A RARE CASE OF PULMONARY ASPERGILLOSIS, WHAT TO TAKE INTO CONSIDERATION

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Abstract

Introduction: Pulmonary aspergillosis is a significant medical complication for individuals with chronic lung diseases or compromised immune systems. Prompt and accurate intervention is crucial for treating this disease. This study aims to document a clinical case of a patient with pulmonary aspergillosis, who underwent a prolonged period of suspicion for this disease and unfortunately did not receive appropriate treatment. Through the analysis of the case and the use of various diagnostic methods, the importance of an accurate diagnosis and prompt treatment for this pathology is emphasized.
Methodology: The patient considered for this study faced suspicions of pulmonary aspergillosis for a long period. To confirm the diagnosis and plan treatment, a series of methods were used. These include computed tomography of the chest to identify pulmonary opacities, sputum examination to identify Aspergillus spp., as well as blood tests to assess IgE levels. Additionally, a bronchial secretion culture was performed to identify potential causative agents of the infection. Furthermore, scientific literature was consulted to support the diagnosis and treatment of the patient.
Results: The analyses conducted revealed two pulmonary opacities in the patient's chest, which were confirmed as Aspergillus spp. infection through sputum examination and bronchial secretion culture. Additionally, an elevated level of serum IgE was observed, another possible indication of pulmonary aspergillosis. Based on these results, a diagnosis of pulmonary aspergillosis was made, and it was decided that the patient should undergo surgical treatment.
Conclusion: This case study highlights the importance of a careful and comprehensive approach to the diagnosis and treatment of pulmonary aspergillosis. By utilizing a wide range of diagnostic methods and consulting scientific literature, the successful diagnosis and treatment of the patient commend a joint effort of medicine to address this significant disease. This case also underscores the need for heightened awareness of pulmonary aspergillosis in patients with chronic lung diseases or compromised immune systems.

Keywords: Pulmonary aspergillosis, Chronic lung disease, diagnosis, treatment

NJË RAST I RRALLË I ASPERGILOZËS PULMONARE, ÇFARË DUHET MARRË NË KONSIDERATË

Abstrakt

Hyrja: Aspergilloza pulmonare është një komplikacion i rëndësishëm mjekësor për individët me sëmundje pulmonare kronike ose sistem imunitar të kompromentuar. Ndërhyrja e shpejtë dhe e saktë është thelbësore për trajtimin e kësaj sëmundjeje. Ky studim synon të paraqesë një rast klinik të një pacienteje me aspergjilozë pulmonare, e cila përjetoi një histori të gjatë të dyshimit për këtë sëmundje dhe për fat të keq nuk kishte marrë trajtim të përshtatshëm. Përmes analizës së rastit dhe përdorimit të metodave diagnostike të ndryshme, synohet të theksohet rëndësia e një diagnoze të saktë dhe trajtim të shpejtë për këtë patologji.

Metodologjia: Pacientja e konsideruar për këtë studim u përball me dyshime për aspergjilozë pulmonare për një periudhë të gjatë. Për të konfirmuar diagnozën dhe për të planifikuar trajtimin, u përdorën një sërë metodash. Këto përfshijnë: tomografinë e kompjuterizuar të toraksit për identifikimin e opaciteteve pulmonare, ekzaminimin e sputumit për identifikimin e Aspergillus spp., si dhe analizat e gjakut për të vlerësuar nivelet e IgE. Po ashtu, u bë edhe një kulturë e sekrecioneve bronkiale për të identifikuar shkaktarët e mundshëm të infeksionit. Përveç kësaj, u konsultua literatura shkencore për të mbështetur diagnozën dhe trajtimin e pacientes.

Rezultatet: Analizat e kryera zbuluan dy opacitete pulmonare në toraksin e pacientes, të cilat u konfirmuan si infeksion me Aspergillus spp. përmes ekzaminimit të sputumit dhe kulturës së sekrecioneve bronkiale. Në plus, u vërejt një nivel i rritur i IgE serike, një tjetër indikacion i mundshëm i aspergjilozës pulmonare. Bazuar në këto rezultate, u bë diagnoza e aspergjilozës pulmonare dhe u vendos që pacientja të trajtohej kirurgjikisht.

