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CASE REPORT

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Chronic Cough: a Symptom between Pulmonary and Psychogenic Disease. A Case of Misdiagnosed Endobronchial Hamartoma

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ABSTRACT

Endobronchial hamartoma is a benign mesenchymal tumor. It contains fat, cartilage and even bone tissue. It can be asymptomatic or cause respiratory symptoms such as cough and pneumonias. We report a case of a 68-year-old male who suffered from cough for the last four years. During this period of time, he was treated with different therapeutic approaches, including antibiotics, inhaled corticosteroids, pregabaline and bronchodilators, without clinical improvement. Allergic and gastrointestinal diseases were excluded. Pulmonary function tests were all normal. His symptoms had been attributed to anxiety disorder as psychogenic cough. However, a chest computed tomography (CT) was never conducted. Chest CT and bronchoscopy revealed an endobronchial hamartoma. Its endoscopical removal led to impressive remission of symptoms.

Keywords: endobronchial hamartoma, chronic cough.

INTRODUCTION

Hamartoma represents the most frequent benign tumor of the lung (1). Only 10% of these lesions are endobronchial (2). These neoplasms contain fibrous, cartilage, fat tissue and respiratory epithelium (3). Their size can vary from millimeters to many centimeters, with average size of 1.5 cm (4, 5). Males in the sixth decade of life usually develop endobronchial hamartomas (5). They are usually asymptomatic. However, in some cases they can cause serious complications, depending on their size and location (6). Herein, we present a case of a 68-year-old man who suffered from misdiagnosed chronic cough of more than five years. ❑

CASE PRESENTATION

A 68-year-old male came to our department complaining about non-productive cough for the last five years. The patient had never smoked and did not have any chronic medical condition, except for anxiety disorder. Medical examinations for asthma, allergic rhinitis, nasal polyps and gastrointestinal reflux disease were all negative. He did not have other symptoms such as wheezing, chest pain, hemoptysis, sputum, fever, or weight loss. No drugs responsible for cough had ever been administered to the patient. During this long period of time, he had received various medications, including antibiotics, inhaled corticosteroids, bronchodilators and pregabaline, for his cough, without any result. He was a farmer and breeder.

His vital signs were all normal. In auscultation, diminished lung sounds were noticed in the left lower zone of the lung. No other abnormal

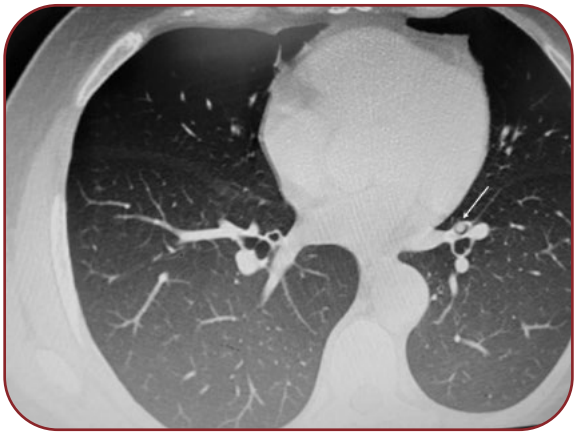

FIGURE 1. Computed tomography demonstrating a 1 cm well-rounded nodule in the left anterior lower segmental lobe

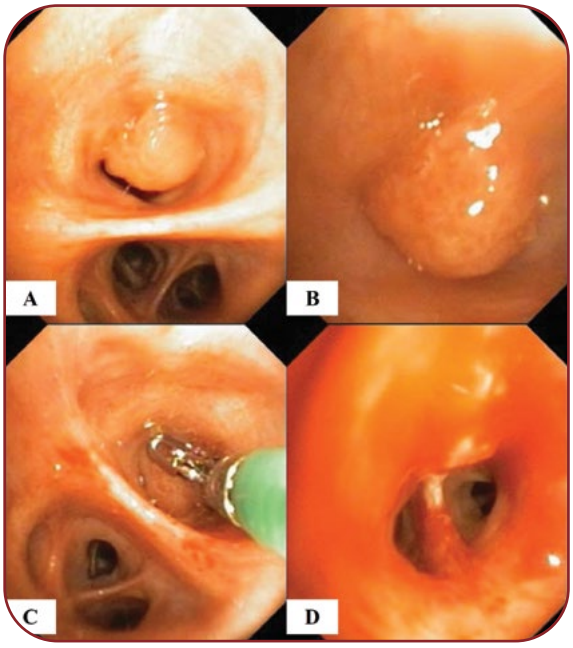

FIGURE 2. Bronchoscopic findings. A, B: a smooth red lesion in LB6; C: bronchoscopical excision of the lesion with forceps; D: the bronchus is open after the removal of the lesion.

