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Case Report

Brucella endocarditis – A series of five case reports

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ABSTRACT

Endocarditis due to brucellosis is considered a rare occurrence involving native, congenital and prosthetic valves. The diagnosis needs high degree of suspicion in culture negative endocarditis especially in those with history of exposure to farm animals. A positive culture in a susceptible patient confirms the diagnosis with 91% sensitivity. An early diagnosis and prompt treatment with appropriate antibiotics can restore the valve structural integrity with minimal damage. Here we present a series of five cases of culture proven Brucella endocarditis (four native valves, one prosthetic valve) and this report discusses the diagnostic and management issues involved.

1. Introduction

Brucellosis is a world-wide zoonosis. The causative organism is an intracellular α2 proteobacteria gram-negative bacillus of the genus *Brucella*. Human brucellosis is a multiorgan disease, transmitted via unpasteurized animal milk and cheese. It often presents with fever and non-specific symptoms. A renewed scientific interest in human brucellosis has been fueled by its recent re-emergence and due to its potential for use as a class-B bioterrorist agent.[1,2]

Endocarditis due to brucellosis is rare but about 80% of deaths in brucellosis are due to endocarditis.[3] In a recent Greek study over 20 years from different centers reported an incidence up to 4%.[4] During the period from 2008 to 2011 we admitted six cases of bacteriologically confirmed Brucella endocarditis and the following is an account of the diagnostic and management issues involved in managing them. We lost one case during early follow up.

1.1. Details of case reports

1.1.1. Case-1

A 32-year-old male who was a farmer by occupation presented with history of continuous fever since 2 months and congestive cardiac failure. Patient had a history of rheumatic heart disease with severe mitral stenosis, mild mitral regurgitation, severe pulmonary artery hypertension. He underwent PTMC 7 years ago. Patient was evaluated and found to have elevated white blood cell count. Serum creatinine 1.8 mmol/L. Electrocardiogram showed right bundle branch block. Echocardiogram showed moderate size vegetation on mitral leaflet of mitral valve (Fig. 1). The diagnosis of Brucella

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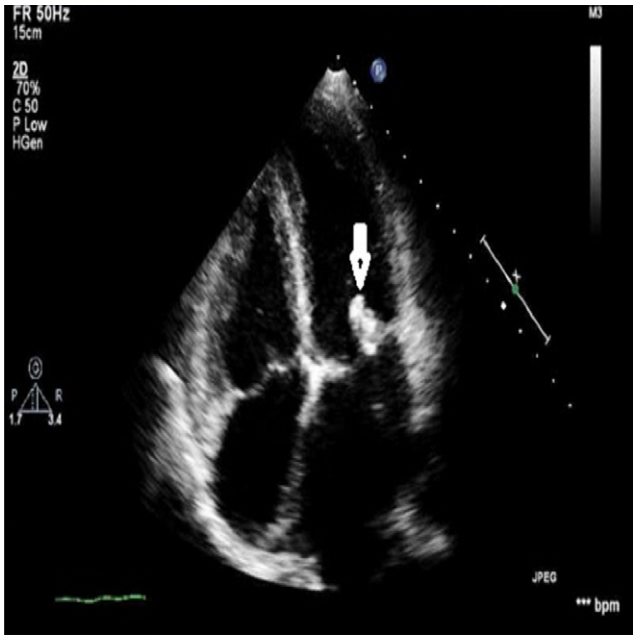

Fig. 1 – Moderate size vegetation pointed by white arrow on mitral valve in a rheumatic heart disease patient on 2nd day of antibiotic therapy.

endocarditis is confirmed by positive blood culture (Fig. 2). He was successfully treated with medical management. After 3 months he underwent PBMV.

1.1.2. *Case-2*

A 22-year-old male farmer who is a known case of acyanotic congenital heart disease, small restrictive ASD moderate size VSD and congenital mitral regurgitation underwent a patch closure and mitral valve replacement with Carbomedic prosthetic valve 3 years ago. He had a history of struck valve for which he took thrombolytic therapy 1 year ago. He presented with high grade fever and severe breathlessness. Echocardiogram showed elevated gradients across the prosthetic valve. Patient was found to have Brucella endocarditis on blood culture and started treatment similarly. He improved initially but he developed multiorgan dysfunction and developed shock and succumbed.

