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# Giant Solitary Fibrous Tumor of Pleura in Patient Submitted to Surgical Treatment

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**Abstract:** Solitary fibrous tumor (SFT) of the pleura is a rare tumor of an unknown cause and corresponds to 5% of all pleural tumors. It is generally asymptomatic and discovered incidentally through imaging exams. The definitive diagnosis is based on histopathological findings and treatment is surgical. This paper describes the case of a previously healthy female patient with a tumor mass at the base of the left lung.

**Keywords**: Neoplasms, Fibrous Tissue, Solitary Fibrous Tumor, Pleural, Pleural Neoplasms

## Introduction

Solitary fibrous tumor (SFT) of the pleura is rare and the cause remains unknown[1]. Although more common in the pleurae, SFT can also be found in the pericardium, mediastinum, heart and extra-thoracic locations, such as the thyroid gland, adrenal gland and bladder, which suggests an origin starting from pluripotent cells of the fibrous mesenchyme with myofibroblastic characteristics[2].

SFT corresponds to 5% of all pleural tumors, affecting approximately 2.8 of every 100,000 individuals[2]. Most cases are diagnosed between the fourth and seventh decade of life and the incidence is similar between men and women[3]. The literature describes approximately 800 cases[4].

Pleural SFT is generally asymptomatic and discovered incidentally by radiography performed for other reasons[5]. The non-specific clinical manifestations make imaging diagnostic methods and biopsy guided by computed tomography (CT) essential for the diagnosis. Definitive treatment is surgical and relapse can occur[6].

This paper reports the case of a patient with a giant solitary fibrous tumor of the pleura submitted to surgical treatment.

## Case Presentation

A 47-year-old female patient complained of mild pain on the left side of the chest that had begun two days earlier. Upon the physical examination, the patient presented a good general state, eupnea and a rosy complexion and was hydrated. The pulmonary auscultation revealed a dull vesicular murmur on the left side.

The chest radiograph revealed a homogeneous opacity involving the lower third of the left hemithorax associated to an elevation of the ipsilateral diaphragmatic dome (Figure 1). The chest CT revealed a voluminous intrathoracic, extra-pulmonary mass with a regular contour at the base of the left hemithorax with a heterogenous content, hyperattenuating images and compression of the neighboring structures with no sign of invasion. The mass measured 12.1 x 7.4 cm on the coronal plane and 14.7 x 11.4 cm on the axial plane (Figures 1 and 2).

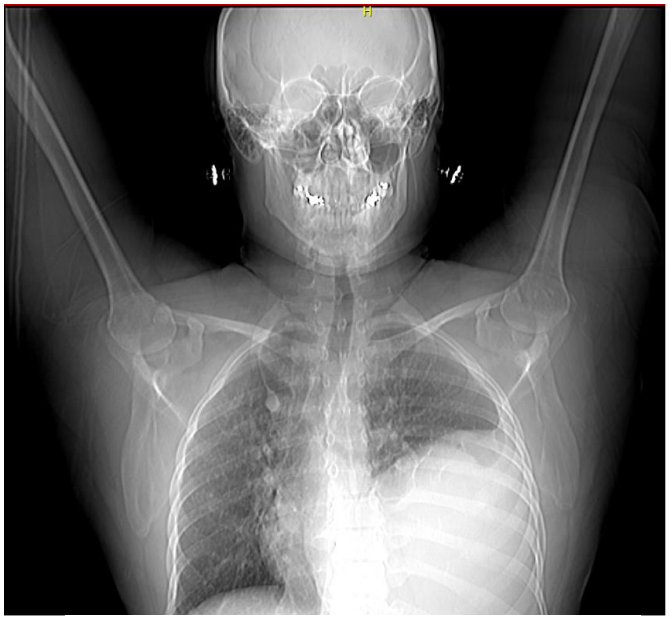

Figure 1. Chest radiograph showing elevation of left diaphragmatic dome.


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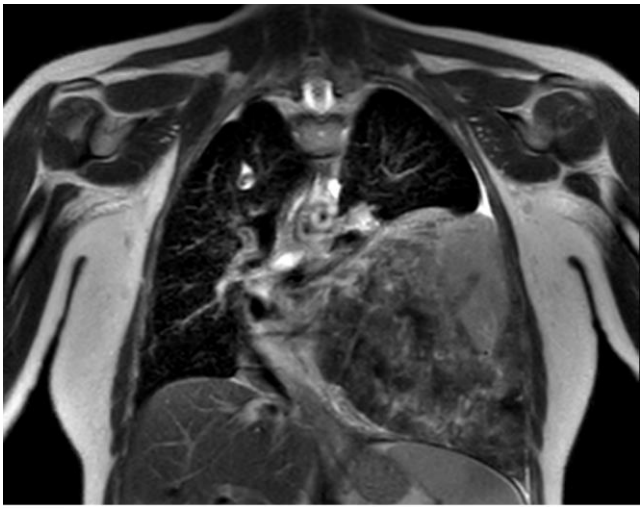

Figure 2. Computed tomogram showing voluminous mass with regular contour, heterogeneous content, compression of neighboring structures and no sign of invasion.

Pulmonary plethysmography revealed a mild reduction in forced vital capacity (73% of predicted), with preserved volume residual and RV/FVC ratio compatible with a mild restrictive disorder.

Following CT-guided biopsy (Figure 3), the anatomopathological findings revealed a solitary fibrous tumor with dense stromal hyalinization and negative for malignancy.

