



Case report

Endobronchial aspergilloma: A case report

Aysel Sunnetcioglu^{a,*}, Selami Ekin^a, Remzi Erten^b, Mehmet Parlak^c, Ramazan Esen^d^a Yuzuncu Yil University Faculty of Medicine, Department of Chest Diseases, Van, Turkey^b Yuzuncu Yil University Faculty of Medicine, Department of Pathology, Van, Turkey^c Yuzuncu Yil University Faculty of Medicine, Department of Medical Microbiology, Van, Turkey^d Yuzuncu Yil University Faculty of Medicine, Department of Internal Medicine, Van, Turkey

ARTICLE INFO

Article history:

Received 31 January 2016

Received in revised form

25 February 2016

Accepted 3 March 2016

Keywords:

Endobronchial

Aspergilloma

Immunocompetent

ABSTRACT

A 28-year-old male with B-cell acute lymphoblastic leukemia presented to our pulmonary clinic with progressive dyspnea, cough, hemoptysis, and fever. Diagnostic bronchoscopy revealed white masses at the entrance of the right middle lobe bronchus and distal to the right main bronchus. Histopathological examination of the biopsy specimen showed those masses to be hyphae of *Aspergillus*.

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1. Introduction

Aspergillus spp. can cause a variety of pulmonary diseases, depending on the immune status of the individual and the presence of underlying lung disease. Pulmonary aspergilloma, allergic bronchopulmonary aspergillosis, chronic necrotizing pulmonary aspergillosis, and invasive aspergillosis are the most common clinical presentations of pulmonary infections due to *Aspergillus* species [1–4]. Endobronchial aspergilloma is an unusual presentation of pulmonary aspergillosis [5] and is characterized by the growth of *Aspergillus* species into the bronchial lumen. Endobronchial aspergilloma can mimic endobronchial tumors in terms of the clinical and radiographic presentation. Here, the study describes a case of endobronchial aspergilloma in a patient with B-cell acute lymphoblastic leukemia.

2. Case report

A 28-year-old male previously diagnosed with relapsed B-cell acute lymphoblastic leukemia presented to our pulmonary clinic with progressive dyspnea, cough, hemoptysis and fever. Auscultation revealed bilateral rhonchi. On admission, the complete blood count results were normal: white blood cells, 5,000/mm³ (41.7%

neutrophils, 49.0% lymphocytes, and 0.1% eosinophils); hemoglobin, 8.5 g/dL; and platelets, 18,000/mm³ after chemotherapy. The C-reactive protein level was 57 mg/IU. Bilateral multiple opacities were detected on the chest X-ray (Fig. 1). Computed tomography revealed multiple areas of consolidation distributed randomly throughout the lung (Fig. 2). Bronchoscopy was performed for evaluate the cause of hemoptysis and to diagnose lung parenchymal lesions. Diagnostic flexible bronchoscopy revealed that, distal to the right main bronchus, the right lung middle lobe bronchial entrances were narrowed by a white mass (Fig. 3). A biopsy was obtained from the white mass at the entrance of the middle lobe bronchus. Microscopy of the biopsy samples showed fungal hyphae that stained with Peryodik Asit Shift (PAS) (Fig. 4), and *Aspergillus fumigatus* was grown in culture. The patient was diagnosed as aspergillosis and voriconazole was started.

3. Discussion

Endobronchial aspergilloma is a rare presentation of pulmonary aspergillosis. It can present as a noninvasive form of aspergillosis characterized by growth of *Aspergillus* spp. within the bronchi, with or without parenchymal lesions or cavities. *Aspergillus* airway infection can complicate the course of various malignant diseases, the risk being highest in severely immunocompromised patients with hematological malignancies.

The clinical presentation of aspergillosis is quite diverse. Many patients are asymptomatic, although some present with symptoms such as cough, dyspnea, hypoxia, hemoptysis and weight loss. The

* Corresponding author. Department of Chest diseases, Yuzuncu Yil University School of Medicine, 65100 Van, Turkey.

E-mail address: izciaysel@myinet.com (A. Sunnetcioglu).

