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Scientific letter

Synovitis due to *Mycobacterium heckeshornense* in a patient with rheumatoid arthritis and treatment with infliximab☆

Sinovitis por Mycobacterium heckeshornense *en paciente con artritis reumatoide en tratamiento con infliximab*

Mycobacterium heckeshornense is a slow-growing, scotochromogenic non-tuberculous mycobacterium, first isolated in a sputum sample from an immunocompetent female in the year 2000.[1] There are few documented episodes in the literature related to *M. heckeshornense* with sporadic cases of pulmonary involvement, tenosynovitis, lymphadenitis, spondylodiscitis, bacteraemia and peritonitis having been published since that first study[2–5] (Table 1), adding to a total of 16 patients. We present a case of joint affectation in a patient with rheumatoid arthritis treated with infliximab and methotrexate. To our knowledge, it is the first in which this mycobacterium has been isolated in a joint fluid sample.

76-year-old male patient, gardener, diagnosed with non-erosive rheumatoid arthritis in 1996, positive rheumatoid factor and negative anti-citrullinated peptide antibody (ACPA). He received initial treatment with gold salts, discontinued due to ineffectiveness, and has been on methotrexate since 2002. Over the course of the disease, the patient presents with several polyarticular outbreaks predominantly in the carpus and elbows that require corticosteroids in a decreasing regimen.

Due to poor control, treatment with prednisone 30 mg is started in a decreasing regimen and with infliximab in combination with methotrexate 7.5 mg weekly. Improvement of the joint symptoms occurs, but he presents with right elbow flexion continuously on physical examination, the presence of active synovitis being confirmed with joint ultrasound. Arthrocentesis is carried out on the right elbow with growth of *M. heckeshornense* in mycobacterial culture from the synovial fluid. Treatment with infliximab is discontinued, a chest X-ray is performed, which is normal, and empirical treatment with clarithromycin is started 500 mg every 12 h, rifampicin 600 mg/24 h, ethambutol 1200 mg/24 h and moxifloxacin 400 mg/24 h. A further arthrocentesis is carried out 2 months later, and the culture is negative. At 4 months ethambutol is discontinued, maintaining triple therapy for one year and the patient is asymptomatic after 10 months of follow-up.

The microbiological study of the sample included auramine staining, MGIT (Becton Dickinson, UK) culture, Löwenstein–Jensen solid medium culture (LJ) (Becton Dickinson, UK) and PCR for *Mycobacterium tuberculosis complex* (XpertMTB/Rif, Cepheid, Sunnyvale, CA, USA). Auramine staining and PCR were nega-

Table 1
Summary of cases of documented infections by *M. heckeshornense*.

Reference	Patient (age, sex)	Clinical presentation	Predisposing condition	Specific treatment	Outcomes
Roth et al. (2000)[1]	30, F	Pulmonary	No	INH, RIF, ETB, CIP, PRO	Relapse Surgery
Van Hest et al. (2004)[2]	43, M	Pulmonary	No	INH, RIF, ETB, PRZ	Favourable
Godreuil et al. (2006)[2]	86, F	Tenosynovitis (hand)	No	Surgery	Favourable
Jaureguy et al. (2007)[2]	65, F	Pulmonary	No	CLR, ETB, MOX	Favourable
Hisamoto et al. (2008)[2]	68, M	Pulmonary	No	INH, RIF, ETB, PRZ	Favourable
McBride et al. (2009)[2]	84, F	Lymphadenitis	No	Surgery	Favourable
Elyousfi et al. (2009)[2]	51, M	Lumbar spondylodiscitis	Etanercept (RA)	CLR, RIF, MOX	Favourable
Ahmed et al. (2010)[2]	40, M	Bacteriaemia	HIV	INH, CLR, MOX, RIB	Favourable
Morimoto et al. (2011)[2]	47, M	Pulmonary	No	MOX, CLR	Favourable
Chan et al. (2011)[2]	76, M	Peritonitis	No	Catheter removal PD-drain	Favourable
Cointinho et al. (2015)[2]	53, M	Pulmonary	No	INH, RIF, ETB, LEV, CLR	Favourable
Carpenter et al. (2015)[2]	45, M	Discitis with lumbar osteomyelitis	HIV	INH, RIF, ETB, PRZ	Favourable
Douiri et al. (2018)[3]	48, M	Lumbar spondylodiscitis	HIV	RIB, CLR, ETB, MOX	Favourable
Howell and Galen (2018)[4]	41, M	Pulmonary	Adalimumab (RA)	AMK, RIF, AZT, ETB Levofloxacin	Relapse
Yokohama et al. (2018)[5]	40, M	Pulmonary	Prednisone, azathioprine	INH, RIF, ETB, STF	Favourable
Kurosaki et al. (2018)[2]	39, F	Pulmonary	No	RIF, ETB, CLR	Relapse Surgery
Current case	76, M	Joint	Infliximab (RA)	CLR, RIF, ETB, LEV	Favourable

AMK: amikacin; RA: rheumatoid arthritis; AZT: azithromycin; CIP: ciprofloxacin; CLR: clarithromycin; ETB: ethambutol; F: female; INH: isoniazid; LEV: levofloxacin; M: male; MOX: moxifloxacin; PRO: procainamide; RIB: rifabutin; RIF: rifampicin; PRZ: pyrazinamide; STF: sitafloxacin; HIV: human immunodeficiency virus.

