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Scientific letter

Mycobacterium malmoense wrist septic arthritis

Artritis de muñeca por Mycobacterium malmoense

Dear Editor,

Nontuberculous mycobacteria (NTM) are a very heterogeneous group, which includes more than 270 species.[1] Over the last 10 years, NTM infections have been on the increase. This is particularly true of *Mycobacterium malmoense* in Northern Europe,[2] although it remains very rare in other parts of the world. We present a case of septic arthritis of the wrist due to *Mycobacterium malmoense*.

This was a 74-year-old woman from Galicia with no history of travel abroad who lived in a rural environment, but had no domestic animals. Three years previously she had been diagnosed with seronegative rheumatoid arthritis after an episode of oligoarthritis, treated with methotrexate (22.5 mg/week) and prednisone (10 mg/day). Since the onset of the disease, the patient had suffered from discomfort, mainly in the left wrist, with an initially normal X-ray (Fig. 1A). She consulted for pain and swelling of the left wrist, and X-ray showed polyarthritis of the carpus and radiocarpal joint (Fig. 1B); etanercept (50 mg/week) was added to her treatment, with clinical improvement. Eight months later the patient was admitted for arthritis of the left wrist with spontaneous discharge of exudate; she had not previously had infiltration and had not suffered trauma. Her C-reactive protein (CRP) was 1.7 mg/l, with an erythrocyte sedimentation rate (ESR) of 6 mm/h. X-ray (Fig. 1C) and arthrocentesis were performed, with release of purulent fluid; there was no bacterial or fungal growth in cultures and she was treated empirically with levofloxacin (500 mg/day) and rifampicin (600 mg/day). Three weeks later, she was readmitted for a large swelling on her wrist with purulent drainage through three fistulas. MRI (Fig. 1D) showed severe involvement of the carpal bones, with heterogeneous fluid collection on the dorsal aspect; antibiotic therapy was discontinued and surgical debridement was performed with release of caseous material. In all intra-surgical specimens the auramine stain was positive, with the presence of acid-fast bacilli. Molecular detection of the genome of *Mycobacterium tuberculosis* complex was performed (Cepheid Xpert MTB/RIF, USA). The result was negative; suspected MNT infection was treated with rifampicin (150 mg)/isoniazid (75 mg)/pyrazinamide (400 mg)/ethambutol (275 mg; 3 tablets/day), linezolid (600 mg/12 h) and levofloxacin (500 mg/24 h). Three weeks later, *Mycobacterium malmoense* grew in all the samples, with identification by Genotype Mycobacterium CM/AS (Bruker, Germany), subsequently confirmed by sequencing (*rpo*®). Antibiogram (Sensititre SLOMYCO, Thermo Fisher, Germany) showed resistance to isoniazid and streptomycin and sensitivity to rifampicin, ethambutol, clarithromycin, moxifloxacin and amikacin. The treatment was changed to rifampicin (450 mg/24 h) and ethambutol (800 mg/24 h). The patient required further surgical cleaning of the wound on two more occasions and made good progress. She attended a check-up six months after starting treatment, with no inflammatory findings on examination, and continued treatment with rifampicin and ethambutol. Follow-up was subsequently lost due to the patient's death from causes unrelated to the infection.

Mycobacterium malmoense was first isolated in 1954 in Malmo (Sweden) and the first infection was described in 1977 by Sroder and Juhlin.[2] It is a slow-growing environmental microorganism isolated from water and soil.[3] The most common NTM is *Mycobacterium avium* complex, but in recent years the incidence of *M. malmoense* infection has been increasing, especially in northern Europe, where it is the second most common NTM.[4]

M. malmoense is most often associated with cervical lymphadenitis in children and respiratory infections in adults. It is usually isolated from respiratory samples, with clinical relevance in 70–80% of cases.[3] Lung involvement is similar to tuberculosis, and risk factors are chronic obstructive pulmonary disease, bronchiectasis, cystic fibrosis, chest disease, HIV infection and other immunosuppressive conditions.[3,4] Extrapulmonary involvement occurs in 21% of cases,[4] being exceptional in adults, but common in children in the form of mild lymphadenitis. Cases of tenosynovitis have been reported, but only five cases of septic arthritis, all of them with comorbidities and/or on immunosuppressive treatment.[5–9] Our case stands out for the severity of the osteoarticular involvement and the previous treatment with etanercept. Anti-TNF-alpha drugs are not only associated with a greater risk of TB infection, but also with a higher risk of NTM infection, with an increased prevalence in areas where TB is not endemic. In these cases, NTM infection has an increased risk of extrapulmonary involvement, including osteoarticular and/or disseminated disease.[10]

The treatment regimen is not well defined; most strains of *M. malmoense* are sensitive to ethambutol and some to rifampicin. Debridement was performed in all reported cases of arthritis. Three patients received ethambutol-rifampicin-clarithromycin, one ethambutol-clarithromycin and one rifampicin-clarithromycin. The duration of treatment was 18–24 months.[5–9]

The case we present here highlights the need to consider NTM, including emerging species such as *M. malmoense*, in the differential diagnosis of arthritis, especially in patients on immunosuppressive therapy or with comorbidities. Clinical suspicion and effective sampling and processing are necessary for early diagnosis, with the aim of reducing morbidity, joint destruction and consequent loss of function.

