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Case Report

Brucella endocarditis caused by brucella melitensis

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Abstract. We present a rare case of brucella endocarditis, forming a vegetation on the mitral valve. The definitive diagnosis has been made with clinical suspicion, positive serology, the demonstration of the vegetation with the echocardiography and with the production from the multiple blood culture of brucella melitensis and from the excised valve. Our patient has been successfully treated with specific antibiotherapy and the surgery of replacement of mitral valve. Our aim in presenting the case is to remind the infective endocarditis which is due to this factor in the regions like our country which is endemic for brucellosis

Key words: Brucellosis, endocarditis

1. Introduction

Brucellosis is an infectious zoonotic disease that occurs from contact with animals carrying brucella bacteria. It is a gram-negative bacteria and is frequently seen in rural regions where patients are involved with livestock and stockbreeding. The bacteria can spread to the humans if he/she contacts with infected meat or the placenta of infected animals, if he/she eats or drinks unpasteurized milk or cheese. The bacteria may spread to the multiple systems mainly such as reticuloendothelial system, the joints, heart and kidneys. The percentage of the brucella-induced endocarditis is under 2%, but it is considered as a complication with a very high rate of mortality (1-4). The incidence of infective endocarditis depending on this determinant tends to increase in endemic areas for brucellosis. Especially, in the Eastern and Southeast of Anatolia, we must keep in mind that this determinant can be responsible from endemic brucellosis in the mentioned areas in our country.

2. Case report

A, 27 year old male patient referred to our emergency clinic due to various symptoms such as fever, fatigue and shortness of breath that continued for 10 days. In his background he underwent mitral valve replacement due to severe mitral stenosis two years ago. He was living in a village located at a rural region and dealing with livestock for living. He also stated that he consumed unpasteurized cheese in large amounts. Physical examination displayed as following: body temperature: 38.2ºC, blood pressure: 110/60 mmHg, heart peak pulse: 86 pulse/minute and rhythmic. Cardiac examination wasn't the sound of prostetic heart valve, displayed a systolic ejection murmur which extended to the carotids and clearly heard at the left fourth intercostal interval of the parasternal region. Ejection Fraction was 58% during a Transthoracic Echocardiography procedure where a mobile vegetation with a diameter of 17 x 10 mm was determined on the mitral valve (Figure 1).

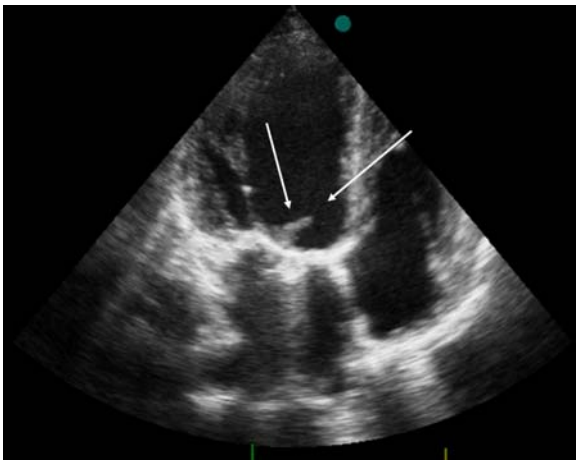

Fig. 1. Appearance of thrombus in the mitral valve by transthoracic echocardiography.

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The patient was hospitalized at our clinic due to a pre-diagnosis of infective endocarditis. After blood cultures were collected, Penicillin G (6 x 3 million units/day) and gentamicin (60 mg/day) therapies were initiated. Laboratory findings included the following measurements: sedimentation 68 mm/hour, CRP 137 mg/L and leukocyte 16.000/mm^3. Rose-Bengal testing was positive, and Wright agglutination testing and C. Wright testing indicated titers as 1/1280 and 1/2560 respectively. Brucella melitensis produced in the collected 3 blood cultures. A consultation was carried out for the patient together with experts in Infectious Diseases and Cardiovascular Surgery. Treatment with cefriaxone 2 g/day, rifampicin 600 mg/day and doxycycline 200 mg/day was initiated. Patient was taken into the re-operation room at Day 7 by the Cardiovascular Surgery Department in order to make a mitral valve replacement. No complications developed during the postoperative terms and the patient was discharged from the hospital with recovery after 6 weeks of medical therapy.

3. Discussion

Brucellosis is a systemic infectious disease, caused by brucella type bacteria, that affects a variety of organs and systems and is widely seen especially in individuals residing at Mediterranean countries (5). The main contamination path in endemic countries is the consumption of unpasteurized dairy products while contamination is possible by contact and inhalation in developed nations (6). Acute and chronic brucellosis may lead to miscellaneous complications; however, endocarditis is one of the most rare complications and can be seen at a ratio of 2% (1,4). Aygen et al (4) reported that endocarditis was determined in 0.4% of the 480 brucellosis cases in our country.

It may be very difficult to recognize brucellosis while investigating the etiological factors of infective endocarditis. Especially, this agent must be kept in mind when brucellosis is searched in endemic regions. Blood cultures have a high specificity, but their sensitivity can be lower than expected (15-20%) (7). Our region is an endemic area regarding brucellosis while we are considering endocarditis, because our patient was dealing with livestock and stockbreeding business and had recently consumed large amounts of unpasteurized cheese. Final diagnosis was based on the determination of positive tube agglutination testing and the reproduction of the effective agent in blood cultures.

The most common cause of deaths in patients with brucellosis is endocarditis (8). It has reported that brucella endocarditis has higher rates of relapse and death in a study with infective endocarditis (9). The aortal valve is frequently involved and valve replacement is an unalterable rule of therapy (10). In our patient, the mitral valve is involved and the patient received medical and surgical therapies. After then, the patient was discharged from our hospital with recovery.

Consequently, even though endocarditis due to brucella infection is a very rare complication, the frequency of brucella-induced endocarditis tends to increase in regions where brucella is endemic. Primarily, this agent must be always considered especially at the Eastern and Southeast Regions of Turkey where brucellosis is an endemic disease.

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