

RELATO DE CASO

BOLA FÚNGICA ASPERGILAR: HEMOPTISE EM PACIENTE COM HISTÓRIA PRÉVIA DE TUBERCULOSE PULMONAR CURADA
ASPERGILLUS FUNGUS BALL: HEMOPTYSIS IN PATIENT WITH PRIOR HISTORY OF CURED PULMONARY TUBERCULOSIS

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RESUMO

O aspergiloma pulmonar consiste em uma massa fúngica composta predominantemente por *Aspergillus fumigatus* formada no interior de uma cavidade pulmonar prévia, em maior número em cavernas tuberculosas saneadas. A clínica é marcada por pacientes na quarta ou quinta década de vida apresentando como sinal mais comum a hemoptise de repetição de pequeno volume. Foi dissertado no presente relato, o caso de um paciente masculino, 66 anos, admitido com hemoptise de grande monta associada à dispneia, e história patológica pregressa de episódios de hemoptise há mais de 24 anos após diagnóstico e tratamento de tuberculose em 1994. Os dados foram obtidos mediante análise de prontuário, exames laboratoriais e de imagem realizados pelo paciente durante o período de internação. Este trabalho evidencia uma relevante causa de hemoptise em pacientes com histórico de tuberculose prévia e esclarece sobre a investigação clínica e de imagem para a diagnóstico oportuno e terapêutica adequada neste casos.

Palavras-chave: Aspergiloma pulmonar. Aspergilose. Bola fúngica. Hemoptise crônica. Sequelas de tuberculose.

ABSTRACT

Lung aspergilloma consists of a fungal mass composed predominantly by *Aspergillus fumigatus* formed within a prior lung cavity, in greater numbers in healed tuberculosis caverns. Clinically, it is marked by patients in their fourth or fifth decade of life presenting most commonly repeating episodes of small volume of hemoptysis. The present report describes the case of a 66-year-old male patient, admitted with hemoptysis of large amount associated with dyspnea, and past pathological history of hemoptysis episodes more than 24 years after diagnosis and treatment of tuberculosis in 1994. Data were obtained through analysis the patient's medical records and laboratory and imaging exams performed on the patient during the hospitalization period. This paper highlights a relevant cause of hemoptysis in patients with previous history of tuberculosis and clarifies the clinical and imaging investigation for timely diagnosis and appropriate therapy in such cases.

Keywords: Pulmonary Aspergilloma. Aspergillosis. Fungus ball. Chronic hemoptysis. Tuberculosis sequelae.

INTRODUCTION

The aspergilloma lung consists of a fungal mass composed predominantly by *Aspergillus fumigatus* formed within a prior lung cavity which can be associated with the presence of mucus, blood, inflammatory cells and cell debris^{1,2}.

In general, pulmonary aspergilloma is associated with reduced local or systemic immunocompetence. Among the local causes of reduced immunocompetence are: interstitial lung diseases, lung resections, pulmonary tuberculosis sequelae³ - leading cause of aspergilloma, occurring in 10 to 20% of the cases of treated tuberculosis -, cystic fibrosis, pneumoconiosis and chronic obstructive pulmonary disease (COPD). Among the systemic ones are the chronic use of corticosteroids, chemotherapy, radiotherapy, alcoholism, diabetes mellitus and immunodeficiencies. Predisposing factors include sequelae of previously treated tuberculosis⁴, bronchiectasis, emphysema, bronchial cysts and neoplasms. From an epidemiological point of view, the mortality associated with this pathology varies between 50 and 85%⁵.

Clinically, it is marked by patients in the fourth or fifth decade of life presenting as the most common clinical manifestation recurrent hemoptysis in small volume, cough, purulent sputum, weightloss, asthenia, chest pain, digital clubbing and dyspnea⁷. The diagnosis is suspected when chest x-rays show a sole consolidation of 3 to 5 cm of diameter, with hypotransparent and round characteristics, may be mobile according to the decubitus, with air in crescent on the periphery (air meniscus sign), pleural thickening adjacent to and in the cavity wall. A computerized tomography (CT) of the chest without contrast can indicate the presence of an intracavitary mass of 'rattling' aspect when the mass is not yet evident on x-rays, and is intended for surgical planning⁷.

Data were obtained through analysis of medical record and laboratory and imaging tests performed on the patient during the hospitalization period. The publication of the information was authorized post-mortem by a family member of the patient's through the signing an Informed Consent (IC) form.

This case report shows a significant cause of hemoptysis in patients with previous history of cured tuberculosis and confirms the importance of timely diagnosis and treatment in such cases.

