

# Case Report

## Endobronchial inflammatory pseudotumor: a case report\*

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### Abstract

Inflammatory pseudotumor of the lung is a rare form of benign neoplasia and is generally characterized by a solitary pulmonary nodule. The endobronchial presentation is uncommon. Conservative surgery remains the treatment of choice, and surgeons should always strive to achieve tumor-free margins due to the possibility of local recidivism. This article reports the case of a 36-year-old male patient with recurrent attacks of wheezing and cough. The patient underwent successful bronchoplasty for the resection of an endobronchial inflammatory pseudotumor.

**Keywords:** Granuloma, plasma cell; Coin lesion, pulmonary; Surgery.

### Introduction

Originally described as a plasma cell granuloma,<sup>(1)</sup> inflammatory pseudotumor of the lung has been referred to by a series of names, such as fibrous histiocytoma or fibroxanthoma, which demonstrates a limited understanding of its etiopathogenesis. It primarily affects young patients and has no predisposition for race or gender.<sup>(2)</sup> Although its origin is unknown, one-third of patients report a history of lung infection.<sup>(3)</sup> Its most common presentation is a solitary pulmonary nodule, and the endobronchial presentation is uncommon.

### Case report

A 36-year-old male nonsmoker was admitted for investigation of chronic cough and wheezing. Physical examination revealed right-sided expiratory wheezing. A simple chest X-ray revealed atelectasis of the right lower lobe, and a tomography scan of the chest revealed an endobronchial mass (Figure 1a). Bronchoscopy identified a vegetative lesion that completely obstructed the intermediate bronchus (Figure 1b), and the biopsy findings were suggestive of hemangioma. The patient was systematically staged due to the hypothesis of it being bronchial neoplasia. Since

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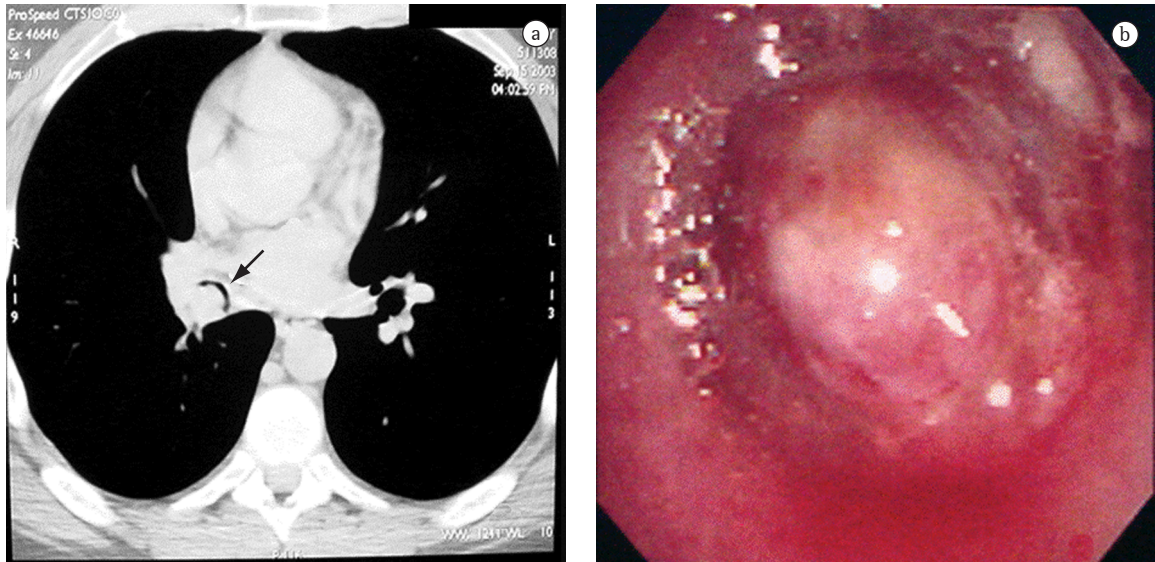
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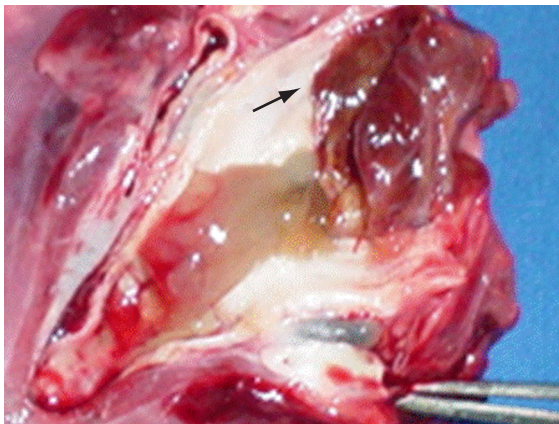
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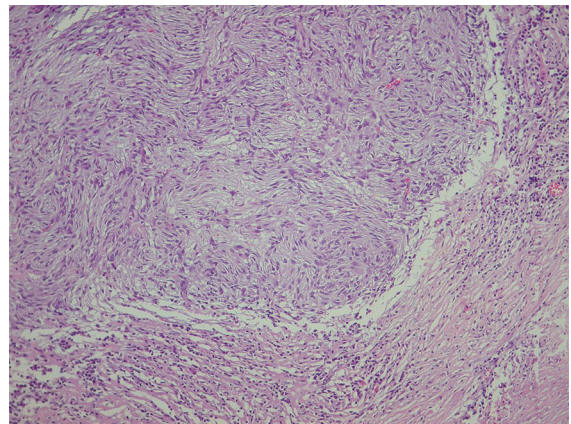
**Figure 1** - Radiological and endoscopic aspects: a) Computed tomography scan of the chest showing nearly complete obstruction of the lumen of the intermediate bronchus (arrow); and b) Endoscopic view of the tumor.

