

# Letter to the Editor

## Thoracic lipomas simulating metastasis

Lipomas torácicos simulando metástases

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### To the Editor:

Lipomas are common benign soft tissues tumors in adults.<sup>(1)</sup> Intrathoracic lipomas are uncommon and can develop from the bronchus, lung, mediastinum, diaphragm, and thoracic wall, intrathoracic lipomas arising from the thoracic wall being particularly rare.<sup>(2)</sup>

Thoracic or pleural lipomas originate from submesothelial layers of parietal pleura, can extend into the subpleural, pleural, or extrapleural space, and exhibit slow growth.<sup>(3)</sup> They can arise from the lateral wall, as well from the mediastinal or diaphragmatic pleura.<sup>(3)</sup>

The low frequency and the very few reports on this entity limit the possibility of defining the correct gender and age predilection. The prevalence has been rising steadily in the past years probably due to the widespread use of chest CT scans.<sup>(1,2)</sup>

Lipomas usually remain asymptomatic and cause chest pain only rarely. As a result, they tend to be overlooked for a long time and are mostly incidentally diagnosed on chest X-rays or CT scans performed for other reasons.<sup>(4)</sup>

Symptoms, although unusual, might include nonproductive cough, back pain, exertional dyspnea, and a sensation of heaviness in the chest.<sup>(3)</sup>

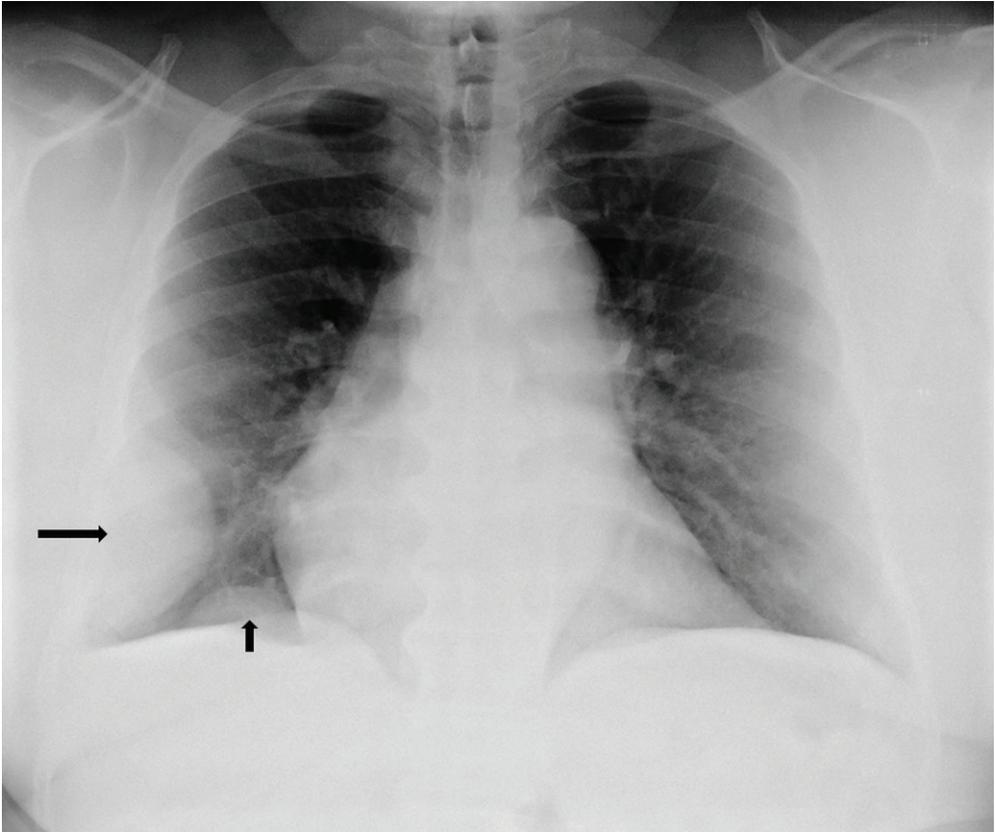
Lipomas are benign tumors, and surgery is not usually indicated.<sup>(5)</sup> However, in view of the difficult differentiation between a lipoma and a well-differentiated liposarcoma even after needle biopsy, surgical excision can be a valid option. A more conservative approach can also be considered, with follow-up imaging in order to exclude lesion growth.<sup>(6)</sup>

We present the case of an obese 62-year-old White male (body mass index, 32 kg/m<sup>2</sup>) with a smoking history of 68 pack-years. An X-ray of the chest was requested by his general practitioner as part of a routine check-up. The patient had no physical complaints, and his clinical evaluation and laboratory workup were unremarkable. The chest X-ray showed a smoothly marginated round mass in the right lower thorax, peripherally located, with apparent pleural contact or origin. The lesion

