**Title: A case of endocarditis mimicking Crimean-Congo Hemorrhagic Fever**

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**ABSTRACT**

Infective endocarditis (IE) is life-threatening condition with a highly variable clinical presentation. We report a case of acute *Staphylococcus aureus* IE resulting in valve replacement, that was initially misdiagnosed as Crimean-Congo Hemorrhagic Fever (CCHF). It serves to emphasize the importance of careful history taking, physical examination and maintaining a broad different diagnosis in the context of suspected cases of viral hemorrhagic fever.

**INTRODUCTION**

Crimean Congo Hemorrhagic Fever (CCHF) is an acute life threatening viral infection characterized by fever, hemorrhage, and thrombocytopenia and is predominantly transmitted by ticks. The initial clinical presentation is non-specific and diagnosis is often delayed, with important infection prevention and control implications. CCHF is a major emerging infectious diseases threat, and Turkey is the epicenter activity worldwide, with considerable expertise in case management and associated low case fatality rates (5%)1.

The diagnosis of infective endocarditis (IE) is also frequently delayed it often presents to a variety of specialists. It remains a diagnostic challenge, with a highly variable clinical presentation and clinical and laboratory findings such as fever, splenomegaly and thrombocytopenia are not specific to IE and may be seen in many other diseases too.2 It is associated with high mortality and severe complications despite improvements in its management, and Staphylococcus is the cause in 20-30% of cases. We present a case initially managed with a preliminary diagnosis of CCHF, but following clinical deterioration was referred to a tertiary centre, where *Staphylococcus aureus* endocarditis was confirmed.

**CASE**

In November 2015, a 47-year-old woman who resided in an endemic region for CCHF in Turkey presented with fever, lethargy and thrombocytopenia. She had no history of tick bite and was managed as a suspected case of CCHF at two separate secondary care hospitals. Transthoracic echocardiography (TTE) was performed due the presence of a murmur and reported as normal. She developed confusion, ecchymosis and petechial bruising and was referred to our tertiary hospital with a preliminary diagnosis of severe CCHF, with significant thrombocytopenia (28.300 mm/3) and somnolence, both poor prognostic indicators of CCHF3. Physical examination revealed confusion, low-grade fever and tachycardia. A 2-3/6 systolic murmur was present in the mitral area, accompanied by a solitary splinter hemorrhage and red, painless nodules on the palms and soles, typical of Janeway lesions. Abnormal blood results included thrombocytopenia (46,000/mm3), elevated liver enzymes (ALT:76 IU/L, AST:92 IU/L) and creatine phosphokinase (682 IU/L), and raised inflammatory markers (C-reactive protein: 119 mg/L, erythrocyte sedimentation rate: 93 mm/hour). IE was suspected, three blood cultures were taken and a repeat TTE revealed a mass, compatible with a mobile vegetation (measuring 15x6 mm) associated with the anterior leaflet of the mitral valve (Figure 1).

Ampicillin/sulbactam and gentamycin were started as empirical treatment for native valve endocarditis and methicillin sensitive *Staphylococcus aureus* was detected in blood cultures. Gentamycin was stopped after 5 days and CCHF ELISA IgM and polymerase chain reaction results were negative. Fever persisted, repeat TTE showed progression and following consultation with cardiothoracic surgery a mitral valve replacement was performed. Antibiotic treatment was continued for six weeks and the patient was subsequently discharged well.

**DISCUSSION**

We report a case that initially presented with fever and thrombocytopenia and had a preliminary diagnosis of CCHF. She was subsequently referred to our specialist unit with suspected progression to severe disease, but in fact she had *Staphylococcus aureus* infective endocarditis and recovered following valve replacement and antibiotic treatment.

CCHF generally occurs in people residing endemic areas, in at risk occupations and in the majority cases (70%) patients report a history of tick bite. Other diagnoses have been reported in patients initially suspected of having CCHF, including Q fever in a patient with tick bite, haemoptysis and thrombocytopenia4, and brucellosis in a patient with tick bite, fever and epistaxis5. No other cases of infective endocarditis mimicking CCHF have been reported, and this cases serves to emphasize the importance of careful history taking, physical examination and maintaining a broad different diagnosis in the context of suspected cases of viral hemorrhagic fever.

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Figure 1. Transthoracic echocardiogram image showing the vegetation (measuring 15x6 mm) associated with the anterior leaflet of the mitral valve.