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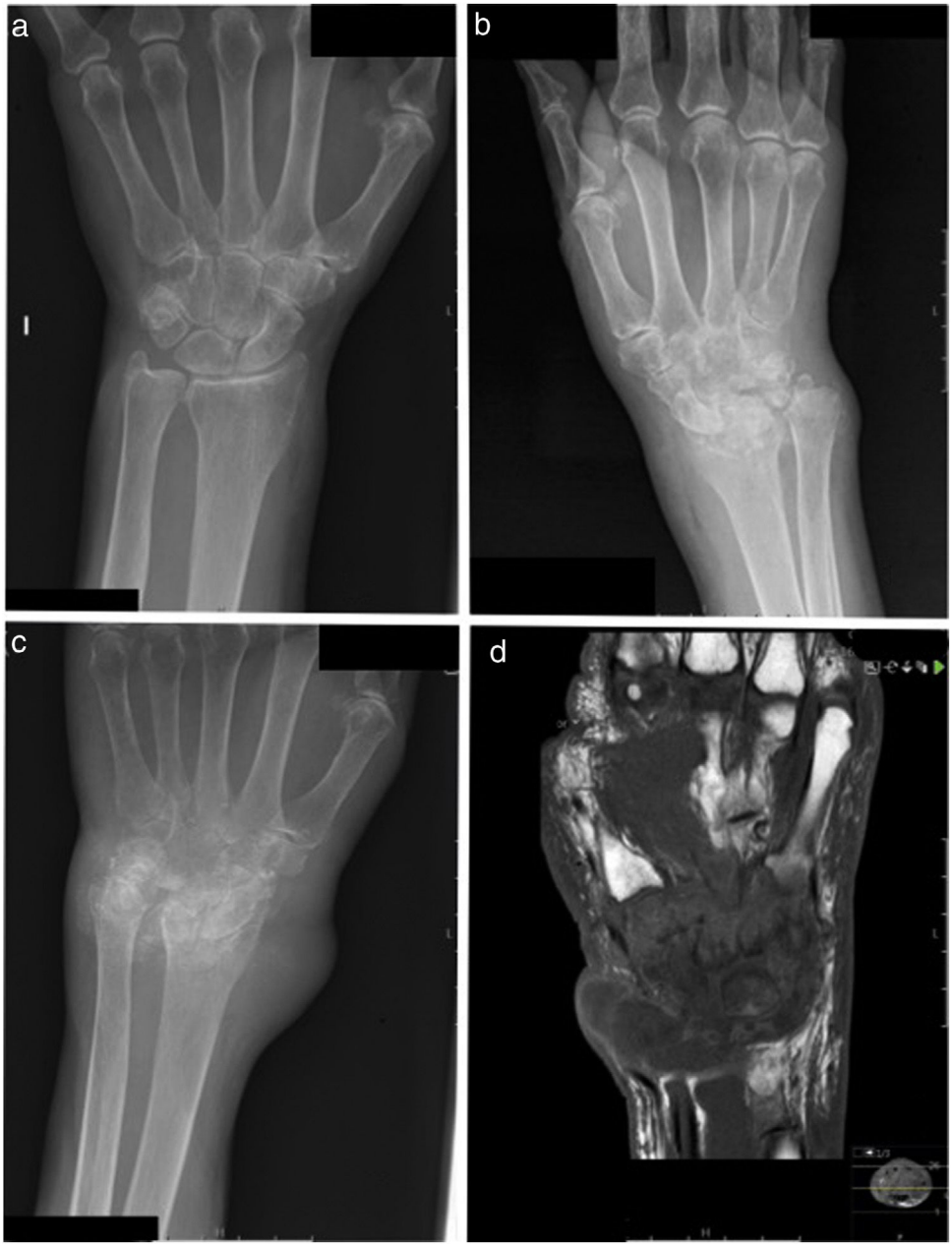

Figure 1. (A) Normal X-ray. (B) X-ray of bone showing polyarthritis at the carpus and radiocarpal joint; joint with synovial calcifications. (C) Follow-up bone X-ray eight months after image B; progression of joint damage can be seen, with bone involvement suggesting osteomyelitis. (D) Magnetic resonance imaging. T1-weighted image with contrast shows widespread severe damage in all carpal bones, distal ulna and radius and second to fifth metacarpals, as well as synovial thinning in all carpal joints, with a heterogeneous fluid collection on the dorsal aspect of the wrist.

