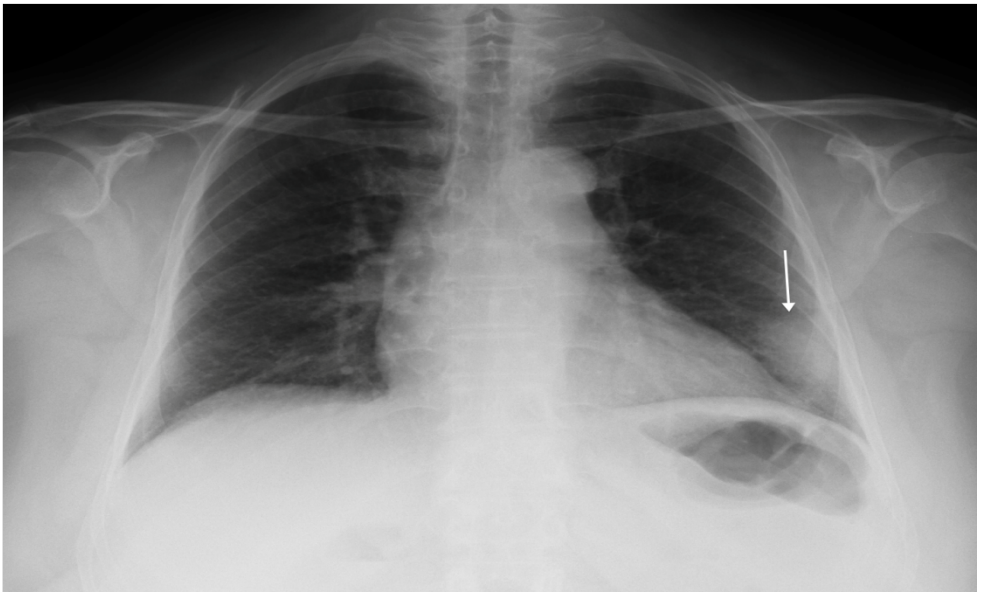
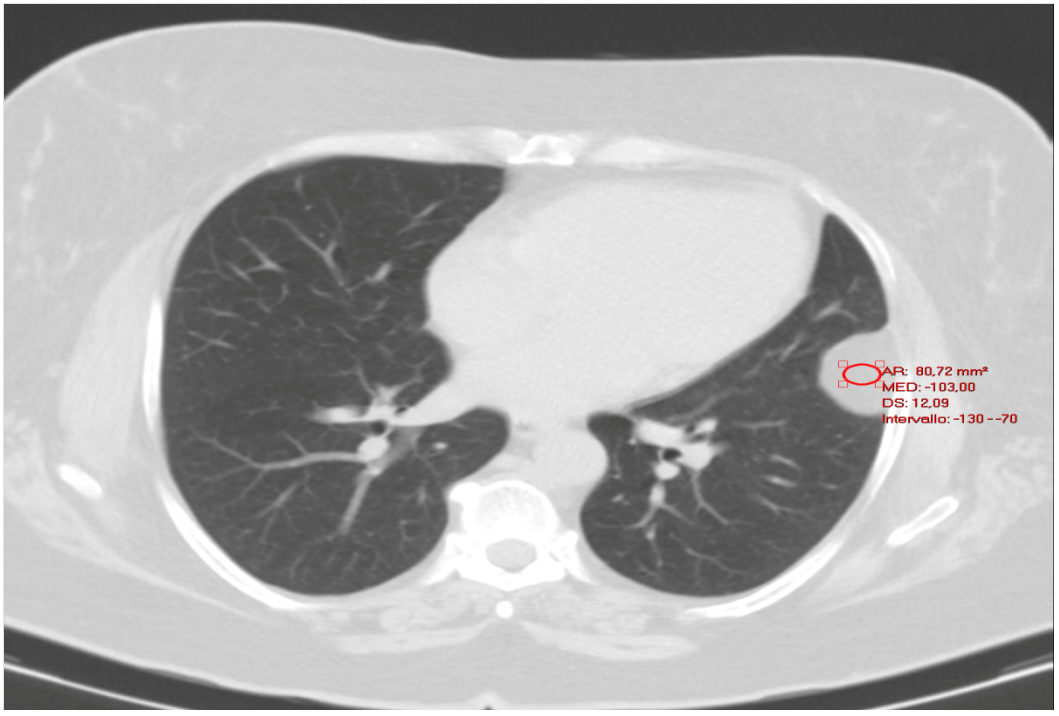
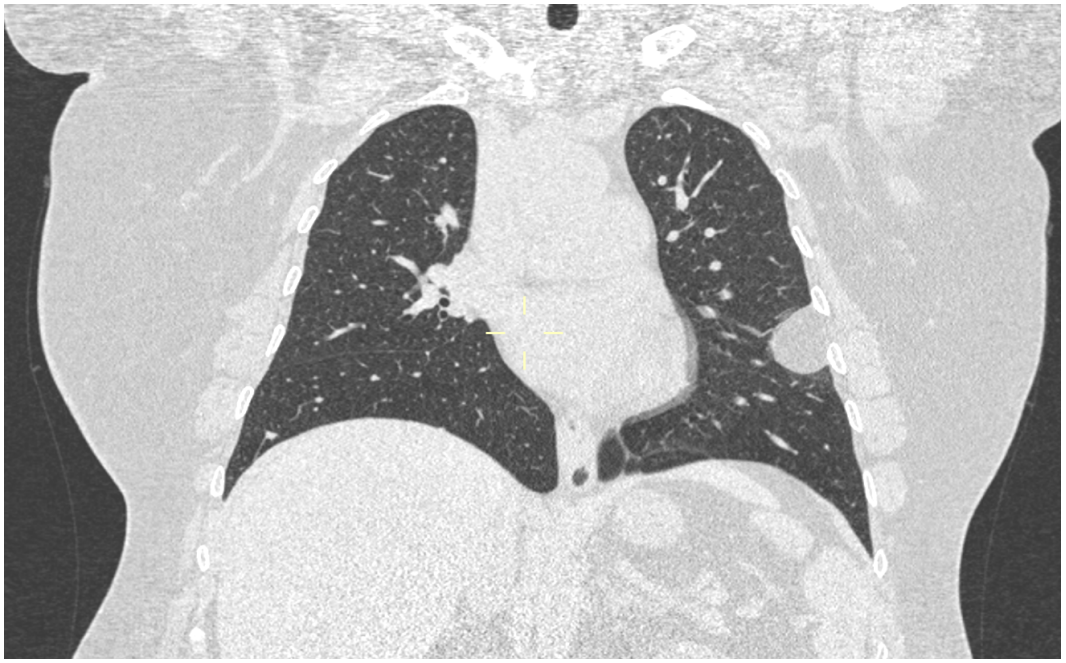
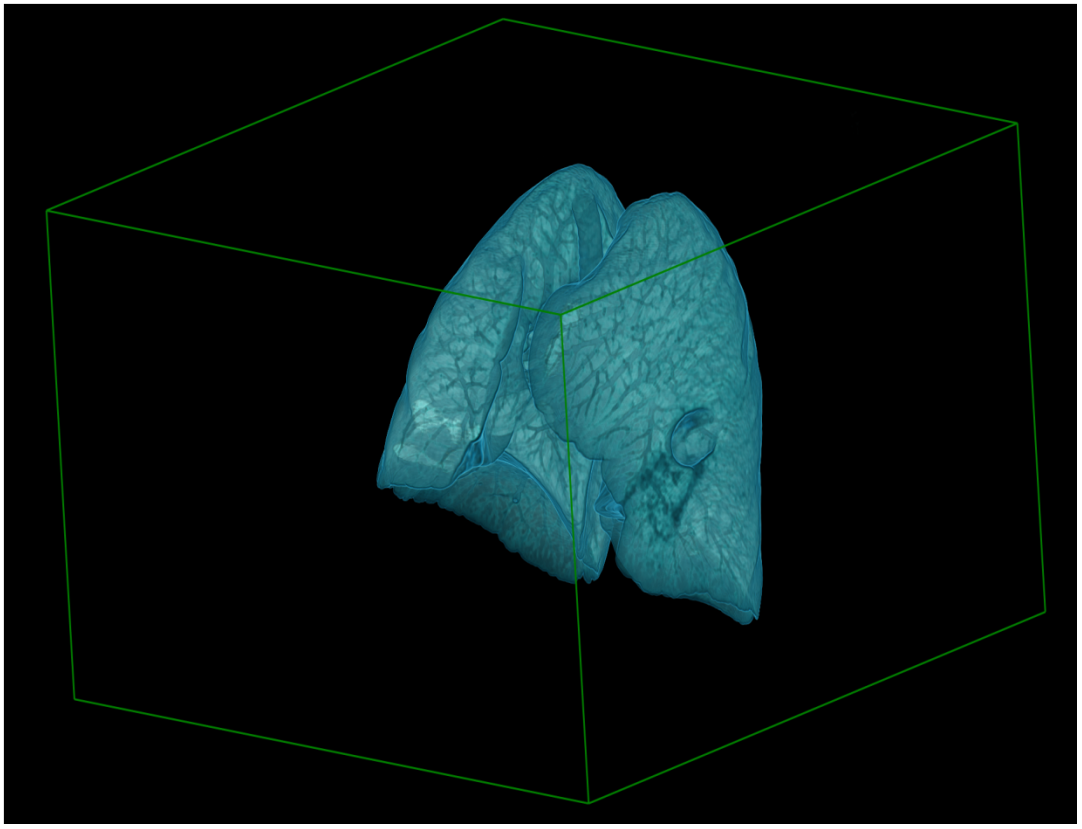
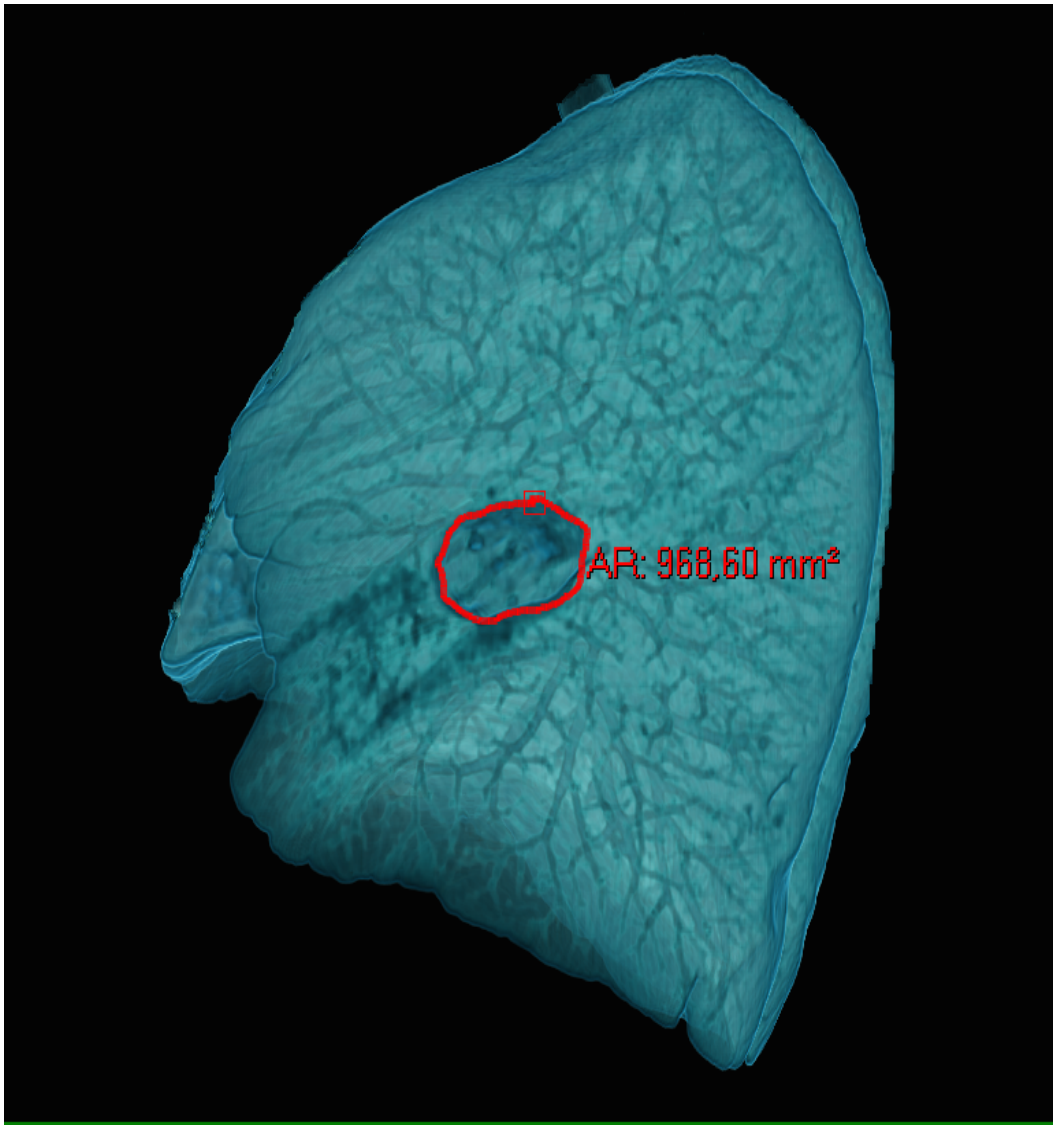


Picture 1: Chest X-Ray Shows a Pleural Opacity in the Left Basal Region









Picture 2: CT scan a) Axial plan clearly shows the pleural mass in the lateral segment of the lingula; b) in coronal plane is possible to observe the cranial-caudal extension of the lesion and the relationship with the coastline; c) d) Processing operations in Volume Rendering (VR) clearly show the imprint left by the mass on the lung parenchyma. Through VR reconstructions was also possible to calculate the area of the lesion, which can aid in the determination of the portion of parenchyma dysfunctional.