

A Case of Myopericarditis: Very Rare Complication of Brucellosis

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Introduction: Brucellosis has various clinical presentations. Cardiac complications are uncommon and the endocarditis is the most common form of cardiac involvement. Pericarditis or myocarditis without concurrent endocarditis, especially their combination (i.e. myopericarditis without endocardial involvement) is rare.

Case Presentation: This is the case of a 22-year-old male with Brucella myopericarditis without endocarditis that excellently responded to medical treatment.

Discussion: Although Brucella myopericarditis is uncommon in endemic areas, it should be considered in the cases with myocarditis and/or pericarditis, especially if no certain explanation exists.

Keywords: Brucellosis; Myocarditis; Pericarditis; Myopericarditis

1. Introduction

Brucellosis is the most common zoonosis (1) and may involve any organ in the body. Unlike endocarditis that is the most common cardiac complication, acute pericarditis and myocarditis (myopericarditis) without associated endocardial involvement is a rare manifestation of Brucellosis (2) and very few cases are reported with myopericarditis from countries with endemic areas of Brucella infection. The current report describes a case of Brucella myopericarditis that excellently responded to medical treatment.

2. Case Presentation

A 22-year-old male soldier from the Southeast part of Iran who had daily contact with livestock, with a month history of prolonged fever and weakness referred to the hospital. The patient complained of retrosternal pleuritic pain, dyspnea, occasional palpitation, the pain of limbs and joints, occasional fever and excessive perspiration. He denied any history of sexual intercourse. He was rancher before serving the military service. Vital signs were as follows: blood pressure: 110/70 mm Hg, oral temperature: 38 °C, respiratory rate: 20/min and pulse rate: 100 beat/min. Important points in physical examination of the patient were as follows: the patient was pale, Jugular venous pressure was normal, respiratory sounds were normal, heart sounds decreased without obvious murmur, lymphadenopathy and organomegaly were not found, painfull passive movement of joints were noted and brief edema of foofs without warmth and redness was detected.

Table 1 shows initial medical laboratory tests that indi-

cate anemia and increased erythrocyte sedimentation rate (ESR) and lactate dehydrogenase (LDH). Antinuclear antibody (ANA), Wright and 2-mercaptoethanol (2ME) tests were negative. Urinalysis (UA) was normal and other biochemical tests including serum glucose, blood urea nitrogen (BUN) and creatinine were normal as did coagulation tests such as prothrombin time (PT), partial thromboplastin time (PTT) and international normalized ratio (INR). Electrocardiogram displayed non-specific ST-T changes and chest X-ray was normal. Ultrasonography and computed tomography (CT) scan of abdomen were also normal. Blood culture after 48 hours was negative.

Table 1. Laboratory Tests Results^a

Variable, Unit	Patient Result	Reference Value
Hemoglobin, g/dL	9.5	14 –18
Leukocytes, per mm ³	5300	4000–11000
MCV, fL	88.3	80 –99
Platelets, per mm ³	263000	150000–400000
ALT, IU/L	19	10 –40
AST, IU/L	10	5 –40
ESR, mm/h	76	less than 15
Reticulocyte Count, %	1.4	0.5 –2.5
Serum Iron, µg/dL	112	65 –176
LDH, U/L	1133	140 –280
ALP, IU/L	106	44 –147

^a Abbreviations: ALP, Alkaline Phosphatase; ALT, alanine aminotransferase; AST, aspartate aminotransferase; ESR, erythrocyte sedimentation rate; fL, femtoliter; LDH: lactate dehydrogenase; MCV, mean corpuscular volume.

