Bilateral Cavitary Lung Disease in a 29-Year-Old Woman*

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A 29-year-old black woman was admitted for evaluation of fever and productive cough of one month's duration. She also complained of occasional hemoptysis, mild shortness of breath, and night sweats. She had a weight loss of 9 kg over the preceding six months. She had had one previous hospital admission for pelvic inflammatory disease in 1981, at which time a routine chest roentgenogram was said to have been abnormal. There was no other past history of illness and no known history of exposure to tuberculosis. She was taking no medication and had no allergies. She had a five pack-year history of smoking and was a nondrinker.

Physical examination results on admission showed the following: mild respiratory distress; pulse rate, 108 beats/min and regular; blood pressure, 100/60 mm Hg; respirations, 36 breaths/min; and temperature, 39°C. Dentition was normal. Examination of the lymph glands revealed a firm, 2.0-cm left supraclavicular node. On chest examination, bronchial breathing was noted in the left upper lung field posteriorly. The rest of the examination results were normal.

Complete blood count showed a WBC count of 7.1/ cu mm, with a normal differential and a hemoglobin of 10.5 g/dl. Serum electrolytes, BUN, and creatinine all were normal. Liver-associated enzymes were normal. Chest roentgenogram showed bilateral upper lobe parenchymal disease with volume loss and a cystic abnormality at the right apex. Right paratracheal adenopathy and right paraspinal widening were also noted (Fig 1).

The patient was admitted for investigation, which included six sputum cultures, all of which showed a heavy growth of Aspergillus fumigatus. Aspergillus precipitins were positive. All sputum specimens stained negatively for acid-fast bacilli. Bacterial and mycobacterial cultures were also negative, as were serologic study and culture for other fungi. Serologic examination for human immunodeficiency virus (HIV) was negative. The patient was anergic. A biopsy specimen of the supraclavicular lymph node showed multiple noncaseating granulomas.

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Figure 1
Diagnosis: Chronic necrotizing pulmonary aspergillosis complicating sarcoidosis

The lymph node was negative on staining for acid-fast bacilli, and cultures were negative for bacterial and mycobacterial pathogens. The chest roentgenogram from the patient's previous hospital admission was obtained and revealed bilateral hilar adenopathy, right paratracheal adenopathy, and displacement of the right paraspinal line (Fig 2). The patient was treated with a total of 1.5 g of amphotericin B. Despite a reduction in fever and sputum production, the patient continued to produce sputum positive for \textit{A. fumigatus}. A repeated chest roentgenogram two years after discharge demonstrated persistent cystic changes in the upper lobes and the development of a mycetoma in the right apex (Fig 3, arrow).

A wide variety of pulmonary syndromes are associated with Aspergillus species.\textsuperscript{1,2} These syndromes range from noninvasive allergic disease to fulminant invasive disease. Invasive Aspergillus pneumonia has been reported most commonly in association with severely immunocompromised hosts; organ transplant recipients and patients undergoing therapy with antineoplastic drugs are two notable examples.\textsuperscript{3} More recent reports, however, have suggested that a semi-invasive or chronic form of invasive aspergillosis exists as a distinct clinical entity.\textsuperscript{4,5} This entity has been termed chronic necrotizing pulmonary aspergillosis (CNPA).\textsuperscript{5}

Patients with CNPA generally are found to have an underlying illness that causes some disruption of host immune defense. Underlying disease of the pulmonary parenchyma is also common. At least two cases have occurred in association with sarcoidosis.\textsuperscript{4,5} Patients with CNPA present clinically with symptoms of fever, weight loss, productive cough, and shortness of breath. Chest roentgenograms demonstrate progressive upper lobe infiltrates with subsequent cavitation. Mycetoma formation occasionally occurs,\textsuperscript{5} as was found in this case. Diagnosis is confirmed by either demonstrating the hyphae of Aspergillus species in lung tissue specimens or growth of Aspergillus species from pulmonary specimens (ie, bronchoscopic, percutaneous lung biopsy or aspirate, or sputum) in association with a response to antifungal therapy.\textsuperscript{5}

Optimal treatment for CNPA has not been determined. Systemic antifungal therapy alone has produced variable results.\textsuperscript{5} Combined systemic antifungal therapy with surgical resection is described in only a small number of cases.\textsuperscript{4,5} Short-term follow-up is encouraging in some cases; however, long-term outcome with either treatment modality is unknown.

REFERENCES