A Rare Reason in Acute Hepatitis: Brucella

Akut Hepatitte Nadir Bir Neden: Brucella

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ABSTRACT

Brucellosis is a zoonosis caused by the genus Brucella. It is the most common zoonosis especially in underdeveloped and developing countries. Brucellosis is a systemic disease may involve multisystem or any organs. Clinical manifestations and symptoms have variable characteristics. For this reason, it is known as a 'great imitator' in the medical literature. Reticuloendothelial system involvement is one of the most important features of brucella infection. The liver is the largest organ of the reticuloendothelial system. Therefore, the most frequently affected organ is the liver. The patients may have mild elevation of transaminases. Acute hepatitis is a rare manifestation of brucellosis. Two sisters diagnosed with acute hepatitis due to brucellosis are presented in this case report. The aim of the case report is to emphasize the importance that brucellosis is kept in mind for the differential diagnosis of acute hepatitis in regions where the brucellosis is endemic.

Key Words: Brucellosis, Acute hepatitis

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ÖZET

Brucelloz Brucella cinsine ait türlerin oluşturduğu özellikle az gelişmiş ve gelişmekte olan ülkelerde görülen dünyada en yaygın zoonozdur. Brucella sistemik tutulumu olan ve tuttuğu bölge ile ilgili değişken karekterde semptom ve bulgularla karşımıza çıkan bir hastalık olup tıbbi literatürde "büyük taklitçi" olarak anılmaktadır. Sistemik veya lokalize organ tutulumu olabilir. Retikuloendotelyal sistem tutulumu ön plandadır. Karaciğer RES'in en büyük organı olduğundan tutulumu sık olarak görülmekte olup hafif transaminaz yükseklikleri görülebilir. Birlikte akut hepatit nadirdir. Bu yazıda brusella infeksiyonuna bağlı nadir görülen akut hepatit tanısı alan iki kız kardeş olgu sunuldu. Olgu sunumunun amacı ülkemizin de içinde bulunduğu brucellanın endemik olarak sık görüldüğü bölgelerde akut hepatit ayırıcı tanısında brucellozun akılda tutulmasının önemini vurgulamaktır.

Anahtar Sözcükler: Brucella, akut hepatit

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INTRODUCTION

Brucella is an intracellular gram negative diplococci. Brucellosis is a systemic infectious disease which caused by Brucella species (1). Brucellosis can be transmitted to humans by direct contact with infected animals, consumption of contaminated milk and dairy products and/or inhalation of infected droplets. It most commonly affects the reticuloendothelial system, but may also affects other systems. It may cause variable clinical manifestations (2). Brucellosis is still a major cause of morbidity in humans and animals, so it is a public health problem that requires serious costs. In this case report, two sisters with the diagnosis of acute hepatitis due to brucellosis are presented.

CASE REPORT

Case 1: A five-year-old girl was referred to our hospital because of elevated hepatic function tests and hepatosplenomegaly. The patient had abdominal pain and weakness for 3 days. It was learned that she consumed ice cream and raw milk cheese from dairy. The patient did not have a chronic disease or hospitalization. Her parents were not relatives. Her father's occupation was farmer. Her mother was a housewife and had preeclampsia in her first pregnancy. On physical examination, she had hepatosplenomegaly. Her spleen and liver had extended about 3 cm below and about 2 cm respectively below the costal margins. Other system examinations were normal.

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The laboratory examination revealed leukocytes: 51000 / µL, (lymphocyte: 59.7%), hemoglobin: 13.5 g / dl, platelet: 160 000/µL, ALT: 1108 U/L, AST: 663 U/L, GGT: 60 U/L, total bilurubin: 0.4 mg/dl, direct bilurubin 0.1 mg/dl, PT: 13 s, INR: 1.1, sedimentation: 19 mm / h, CRP: 0.17 mg / dl. Hepatic and viral markers were negative. α-1 antitrypsin, alpha feto protein, ceruloplasmin levels were normal. Brucella tube agglutination titer was 1/320 (positive) on the second day of hospitalization. Brucella species were produced in blood culture. The patient was treated with Trimethoprim-sulfamethoxazole (10 mg/kg/day)+rifampicin (20 mg/kg/day) (8 weeks), gentamicin (5-7 mg/kg/day) (5 days). Transaminases increased two weeks later of treatment. Brucella standard tube agglutination titer was 1/160, 2-mercaptoethanol titer was 1/320. Brucella species were produced in blood culture. It was recognised as relapse. For this reason, trimethoprim-sulfamethoxazole + rifampicin (8 weeks), gentamicin (2 weeks) treatment was started and completed to 16 weeks. The transaminases returned to normal (ALT: 38 U / L, AST: 35 U / L) and brucella standard tube agglutination test titer decreased to 1/80.

Case 2: A seven-year-old girl presented with whole abdomen pain. On physical examination, she had hepatosplenomegaly. Her spleen and liver had extended about 1 cm below and about 3 cm respectively below the costal margins. She had elevated liver function tests. It was learned that she consumed ice cream and cheese taken from dairy. The patient did not have a chronic disease or hospitalization. In her family history, her parents were not relatives. Her father's occupation was animal breeding. Her mother was a housewife and had preeclampsia in her first pregnancy.

