

# Case Report

## Inflammatory pseudotumor of the lung

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Inflammatory pseudotumor of the lung is a rare condition that represents a dilemma because the radiographic, macroscopic and pathological aspects mimic a malignant process. Herein, we report the case of a patient complaining of respiratory difficulty who, after being appropriately assessed, was submitted to exploratory thoracotomy. An initial diagnosis of pseudotumor was subsequently confirmed through immunohistochemistry. In addition to presenting data relating to clinical history, we also discuss radiographic, histopathological and surgical aspects, as well as treatment options.

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**Key Words:** Inflammatory pseudotumor of the lung. Toracotomy. Immunohistochemistry

### INTRODUCTION

Inflammatory pseudotumor of the lung is a rare benign condition of uncertain etiology that predominantly affects young patients<sup>(1,2)</sup>. It is the most frequent form of primary pulmonary tumor in children under 16<sup>(3)</sup>. Its prevalence is unknown. According to Alam et al.<sup>(1)</sup>, inflammatory pseudotumors account for 0.7% of all pulmonary masses. Clinical history and radiographic aspects are often unspecific, which makes it difficult to arrive at a diagnosis, which, in some cases, can only be defined through surgery<sup>(3)</sup>. However, even in the pathological anatomy, inflammatory pseudotumor can mimic malignant neoplasia since

it presents localized proliferation of mature plasmocytes and reticuloendothelial cells supported by granulation tissue, which is usually infiltrated by lymphocytes and mononuclear cells.

### CASE REPORT

A 37-year-old male patient (mulatto, single and a hairdresser) was admitted to the Thoracic Surgery Department of the *Hospital Universitário da Universidade Federal de Juiz de Fora* (University Hospital of the Federal University of Juiz de Fora), with right-sided chest pain upon drawing a breath and hemoptysis for approximately a month. He presented no other signs or symptoms and had no

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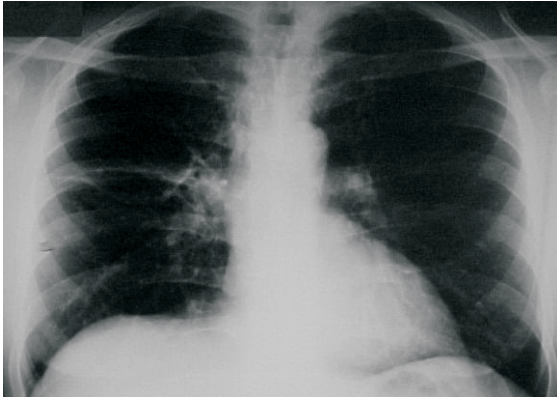


Figure 1 – Right-sided perihilar infiltrate

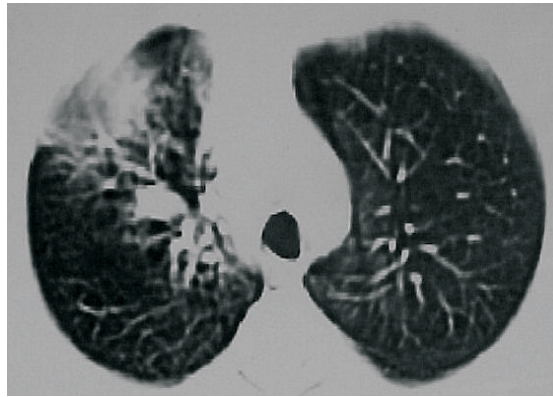


Figure 2 – Area of nodular opacity and atelectasis in the upper right lobe

previous history of similar episodes. He stated that he was not a smoker.

The chest X-ray revealed right-sided perihilar infiltrate (Figure 1), and the computed tomography scan revealed an area of nodular opacity with atelectasis in the upper right lobe (Figure 2). Fiberoptic bronchoscopy revealed a vegetative lesion that bled when touched, extending from the upper right lobe to 0.5 cm from the secondary carina, suggestive of a carcinoid tumor.

Exploratory thoracotomy was indicated, and, during the procedure, we opted to perform lobectomy of the upper right lobe since the results of the anatomopathological exam (performed by freezing the sample obtained) were inconclusive.

Under macroscopic examination, a soft 3.5 x 2.2 x 1.5 cm yellowish-white intrabronchial nodule with expansive growth was observed.