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tive. The MGIT culture was positive 12 days after incubation, confirming the presence of acid-alcohol fast bacilli by Zhiel-Nielssen staining. The LJ medium culture could not be interpreted because it was contaminated. Identification by MALDI-TOF MS (Bruker Daltonics Inc., Germany) with a score of 1909 was *M. heckeshornense*. The strain was sent to the National Micobacteria Centre (Instituto Carlos III [Carlos III Institute], Majadahonda, Madrid) to confirm its identification by molecular methods and to carry out antibiotic susceptibility studies using the proportion method.

Identification was carried out through PRA of the *hsp*65 gene and digestion with BstEII and HaeIII enzymes. The pattern that was obtained was 3 bands 235/120/100 after digestion with the first enzyme and 3 other bands after digestion with HaeIII 160/105/60. This presumptive identification was confirmed by 16S rRNA gene sequencing. The strain with which 100% homology was presented in the GenBank was with the *M. heckeshornense* strain S369 (NR_028759), comparing 1360 pb. The antibiotic susceptibility test was carried out using MIC in solid medium; the strain was sensitive to cycloserine, ethionamide, rifampin, capreomycin, streptomycin and kanamycin, and resistant to ethambutol, isoniazid, PAS, pyrazinamide, TCH, and thiosemicarbazone.

Isolation of non-tuberculous mycobacteria in synovial fluid is unusual, preferentially occurring in immunosuppressed patients. In our case, as in the work of Yokohama et al.,[5] identification by MALDI-TOF was conducted, which is why it can be considered a quick, cost-effective and accurate tool for the identification of *M. heckeshornense*. We presented a fifth case of osteoarticular involvement in addition to a case of tenosynovitis[2] and 3 of spondylodiscitis.[2,3] Males (4 cases) and the existence of any risk factor (2 HIV infections and 2 immunosuppressive treatment) predominated, and all achieved a cure. The association of biological drugs used in rheumatoid arthritis and the increased risk of serious infections provide controversial evidence. According to a meta-analysis published in *The Lancet*,[6] biological medicines showed a significant increase in the risk of serious infections at usual doses compared to disease-modifying antirheumatic drugs (DMAD), with the combination of biological drugs presenting the highest risk.

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Parvimonas micra infective endocarditis

Endocarditis infecciosa por Parvimonas micra

Parvimonas micra, formerly *Peptostreptococcus micros* and *Micromonas micros,* are anaerobic, gram-positive cocci that belong to the abdominal, oropharyngeal and genitourinary flora, commonly related with periodontal diseases.[1] Its pathogenicity has been also documented in disseminated diseases such as septic arthritis, spondylodiscitis or abscesses in different organs.[2–4] In 2015 the first case of endocarditis was described, in a 71-years-old male patient with valve abscess.[1] A literature review showed two cases of infectious endocarditis due to *P. micra*[1,5] and three cases related to their ancestor *P. micros*.[6–8]

We present a case of infectious endocarditis in a woman with a pacemaker and prosthetic mitral valve.

A 63-year-old female presented at the emergency department with a history of one month of persistent fever at dawn and noon, with chills, diaphoresis, asthenia and weight loss (5 kg). She denied dental procedures, recent interventions or invasive diagnostic techniques. Oral evaluation was made with no signs of periodontal disease other than edentulism. There were no respiratory, gastrointestinal, musculoskeletal or urinary symptoms and no cutaneous manifestation were found.

She had frequent follow-ups with neurosurgery and neurology for a right cerebral subependymoma and a mid-cerebral artery cardioembolic ictus performed eleven months prior to this episode. She had had a mechanical prosthetic mitral valve replacement in 1990. She had frequent checkups with urology for kidney angiomyolipomas.

On examination, temperature was normal, blood pressure was 130/62 mmHg, pulse of 70 beats per minute, respiratory rate of 18 breaths per minute, and oxygen saturation 100%. Auscultation was clear with no remarkable finding except for a click in the mitral valve. No lymphadenopathies were noted, as well as no edemas, with low muscle mass. The remainder examination was normal.

The patient was hospitalized to study a fever of unknown origin, and an echocardiography and positron emission tomography/computed tomography (PET/CT) were done. The PET/CT showed metabolic signs of infection in mitral prosthetic and