Lung scedosporiosis: a differential diagnosis of aspergillosis

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Abstract
Lung scedosporiosis is an opportunistic fungus in humans that rarely affects the lung. It may give clinical presentations that are similar to aspergillosis. However, it must be detected because of its frequent resistance to medical treatment. Two cases of pulmonary scedosporiosis that were surgically treated are reported herein. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction
Scedosporium apiospermum is an opportunistic fungus in humans, originally identified as a causative agent of suppurative cutaneous lesions, that rarely affects the lungs. We report two cases of pulmonary scedosporiosis that were surgically treated.

2. Case reports

2.1. Patient 1

A 54-year-old woman suffered from insulin-dependent diabetes mellitus, chronic renal insufficiency, and right eye blindness due to diabetic retinopathy. In 1994, the patient underwent renal and pancreatic transplantation and received immunosuppressive treatment with corticosteroid and cyclosporine. In 1998, she underwent surgical drainage of maxillary sinusitis due to Aspergillus. Concomitantly, she presented cough and hemoptysis related to a right upper lobe pneumonia. Culture of the broncho-alveolar aspiration revealed S. apiospermum. Because 3 weeks on itraconazole was unsuccessful, a right upper lobectomy was performed. Histologic examination showed a filamentous fungus evoking aspergilloma, but the mycologic study with prolonged culture for 2 weeks on Sabouraud's agar revealed the presence of Scedosporium in its sexual phase, i.e. Pseudallescheria boydii (Fig. 1). The postoperative recovery was uneventful. Although the postoperative serologic antibody research against the fungus was negative, the patient received oral itraconazole at a dose of 400 mg/day for several months, regardless of her immunocompromised status. She remained free of fungus recurrence 3 years later.

2.2. Patient 2

A 55-year-old man underwent an endoscopic resection of a bladder tumor in 1998, with adjuvant chemotherapy. In July 2000, chest X-ray and computed tomography scan revealed an opacity of the lingula with an air crescent sign (Fig. 2). The patient was asymptomatic. Fiberoptic bronchoscopy with biopsies of the bronchial tree was normal. Because of the past history of bladder cancer, we suspected a lung metastasis. Lingulectomy was performed, whereas histological study with frozen section examinations showed a mycetoma with filamentous fungus which had developed in an old pneumoconiosis sequelae cavity. Mycological cultures on Sabouraud’s agar for 1 week demonstrated that the opacity fungus was due to S. apiospermum. Prolonged incubation did not show P. boydii. The postoperative recovery was uneventful. The patient was discharged without medical treatment. The serologic test against the fungus was negative one and three months after the surgical operation. The patient was free of recurrence 18 months later.

3. Discussion
Scedosporium apiospermum is an ubiquitous saprophyte
that has been isolated from soil, animal feces, and polluted water. This fungus is pathogenic and responsible for sinusitis, corneal infection, skin infections, arthritis, osteomyelitis and brain abscess [1]. It may also cause allergic bronchopulmonary reactions [2]. Lung infection is a rare event, that usually occurs on a previous damaged lung tissue such as a cavity (as in our patient 2) or a lung cyst, leading to the development of a mycetoma [1]. In immunocompromised patients, as in our case 1, invasive infections may sometimes occur [3].

Pulmonary scedosporiosis may be caused by \textit{S. apiospermum}, the so-called fungi in its asexual phase as in case 2, and/or by \textit{P. boydii} in its sexual phase as in case 1. Symptoms are mainly those of a pneumonia with cough, fever, thoracic pain and hemoptysis. However, patients may also be asymptomatic as in case 2. Radiologic examination may show a moon-shaped radiolucent sign that caps the fungus ball like the one seen in aspergilloma (case 2), but it can be less specific with diffuse infiltration and pneumonia (case 1). Differential diagnosis with aspergillosis is impossible on histological examination, and need prolonged cultures on Sabouraud’s agar. Because \textit{S. apiospermum} is most often resistant to amphotericin B and sometimes sensitive to azole derivatives, the mycological identification of the fungi is essential, especially in immunocompromised patients. However, in localized infections, surgical resection is generally mandatory to cure, because of the frequent resistance of the fungi to medical therapy [4,5]. In patient 1, surgical resection was performed because of the inefficiency of medical treatment, whereas in patient 2, it was performed to exclude a lung metastasis. So we agree with Jung et al. [4] that surgery is the treatment of choice when the pulmonary infection is localized, or resistant to medical therapy (especially to amphotericin B) as reported by Galgiani et al. [5]. It can also be necessary to rule out malignant disease. Finally, lung scedosporiosis has similar presentations to aspergillosis, but it must be recognized because of its frequent resistance to medical treatment. This is of particular importance in immunocompromised patients.

References