LETTERS TO THE EDITOR

Arthritis in cat scratch disease: an unusual manifestation

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Dear editor,

Cat scratch disease (CSD) is a globally endemic zoonosis caused by Bartonella henselae and is usually transmitted to humans through scratches or bites from infected cats[1]. Despite its worldwide distribution, the exact prevalence of CSD is unknown[2].

Although it can affect individuals of any age, CSD is primarily a disease of children and adolescents[3]. It initially presents as an erythematous papule or pustule at the site of inoculation. One to three weeks later, regional lymphadenopathy typically develops and can persist for a few weeks or several months[4]. Mild systemic symptoms may be present in one-half of patients. In 10% of cases, atypical manifestations may occur, with ocular, cutaneous, neurological, cardiopulmonary, hematological, and musculoskeletal involvement[5,6].

Herein, we report a case of a healthy 51-year-old man admitted to the Emergency Department with a two-week history of low-grade fever and one-week history of a single tender, swollen right axillary lymph node.

Three days later, he developed erythema nodosum in his left leg and inflammatory joint pain on both ankles and knees. He denied previous episodes of arthralgia, oral or genital ulcers, red eye, diarrhea, cough, sore throat or other symptoms. There was no history of recent travels, previous infections or contact with tuberculosis patients, but the patient recalled that his cat had scratched and bitten him 3 months before the symptoms' onset.

On physical examination, the right ankle was tender and swollen, with limited range of motion. An ultrasound evaluation revealed mild synovitis of the ankle, talonavicular and naviculocuneiform joints, as well as common extensor, tibialis posterior and peroneal tenosynovitis. Analysis of synovial fluid obtained by ultrasound-guided arthrocentesis of the ankle revealed inflammatory characteristics, but bacterial cultures, including mycobacteria, polymerase chain reaction (PCR) for detection of Bartonella DNA, and crystal examination were negative.

Blood tests revealed normocytic and normochromic anemia (Hb 11.2 g/dL) and slight elevation of C-reactive protein (3.4 mg/dL). HLA-B27, HLA-B51, angiotensin-converting enzyme, Interferon Gamma Release Assay (IGRA) and urinary PCR for Chlamydia trachomatis and Neisseria gonorrhea were negative. However, indirect immunofluorescence assay showed the presence of high titers of specific IgG antibodies against B. henselae (IgG 2048; cut-off ≥128), despite negative IgM antibodies, supporting the serological diagnosis of CSD. Moreover, a blood sample collected from the cat was tested by PCR for Bartonella and DNA sequencing and the result came up positive. The patient was treated with azithromycin 500mg for 5 days with complete resolution of symptoms. At six months of follow-up, he remained asymptomatic.

This case highlights an initial classic presentation of CSD in an immunocompetent patient, characterized by regional lymphadenopathy and fever after exposure to an infected cat, followed by the occurrence of atypical musculoskeletal and cutaneous manifestations.

Although poorly studied in the literature, musculoskeletal manifestations may be more common than previously thought, having been identified in 10.5% of 913 patients with CSD[7] in a surveillance study. Generalized myalgia was the most frequent manifestation (5.8%), followed by arthralgia or arthritis (5.5%). Osteomyelitis, tendinitis, and neuralgia due to direct nerve compression by an enlarged lymph node were less common[7].

The diagnosis of CSD relies on epidemiological, clinical and laboratory features[4]. Table I summarizes the main diagnostic tests and their characteristics[4,8-10].

Since CSD is usually a self-limiting disease, treatment can be primarily symptomatic. In moderate-to-severe disease or atypical presentations, antibiotics may be indicated[2,4].

Overall, physicians should be familiar with the musculoskeletal manifestations of CSD and keep a high index of suspicion in the presence of a compatible epidemiological and clinical scenario. This case evokes one

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Table I. Diagnostic tests for *Bartonella henselae* infection and their main characteristics

Diagnostic test	Main characteristics
Antibodies against Bartonella henselae	• Remains a major diagnostic tool • IgM antibodies are identified in only 50% of infected individuals[8] • IgG antibodies seroconversion occurs within 1 to 8 weeks and its titers may remain positive for more than one year after disease onset, although with decreasing levels over time[8]
Molecular assays (PCR)	• Increasing use • Specificity of up to 100%[9] • Variable sensitivity, ranging from 43% to 81%[9,10] • Not readily available in all laboratory centers
Culture	• Isolation of Bartonella sp. is difficult and usually negative • Not routinely recommended unless the diagnosis remains uncertain

PCR: polymerase chain reaction; sp.: species

of the least common etiologies of arthritis and highlights the importance of a multidisciplinary approach.

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