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Brucellosis Presenting With Spleen Abscess: A Case Report

Sahar Ravanshad[1], ShadanTafreshian [2], Sadaf Hassani [3*]

[1] Assistant professor of internal medicine, Department of Internal Medicine, Faculty of medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
[2] Department of Internal Medicine, Faculty of medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
[3] Nursing Student, School of nursing, Midwifery and Medicine Islamic Azad University, Mashhad Branch, Mashhad, Iran.

.* Corresponding author email: sadaf__hassani99@yahoo.com
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Abstract

Brucellosis is a kind of zoonosis and an important health problem in some areas. This disease especially can affect skeletal, neurological, and genitourinary systems. Spleen abscesses are one of its serious but uncommon complications. A 48-year-old male with severe abdominal pain, fever, and sweating visited the hospital. After examinations, the serological Wright test and Coombs serology test were obtained and their results were both negative but the blood culture test revealed he is infected with brucellosis. After 2 days of antibiotic therapy, the serological Wright test and Coombs serology test were performed again and resulted in positive. So when a patient is diagnosed with splenic abscesses and infectious symptoms but serology tests are negative with brucellosis, we cannot decline this disease and further tests should perform.
Key words: Brucellosis, Spleen Abscess, patient.

Introduction

Brucellosis is one of the most prevalent zoonoses. WHO estimates that more than 5,000 people are diagnosed with brucellosis each year and 68% of them live in rural areas(1). Brucellosis can involve multiple systems in the body, usually skeletal, neurological, and genitourinary systems. Spleen abscesses are rare but serious complications(2). In acute brucellosis, small, multifocal abscesses are diagnosed that have a good prognosis and can be treated with drugs. There are other kinds of abscesses that have a feeble course. They may have a much worse prognosis and can exhibit many difficulties including focal complications(3).

Presentation Of Case

A 48-years-old male was evaluated at the Ghaem Hospital of Mashhad, Iran, with the symptoms of acute abdominal pain, fever, and sweating for one week before admission. He had constant pain in the left upper quadrant of the abdomen, radiated to the left scapula, and worsened with eating. He had no nausea, vomiting, or anorexia. He didn't report any weight loss. The fever and sweating began simultaneously with abdominal pain.

He had no past medical history. He did not smoke and wasn't addicted to any illegal drugs. He had worked in sheep husbandry for 20 years. In physical examination, the axillary temperature was 38°C, heart rate was 98 beats per minute, and blood pressure was 110/75 mm Hg. He had tenderness in the left upper quadrant and also severe back pain in the 8th left rib area. There was no significant difference in other examinations and abdominal distention, hernia, and rebound or guarding were not observed. Emergency laboratory test results are shown in Table1.

TABLE 1. Laboratory test results

Because of his abdominal pain and tenderness at physical examination, abdominal sonography was performed and the result showed two splenic hypoechoic foci with the largest diameter of 17mm. Blood samples were obtained for culture. Empirical Ceftriaxone (1gr, every 12 hours) and Metronidazole (500mg, every 8 hours)were administered intravenously. Echocardiography was done to rule out the origin of splenic

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abscesses from the cardia and the result was normal with no vegetation. On the third day at the hospital, nausea and vomiting developed, and fever and chilling also persisted, so instead of Ceftriaxone, Cefepime was administered. The patient was considered to be NPO and a surgery consult was done. An abdominal computed tomography scan (CT scan) suggested by surgical consult, showed lytic foci with a posterior sclerotic margin in the eighth rib's posterior arch. Consequently, a biopsy was ordered for further examination. In reviewing CT scan reports by other radiologists the lesions did not indicate inflammation and periosteal reactions so the hypothesis of Dysplasia Fibrous or other benign bone lesions was raised. The biopsy request was also rejected because the lesion had a small size. fever and chilling resolved after antibiotic therapy with Cefepime(1gr., given every 8 hours) and Metronidazole (500mg, given every 8 hours) for 7-10 days. CBC tests and urine cultures were negative. Serological Wright test and 2-mercaptoethanol (2-ME)and Coombs serology for incomplete brucella antibodies were performed and the results were negative with a titer of 1/60 and 1/40 respectively. He responded well to antibiotic therapy, thus blood culture test was prescribed for him and the results showed he was suffering from brucellosis disease. After two days, the serological wright test and 2-mercaptoethanol (2-ME)and coombs serology for incomplete brucella antibodies were positive(1/640 and 1/320). After the diagnosis of brucellosis, the patient was discharged from the hospital, and Doxycycline (100mg, every 12 hours) and Rifampicin (300mg, every 12 hours) were prescribed for 3 months. After a three-month follow-up, he was clear of any clinical symptoms of brucellosis and did not have any splenic abscesses so medications were stopped.

