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Dilated Cardiomyopathy in Behcet's Disease in a Young Male Patient

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Abstract

Behcet's disease is a multi-systemic, inflammatory, and chronic disorder characterized by recurrent oral aphthous ulcers, genital ulcers, uveitis, and other systemic organ involvement. Cardiac involvement in Behcet's disease is rare; however, it plays an important role in prognosis and increases mortality. The current researchers hereby have reported a case of Behcet's disease with dilated cardiomyopathy. A 28-year-old male patient was presented with constitutional symptoms, oral and genital aphthous ulcers, pseudofolliculitis, tachycardia, arthritis, splenomegaly, erythrocyte sedimentation rate and C-reactive protein elevation, and left ventricular systolic dysfunction with left ventricular ejection fraction of 45%. Azathioprine and prednisolone were begun for the patient.

INTRODUCTION

Behcet's disease (BD) is a multi-systemic, inflammatory, and chronic disorder characterized by a triple-symptom complex of recurrent oral aphthous ulcers, genital ulcers, uveitis [1, 2], and other diverse spectrum of clinical manifestations, including skin, joint, Central Nervous System (CNS), gastrointestinal, pulmonary, and cardiovascular system involvement, which are reported in addition to the major findings of this disorder. Cardiac involvement in BD is known as cardio-Behcet's disease that occurs in 7% to 31% of patients with BD, with a mortality rate of 20% [3]. Cardiac manifestations in BD include endocarditis, myocarditis, pericarditis, intracardiac thrombus, endomyocardial fibrosis, coronary arterial disease, cardiomyopathy, myocardial infarction, valvular disease, diastolic dysfunction, ventricular arrhythmias, and sudden cardiac death [4]. Cardiovascular involvement is rare, yet life-threatening, and early diagnosis has important therapeutic implications [5, 6]. Sporadic cases of cardiovascular involvement like Cardiomyopathy (CM) have been reported. Degenerative changes and lysis of myocytes with cytoplasmic vacuolization, interstitial focal fibrinoid deposition, and fibroblast proliferation could be seen in CM due to BD [7, 8]. Although sub-endocardial longitudinal fibers will be the first affected region in patients with BD, BD could effect any of the 3 layers of the heart or all of them at the same time [9]. Furthermore, CM in BD could be ischemic, non-ischemic, or inflammatory. It could manifest as systolic or diastolic heart failure, or even as asymptomatic systolic or diastolic dysfunction [10]. The clinical presentation of CM in BD could include fever, dyspnea, chest pain, hemoptysis, and edema [11]. The aim of this study was to report dilated cardiomyopathy in Behcet's disease in a young male patient.

CASE PRESENTATION

General Description

A 28-year-old male patient was admitted with fever, night sweats, anorexia, weight loss, pain, and swelling in the left knee. On examination, his body temperature, heart rate, and blood pressure were 38.4°C, 154 bit/Min, and 96/63 mmHg, respectively. The chest, heart, and abdomen examinations showed no abnormal findings. He had no lymphadenopathy. His left knee was tender and swollen. His clinical examination did not reveal any evidence of extraintestinal manifestation of inflammatory bowel disease. He had smoked 2 packs of cigarettes/day for 4 years. According to these presentations, the patient was worked up for Fever of Unknown Origin (FUO).On the third day of hospitalization, oral aphthous ulcers and pseudofolliculitis in the anterior of the thigh were found. The next day, genital ulcers

appeared on the scrotum (Fig 1a, b, c). The patient reported recurrent oral and genital ulcers for the previous months. According to new findings on examination, rheumatologic consult was asked for the patient. Imaging and laboratory investigations results were as follows.

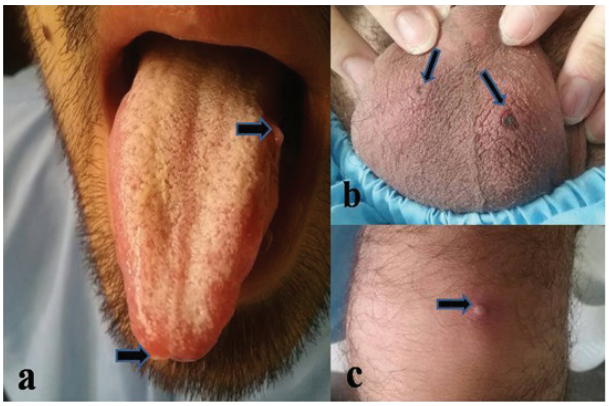

Figure 1: Oral Aphthous Ulcers (a), Genital Ulcers on the Scrotum (b) and Pseudofolliculitis in the Anterior of Thigh (c) were found on Examination.

Laboratory Investigations

The initial Complete Blood Count (CBC) revealed a hemoglobin count of 11.8 g/dL, a platelet count of 308×10^3/μL, and a white cell count of 11.4×10^3/μL. The Erythrocyte Sedimentation Rate (ESR) and C - reactive protein (CRP) were elevated to 63 mm/hr and 126 mg/l, respectively. Coagulation screening tests, coagulation factors, and anticoagulation levels were within the normal range. Complement components, levels of IgA, IgG, and IgM were also normal. The results of his autoimmune screening tests, including perinuclear-Anti-Neutrophil Cytoplasmic Antibodies (p-ANCA), cytoplasmic-Anti-Neutrophil Cytoplasmic Antibodies (c-ANCA), Human Leukocyte Antigen-B27 (HLA-B27), Fluorescent Antinuclear Antibody (FANA), Antinuclear Antibody (ANA), anti ds_DNA and anti-Citrullinated Peptide Antibodies (Anti-CCP) were negative. His HLA-B51 was negative. The anticardiolipin antibodies, antiphospholipid antibodies, and lupus anticoagulant were negative. Brucellosis tests and Tuberculin Skin Test (TST) were negative. His serum troponin level was within the normal range. It is important to note that his pathergy test result was also negative. Analysis of left knee arthrocentesis showed inflammation. Blood culture (×2) showed no growth.

