BRUCELLA ABORTUS ENDOCARDITIS - A RARE PRESENTATION IN A YOUNG FEMALE FROM KARACHI, PAKISTAN

Shehzeen Fatima Memon*,1, Rafia Hasan Qadri*, Mohammad Daniyal Zafar Malik*, Shahzeb Ali Memon* and Namra Talib Farooqui*

*Dow University of Health Sciences Baba-E-Urdu Road.

ABSTRACT Infective endocarditis is defined as an infection of the endocardium caused by bacteria entering the bloodstream via skin, intestines, respiratory system, urinary tract, or the mouth and reaching up to the heart. Infective endocarditis is usually caused in previously damaged valves, most commonly involving the mitral valve. Streptococci, staphylococci, and enterococci are the most commonly occurring organisms while Gram-negative and fungal organisms are rare entities. We present the case of a young female patient with no known comorbidities or structural heart diseases who was diagnosed to have Brucella Infective endocarditis which is a rare etiology for this disease in our region.

KEYWORDS endocarditis, brucella, mitral valve, vegetation, karachi

Introduction

Infective endocarditis (IE) is defined as an infection of the endocardium, which is the innermost surface of the heart. It may include one or more heart valves, the mural endocardium, or the septum. This disease can present as a severe valvular insufficiency, which may lead to intractable congestive heart failure or as a myocardial abscess. It is usually caused by bacteria entering the bloodstream via skin, intestines, respiratory system, urinary tract or the mouth and reaching up to the heart.

Structural heart diseases like rheumatic heart disease tend to predispose a person to Infective endocarditis, where the mitral valve is usually found to be the most commonly involved site[1]. Streptococci and staphylococci have collectively accounted for approximately 80% of IE cases[2]. Enterococci are the third leading cause of IE and are increasingly linked to health care contact[3]. Infections involving Gram-negative and fungal pathogens in IE are rare and are usually hospital-acquired. In approximately 10% of cases of Infective endocarditis, blood cultures are negative, sometimes due to prior antibiotic reception or to particular microorganisms that are difficult to isolate with conventional microbiological techniques and need highly specialized serological assays for diagnostic purposes[4]. Such organisms include Bartonella species, Brucella species, Tropheryma whippelii and Coxiella Burnetti, to name a few[5]. Here we present the case of a young female patient who was diagnosed to have Brucella Infective endocarditis, which is a rare etiology for this disease in our region.

Case report

A 25-year-old female with no known co-morbidities, a housewife and a resident of Larkana, Sindh, Pakistan, visited the emergency department on 6th September 2019 with a fever for two months. According to the patient’s attendant, she was in her usual state of health two and half months back when she delivered a baby through uncomplicated normal vaginal delivery. Then, 15 days later, she developed a complaint of fever which was sudden in onset, high grade with rigours and chills (documented 102 – 103 Fahrenheit), not related to any specific time, relieved by taking antipyretics associated with decreased appetite, weight loss (undocumented), generalized body ache, headache & fatigue. Ceftriaxone and Gentamycin were started as empirical therapy.

There was no history of vaginal discharge, chest pain, pal-
pitations, joint pain, swelling, morning stiffness or rashes. For her complaints, she visited a general physician who prescribed symptomatic treatment, but the issues did not resolve. There was no history of dizziness, vertigo, double vision, altered level of consciousness, fits or vomiting.

Echocardiography was advised in that hospital, which showed vegetation on the anterior mitral valve leaflet measuring 11.54 x 10.19 centimetres. The patient was then referred to a tertiary care hospital. On presentation, her neurological examination showed a woman with average lean and built oriented with time, place and person, a Glasgow-coma scale (GCS) of 15/15, reflexes of + 2, no clonus, down-going plantar of both feet, pupils equally reacting to light bilaterally and power of 5/5 in all four limbs bilaterally. Her respiratory system revealed normal vesicular breathing and bilateral equal air entry. The abdominal examination showed tenderness in the hypochondrium bilaterally, normal audible gut sounds and normal tympanic percussion notes. Since the patient had delivered by normal vaginal method 4 months back at a local hospital to rule out the products of conception, a pelvic ultrasound was ordered, which came out to be negative. She has had no other surgical or dental procedures in the past.

An echocardiogram was ordered, which showed small vegetation measuring 12.76 x 11.86 millimetres attached to anterior mitral valve leaflets. Their thickening and calcification and a reduced ejection fraction of about 70% indicated mild to moderate mitral stenosis and mild mitral regurgitation. Based on the echocardiographic findings, three blood cultures were ordered following the protocol of infective endocarditis, but all came out to be negative.

Imipenem and Gentamycin were started as empirical therapy. After one week, when the patient still did not respond to the antibiotics, another echocardiogram was repeated while HACEK and fungal cultures were also ordered alongside Brucella titers. This new echocardiogram (Figure 1) showed thickened mitral valves with mobile echogenic masses measuring 17.9x8.5 millimetres on anterior mitral leaflets, mitral regurgitation, and mild tricuspid regurgitation.

Fungal and HACEK cultures came out to be negative, while Brucella antibody titers were positive. Brucella Abortus titers were found to be four times high with a value of 1:640 (normal range=1:80), but Brucella Melitensis was normal, that is, 1:80 (normal range=1:80). HIV antibodies came out to be negative. Electrocardiogram and Chest X-Ray were also unremarkable. However, the patient did not meet the criteria for Neurobrucellosis as she had no meningitis signs or nerve lesions rather fit perfectly on the criteria of Brucella Infective endocarditis. A diagnosis of Brucella infective endocarditis was hence made. A Brucella culture was planned, but as it is not available in our country, it was not carried out. Rifampicin 600 milligrams and Doxycycline 100 milligrams were started in a twice-daily dose. The patient started improving after one week, her fever subsided, and she could move her limbs with support. The patient was discharged on Rifampicin and Doxycycline for six months and was called for a follow up in the outpatient department with a new Echocardiogram after one month. The new echocardiogram showed a considerable decrease in the echogenic mass on the anterior mitral leaflet, now measuring 5.9x8 millimetres. Vegetations had taken a total of four weeks to reduce in size.

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presented with mitral stenosis in the first echocardiogram, although the latter did not reveal a stenosis picture. Mitral stenosis is rarely caused by Brucella[14], and this finding was indeed peculiar. Contrary to all these cases, our patient also did not have a pre-existing valvular heart disease which was a rather peculiar finding.

The last resort for Brucella endocarditis is usually surgical in the form of valve replacement; however, our patient’s vegetation decreased in size only by medical treatment, and no aggressive surgical approach was needed.

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**Conflict of Interest**

There are no conflicts of interest to declare by any of the authors of this study.

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