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Case Report

Disseminated *Mycobacterium kansasii* in an HIV-negative patient

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ABSTRACT

Disseminated *Mycobacterium kansasii* infection is a rare infection in non-HIV patients. This research has uncovered a very rare manifestation of disseminated *M. kansasii* infection in a non-HIV patient with lung and pericardial involvement.

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Case presentation

The main responsible organisms for non-tuberculosis mycobacteria (NTM) infections in HIV positive patients are *Mycobacterium Avium Complex* (MAC) and *Mycobacterium kansasii* [1]. These infections, although rare, can be fatal [2,3]. This research has uncovered a rare infection associated with *M. kansasii* in a non-HIV patient with several noteworthy aspects. In January 2005, a 37-year-old male was admitted to the hospital with complaints of cough and fever of two months' duration. Four months prior to his admittance to the hospital, the patient was hospitalized in another center presenting with pancytopenia and diagnosed with Myelodysplastic Syndrome (MDS) of refractory anemia with excess blast type after aspiration and bone marrow biopsy. The patient was then treated with Cyclosporine and Danazol. Two months later the patient developed fever, dry cough, and weight loss, and 20 days prior to his admittance at this center, the patient suffered from progressive cough and dyspnea. The patient had no history of smoking, opium use, or high-risk sexual behavior. Upon physical examination, the patient

looked ill and appeared toxic (BP = 110/70, P = 90, RR = 24, T = 39 °C). Other than bilateral wheezes and reduced sounds over the left lung, there were no other significant abnormalities upon physical examination. The chest X-ray revealed a mass in the upper lobe of the left lung (see Fig. 1). A Spiral CT Scan demonstrated a mass in the left upper lobe (LUL) along with infiltration around the area, consolidation in LUL and lingual, along with mediastinal lymphadenopathy, a left pleural effusion, and pericardial effusion. In the primary analysis of respiratory specimens, the smear was found positive for Acid-Fast Bacillus (AFB) and the standardized treatment regimen for tuberculosis was started. In addition, prednisolone (50 mg/daily) was prescribed because of TB pericarditis. On the 15th day of hospitalization, the patient had an episode of dyspnea associated with a drop in blood pressure, and underwent surgery for a pericardial window and biopsy of the pericardium. The smear of the pericardial fluid was negative for AFB. Diagnostic bronchoscopy showed vegetative tissue in the LLL opening accompanied by mucosal irregularity. A smear from the BAL was positive for AFB. A poorly-formed histiocytic granuloma with many AFB was reported

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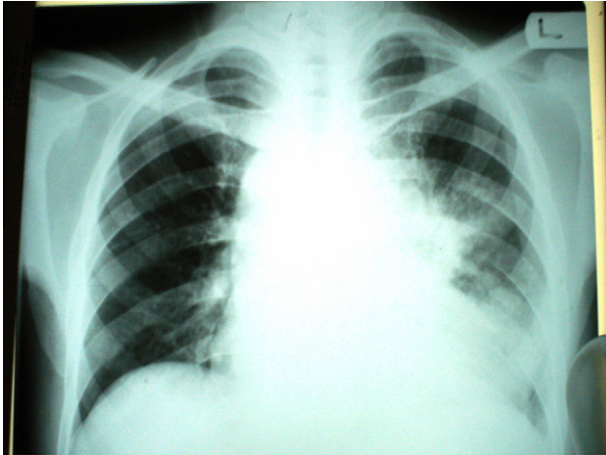


Fig. 1 – Patient X-ray revealed a mass in the upper lobe left lung; diagnosis as *Mycobacterium kansasii*.

in the transbronchial lung biopsy (TBLB) sample. However, the pericardial biopsy only showed chronic fibrosis. On the 20th day of hospitalization, the patient's general state had improved and he was afebrile. On follow-up, the culture of bronchoalveolar lavage (BAL) and pericardium were both positive for mycobacteria. On the basis of Bergey's Manual of Systematic Bacteriology, conventional biochemical tests (obtained from the Department of Mycobacteriology, National Institute of Public and the Environment, The Netherlands) were consistent with *M. kansasii* [4,5]. At this point, all of the previous anti-tuberculosis medications were continued except for Pyrazinamide (PZA). After 18 months of treatment, the chest X-ray appears completely normal, sputum culture is AFB negative, and the patient is currently on the list for bone marrow transplantation. Until the HIV/AIDS epidemic, infections related to *M. kansasii* were rarely reported [1,2]. Lilo and colleagues reported eight cases related to *M. kansasii* in which all patients had systemic problems, six of whom were on steroids [6].

The presented case contains 3 major points

- The condition first appeared as a lung tumor;
- The condition showed vegetative tissue (endobronchial lesion) in the bronchoscopy;
- Pericardial involvement.

The clinical manifestations of patients with NTM are associated with fever and chills and in many cases these manifestations are very similar to tuberculosis [7]. In patients with defective immune systems, the infections associated with NTM should be taken into consideration. Pericardial complications with *M. kansasii* are very rare, and all such cases have been reported in HIV-positive patients [8]. At the time of writing this report, this case is the first such report with *M. kansasii* in an HIV-negative patient. The other interesting

observation was the presence of endobronchial complications. This presentation has been reported in less than ten patients, all of them were HIV-positive patients [9].

Treatment of *M. kansasii* in immunocompetent patients is usually successful. However, in patients with defective immune systems, this infection is accompanied by high mortality rates. Even though standardized anti-TB treatment is useful for *M. kansasii*, recognition of this infection is important because longer drug regimens (18 months) are necessary. In addition, because of the lack of PZA efficacy in *M. kansasii*, the elimination of this from the drug regimen helps in the reduction of side effects [10].

In conclusion, a patient with *M. kansasii* infection that presented with pericardial complications, endobronchial vegetative lesions, and appearance mimicking a tumor has been reported. With the improvement in diagnostic methods, the determination of the NTM infections should be considered in individuals with depressed immune systems that present with multi-organ involvement.

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