Hematoxylin and eosin staining of the sample revealed fusocellular neoplasia. In attempting to determine its lineage, it was not possible to distinguish between fibrous histiocytoid cells and smooth muscular cells. Therefore, immunohistochemical studies were ordered. The results revealed an inflammatory pseudotumor of the fibrous histiocytic type (CD 68 markers and XIII factor, specific for fibrous histiocytic cells, were positive – Figure 3).

In the postoperative phase, the patient developed a pulmonary abscess in the lower right lobe, accompanied by two episodes of expectoration of bloodstained sputum (hemoptysis). Conservative treatment was then given, and patient evolution was favorable.

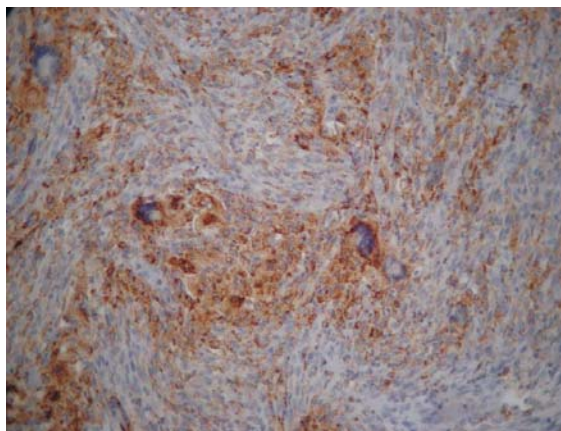


Figure 3 – Immunohistochemistry: CD68 marker showing positivity for fibrous histiocytic lineage

Subsequently, the patient was submitted to two control fiberoptic bronchoscopy procedures, two and six months after the surgery. Both revealed that the bronchial stump appeared normal and disease free, which was confirmed by anatomopathological examination of the fragment obtained in the biopsy.

## DISCUSSION

Inflammatory pseudotumor is a condition that affects both genders equally and is typically seen in patients in their 50s or 60s<sup>(4)</sup>. However, in one study, the average age was 47 (varying from 5 to 77), and 26% of the patients were under 18<sup>(5)</sup>.

The condition is usually asymptomatic and is identified only through chest X-ray. According to

Bahadori et al.<sup>(6)</sup>, only 30% of the patients present respiratory complaints. Alam et al.<sup>(1)</sup> referred to three series of cases that revealed the following clinical findings, listed here in order of frequency: cough (11%), chest pain (10%), hemoptysis (9%), fever (7%), dyspnea (6%), recurrent respiratory infections (6%) and weight loss (6%).

Chest X-rays typically reveal a mass consistent with malignancy. Agrons et al.<sup>(7)</sup> published a study involving 61 patients with pulmonary inflammatory pseudotumor and presented the following radiological findings: peripheral solitary lesions (87%), central lesions (6%), multiple nodules (5%) and pleural lesion (2% - one patient only).

There is no standardized histopathological classification for inflammatory pseudotumors. The various classifications that were created for this group of pulmonary lesions (for instance, granuloma and histiocytoma) led to confusion and imprecise recognition of its inflammatory nature<sup>(8)</sup>. Matsubara et al.<sup>(9)</sup> reviewed 32 cases and identified three pathological groups: pneumonia in organization (44%), fibrous histiocytoma (44%) and lymphoplasmacytic (12%).

Cerfolio et al.<sup>(5)</sup> conducted a retrospective study of 23 patients diagnosed with pulmonary inflammatory pseudotumor and reported that complete resection was achieved in 18 cases. The surgical procedure varied from procedures presenting a low degree of complexity (such as wedge excision of the lesion) to pulmonary or chest wall resections. The average size of the lesion was 4 cm (1 to 15 cm). In 3 patients who underwent partial resection of the lesion, there was recurrence, and those patients were then submitted to a second operation.

There are reports in the literature that treating unresectable or recurrent tumors with corticosteroids has resulted in reduction or

complete regression of the lesion<sup>(10,11)</sup>. There was even a case reported in which a patient with inflammatory pseudotumor and pleural thickening which evolved to spontaneous regression of the lesion<sup>(12)</sup>.

Complete resection, preserving the greatest possible amount of pulmonary parenchyma, is indicated for definitive diagnosis and treatment and leads to an excellent prognosis.

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