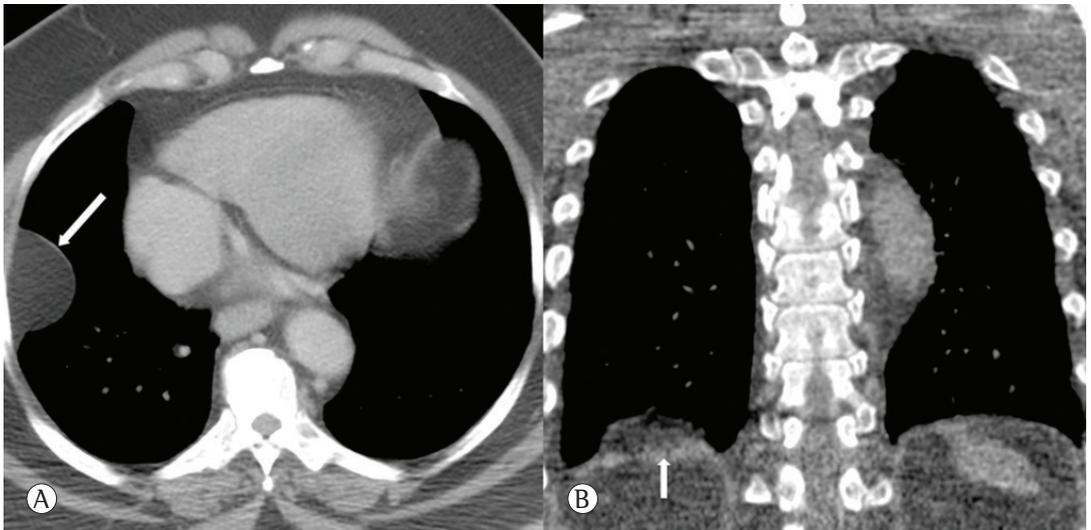
had homogeneous soft tissue density, without associated calcifications, air bronchogram, bone erosion, or periosteal reaction of the adjacent ribs. A similar but smaller lesion could be seen riding above the right diaphragm (Figure 1). Additionally, the cardiothoracic index was increased.

Certain features of lesions on radiographic images can help to narrow the differential diagnosis. The first step should be to locate the lesion precisely, and a lateral chest X-ray is a very useful complement to the posteroanterior incidence. Unfortunately, a lateral chest X-ray was not available in the present case. However, we attempted to determine whether the lesion was located in the lung parenchyma, pleura, or chest wall; we noticed that the angle between the contour of the lesion and the thoracic wall was obtuse (> 90°), which is indicative, although not pathognomically, of pleural or chest wall lesions, whereas an acute angle would be more often seen in lung parenchymal lesions.

Both lesions had a regular border, which is more likely of benign lesions or metastasis than of a primary malignant lesion of the pleura. However, since there were two lesions with similar features in a 62-year-old man, the possibility of metastasis was certainly very strong and a real concern. Thus, it was reasonable to consider the possibility of pleural metastasis as the main differential diagnosis and benign pleural or extrapleural lesions as our second possibility. Some less frequent benign-looking lesions of the pleura or in extrapleural tissues were excluded, such as a solitary fibrous tumor, because there were two lesions; asbestosis plaques were also ruled out because they are not usually as round as the lesions in the present case; and even loculated effusions could be an explanation but hardly likely in an asymptomatic patient with normal laboratory tests. Lipomas could not be excluded by X-rays alone; however, since they are very rare in that localization, they were at the end of our list of differentials.



**Figure 1** - Posteroanterior chest X-ray. Two smoothly marginated masses can be identified, a bigger one in the lateral aspect of the right lower thorax (large arrow) and a smaller one just above the right diaphragm, close to the cardiophrenic angle (small arrow). Notice the wide angle both lesions make with the thoracic wall and diaphragm, respectively, suggesting a pleural or extrapleural origin.



**Figure 2** - CT scans. In A, axial image, mediastinal window setting. The regular margin and homogeneous fat content of the mass in the lateral thoracic wall can be easily seen. There are no invasive features, and a part of the pleura enclosing the lesion is even visible (arrow). In B, reformatted coronal image depicting the position of the smaller lipoma resting above the right diaphragm. The underlying diaphragm is intact (arrow). This lesion also displays a regular margin and homogeneous fat content.

Subsequently, a CT scan was obtained with lung and mediastinal windows in order to characterize the radiographic findings further. It confirmed the presence of a smooth, well-defined mass with 5 cm of diameter and clearly confirmed its extrapleural location in the lateral side of the right lower thorax. On the CT scans, it was also possible to define that the lesion was composed of homogeneous mass with fat attenuation without internal septations or thickened capsules (Figure 2A). The presence of a second, smaller, lesion was also confirmed, just above the right diaphragm, also extrapleural, showing the same features (Figure 2B). No enhancement in either lesion was identified after the injection of intravenous contrast.

Such findings were consistent with lipomas of the extrapleural fat. No biopsy or surgical excision was performed. At this writing, the patient had completed 3 years of follow-up with no signs of lesion growth or changes in morphology.

The chest CT scans were paramount for the final diagnosis, since it allowed the precise localization of the lesions in the extrapleural space, and they gave us important information on the shape and content of the lesions, their relationship with nearby structures, as well as their vascularization, being the homogeneous fat content being fundamental for the diagnosis of lipomas.

Although it cannot be overemphasized the central role of CT in clarifying and characterizing ambiguous findings on chest X-rays, it is generally the careful analysis of both methods that allows us to reach the final diagnosis. This case illustrates how simple it is to establish the location (pleural or extrapleural) and the nature (probably benign) of the lesions by chest X-rays. However, the precise characterization and diagnosis were achieved only with CT, which is undoubtedly the most accurate imaging technique for thoracic and specific lung pathologies.

Physicians are frequently called upon to interpret chest X-rays without the safeguard of a report of a radiologist, and this is true not only in emergency departments but also in hospital wards and ambulatory settings. It is therefore mandatory that all physicians keep their chest X-ray reading skills updated.

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