



Neurobrucellosis Presented with a Hyperacute Onset: A Case Report

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Abstract

Neurobrucellosis is uncommon; however, it is an important complication of brucellosis, which could be seen in any stage of the disease. It presents with different kinds of neurology manifestations and diagnosis is mainly made on history, physical examination and laboratory tests. The clinical course of the disease is relatively insidious and the most common pattern of presentation is subacute or chronic. It has a long-term treatment period and its response to treatment is slow. Here, we report a case of an apparent healthy 25 yr-old Afghani woman from Fars Province (south of Iran) that presented at first with hyperacute onset of headache and abnormal behavior and diagnosed neurobrucellosis in Nov 2015. In endemic areas, neurobrucellosis should be considered for each patient referred with unexplained neurological problems.

Keywords: Neurobrucellosis, Hyperacute onset, Neurologic manifestation, Iran

Introduction

Brucellosis is the most common zoonotic disease in the world. Although, the disease has been reported around the world, it has a higher prevalence in countries where the health care problems and animal health are not standardized. In Asian countries and Turkey, a high incidence of the disease has been reported (1, 2). The course of the disease may be acute, sub-acute or chronic. Clinical manifestation of brucellosis includes weakness, fever, headache, pain involving muscles and joints (low back pain in 60% of cases), rash, splenomegaly and hepatomegaly, diarrhea, nausea, vomiting, constipation, and lack of appetite (3, 4). Neurobrucellosis (NB) is an uncommon complication, which occurs in 3%-5% of brucellosis and could present in any stage of the disease. Although, this side effect is not so common, it is a significant problem in Mediterranean regions (1,

5). There is a controversy about diagnostic criteria for NB in different papers. Diagnosis based on the detection of neurological symptoms in a patient with brucellosis and in others on the microbiological results of cerebrospinal fluid analysis. Microbiological evaluation and culture of the cerebrospinal fluid is the gold standard for diagnosis of NB, however, because growth rate of microorganism is low this method is time consuming. Thus, performing serological tests and cerebrospinal fluid (CSF) analysis in suspected patients is necessary and could be more helpful (5, 6). The clinical course of the disease is relatively insidious and the most common pattern of presentation is subacute or chronic (4).

Here, we reported a case of an apparent healthy young woman presented with hyperacute onset of headache and abnormal behavior and diag-

nosed NB. In endemic areas, NB should be considered for each patient referred with unexplained neurological problems.

Case report

The patient is a 25 yr-old Afghani woman presented with severe acute headache, agitation and abnormal behavior since one day prior to her admission in Nemazee Hospital; an academic center affiliated to Shiraz University of Medical Sciences, Shiraz, south of Iran in 2105. She was an animal husbandry and had no any significant disease in the past medical and drug histories. The patient lived in rural areas of Shiraz (south of Iran) and used to consume unsterilized milk products.

On arrival in the hospital, the patient was confused, restless and agitated without verbal communication. She had no fever and other parts of the vital signs were normal. There was nuchal rigidity; however, the rest of general and neurological examinations were normal.

Laboratory tests including Complete Blood Counts (CBC), Blood Urea Nitrogen (BUN), serum creatinine, electrolytes and liver function tests proved to be normal. Erythrocyte Sedimentation Rate (ESR) was 51 and CRP 68. Antibody for HIV virus was negative. Brain MRI with and without contrast was consistent with diffuse dural and leptomeningeal enhancement (Fig. 1). Lumbar puncture was performed 2 times in a 72-h period and checked for analysis, gram staining and culture (Table 1).

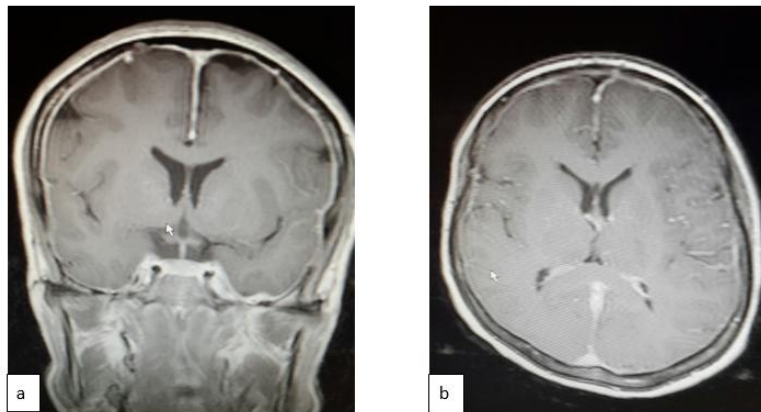


Fig. 1: Coronal (a) and axial (b) views of brain MRI with and without contrast show diffuse dural and leptomeningeal enhancement (Original)

Further CSF evaluations were requested for herpes simplex virus (HSV-PCR), IgG- and IgM-antibody for NB, ADA and PCR for mycobacterium tuberculosis (TB). HSV-PCR, ADA and TB-PCR were negative. IgG-antibody for NB was 121.3 mg/dl, (normal range lower than 0.5 mg/dl). IgM-antibody was not detected.

Serum IgG for brucella demonstrated 108 mg/dl (normal range less than 8 mg/dl) and for IgM 3.2 mg/dl (less than 8 mg/dl); 2-ME titer also was 1:20 and Wright test 1:80 which were positive for this endemic area. With suspicion to brucellosis,

treatment was initiated with rifampin, doxycycline, and co-trimoxazol.

Fortunately, she was improved and was awakened after 48 h of treatment. Few days later, she was discharged from the hospital in a good situation with oral medications.

Discussion

Brucellosis is still one of the important problems in some areas of the world. Consumption of unpasteurized milk products, as well as contact with infected animals, is a common route of transmission (7, 8).

Table 1: Pattern of first and second CSF analysis

CSF analysis	The first	The second
Opening pressure	45 cm H ₂ O	23 cm H ₂ O
Leukocyte:	45:	180:
-Lymphocytes	- 27	- 63
-polymorph-nuclear cells	- 18	- 37
Glucose	33 (mg/dl)	40 (mg/dl)
Protein	140 (mg/dl)	80 (mg/dl)
Culture	negative	negative
Gram stain	gram negative rod	gram negative rod

Our patient had a history of consuming unpasteurized milk products, too. Neurologic complications of brucellosis are not so common, but very important. Diagnosis of NB was difficult and there was not a definite diagnostic test for this disease (9). Since this condition can be very dangerous and problematic for patients, it is very important to consider it in every patient with undiagnosed neurological manifestations.

Usually, NB has a chronic course and its symptoms present gradually. Indeed, it has a long-term treatment period and its response to treatment is slow. In one study in Turkey, 13 adult patients with NB were evaluated. In this study, 77% of patients had chronic presentation (10). This finding has also been confirmed in other studies (11, 12).

Our patient presented with hyperacute onset of symptoms (which started and reached its peak among hours), such as headache, abnormal behavior, and impaired level of consciousness. This hyperacute presentation for NB is very unusual.

Turel and colleagues reported a case of acute NB. The patient was reported in Turkey and her primary symptom was seizure. Clinical symptoms and the course of the disease were also consistent with NB; however, that was contrary to the usual cases, and her symptoms appeared suddenly (13). Initial symptoms of this patient in our study were started by sudden headache and behavioral changes. Diagnosis of this patient was made

based on clinical laboratory and response to treatment.

The aim of this case study was to alert physicians on the unusual manifestations and presentations of NB, which could be missed if there is no suspicion about it.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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