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Case reports

A commentary on the following three case reports appears on pages 317–318.

Pulmonary aspergilloma in a patient with AIDS

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Abstract

***Aspergillus* infections are rare in the course of AIDS. They mostly occur as invasive destructive disease in patients with severe CD4 cell depletion. An unusual case of a homosexual AIDS patient who developed a pulmonary aspergilloma is presented.**

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Keywords: *Aspergillus* infection, pulmonary aspergilloma, AIDS.

Aspergillosis is unusual in patients with the acquired immune deficiency syndrome (AIDS). This fungal infection usually occurs late in the course of the disease, affecting predominantly the lung.[1] Pulmonary aspergillosis has various forms depending largely on the immune competence of the patient, the type of exposure, and the presence of underlying disease. In patients with AIDS pulmonary invasive disease is almost exclusively observed. In this report we present the unusual case of a pulmonary aspergilloma in an AIDS patient with severe CD4 cell depletion.

Case report

A 49 year old homosexual man was admitted because of chronic productive cough and severe weight loss. The patient had been treated for pulmonary tuberculosis in 1972. In 1984 he had a resection of the right upper and middle lobe because of a large pulmonary abscess. The HIV infection had been diagnosed in 1990. Up to that year he had been smoking 60 cigarettes a day. Routine chest radiographs taken in 1991 showed several cavernous lesions in the right upper and mid zones that increased in size in subsequent films. Although bronchoscopy and sputum cultures did not show any pathological results, antituberculous drug treatment was started. Two months before admission the patient had stopped taking his medication. At the time of admission in November 1992 he had an elevated erythrocyte sedimentation rate, an anaemia of 10·9 g/dl, a hypergammaglobulinaemia of 38·3% of the total protein, and a CD4 cell count of 98/mm^3 (normal >400/mm^3). The white cell count was 6700 cells/mm^3 with 56·4% neutrophils, 25·8% lymphocytes, 17·2% monocytes, and 0·3% eosinophils. Atypical mycobacteria and *Aspergillus fumigatus* were now cultured repeatedly from bronchoalveolar lavage fluid. A test for aspergillus precipitins in the serum was strongly positive at 1:1280. The *Treponema pallidum* test for syphilis was positive.

A chest radiograph showed a large right apical cavity with pleural thickening and an irregularly shaped opacity projecting inferiorly into the cavity (fig 1). A computed tomographic scan showed a rounded mass in the dependent portion of a large cavity in the posterior part of the right lower lobe (fig 2). In addition there was a large aneurysm (diameter 6 cm) of the ascending aorta, presumably of syphilitic origin.

Because of the advanced HIV infection and the aneurysm an operation was considered too hazardous. Treatment with intravenous amphotericin B (0·5 mg/kg/day) and oral itraconazole (400 mg/day) was started. A computed tomographic scan five weeks after the start of treatment showed no change in the size of the aspergilloma and amphotericin B was discontinued. The patient was discharged on oral itraconazole to prevent progression to an invasive aspergillosis. He died six months after discharge as a result of an accident. Up to that time the aspergilloma had not shown

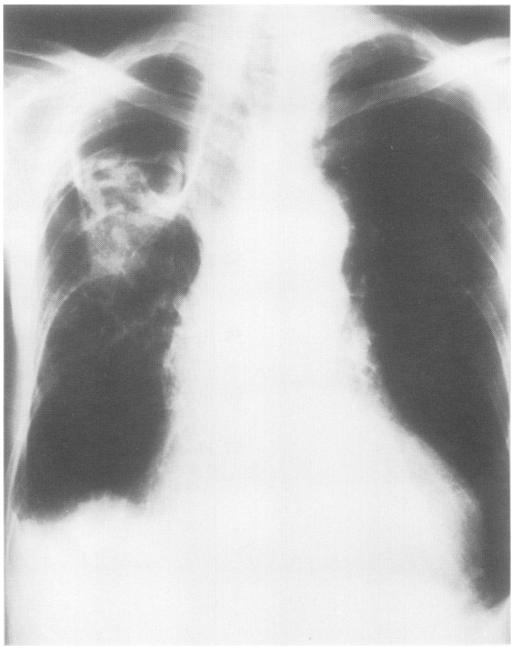

Figure 1 Radiograph of the chest obtained on admission to hospital. There is volume loss related to a previous right upper and middle lobectomy and a large right apical cavitation with pleural thickening. An irregularly shaped opacity extends inferiorly into the cavity.