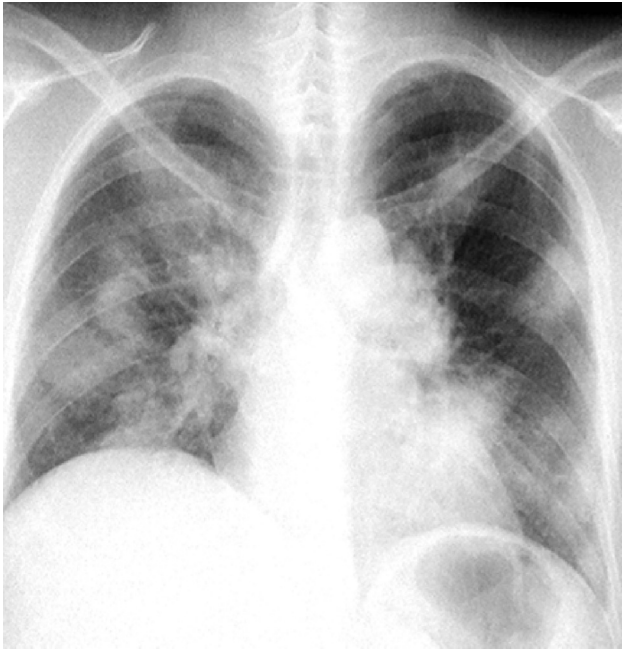


Fig. 1. Chest radiogram demonstrating multiple opacities.



Fig. 2. Thorax computed tomogram showing consolidated areas in the lung distributed randomly.



Fig. 3. The bronchoscopy shows a whitish mass lesion causing partially obstruction of distal the right main bronchus (A), and complete obstruction of entrance the middle lobe bronchus (B).

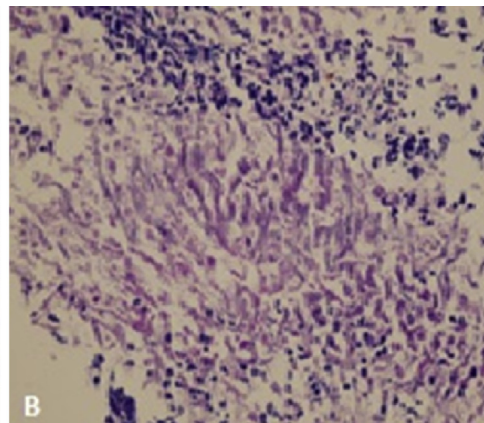
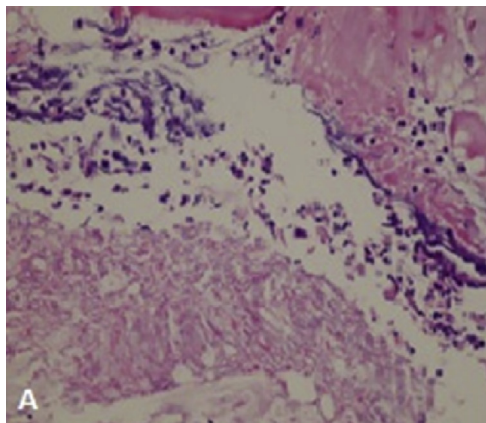


Fig. 4. The histologic examination shows numerous hyphae with background necrotic debris hematoxylin and eosin. $\times 400$ (A), Peryodik Asit Shift(PAS) (B).

potential for endobronchial aspergillosis to progress rapidly to respiratory failure has previously been reported [6,7]. In addition, the need for mechanical ventilation drastically affects mortality rates, which have been reported to be 94% for endobronchial aspergillosis patients on mechanical ventilation, compared with 25% for those not requiring mechanical ventilation [8].

In many cases, endobronchial aspergilloma is incidentally detected in patients who have undergone bronchoscopy to evaluate the cause of hemoptysis and to diagnose parenchymal lung lesions [5]. Bronchoscopic findings vary from yellowish-white necrotic plaques to whitish nodules.

Since the most reliable criterion of fungal airway disease is demonstration of tissue invasion and damage caused by hyphae [9–11], bronchoscopy with biopsy, microscopy, and culture is the only way to confirm invasive *Aspergillus* tracheobronchial infection in the clinical setting [12].

The optimal treatment or duration of therapy for endobronchial aspergilloma has yet to be established since this unique presentation of *Aspergillus* seen in immunocompetent individuals are usually diagnosed incidentally. Treatment options include amphotericin B, voriconazole, itraconazole, and caspofungin.

Finally, although endobronchial aspergilloma is extremely rare, it should be considered in the differential diagnosis of endobronchial masses in immunocompromised patients.

Conflicts of interest

No potential conflict of interest relevant to this article was reported.

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