Mycobacterium simiae Infection in an Immunocompromised Patient without Acquired Immunodeficiency Syndrome

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We report a case of lung infection due to Mycobacterium simiae in an immunocompromised patient without acquired immunodeficiency syndrome. The patient had multiple pulmonary nodules similar to those seen in cases of lung disease caused by Mycobacterium avium in elderly women. Appropriate therapy for M. simiae disease should be determined because, in some cases, the risk of adverse effects can outweigh the potential benefits of treatment.

Mycobacterium simiae was isolated for the first time from monkeys in 1965 [1]. Although most isolates recovered from humans are considered nonsignificant from a clinical standpoint, some anecdotal reports have documented the ability of M. simiae to cause lung infection, osteomyelitis, peritonitis, pyelonephritis, and disseminated infection [2–4]. However, the clinical spectrum of the M. simiae infection is not yet known, nor is the evolution of the disease when it is being treated. We describe a case of lung infection due to M. simiae.

An 82-year-old woman was admitted to our hospital because of a multinodular lung disease. She had been receiving high-dose corticosteroid therapy to treat rheumatic polymyalgia for the 3 months before admission. Her only symptoms were proximal muscular weakness and a mild cough. The leukocyte count, hemoglobin level, platelet count, and results of biochemical studies were normal. The erythrocyte sedimentation rate was 40–60 mm/h. Analysis of chest radiographs revealed nodular infiltrates on both lung fields; CT revealed that some of the infiltrates were cavitated.

A bronchosopic examination did not reveal anatomic abnormalities of the bronchial tree. The microscopic examination of a tissue specimen obtained by use of bronchoalveolar lavage (BAL) revealed many acid-fast bacilli. Analysis of a transbronchial tissue sample revealed noncaseating epithelioid granulomas in the lung and bronchial mucosa. Both the BAL sample and the biopsy specimen were processed according to common protocols to look for aerobic and anaerobic bacteria, Legionella species, viruses, fungi, and mycobacteria. Cultures of BAL and biopsy specimens yielded a heavy growth of mycobacteria with phenotypic characteristics of M. simiae. No other possible pathogens were detected. The strain tested negative for hybridization with use of a commercial Mycobacterium tuberculosis complex probe (AccuProbe) and a Mycobacterium avium complex probe (BioMérieux), and a sample of the strain was sent to the Centro Nacional de Microbiología (Majadahonda, Spain). Results of common biochemical tests and restriction fragment–length polymorphism PCR analysis identified the strain as M. simiae.

The patient was treated with rifampin, isoniazid, and pyrazinamide for 2 months, followed by treatment with rifampin and isoniazid for 2 additional months. Upon receipt of in vitro susceptibility test results that showed that the isolate was completely resistant to all first-line antituberculous drugs, therapy was changed to clarithromycin and rifabutin, which was administered for an additional 3 months.

Analysis of new chest radiographs obtained at the end of therapy showed a slightly improved nodular pattern. One year after the end of therapy, the patient remained asymptomatic, and the appearance of the chest films remained unchanged. Subsequent cultures of respiratory samples were negative for mycobacteria.

M. simiae is a slow-growing mycobacterium that shares some phenotypic properties with M. avium complex, which has occasionally been isolated from clinical specimens. Most isolates have been considered contaminants with no clinical significance [2, 5], and only a few patients with a definitive diagnosis of M. simiae infection have been reported [3, 4]. Most of these patients were immunocompromised and had AIDS, were undergoing corticosteroid therapy, or had solid-organ cancer [6, 7].

This patient’s case is unique because, although several pulmonary nodules were found, the patient presented with only mild respiratory symptoms. Clinical and radiological manifestations of the disease resembled those previously found in eld-
erly women with *M. avium* complex infection [8]. The pathological findings and the isolation of *M. simiae* from samples of tissue and respiratory secretions established the diagnosis of the infection beyond any doubt.

Optimal therapy of *M. simiae* infection has not yet been determined. Because the microorganism is resistant to most antituberculous drugs, infected patients have been treated with combinations of multiple agents for long durations [9]. The risk of adverse effects of treatment may in some cases outweigh the potential benefits. This factor is much more important in a case such as this, which had a benign course.

**References**