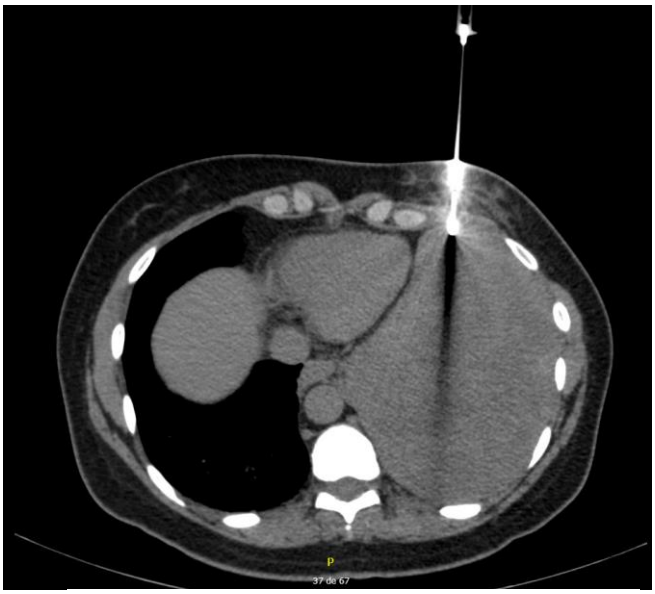

Figure 3. Image showing biopsy guided by computed tomography for percutaneous puncture.

The patient was submitted to left posterolateral thoracotomy for resection of the tumor mass with the fracture of the rib for the removal of the surgical specimen and total preservation of the left lung. No complications occurred in the postoperative period.

The anatomopathological analysis revealed a pleural solitary fibrous tumor measuring 18.2 x 17.0 x 9.5 cm and weighing 1398 g, with extensive collagenization and areas of necrosis associated to focal points of both old and recent thrombosis in organization, with the surgical margin free of neoplasm (Figure 4).

Approximately six months after surgery, with the patient asymptomatic, the follow-up chest CT revealed complete preservation of the pulmonary parenchyma and no sign of recurrence (Figure 5).

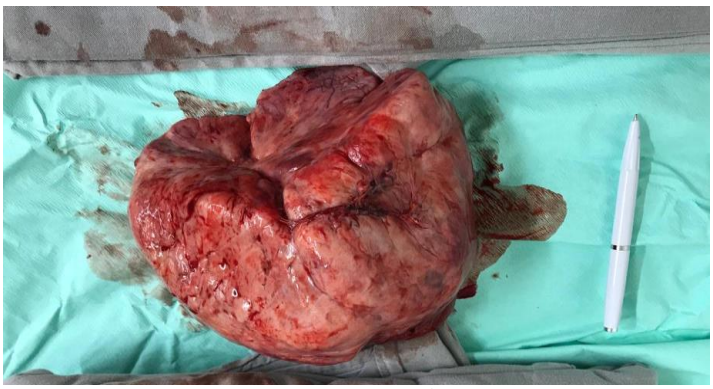

Figure 4. Surgical specimen, solitary fibrous tumor.

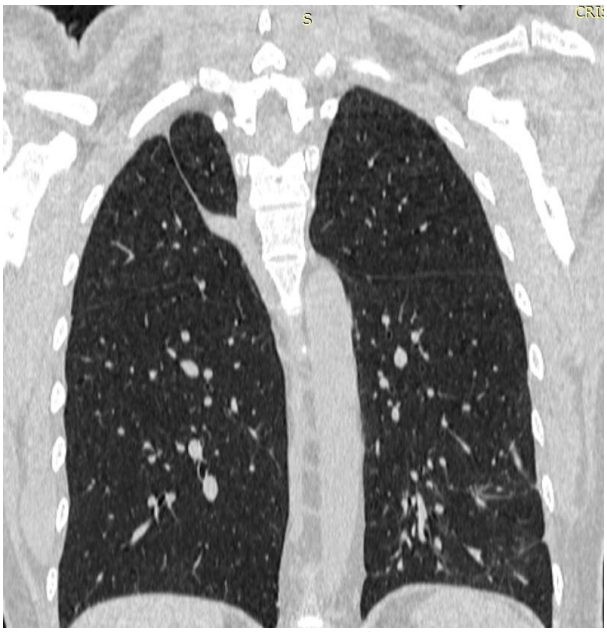

Figure 5. Computed tomogram of thorax showing complete preservation of pulmonary parenchyma six months after surgery.

**Discussion**

In the majority of cases, pleural SFT is asymptomatic in the early phase. However, with the growth of the tumor mass, some symptoms may appear, such as cough, chest pain, dyspnea and hemoptysis, with local pain as the most common symptom[7]. In the present case, the patient complained of a mild pain in the left hemithorax.

In cases of tumors with a larger volume,

paraneoplastic symptoms may be reported, such as hypertrophic arthropathy, digital clubbing, gynecomastia, galactorrhea and hypoglycemia[8]. None of these symptoms were reported by the patient in the present case.

Benign pleural SFTs have vascularization through a pedicle linked to the pleura and have considerable mobility[9]. In the present case, these characteristics were identified in the intraoperative period.

Despite the contribution of diagnostic imaging methods, such as radiography and CT, to the detection of pleural tumors, the "gold standard" remains biopsy, which was guided by CT in the present case. Despite being an invasive procedure, biopsy is fundamental to the precise diagnosis.

In cases of pleural SFT, definitive treatment is surgical. As there were no adherences or invasion of the tumor into the pulmonary parenchyma, lobectomy was not indicated, and the patient was submitted to left thoracotomy for excision of the tumor mass[8].

## Conclusion

In this report, a patient with a giant solitary fibrous tumor was submitted to surgical treatment, which achieved a satisfactory result with no intraoperative or postoperative complications and with complete preservation of the left lung.

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