CASE REPORT

Acute Onset Myositis Associated with Brucellosis, Quite a Rare Diagnosis

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Abstract

Brucellosis is a zoonosis that is transmissible to humans. It is a disease with multi-systemic involvement caused by the genus Brucella. Neurological complications, including meningitis, meningo-encephalitis, myelitis-radiculoneuritis, brain abscess, epidural abscess and meningo-vascular syndromes, are rarely encountered. We present a patient presenting with acute onset myositis. This kind of presentation has not previously been reported in the English language literature. We conclude that the diagnosis of neuro-brucellosis should be considered in patients presenting with muscle weakness.

Key words: Brucellosis, myositis

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Introduction

Brucellosis is a common zoonosis which still remains as a major health problem in certain parts of the world and is transmitted from animals to man through the ingestion of un-pasteurized milk and milk products. Brucellosis remains a very important health problem in Turkey, with about 18,000 new cases diagnosed per year. Although neurological involvement is rare, severe complications including meningencephalitis, meningitis, myelitis-radiculoneuritis, epidural abscess, brain abscess, cranial and peripheral nerve involvement and meningo-vascular syndromes, have been reported (1).

Case Report

A 25-year-old man was admitted to our hospital with rapidly evolving muscle pain in proximal limbs over a few weeks. Shortly after that, generalized weakness developed, and he began to have an intense aching pain in the muscles of his legs. He also described an intermittent fever of 38-39°C for 2 days. The patient denied any other complaints. He had neither recent history of muscular injuries, viral infections or heavy physical exercise nor a family history of hereditary neuromuscular diseases. He also denied drug intake, trauma, infection and exposure to any chemicals. He has lived in a rural area with a livestock-raising family. On physical examination, the abdomen was soft and non-tender; the liver and spleen were not enlarged. There was no pathological finding on cardiac, pulmonary, head and neck examination. The cranial-nerve functions were preserved. Muscle strength was 5/5 in the arms and 4/5 in the legs. The deep-tendon reflexes were normal, as was sensation. The thighs were slightly tender to touch, and the patient was unsteady on his feet. Laboratory test results revealed: hemoglobin 10.6 g/dL; MCV: 80fL; white blood cells 11,000/mm³; platelets 170,000/mm³; blood smear showed 44% segmented leukocytes, 1% band and 55% lymphocytes with rare large platelets; reticulocyte count was 0.1%; ALT 70 U/L (normal 5-52); AST 120 U/L (normal 8-35); and erythrocyte sedimentation rate was 65 mm/hour. Serological tests for antinuclear antibody, anti-DNA and rheumatoid factors, HBsAg and IgM for anti-HBc, anti-HAV, EBV VCA, and CMV were all negative. On the fifth day, Brucella melitensis was isolated from blood culture. Serum agglutination test for Brucella was positive at a titre of 1/160. Serum enzymes indicating myositis were markedly elevated (creatinine kinase [CK] 6,897 U/L, normal range 0-171 U/L; myoglobin 902 ng/mL, normal range 0-110 ng/mL), the CK isoenzyme pat-
Figure 1. Electromyography of the right iliopsoas muscle showed low amplitude, polyphasic, myopathic units, the interference pattern indicated myositis.

Figure 2. Level of creatine kinase with treatment.

Discussion

Brucellosis can involve multiple organ systems. Sometimes hematological and, on rare occasions, nervous systems may be affected. Neuro-brucellosis is a treatable disease with a favorable outcome.

Neurobrucellosis occurs in 4% of cases of brucellosis and affects the central nervous system (CNS) or peripheral nervous system (PNS) (2). Neurological manifestations of brucellosis include meningitis, encephalitis, myelitis, radiculoneuritis, visual loss, cranial neuritis, intracerebral abscess, epidural abscess, demyelination and meningovascular syndromes, but muscle involvement is rare. Acute onset myositis is a particularly unusual presenting feature (3).

The most typical presentation of CNS involvement in bruc-
cellosis is chronic meningoencephalitis with mononuclear pleocytosis, decreased glucose and increased protein concentrations in the cerebrospinal fluid (CSF) (4). Uncommon clinical presentations of neurobrucellosis such as migraine, Parkinsonism, optic neuritis, chronic intracranial hypertension, stroke, and epilepsy have been reported (5). There is only one case report of myositis associated with brucellosis in the literature and it is published in Spanish language (6).

The diagnosis was established by using electromyography and increased muscle enzymes after the serum agglutination test for \textit{Brucella} was detected as positive. The diagnosis was also confirmed by positive blood culture. A high degree of suspicion in the diagnosis of brucellar myositis is essential to reduce the delay for the treatment.

S-LPS containing the A and M antigens are the major cell wall antigen and virulence factor of the \textit{Brucellae} and dominates the antibody response (1). Although we could not show the pathology by muscle biopsy we think that the deposited humoral antibodies in the muscle fiber likely caused myositis in this case. The patient was diagnosed as myositis and treated with antibiotics that were effective against \textit{Brucella} with an excellent recovery. It is important to consider brucellosis in the differential diagnosis of a patient who presents with neuromuscular findings, particularly in areas where the disease is endemic.

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