Echocardiogram was requested because of prolonged fever and pleuritic chest pain and revealed moderate pericardial effusion without vegetation, but mild to moderate global hypokinesis was detected and the estimated Left Ventricular Ejection Fraction (LVEF) was 45%. Mild mitral and tricuspid regurgitation were also detected. On the seventh day of admission, blood culture reported to be positive for *Brucella* infection and Combs Wright test titer was positive at 1/1280. Diagnosis of *Brucella* myopericarditis was made and the treatment was started with co-trimoxazole, rifampin doxycycline metoprolol and captopril for three months and naproxen for two weeks. Two weeks after treatment initiation, echocardiography showed decreased pericardial effusion with improved LVEF at 50%. The symptoms significantly subsided. Two months later, further echocardiography showed minimal (normal volume) pericardial effusion with normal LVEF and general status of the patient improved. Pain of limbs and retrosternal pain completely vanished.

3. Discussion

Clinical presentations of Brucellosis are various. The most common symptoms of the disease are: fever (95%), anorexia (90%), fatigue (90%), smelly perspiration (80%), arthralgia (25-50%), and weight loss. Less common symptoms and signs of the disease are: swelling of the joints (15%), splenomegaly (20%), and lymphadenopathy of inguinal area (10-15%) (3). Bronchitis, pleurisy, emphysema, pulmonary abscess, and cardiac involvement are very uncommon. The most common cardiac problem is endocarditis that usually involves normal aortic valve and with lesser frequency, the mitral valve.

Despite recognition of *Brucella* pericarditis for more than 100 years, pericardial involvement in the absence of concomitant endocarditis is very rare (3). Among 322 cases of Brucellosis in Barcelona, Spain, none of them had pericarditis (3). Another study from Spain revealed that eight out of 530 cases of Brucellosis (1.5% of patients) had cardiac involvement and only one of them had pericarditis without concurrent endocarditis (0.2%) (3). Cases of pericarditis or myocarditis without simultaneous endocarditis, which rarely happen, are reported sporadically as case report (4-6).

We searched in the MEDLINE database using the words "myopericarditis" and "brucellosis" and only three articles detected (2, 7, 8). The search using the words "pericarditis", "myocarditis" and "brucellosis" revealed only 16 papers in the English literature of adult patients with brucellosis.

There is a delay of 8-30 days between the onset of symptoms to admission of the patients (3). At the time of admission, patients usually have moderate anemia and hepatosplenomegaly. Majority of Wright test titers are 1/640 or less. Blood or pericardial fluid culture is usually positive for *Brucella* infection (3). Pleural and pericardial signs and symptoms of patients are rarely reported as pleuritis, pleuritic chest pain, friction rub and cardiac tamponade.

Two of four patients with reported tamponade in literature died (3). The mechanism of cardiac damage in Brucellosis although is not clear but may be due to the direct invasion of organism or immunological reaction (2).

In the current case report, no involvement of cardiac valves were observed in the three times of echocardiography and diagnosis of *Brucella* myopericarditis was established with positive blood culture, positive Combs Wright test and pericardial effusion in echocardiography associated with typical symptom and sign of pericarditis as well as myocardial involvement.

At present, no specific evidence-based therapeutic regimen has been reported in literature for *Brucella* pericarditis or myocarditis in the absence of simultaneous endocarditis. In some cases, patients were treated with two drugs (9-11) and in the others with three drugs (12). We treated with triple drug regimen because consequence of cardiac involvement especially myocarditis can be very fatal.

In this case, conventional treatment for pericarditis and myocarditis in association with antibiotic treatment resulted in complete resolution of pericardial effusion and left ventricular systolic dysfunction.

Although *Brucella* myopericarditis is uncommon in endemic areas, it should be considered in cases with myocarditis and/or pericarditis especially if no certain explanation exists. The current case revealed that conventional treatment of pericarditis and myocarditis with three-drug-regimen antibiotic therapy for Brucellosis can relieve this rare complication. Rare combination of pericarditis with myocarditis without concurrent endocarditis (i.e. myopericarditis), and excellent response to treatment with three antimicrobial agents in the patient were causes for reporting this case.

Authors' Contributions

Mehrdad Farrokhnia collected the data and diagnosed the disease and Ali Akbar Khorasani diagnosed the disease and wrote the manuscript. Both authors read the final version of the manuscript.

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