Mycobacterium heckeshornense Lumbar Spondylodiskitis in a Patient with Rheumatoid Arthritis Receiving Etanercept Treatment

To the Editor:

Biologics directed against tumor necrosis factor-α (TNF-α) are highly effective in patients with rheumatoid arthritis (RA)[1]. There are significant concerns, however, surrounding opportunistic infections including reactivation of *Mycobacterium tuberculosis*[2]. Infection with atypical mycobacteria has also been reported[3]. *Mycobacterium heckeshornense* is a recently described non-tuberculous mycobacterium species first identified in 2000[4]. There are limited reports of its isolation as a pathogen in immunocompetent patients causing cavitary lung disease, recurrent lung infection, and tenosynovitis[4-6]. We describe the first reported case of lumbar spondylodiskitis with *M. heckeshornense* infection in a patient with RA treated with etanercept.

A 51-year-old Caucasian man presented with a 3-month history of lumbar pain with radicular symptoms down the right leg. He had a 5-year history of RA with a right total knee arthroplasty and had been resistant to or intolerant of several disease modifying drugs. He had been treated with etanercept for 3 years with good effect. Chest radiography and tuberculin skin testing were negative prior to starting etanercept. At presentation to hospital he was on etanercept, and corticosteroids had been tapered several months prior. On initial examination, he was in severe pain and guarding his spine when sitting and standing. He was afebrile. Characteristic changes of peripheral joint damage were present without signs of acute inflammation. Neurological examination was unremarkable. His peripheral white cell count was 6.8 × 106/l, erythrocyte sedimentation rate 102 mm/h, and C-reactive protein 168 mg/l. Computed tomography (CT) of the lumbar spine (L) showed spondylodiskitis at L1-2 and L2-3 with kyphotic deformity (Figure 1). Magnetic resonance imaging (MRI) of the lumbar spine revealed bilateral cystic collections tracking into both psoas muscles, suggestive of paravertebral abscesses (Figure 2).

The patient underwent irrigation and debridment for the paravertebral abscesses. L2 vertebrectomy with insertion of bone graft and T12-L4 instrumented vertebral fusion were performed. The aspirated fluid showed a positive acid-fast bacilli stain. The culture from L2 tissue showed propionibacterium species. Etanercept was discontinued.

A repeated chest radiograph and the tuberculin skin testing (one-step) were negative. Four-drug treatments for presumed reactivation of *M. tuberculosis* were initiated. Subsequent cultures from the aspirate grew *M. heckeshornense* identified by 16S RNA sequencing. A prolonged course of clarithromycin, moxifloxicin, and rifampin was prescribed.

M. heckeshornense is a recently described atypical mycobacterium closely related to *M. xenopi* and differentiated on the basis of 16S rRNA sequencing[7]. Only a handful of cases of infection have been reported with this organism, most often in immunocompetent patients[4-7]; most have been pulmonary infections, although there is one report of tenosynovitis[5].

On initial presentation of our patient there was appropriate concern regarding the possibility of reactivation of *M. tuberculosis*. This was in spite of a negative chest radiograph and tuberculin skin test prior to initiating etanercept therapy. It is unknown when or how the *M. heckeshornense* was acquired in this case. Repeat tuberculin skin testing was negative due to either anergy or failure of the skin test to reflect exposure to *M. heckeshornense*. To our knowledge this is the first report of this organism causing spondylodiskitis and paraspinal abscesses. This is also the first report of *M. heckeshornense* in a patient treated with an anti-TNF agent.

ABDULHAMID A. ELYOUSFI, MD, Orthopaedic Resident, JEFF R.S. LEITER, MSc, PhD, Orthopaedic Resident Research Coordinator; MICHEAL J. GOYTAN MD, FRCSC, Surgeon, Assistant Professor, Section of Orthopaedic Surgery; DAVID B. ROBINSON, MD, MSc, FRCPC, Associate Professor, Internal Medicine, University of Manitoba, Winnipeg, Canada. Address correspondence to J. Leiter, Pan Am Clinic, 75 Poseidon Bay, Winnipeg, Manitoba, Canada R3M 3E4.