Konkluzioni: Ky rast studimi thekson rëndësinë e një përqasje të kujdesshme dhe të plotë në diagnozën dhe trajtimin e aspergilozës pulmonare. Duke përdorur një gamë të gjerë metodash diagnostike dhe duke konsultuar literaturën shkencore, diagnoza e suksesshme dhe trajtimi i pacientes përshëndet një përpjekje të përbashkët të mjekësisë për të trajtuar këtë sëmundje të rëndësishme. Ky rast gjithashtu thekson nevojën për një ndjeshmëri të lartë ndaj aspergilozës pulmonare tek pacientët me sëmundje kronike të mushkërive ose sisteme imunitare të dobësuar.

Fjale kyçe: aspergiloza pulmonare, sëmundjet pulmonare kronike, diagnoza, trajtimi

Introduction

Pulmonary aspergillosis is an infection or allergic reaction caused by various types of fungal organisms (most commonly Aspergillus fumigatus) (1). Individuals at higher risk of developing this pathology are those with chronic lung diseases (pre-existing cavity lesions) and compromised immunity. The annual incidence of bronchopulmonary aspergillosis is 1-2 cases per 100,000 population (2). The manifestations of the disease include: simple bronchial colonization, allergic bronchopulmonary aspergillosis, aspergilloma, bronchocentric granulomatosis, extrinsic allergic alveolitis, or invasive pulmonary aspergillosis (3).

Methodology and Results: This clinical case presents a 61-year-old patient who presents with a several-year history of dry cough, chest discomfort, and body weakness. These symptoms have worsened recently, leading her to seek medical attention at the hospital. The patient reports being suspected of Pulmonary Aspergilloma since 2012 (Figure 1), for which several imaging and

laboratory examinations have been conducted over the years, but despite these, she has not received treatment for Aspergilloma.
The patient reports no chronic pulmonary pathology. She is readmitted to the pulmonology service for further examinations.

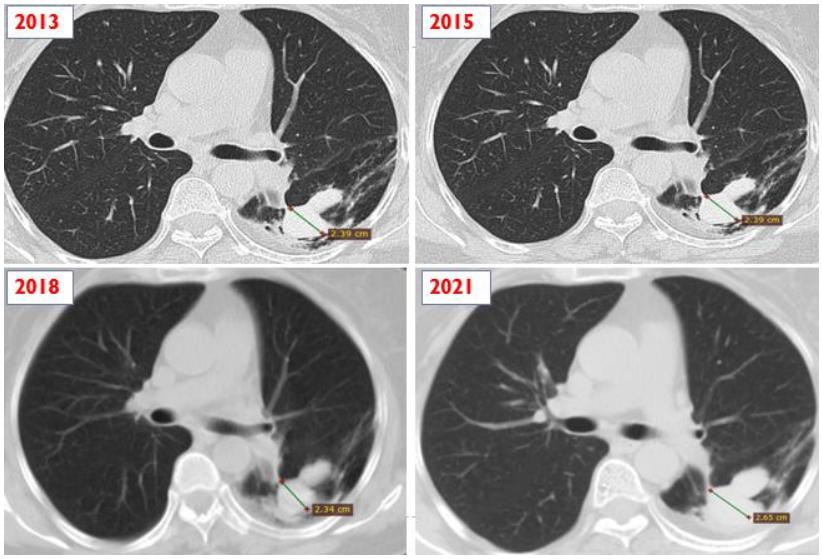

Figure 1: Imaging evolution of the pulmonary lesion over the years.

In the computed tomography of the thorax, the following observations are noted: Central positioning of the mediastinum, without apparent lymphadenopathy. Two nodular pulmonary opacities in the left upper lobe, with pleural thickening and minimal pleural fluid at this level.