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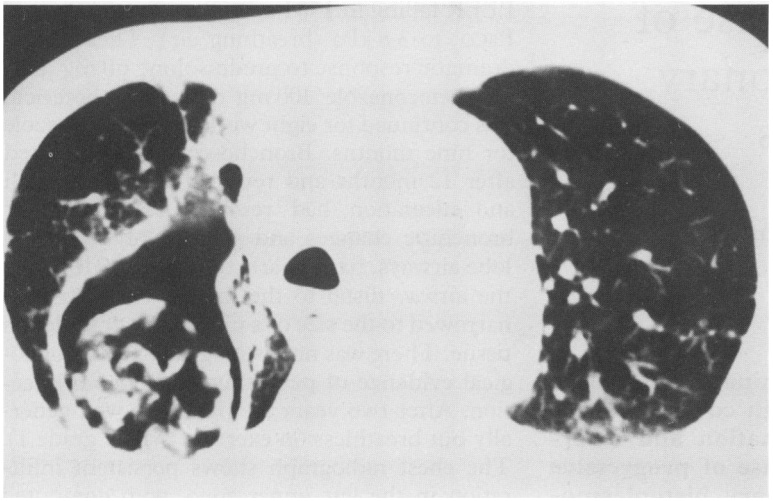

Figure 2 Computed tomographic scan of the chest demonstrating a rounded mass in the dependent portion of a large cavitation within the posterior part of the right lung.

any progression in subsequent chest radiographs. On itraconazole sputum cultures became negative for *Aspergillus*.

Discussion

Despite the growing number of reports of invasive aspergillosis in patients with AIDS[1 2] there has been only one report describing a pulmonary aspergilloma in an HIV infected patient.[3] Unfortunately the authors did not give any details of the immunological status of their patient.

Aspergillus is an opportunistic fungus species. Invasive disease has been frequently observed in patients with leukaemia and in bone marrow and heart transplant recipients. However, in patients with AIDS *Aspergillus* infections are rare and occur late in the disease when CD4 cell depletion is severe. Previous *Pneumocystis carinii* pneumonia, cytomegalovirus disease, and the use of broad spectrum antibiotics may be predisposing factors for invasive pulmonary aspergillosis.[1]

Infections are usually caused by inhalation of spores, which are common environmental contaminants. Natural immunity to *Aspergillus* infections is provided by macrophages and neutrophilic granulocytes and appears to be independent of T cell assistance.[4] Prolonged periods of neutropenia and corticosteroid treatment have been identified as possible risk factors.

In patients with AIDS there are conflicting data on macrophage and neutrophil function. Some reports found a dysfunction of these cells in HIV infected patients including an impaired neutrophil oxidative burst in patients with CD4 cells <200/mm^3.[5 6] Other groups could not detect any impairment of phagocytic and fungicidal activity in the monocyte/macrophage population in patients with AIDS.[7] Despite the advanced CD4 cell depletion in our patient, neutrophils and monocytes appeared to be able to prevent development of an *Aspergillus* infection.

The treatment of patients with pulmonary aspergilloma remains a difficult problem. Fatal haemoptysis occurs in up to 25% and progression to secondary invasive aspergillosis (especially in immunocompromised patients) is common.[8] Surgery is associated with mortality rates of up to 10% and major postoperative complications.[9]

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