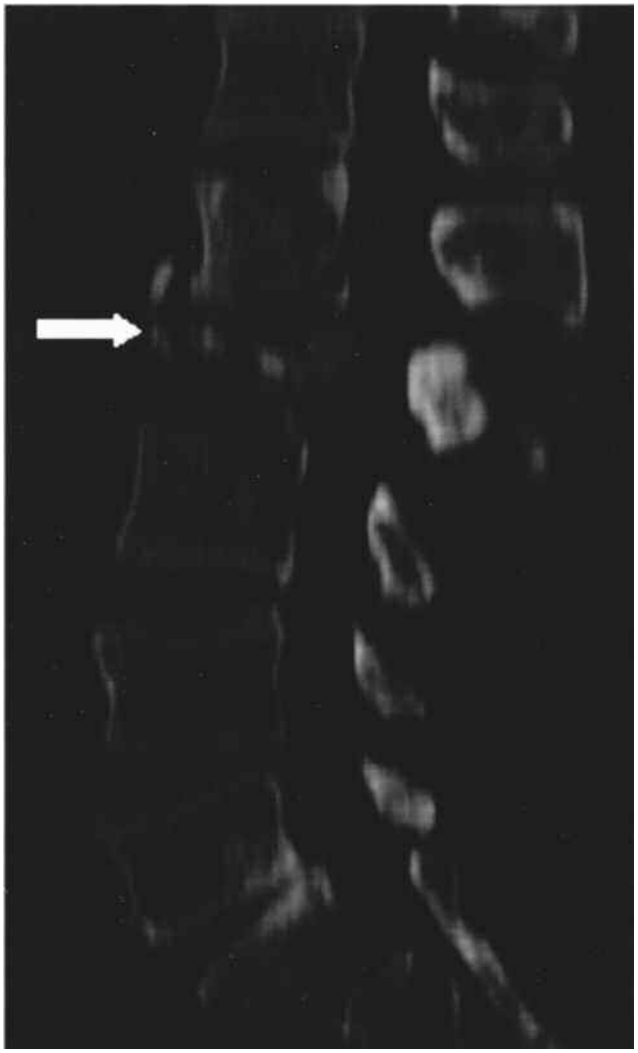

Figure 1. Initial lumbar spine CT scan (sagittal view). Arrow: area of L2 bony destruction and spondylodiskitis at L1-2 and L2.

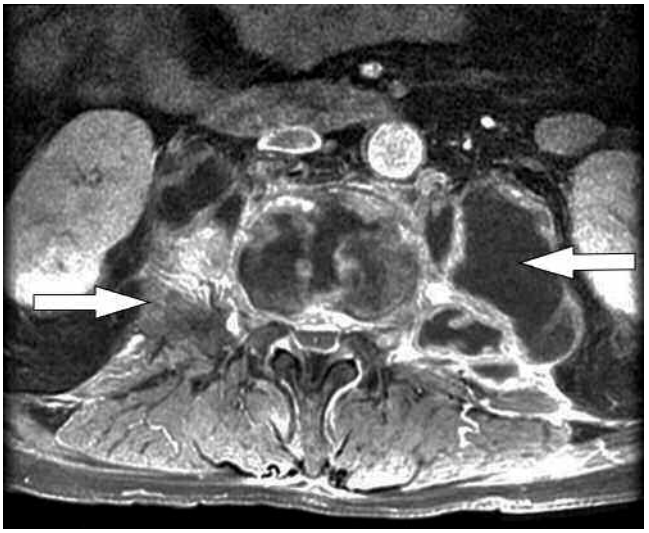

Figure 2. MRI axial imaging of the lumbar spine. Arrows: bilateral paraspinal abscesses.

REFERENCES

1. Moreland LW, Schiff MH, Baumgartner SW, et al. Etanercept therapy in rheumatoid arthritis. A randomized, controlled trial. Ann Intern Med 1999;130:478-86.
2. Gomez-Reino JJ, Carmona L, Angel Descalzo M. Risk of tuberculosis in patients treated with tumor necrosis factor antagonists due to incomplete prevention of reactivation of latent infection. Arthritis Rheum 2007;57:756-61.
3. Maimon N, Brunton J, Chan AK, Marras TK. Fatal pulmonary Mycobacterium xenopi in a patient with rheumatoid arthritis receiving etanercept. Thorax 2007;62:739-40.
4. Roth A, Reischl U, Schonfeld N, et al. Mycobacterium heckeshornense sp. nov., a new pathogenic slowly growing Mycobacterium sp. causing cavitary lung disease in an immunocompetent patient. J Clin Microbiol 2000;38:4102-7.
5. Godreuil S, Marchandin H, Terru D, et al. Mycobacterium heckeshornense tenosynovitis. Scand J Infect Dis 2006;38:1098-101.
6. Jaureguy F, Ioos V, Marzouk P, et al. Mycobacterium heckeshornense: an emerging pathogen responsible for a recurrent lung infection. J Infect 2007;54:e33-5.
7. van Hest R, van der Zanden A, Boeree M, et al. Mycobacterium heckeshornense infection in an immunocompetent patient and identification by 16S rRNA sequence analysis of culture material and a histopathology tissue specimen. J Clin Microbiol 2004;42:4386-9.

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