CASE REPORT

F.A.S.F., 66-year-old male, married, brown, helper mason, sought medical advice at Hospital Geral Público de Palmas (HGPP) complaining of "bleeding from the mouth and nose" for the past 3 days. The patient reported hematemesis, hemoptysis and epistaxis in large amounts (unable to specify the volume) for the past 3 days, associated with breathlessness, productive cough, weakness, appetite loss and melena. He also denied headaches, fever, loss of weight, sweating, dysphagia or odynophagia and any other complaints. The patient did, however, report a previous pathological history of episodes of small volume hemoptysis more than 24 years after diagnosis and treatment of tuberculosis in 1994, as well as high blood pressure. Previous

history of trauma, diabetes, and personal or family history of cancer were denied. The patient reported being a smoker from age 12 to 40, but could not quantify the consumption per day. At pulmonary auscultation, vesicular murmur present bilaterally from apex to base, with the presence of slight snoring in the right base.

Laboratory tests on admission were: PT, aPTT, bleeding time and clotting time within reference values, 11.400/mm³ leukocytes, CRP 49.29 mg/L as well as the presence of a normocytic and normochromic anemia. An upper digestive endoscopy was performed, excluding gastrointestinal causes of bleeding, as well as AAFB search in sputum, which was negative in 2 samples, excluding tuberculosis in activity. A chest CT showed areas of bronchiectasis in the right lower lobe with air bronchogram and cavitation area suggestive of complex pulmonary aspergilloma (CPA). He underwent right pneumectomy with biopsy and thoracostomy with water-seal drainage, without intraoperative complications.

The anatomopathological analysis of the surgical specimen of the pneumectomy (inferomedial lobectomy) measuring 19.5 x 13.0 x 7.0 cm, stained with Hematoxylin-Eosin (HE), showed in the lower lobe a cavitation measuring 3.1 x 1.5 cm. Its interior exhibited brownish, friable content and clumps of fungal structures compatible with Aspergillosis. Around this area there was an area of whitish thickening that promoted pleural retraction. Four lymph nodes were isolated with reactive lymphoid hyperplasia.

On the 10th postoperative day, the patient was readmitted presenting dyspnea important desaturation and hypotension, requiring orotracheal intubation and the use of vasoactive drugs. He returned with poor clinical response to supportive therapy and on the next day died.

DISCUSSION

This study reinforces pulmonary aspergilloma as an important differential diagnosis of hemoptysis, especially in countries with a high prevalence of tuberculosis, due to the higher number of chronic cavities cleared after cure. The most characteristic clinical presentation of this etiology is: patient with a previous history of pulmonary tuberculosis treated, with negative sputum smear bacilloscopy⁷.

For proper investigation it is necessary to rule out coagulation disorders, digestive hemorrhage and factors linked to immunosuppression, especially history of tuberculosis. Therefore, laboratory and imaging tests were performed, as well as a clinical investigation to rule out possible morbidities that contain hemoptysis as a symptom. The initial diagnosis is established by the clinic, associated with chest X-ray or CT showing cavitations filled with hypotransparent content, consolidation or intracavitary mass, and confirmed by histopathological analysis.

The treatment of choice, especially if there is hemoptysis as a clinical manifestation, is resection of the affected region^{8,9}. Antifungal therapy has proved ineffective if the fungus ball is already installed¹⁰. Surgery, however, has high morbidity and mortality¹¹ and it is necessary to analyze the risks of complications individually and the clinical presentation of the current disease.

In this case, as recommended by literature, right-sided pneumectomy was performed due to the high mortality risk of chronic hemoptysis episodes associated with respiratory symptoms presented by the patient during the preoperative period, as well as the extensive pulmonary lesions associated with CPA, weighing the risks and benefits of surgical intervention. Palliative measures such as cavernostomy, bronchial artery embolization, and transthoracic antifungal injection into the fungal mass are reserved for patients to whom surgical intervention is proscribed^{12,13}.

Common postoperative complications in complex pulmonary aspergilloma are prolonged air leaks, bronchopleural fistulas, empyema and hemothorax¹², appearing as possible factors implicated in the outcome of death depicted in the study.

CONCLUSION

The proper diagnosis and recognition of risk factors associated with the suspicion of aspergilloma, as well as the exclusion of differential diagnoses for hemoptysis are crucial for the timely therapeutic management of the patient with this illness, especially in patients who are immunocompetent, as this is an uncommon pathology in this group. The high complication rates, however, limit the prognosis of individuals undergoing definitive surgical treatment.

IMAGES



Image I - Chest CT - Cavity filled with mass in the right lower lobe, suggestive of tumoral mass and bronchiectasis.

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