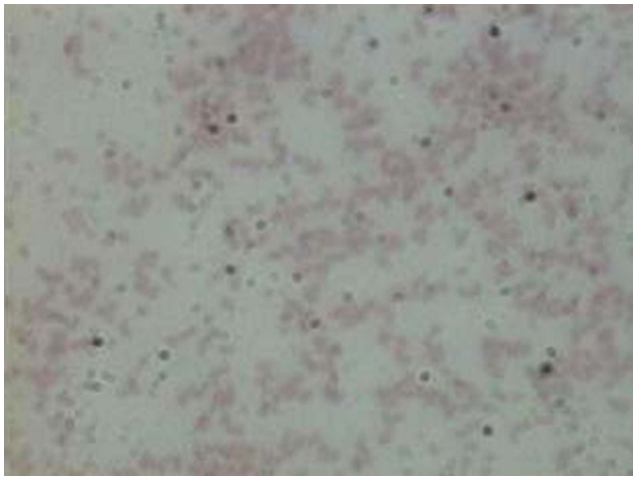

Fig. 2 – Gram's smear of culture showing gram negative *Brucella melitensis* bacillus.

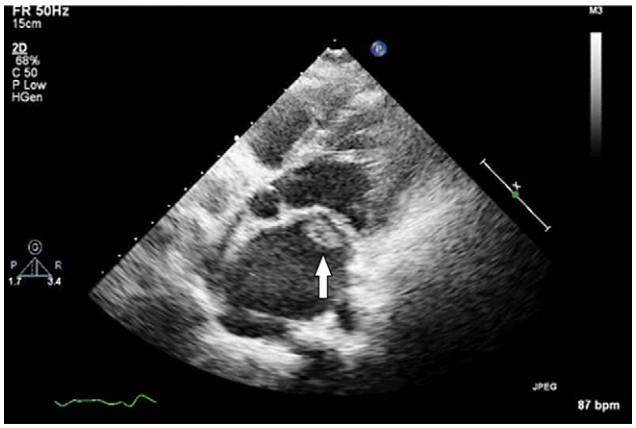

Fig. 3 – Large fluffy vegetation on mitral valve showed by arrow in a CRHD patient with severe mitral stenosis and Brucella endocarditis.

1.1.3. *Case-3*

A 44-year-old male a known chronic rheumatic heart disease with severe mitral stenosis presented with continuous high grade fever for 2 months. ECG showed right bundle branch block. Echocardiography showed large vegetation on mitral valve (Fig. 3). Patient was confirmed Brucella endocarditis after 5 days of subculture. He was successfully treated with antibiotics followed by elective mitral valve replacement after 3 months.

1.1.4. *Case-4*

A 36-year-old male presented with pyrexia of unknown origin for one month. Patient was subjected to all routine tests which did not yield any cause. Echocardiography showed aortic valve abscess (Fig. 4). Blood culture for fastidious organisms showed *Brucella melitensis*. Patient was treated appropriately

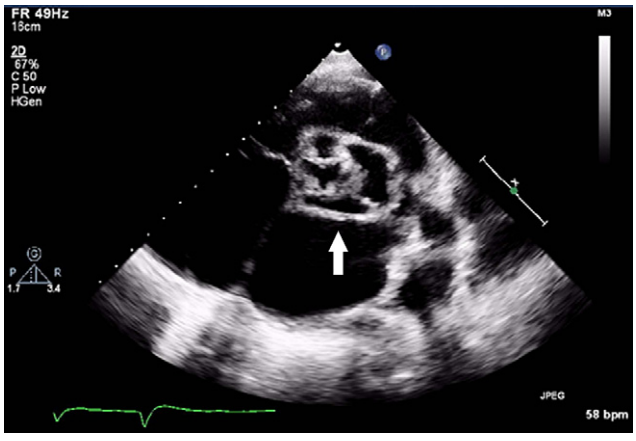

Fig. 4 – Aortic root abscess as pointed by arrow in a PUO patient.