Short Communication

*Mycobacterium monacense* in a Patient with a Pulmonary Tumor

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SUMMARY: We report on a *Mycobacterium monacense* infection associated with a pulmonary tumor in a Chinese patient. To our knowledge, this is the first case of *M. monacense* described in a non-European patient with a tuberculosis-like disease. Further evaluation of the human pathogenic potential of *M. monacense* is needed.

The pathogenic role of rapidly growing nontuberculous mycobacteria has been underestimated for many years and has only recently been focused on in the clinical literature (1). Here we report on the isolation of a rapidly growing scotochromogenic mycobacterium associated with pulmonary tuberculosis-like disease.

A 36-year old HIV-negative Chinese business traveller came to the outpatients department after a car accident which occurred on the second day of his first visit to Europe. During initial examination of his broken clavicula and radius, he received a thoracic computed tomography (CT) showing a large tumor in the upper lobe of his left lung highly suspicious for tuberculosis (Fig. 1). A bronchoscopy was performed. A broncho-alveolar lavage sample and a sputum from the next day were obtained for bacteriological and mycobacteriological diagnosis. Both Ziehl-Neelsen staining for acid-fast bacteria and a *Mycobacterium tuberculosis* complex specific PCR (COBAS Amplicor MTB, Roche Diagnostics, Mannheim, Germany) were negative on either specimen. While routine bacteriology only yielded nonpathogenic bacteria, yellowish mycobacteria grew within 10 days on Lowenstein-Jensen medium at 37°C after standard N-acetyl-L-cysteine-NaOH decontamination in both samples. The strain was positive for nitrate reduction, thermostable catalase and Tween hydrolysis using standard procedures for biochemical testing (2), while niacin accumulation and 3-day arylsulfatase testing were negative. After DNA extraction using an established protocol (3), fragments of the 16S rRNA gene were amplified by PCR using sets of broad-range eubacterial primers combined with mycobacterial genus-specific primers as published previously (4). Sequencing of the 16S rDNA amplicons revealed 100% sequence homology with reference strains of *Mycobacterium monacense* published in the GenBank/EMBL database (GenBank accession no. AF107039) (2,5).

The sequence of the hypervariable region within the *hsp65* gene was determined as reported previously (6), and found to be identical to that of the published *M. monacense* strains F1-03115 and the type strain B-9-21-178 T (GenBank accession no. DQ381730). This strongly suggests that the identification of the isolate as *M. monacense* is correct. Fig. 2 depicts alignment sections of the *hsp65* gene hypervariable regions where the known sequevars of *M. monacense* differ from each other. Sequencing reactions were carried out in triplicate to rule out any polymerase-induced errors.

Susceptibility testing, performed using the minimal inhibitory concentration method recommended by the Clinical and Laboratory Standards Institute for rapidly growing mycobacteria (7), showed uniform susceptibility to amikacin, cefoxitin, ciprofloxacin, clarithromycin, doxycycline, and linezolid.

Additional laboratory diagnosis was unremarkable except for an elevated C-reactive protein level (1.9 mg/dL; normal, <0.5 mg/dL). A Mendel-Mantoux test was highly positive with a diameter of >15 mm. Due to the patient’s need to continue travelling for business, he returned to China and was therefore lost for follow-up.

*M. monacense* was first described in 2006 (2). It has been previously found in two elderly patients with suspected or verified lung carcinoma, one HIV-patient with bronchopneumonitis and in an injury-related fistula of a thigh from...
an 11-year-old boy (2). All patients were from Europe. In all reported cases, the clinical significance of the isolated \textit{M. monacense} strain was at best uncertain. In contrast, \textit{M. monacense} in our patient was associated with pulmonary tuberculosis-like disease. Although underlying diseases could not completely be excluded due to the patient’s loss to follow-up, his clinical and bronchoscopic examinations did not suggest a malignant lung process. Moreover, the strain was found in Germany on the Chinese patient’s second day of his first trip to Europe, suggesting that \textit{M. monacense} is not restricted to Europe. Taken together, this case illustrates that \textit{M. monacense} should be considered to be associated with pulmonary disease. Further evaluation of its human pathogenic potential is needed.

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**REFERENCES**