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Q Fever Endocarditis: Rare but not Forgotten

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Abstract
The case of a 56-year-old man from Bangalore diagnosed with Q fever endocarditis is presented here, patient with background history of Diabetes and Hypertension had presented with history of on and off fever for 15 days. Physical examination revealed tachycardia, temperature of 101-degree F with positive hills sign and EDM in aortic area, with the above features prompted an investigation for endocarditis, which was initially negative. Markedly positive serology was seen for Q fever which established the diagnosis. The patient was started with antibiotics directed against Coxiella burnetii.. It highlights the nonspecific nature of the presenting symptoms, and emphasizes the use of serology for diagnosing endocarditis suspected patients who are culture negative. Coxiella burnetti serology should be sent to all patients with culture negative endocarditis, especially in immunocompromised and patients with pre-existing valvular pathology which help in early diagnosis and treatment thus it will decrease the mortality and morbidity.
Keywords: *Coxiella Burnetti, Q fever Endocarditis, Culture negative endocarditis.*

Introduction

Q fever is a zoonotic disease caused by infection with a gram-negative bacteria organism Coxiella Brunetti, that most probably spread through aerosol transmission from animals which are infected and it is found throughout the world. Culture remains negative in 2 to 7 percent of patients with infective endocarditis and it is a very rare manifestation of Q fever that often remains under diagnosed. Endocarditis is the common and dangerous manifestation of chronic Q fever. It occurs in about 75% of chronic Coxiella burnetti infections and has an high mortality of nearly 25%.[1,2]

Case Report

56-year-old veterinary assistant by occupation with background history of Diabetes and Hypertension presented with h/o fever on and off for 15 days, low grade not associated with chills, there was no history of breathlessness, chest pain, cough and any other significant history in the past

Physical examination revealed a heart rate of 116 beats/min, blood pressure of 110/48 mmHg and a normal oxygen saturation on room air. No signs of endocarditis were found. Bounding pulses were evident along with a positive hill sign and collapsing pulse. The patient's jugular venous

pressure (JVP) was normal . Auscultation revealed a single S2, He had grade 2/4 early diastolic murmur at the aortic area. The lungs were clear on auscultation. Patient had hepatomegaly with liver span of 16cm and splenomegaly 6 cm below left coastal margin present, all the routine blood investigations with fever work up and 3 set of blood cultures were sent.

The electrocardiogram showed sinus tachycardia, no ST T changes. A transthoracic echocardiogram showed Large vegetation seen attached to the aortic valve measuring 16x 8mm with normal systolic function, and showing moderate to severe aortic regurgitation, with no features of aortic stenosis with gradient of 36mm of hg and also presence of left atrium enlargement.

He remained febrile for first 5-6 days and fever spikes gradually decreased, clinically was better with no new murmurs. However, fever after touching the baseline reappeared hence Ceftriaxone was changed to vancomycin on day 8 and oral doxycycline and ciprofloxacin was started. He remained febrile in spite of change of antibiotics, hence Coxiella IgM and IgG was sent and came as positive and fever subsided after 4th day of adding doxycycline

Table 1: Investigations

INVESTIGATIONS	RESULT
Haemoglobin	9.8
Total Leucocyte Count	15000
Differential Leucocyte Count	N-81, L-8.3, M-6.7, E-3.1
Platelet Count	1.00 lakh
ESR	108
CRP	52
LFT	TB-1.66, DB-0.75, ALB-2.8, ALP-93 SGOT/SGPT-26/29
RFT	55 / 1.5
Serum Electrolyte	136 / 4.2
Chest X Ray	Cardiomegaly, straightening left heart border
2D ECHO	Large vegetation seen attached measuring 16 x 8 mm at aortic valve , Grade 2 AR, No AS, Dilated LA
Blood Cultures	3 sets Negative
Brucella, Malarial, Dengue	Negative
Coxiella Burnetti Antibody	Antibody Positive (IgM-26 IU and IgG-.20.1 IU
ANA Profile	Negative

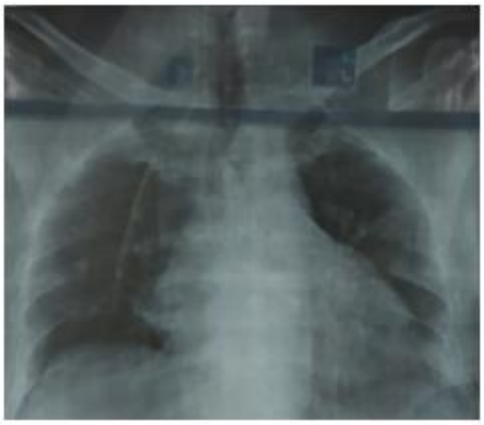

Figure 1: CXR showing Cardiomegaly and left heart enlargement

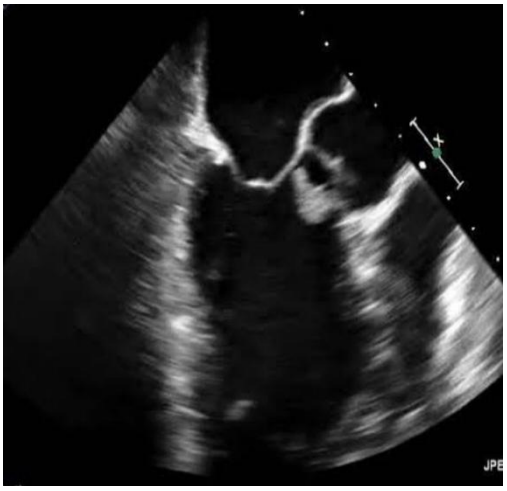

Figure 2: 2D echo done showing aortic valve vegetation

Discussion

The clinical presentation of Q fever doesn't have typical features of bacterial endocarditis, so there is delay in diagnosis significantly. The majority of cases present with congestive heart failure due to valvular dysfunction [3]. Unlike typical cases of endocarditis, fever is low grade and intermittent and majority have no fever. Embolic phenomenon is present in 33% of the cases[4].

There are many peripheral manifestations of Q fever endocarditis that provides clue for diagnosis. Specifically, hepatomegaly and splenomegaly are felt physical examination in 50% cases. Patient may have mild hepatitis with transient elevation of transaminases. Anaemia may be present in 50% of the cases, other observed abnormalities include leukopenia leucocytosis, and thrombocytopenia.

Echocardiography, usually remains the mainstay of diagnosis in endocarditis. Transthoracic echocardiography reveals abnormalities in only 12% of cases[5]. This is due, to the small size and nodular shape of the typical vegetations[6]. While transesophageal echocardiography is the best method of demonstrating the vegetations.

The diagnosis of Q fever endocarditis is difficult due to the inability to culture *Coxiella burnetii* using routine media. As a strict obligate intracellular bacterium, it can only be cultured in living cell lines. Therefore diagnosis of chronic Q fever highly relies on serological testing

Conclusion

Q fever endocarditis is a rare entity that poses a diagnostic challenge. Coxiella burnetti serology should be sent to all patients with culture negative endocarditis, especially in immunocompromised and patients with preexisting valvular pathology.

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