Imaging

Ultrasound of the left knee showed effusion. Abdominal ultrasound detected splenomegaly with span of 157 mm. Whole body bone scan by Tc99m_MDP found bony lesion in the left knee. Serial electrocardiography along hospitalization showed normal sinus rhythm with sinus tachycardia. Echocardiographic diameters were measured as transthoracic, which reported Left Ventricular (LV) enlargement with diameter of 62 mm, mild Mitral valve Regurgitation (MR), and mild LV systolic dysfunction with Left Ventricular Ejection Fraction (LVEF) of 45%. Transesophageal Echocardiography (TEE) reported no vegetation, no Aortic Insufficiency (AI), trivial mitral valve regurgitation and Tricuspid valve Regurgitation (TR) and mild LV systolic dysfunction with LVEF of 45%. Chest X-Ray (CXR), spiral Computed Tomography (CT) of the lung, carotid artery ultrasound was evaluated by B-mode, brain CT, brain Magnetic Resonance Imaging (MRI) were reported as normal. Doppler ultrasound exam of upper and lower extremity arterial and venous regions were normal. Pathological findings were not found on gastrointestinal endoscopy.

Diagnosis and Treatment

Behcet's disease was confirmed on the basis of recurrent oral and genital ulcers, pseudofolliculitis, monoarthritis, cardiovascular involvement, and no evidence of other inflammatory disease. Azathioprine 150 mg/d and prednisolone 60 mg/d were started for the patient and according to cardiac findings, captopril, Metoral, and carvedilol were begun. He is currently being followed up.

DISCUSSION

The authors hereby have reported a case of BD with dilated cardiomyopathy. He was presented with fever, night sweats, anorexia and weight loss, pain, and swelling in the left knee. Oral and genital aphthous ulcers, pseudofolliculitis, tachycardia, arthritis, splenomegaly, Erythrocyte Sedimentation Rate (ESR) and C - reactive protein (CRP) elevation, Left Ventricle (LV) enlargement with diameter of 62 mm and LV systolic dysfunction with LVEF of 45% were found in the evaluation. The patient fulfilled the international criteria for BD [7, 12] with oral and genital aphthous ulcers, pseudofolliculitis, along with arthritis and cardiovascular involvement, while an alternative diagnosis was absent.

Epidemiology

Behcet's disease is thought to be more common along the ancient Silk Road, extending from Asia to the Mediterranean [13]. The highest prevalence of BD was seen in Turkey, with 420 cases per 100 000 individuals. The prevalence of BD in Japan, Korea, China, Iran, and Saudi Arabia is also high [14].

Gender

As the current case was male, BD was more common in males in the Middle East, with a male-to-female ratio of 2:1. Despite the variability of the reported gender ratios, the disease tends to run a more severe course in males [15].

Age

As in the case of this study, BD is usually seen in patients in the late third and early fourth decades of life. However, it is rarely seen in childhood years, before school age, and in pediatric patients [16].

Pathophysiology

Affected lesions of BD demonstrate microscopic evidence of inflammatory tissue infiltration with both T cells and neutrophils [7, 17]. Results of recent Genome-Wide Asso-

ciation Studies (GWASs) confirm the association of BD with HLA-B51, IL-10, and IL23/17 [18].

Etiology

The etiology of BD is unknown. However, it may be triggered by a cross-reactive autoimmune response, cytokines, smoking, viral, and bacterial factors; also, a familial aggregation is well-known meaning that carriers of HLA-B51/HLA-B5 have an increased risk of developing BD [19, 20]. The case in this study reported that his father had died at middle age due to BD and cardiomyopathy.

History and Physical findings

History and physical findings including oral and genital ulcerations, uveitis, erythema nodosum, pseudofolliculitis rash and mono-arthritis or poly-arthritis occur in at least 50% of patients; also, CNS involvement, such as meningitis, encephalitis, and focal neurological deficits occur in as many as 25% of patients. Cardiac involvement includes any of the 3 layers of the heart involvement and coronary artery disease, and cardiac valves may develop vegetations with subsequent emboli. Vascular involvement includes migratory superficial thrombophlebitis, deep venous thrombosis in veins, arteritis and aneurysm formation, which may involve the aorta or its branches. The pathergy test is helpful but is not sensitive or specific for the diagnosis of BD [21, 22].

Treatment

Treatment of BD must be appropriate to the individual patient, severity of disease, and major organ involvement. Corticosteroids are useful in controlling acute manifestations. Colchicine has also been used to prevent mucocutaneous relapse [23]. For severe mucocutaneous lesions, systemic corticosteroids, azathioprine, pentoxifylline, dapsone, interferon-alfa, colchicine, and thalidomide have demonstrat TNF-α blockers, cyclosporine A, interferon-alfa, cyclophosphamide, rituximab, alemtuzumab, and golimumab [24-26].

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CONFLICTS OF INTEREST

None

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