Results and Discussion

This case had small, multifocal spleen abscesses with a good prognosis. The prevalence of hepatosplenic abscesses is 0.86%, indicating that this complication is rare. Most of these patients had been suffering from both hepatic and splenic abscesses and other literature had studied cases with hepatosplenic abscesses. Despite the study by Yayli et al reporting the patient with a normal temperature (37.2°C), the patient in our study and similar cases had a fever and a high temperature of 38°C (4).

In a case study of Heller T. et al, the hepatic abscess was diagnosed by ultrasonography and CT scan but the serological wright test result was negative and the coombs serology test was positive with a titer of 1:1400, leading to diagnosing brucellosis. After starting antibiotic therapy, serological Wright and Coombs tests were reported positive. These result tests are consistent with our case and can be a result of patients visiting a hospital in the early stages of disease(5).

Serological wright test and 2-mercaptoethanol (2-ME) and coombs serology for incomplete Brucella antibodies were performed to diagnose brucellosis in our patient. Some studies, in addition to these, used the Rose Bengal test. This is because it was not possible to perform this test in our hospital. If possible, it is recommended that a Rose Bengal test perform along with other tests to make a definitive diagnosis of brucellosis (3, 6, 7).

In most studies as well as our study, Doxycycline with Rifampicin is prescribed as an antibiotic to treat brucellosis but in addition to these drugs, some studies have used Streptomycin to treat hepatosplenic abscesses. In these studies, the patient's condition was severe and the treatment continued for more than 6 months and up to 2 years (3, 4, 6, 7).

In 48% of patients with hepatosplenic abscesses due to Brucella, antibiotic therapy and surgery were used for treatment and the rest have only been treated with antibiotics such as this study. performing surgery may be due to the severe conditions of abscesses or poor response to antibiotic therapy (5).

These findings recommend that if patients visited a hospital with infectious symptoms and brucellosis was a possible diagnosis for them, it is necessary to perform diagnosing tests of brucellosis several times in different stages of illness since it is possible that results became negative despite the disease is existed.

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TABLE 1. Laboratory test results

Variable	Reference Range	On Admission
Hemoglobin (g/dl)	13.5–17.5	13.2
Hematocrit (%)	41.0–53.0	39.6
White-cell count (per µl)	4500–10,000	5500
Neutrophils(%)	40–70	75
Lymphocytes(%)	20-40	20
Atypical lymphocytes(%)	0	0
Platelet count (per µl)	150,000–450,000	218000
Sodium (mmol/liter)	135–145	138
Potassium (mmol/liter)	3.3–4.5	4
Urea nitrogen (mg/dl)	10-30	41
Creatinine (mg/dl)	0.4-1.2	0.8
Calcium (mg/dl)	8.5–10.5	8.9
Alanine aminotransferase (U/liter)	0–40	73
Aspartate aminotransferase (U/liter)	0–37	38
Alkaline phosphatase (U/liter)	40–129	278
Total bilirubin (mg/dl)	0.2–1.2	0.5
Erythrocyte sedimentation rate (mm/hr)	0-13	10
C-reactive protein		NEGATIVE
LDH (U/L)	100-190	369
PTT	25-35	31
PT	11-13	12.9
INR	0-1.5	1.23

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