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Authorship

All authors made intellectual contributions to the article and approved the final version thereof.

Conflicts of interest

There are no conflicts of interest.

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Cerebral and spinal neurocysticercosis with extensive myocysticercosis presenting with new-onset convulsive status epilepticus and myopathic symptoms

Neurocisticercosis cerebral y espinal con miocisticercosis extensa, presentándose con estado epiléptico convulsivo de nueva aparición y síntomas miopáticos

Dear Editor,

Neurocysticercosis is a parasitic infection of the central nervous system caused by the cystic larval stage of the tapeworm *Taenia solium*.[1] Endemic areas include Latin America, Southeast Asia, India, Nepal, China, and Africa, where it is a leading cause of acquired epilepsy.[1] With increasing globalization and international travel, neurocysticercosis is now being reported in many developed countries.[1]

We herein report an adult case of cerebral and spinal neurocysticercosis with extensive myocysticercosis, which presented with new-onset convulsive status epilepticus and proximal muscle weakness masquerading clinically as an acquired myopathy.

A 23-year-old male from rural India was brought by his relatives with an acute new-onset generalized tonic–clonic status epilepticus. He was stabilized at the emergency department with intravenous lorazepam (needed a total of 8 mg in two separate dosages to abort seizure) and a loading dose of phenytoin (700 mg with intravenous normal saline) and shifted to the intensive care unit for close monitoring. His relatives revealed that he complained of progressive generalized weakness, which initially started in the proximal extremities with a visible increase in the bulk of the affected muscles and a bodybuilder-like appearance over the last year associated with easy fatigue and pain. He also complained of persisting headaches with frequent exacerbation and blurred vision for the last two months.

After recovery from the post-ictal state, physical examination revealed that the muscles were firm, tender, and symmetrically hypertrophied in both upper and lower limbs, and weakness, particularly in proximal muscles (MRC 3-/5). He also had multiple soft, non-tender nodules of variable sizes on the forehead and neck.

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The complete blood cell count revealed mild anemia (10.1 g/dL, normal 13.5–17.5 g/dL), peripheral eosinophilia (3000 eosinophils/μL, normal absolute eosinophil count 30–350 eosinophils/μL), and a high erythrocyte sedimentation rate (89 mm/h, normal <15 mm/h). Serum creatine phosphokinase (978 U/L, normal <171 U/L) and aldolase (38 U/L, normal <7.6 U/L) levels were raised. The remaining biochemical parameters were within normal levels. Brain magnetic resonance imaging (MRI) revealed the starry sky appearance of neurocysticercosis (Fig. 1). MRI of the neck and limb muscles showed the presence of generalized deposits of cysticercus larvae (Fig. 2). Excision biopsy from a lesion over the left quadriceps muscle was performed, with histopathology revealing cysticercus larvae within the muscle fibers. Diagnosis of neurocysticercosis (including extra-

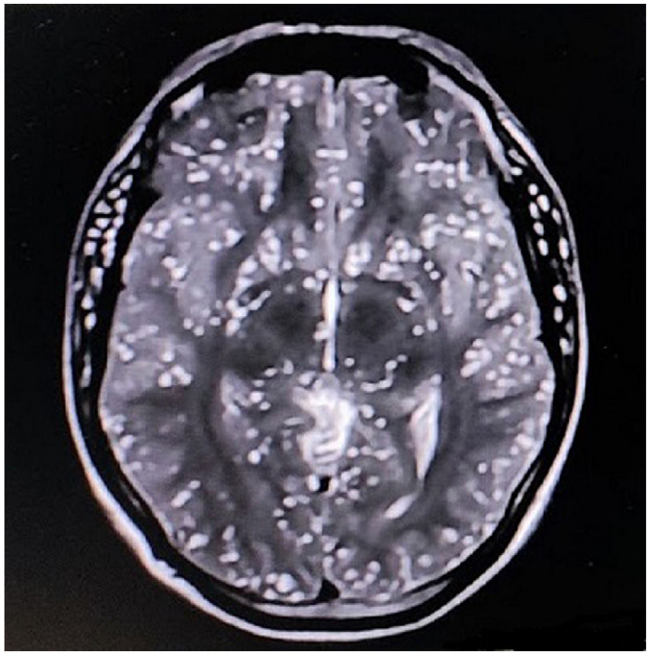

Fig. 1. Brain magnetic resonance imaging reveals the starry sky appearance of neurocysticercosis on axial-T2-weighted imaging (A).