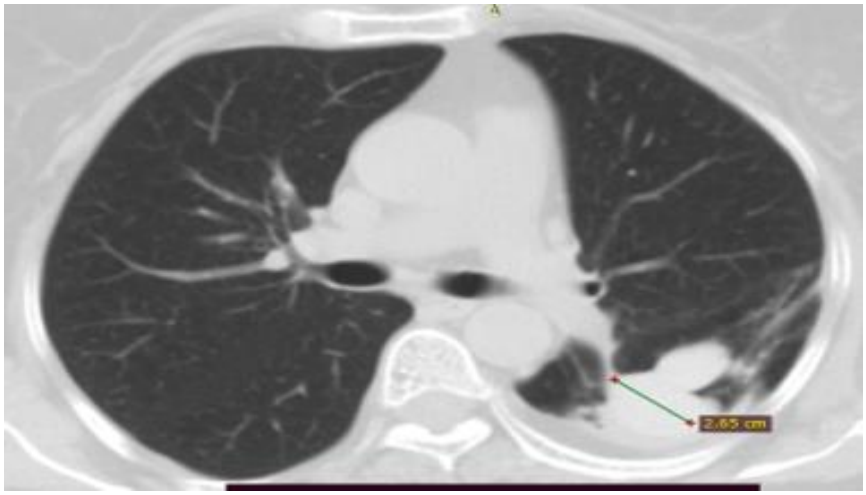

Figure 2: Radiological frame at the time of the last hospitalization.

Examination of sputum for eosinophils is performed, but Aspergillus spp. as well as numerous neutrophils are evident. Serum IgE measurement results in 118.1 IU/mL (normal <100 IU/ml). During the endoscopic examination, hyperemic mucosa is observed in the trachea, with mobile and stiff tracheal carina, while primary, lobar, and segmental bronchi exhibit fragile hyperemic mucosa upon touch, with mucoid secretions freely aspirated from the depth. Lavage for Bacillus Koch (BK) and mycotic lavage in the left hemithorax were performed. Bronchial lavage fungal culture resulted POSITIVE for Aspergillus flavus and Candida Glabrata. Based on the above examinations, the diagnosis is established: Pulmonary aspergillosis, and in general consultation with the heads of the service and thoracic surgeons, the patient is indicated for surgical intervention, and thoracotomy is planned for the removal of Pulmonary Aspergilloma. The surgery was successful without postoperative complications.

Discussion: Despite suspicion for many years as Aspergillosis, the patient's diagnosis was never concluded due to the lack of laboratory and endoscopic examinations. The diagnosis of the pathology is made through serum IgE measurement, skin tests against Aspergillus spp., bronchial secretion culture, and imaging examinations. Treatment varies according to the manifestations and is represented by treatment with antifungals, corticosteroids, or surgical interventions (4,5).
Pulmonary aspergillosis encompasses a range of diseases caused by the fungus Aspergillus, which includes non-invasive forms like aspergilloma and invasive forms such as invasive pulmonary aspergillosis (IPA). The case presents a long-standing suspicion of pulmonary aspergilloma in a patient who experienced progressive symptoms over several years.
The diverse manifestations of pulmonary aspergillosis range from simple colonization to invasive diseases, depending on the host's immune status and lung condition. Aspergilloma, the most common form of pulmonary aspergillosis, often occurs in pre-existing lung cavities and can lead to significant morbidity if not diagnosed and managed properly. Diagnosis generally requires radiographic, serologic, or microbiologic evidence of Aspergillus infection (6).
Surgical intervention remains a primary treatment for aspergilloma, but it carries risks of high mortality and morbidity. For patients unsuitable for surgery, systemic antifungal therapy with azoles such as voriconazole has shown effectiveness in treating chronic pulmonary aspergillosis (CPA). Voriconazole treatment has resulted in improved symptoms and eradication of the fungus in many cases, though some patients may experience side effects (7). Additionally, guidelines recommend long-term oral antifungal therapy to prevent progression and manage symptoms in chronic cases (8). The resistance to antifungal agents and the need for prolonged treatment highlight the complexity of managing pulmonary aspergillosis. Novel antifungal combinations or new therapeutic agents may be required to improve outcomes in resistant or complex cases (9).

Conclusion

This case exemplifies the challenges in diagnosing and managing pulmonary aspergillosis, particularly in patients who do not present with clear risk factors such as compromised immunity. The need for a comprehensive approach that includes accurate diagnosis, consideration of surgical options, and tailored antifungal therapy is crucial. Effective management often requires a combination of therapies adapted to the severity and form of the disease.

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