In laboratory studies, it was found that leukocyte: 6400/µL (lymphocyte:42%), hemoglobin:11.5 g/dl platelet: 226100/µL, ALT: 643 U/L, AST: 571 U/L, GGT: 16 U/L, Total Bilurubin: 0.6 mg/dl, direct bilurubin 0.2 mg / dl, PT: 14 sec, INR: 1, sedimentation: 14 mm / h, CRP:0.3 mg/dl. Hepatic and viral markers were negative. α-1 antitrypsin, alpha feto protein, ceruloplasmin levels were normal. Brucella tube agglutination titer was 1/640 (positive). Brucella species were produced in blood culture. The patient's history included the use of non-boiled milk and dairy products and she had an elder sister with brusellosis. The patient was treated with Trimethoprim-sulfamethoxazole (10 mg/kg/day)+ rifampicin (20 mg/kg/day), gentamicin (5-7 mg/kg/day) for 8 weeks. It was found that Brusella titer decreased to 1/40 and liver function test values returned to normal range in the outpatient follow-up.

DISCUSSION

Brucellosis is a widespread bacterial zoonosis transmitted to humans through the consumption of food products such as unpasteurized milk and cheese and possibly undercooked meats. Brucellosis remains a major human health problem in many developing regions. The infection has a broad clinical spectrum that ranges from asymptomatic disease to severe and/or fatal sequelae, Usually infection among children is more benign than in adults (3).

The Brucellosis clinic has a variable perspective ranging from asymptomatic to multisystemic findings. It is found that nonspecific gastrointestinal findings of brucellosis including nausea, vomiting, diarrhea, constipation, jaundice and abdominal pain are seen in 70% of patients. Liver involvement is frequently seen as the liver is the largest organ of the reticuloendothelial system. Hepatomegaly is one of the most important findings of brucellosis and is present in 20-40% of patients. Serum transaminases increase in 25 % of cases. Liver enzyme levels may be normal, mildly high or 2-3 times higher than normal. Although liver involvement is frequently found in brucellosis, but acute hepatitis is rarely detected. In some researches, acute hepatitis development has been associated with excessive intake of bacteria. Brucellosis-induced liver failure has not been reported (4). In some researches, it is reported that hepatic pathology may vary due to the species of brucellosis in hepatitis. Non-cazeifiye granulomas, suppurative abscess or mononuclear cell infiltration can be seen. Some species, such as B. Suis, have rarely been reported to cause liver abscess. Brucellosis is diagnosed according to results of serology positivity, blood and bone marrow culture. Serum agglutination above 1: 160 is considered positive and it takes a long time to reach low levels in the blood (5).

Arıca et al. reported that bicytopenia and acute hepatitis were found in 19-year-old male farmer who had brucellosis (6). Our two cases had only acute hepatitis and no bicytopenia. In another research, it was reported that a 14-year-old male patient who presented with icterus and hepatomegaly, high liver function tests was diagnosed as acute hepatitis. Researchers also were reported that this case was a brucellosis, Brucella spp was produced in blood culture and healed after 8 weeks of treatment (6).

The high level of AST and ALT has been reported in 40% and in 30% repectively of children with brucellosis (7). These two patients had elevated liver enzymes and hepatosplenomegaly and had acute hepatitis. It was suspected if the cases were brucellosis due to the fact that the cases were living in an area where Brucellosis was common and consumption of unpasteurized ice cream. These two patients had elevated liver function tests and hepatosplenomegaly. Rose Bengal (+), standard tube agglutination test titer was found 1/320 (positive) and brucellosis was diagnosed. Trimethoprim-sulfamethoxazole (10 mg/kg/day), rifampicin (20 mg/kg/day) and gentamicin (5-7 mg/kg/day) were given to these cases for 8 weeks. In the Case 1, liver function tests increased and B. species were positive in blood culture, therefore it was considered that treatment dose was insufficient. Treatment was restarted and then it terminated after six week. The liver function tests were normalized and blood cultures were negative in the outpatient follow up.

Brucellosis should be kept in mind in cases with acut hepatitis that live in endemic areas for brucellosis and especially have family with high-risk occupation. Case 1 had nonspecific symptoms and physical examination revealed hepatosplenomegaly and high level liver function tests. She was diagnosed after examinations and tests. Case 2 was determined by family screening.

It should be kept in mind that Brucella-related hepatitis may be related to various Brucella species and that recurrence may occur despite effective treatment and hepatototoxic effects may be present. Brucellosis can mimic acute viral hepatitis, therefore it should be kept in mind in those cases presenting with liver function test disorder and hepatosplenomegaly and living in endemic areas. In this case report, it is aimed to emphasize the necessity of accepting brucellosis as a public health problem and therefore the importance of taking protective measures.

Conflict of interest:
No conflict of interest was declared by the authors

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