Case Report

Bronchocentric granulomatosis due to *Aspergillus terreus* in an immunocompetent and non-asthmatic woman

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This is the first report of bronchocentric granulomatosis due to *Aspergillus terreus* in a healthy and non-asthmatic 74-year-old Japanese woman. Following identification of the fungus, oral itraconazole therapy was begun after intrabronchial infusion of amphotericin B. No recurrence has occurred after treatment for 24 months. We should consider the possibility of bronchocentric granulomatosis including *Aspergillus terreus*, when an intrabronchial lesion is found even in a healthy and non-asthmatic person. Oral itraconazole after intrabronchial infusion of amphotericin B seems to be effective in such cases.

Introduction

*Aspergillus* species are ubiquitous and occur worldwide. Most case of the previous reports describe infection with *Aspergillus fumigatus* and *A. flavus*. Invasive pulmonary aspergillosis caused by *A. terreus* has also been reported in immunocompromised or immunocompetent hosts. Although there have been some reports of intrabronchial aspergillosis caused by other fungi, this is the first case of bronchocentric granulomatosis due to *A. terreus* in an immunocompetent and non-asthmatic woman.

Case Report

In January 1997, a healthy and non-asthmatic 74-year-old woman was admitted to our hospital for further examination of the right upper nodular opacity. The results of laboratory tests on admission were normal and she had no immunological defects. Serum IgE and MAST (multiple antigen simultaneous test) for aspergillus was normal. Serum aspergillus antigen (latex agglutination test, SRL-INC. Co, Japan) was negative, with a reported specificity of 96.2 % and a sensitivity of 97.6 % (1). Serum aspergillus antigen was negative test after 3 months was negative. Routine bacteriological, fungal and mycobacterial cultures of sputum were negative. A chest radiograph revealed a nodular opacity in the right upper lobe [Fig. 1(a)]. CT scans of the thorax showed a branching band-like opacity in the right B2 [Fig. 1(b)]. Fibre-optic bronchoscopy was performed. The transbronchial lung biopsy specimen contained hyphal fungal elements and a 3-day culture of the biopsy material on Sabouraud dextrose agar (Nissui Pharmaceutical Co, Inc., Japan) yielded five yellowish-brown cotton-like colonies. The fungal isolates were stained with lactophenol cotton blue stain and microscopic examination revealed conidiophores with multiple phialides and metulae, findings characteristic of *A. terreus*. The biopsy tissue showed an inflammatory granuloma with necrosis and hyphal fungal elements (Fig. 2).

Intrabronchial infusion of amphotericin B (10 mg) was repeated five times. Treatment with oral itraconazole at a dosage of 100 mg day⁻¹ was begun in February 1997. Though chest radiographs showed transient opacity of the right upper lobe, which is suspectedly a reaction to lysis of the fungus, this resolved 3 months later. After then, the chest radiographs showed no significant changes. Itraconazole therapy was continued for 12 months without recurrence for 24 months.

Discussion

*Aspergillus terreus* is a ubiquitous fungus usually acquired by inhalation of airborne spores. Although invasive pulmonary aspergillosis (2–5) and allergic bronchopulmonary aspergillosis (6–8) have been reported, this is the first case of bronchocentric granulomatosis (BCG) due to *A. terreus* in immunocompetent and non-asthmatic woman. BCG is a descriptive term coined by Liebow in 1973 (9) to refer to an
uncommon histological reaction chiefly involving the small bronchi and bronchioles.

*A. terreus* is being identified with increasing frequency in post-operative cardiac surgery patients and immunocompromised patients (3,4). Our patient had neither abnormal laboratory data nor evidence of immunological abnormalities. Vincken (10) reported that *A. terreus* may be a more common human pathogen than previously thought. Also, several recent reports of invasive aspergillosis other than *A. terreus* in patients without apparent defects in their immune system have been published (11,12). Therefore, we should consider the possibility of fungal infection, including *A. terreus*, when we find intrabronchial lesions in a previously healthy person.

Goldberg (13) reported successful treatment of pulmonary *Pseudallescheria boydii* and *A. terreus* infections with oral itraconazole. Corticosteroids are the mainstay of treatment for BCG and there is little evidence that fungicidal therapy is effective (14). On the other hand, allergic bronchopulmonary aspergillosis (15) and aspergilloma (16,17) can progress to invasive aspergillosis. We have previously reported a case of intrabronchial pseudallesheriasis (18), which progressed to lobar pneumonia despite oral itraconazole (19). Therefore, we chose oral itraconazole therapy after intrabronchial infusion of amphotericin B, a combination which was effective without recurrence.

Fig. 1. (a) Chest radiograph showing a band-like opacity of the right B'. CT scan of the thorax showing an intrabronchially branching, band-like opacity in the right B'a.

Fig. 2. Endobronchial biopsy specimen from the intrabronchial lesion containing fungal hyphae of *A. terreus*. Bar indicates 100µm. Grocott's methamine silver stain; original magnification ×100 reproduced at 100%.
References