there was no evidence of local, regional, or remote impairment, the patient underwent a right lateral thoracotomy for resection of the lower lobe. Due to the extent of the endobronchial involvement, with impairment of the intermediate bronchus but without invasion of the middle lobe bronchus, we decided to perform a lower lobectomy with partial resection of the intermediate bronchus and reconstruction, including the creation of an anastomosis

between the proximal part of the intermediate bronchus and the middle lobe bronchus. The postoperative evolution was favorable and uneventful. The patient was discharged on postoperative day 5. The tumor originated in the apical segmental bronchus of the right lower lobe (Figure 2). The anatomical and pathological diagnosis was that of inflammatory fibrohistiocytic pseudotumor (Figure 3), which was confirmed through immunohistochemistry.



**Figure 2** - Excised section: longitudinal opening of the right lower lobe bronchus showing the tumor origin in the upper segment (arrow). Distal accumulation of secretion.



**Figure 3** - Photomicrograph showing an area in which there is a proliferative, fusocellular storiform pattern, next to an area presenting an inflammatory pattern.

## Discussion

Inflammatory pseudotumor accounts for less than 1% of all lung tumors.<sup>(4)</sup> The mean age at onset is 40 years, and 15% of the patients are under 10 years of age.<sup>(5)</sup> Although most patients are asymptomatic, they can present cough, fever, hemoptysis, dyspnea, and chronic bronchitis. This type of tumor usually manifests as a solitary pulmonary nodule or as a mass with well-defined borders, and it is often confused with malignant pulmonary neoplasia. The endobronchial presentation is uncommon, accounting for less than 12% of the cases, and constitutes the most symptomatic form, which frequently leads to an early diagnosis. Although the cytological examination of the sputum and of the bronchial lavage fluid cannot be used to confirm the diagnosis, it should be performed in order to rule out active infections, such as tuberculosis, and other types of neoplasia.

Histological examination reveals local proliferation of mature plasma cells and of reticuloendothelial cells in a granulation tissue stroma with no signs of mitosis or cellular atypia. The differential diagnosis includes sclerotic hemangioma, pseudolymphoma, malignant proliferation of plasma cells, and infectious granulomas.

Conservative surgery remains the treatment of choice,<sup>(1)</sup> although the locally aggressive behavior of the tumor occasionally requires the use of more radical procedures, such as pneumonectomy. Other reports in the literature<sup>(4,6)</sup> report favorable results when bronchoplasty is performed for the treatment of such tumors. In the present case, the proximity of the tumor to the middle lobe bronchus and its extension into the intermediate bronchus required that a bronchoplasty be performed in order to achieve tumor-free margins and preserve the middle

lobe. Enucleation of nodules is not recommended, due to the possibility of recurrence.<sup>(5)</sup> Radiotherapy and corticosteroid treatment can be considered in patients with recidivism, in patients who underwent incomplete resection, or in patients considered unfit to undergo pulmonary resection.<sup>(7,8)</sup> The prognosis seems to be excellent when complete surgical resection is performed.<sup>(1,5)</sup>

In conclusion, inflammatory pseudotumor of the lung is a rare, locally invasive, and generally asymptomatic form of benign neoplasia, except in its endobronchial presentation, whose clinical and radiological aspects suggest other types of neoplasia. The preoperative tests are rarely diagnostic of the tumor, and complete resection is necessary for adequate treatment and a definitive diagnosis.

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