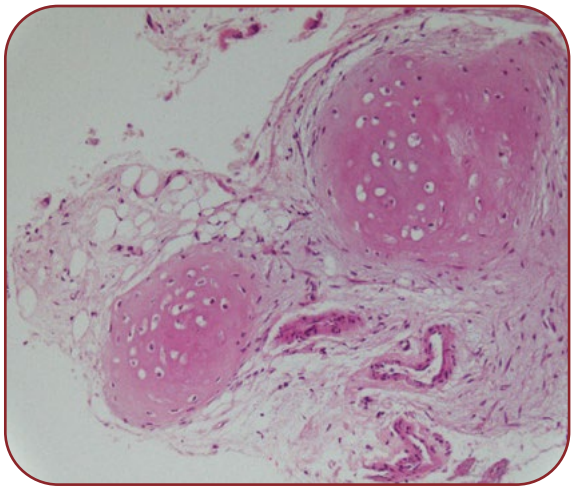

FIGURE 3. Histopathological findings: lobules of mature cartilage in myxoid stroma, nests of mature lipocytes and fibroblastic cells (H-E, x300)

findings were observed during physical examination. Total blood count, coagulation profile, metabolic exams, IgE, skin tests and pulmonary function tests were all in the normal range. A chest computed tomography (CT) revealed a well-rounded nodule of 1 cm in the anterior lower left segmental lobe (LB6) (Figure 1). The bronchoscopy revealed a smooth red mass, without necrosis, dilated vessels or hemorrhage in LB6, which occluded the bronchus during expiration and not inspiration (Figure 2A, B). The lesion was bronchoscopically excised with forceps (Figure 2C, D). The histopathological examination demonstrated lobules of mature cartilage in myxoid stroma, nests of mature lipocytes and fibroblastic cells close to the bronchial epithelium (Figure 3). This was consistent with endobronchial hamartoma. No malignant cells were observed. Cultures for common bacteria, fungi and *Mycobacterium tuberculosis* were all negative. The patient was clinically stable and left the hospital the same day. In a 12-month follow-up, he is free of symptoms. ❑

DISCUSSION

Pulmonary hamartomas originate from mesenchymal cells, which differentiate to mature lipocytes, fibroblasts or smooth muscle cells. They contain at least two mesenchymal elements (7); 90% of them occur in the lung parenchyma and are usually asymptomatic (8). However, the endobronchial hamartoma can cause various symptoms such as cough, recurrent pulmonary infections or even hemoptysis (9-11). Cough is a result of irritation of the bronchial mucosa (10). Pneumonia and atelectasis occur due to obstruction (9), whereas hemoptysis is due to perforation of superficial vessels (9, 11). In our case, the patient did not suffer from recurrent pulmonary infections. They are encountered more often among white males and are located in the left lung, as also in the case described by us (11).

Our patient was tested for various factors of cough. Environmental factors, smoking habits, use of drugs, asthma, non-asthmatic bronchitis, bronchiectasis, upper-airway and gastrointestinal abnormalities were excluded in this case. In our patient, chronic cough had been firstly attributed to his anxiety disorder. Chest CT finally helped for the diagnosis, since an endobronchial nodule was identified. On chest CT, these lesions typically contain more fat than other mesenchymal elements, as occurred in our case. Additionally, calcification can be noticed (10). Bronchoscopically, hamartomas are polypoid lesion, well-shaped, in grey or white color, within the bronchus (11). The differential diagnosis also included carcinoid and malignant neoplasms (12-14). In our case, it was a red smooth polypoid lesion without macroscopic vessels. Histologically, fat, cartilage and respiratory epithelium should coexist, as it happened in our case (13). Fat is found in greater concentrations in the endobronchial lesions, whereas cartilage and bone are the predominant components of pulmonary hamartomas (13, 14). Concerning the treatment of endobronchial hamartomas, bronchoscopical (resection, ablation) or surgical excision (lobectomy, resection, bronchotomy, pneumonectomy) can be implemented (15). The prognosis is generally good, with few recurrences and no malignant transformation (16).

It is worthwhile mentioning that the symptoms of our patient were initially treated as psychogenic cough. The term is used to describe cough without other medical etiology, which is unresponsive to medical treatment and based on psychological reasons (17). There are few criteria for the diagnosis of this entity including such as honking or barking cough. The presence of psychiatric disorders such as depression or anxiety is mistakenly used as a diagnostic tool for psychogenic cough as patients with a persistent cough can develop the above symptoms when the cough remains unmanageable (18). As in our case, the patient suffered from anxiety disorder due to the presence of a chronic cough. ❑

CONCLUSION

In conclusion, endobronchial hamartoma is a rare cause of chronic cough. Chest CT is necessary for the diagnosis. Bronchoscopy can be both a diagnostic and therapeutic procedure. This medical entity should be suspected in all cases with chronic cough, in which no other obvious reason exists. Finally, cough might be attributed to psychiatric reasons only if all other reasons have been excluded. ❑

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