



MYOPERICARDITIS IN A CASE OF IGM POSITIVE DENGUE

General Medicine

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ABSTRACT

Myopericarditis, a complication of acute pericarditis, is characterized by extension of pericardial inflammation to the myocardium, which manifests as an elevated troponin level. It is generally evaluated and treated as acute pericarditis. The key challenge in managing myopericarditis is excluding the presence of an acute coronary syndrome and myocarditis. Viral myocarditis is known to occur commonly with Cocksackie virus B1 and B4 and rarely with dengue virus. viral myocarditis may be a manifestation of dengue

KEYWORDS

INTRODUCTION

Dengue is a self-limited systemic viral infection transmitted between humans by mosquitoes. It is caused by one of the four single stranded positive sense RNA viruses of genus flavivirus. Dengue viruses exist in two environments, the urban or endemic setting, where humans and mosquitoes are the only known hosts, and forested areas where transmission of mosquito borne virus occurs rarely between primates and humans(1). Although dengue has emerged in multiple new territories, it has largely been reported to be endemic in evolutionary histories. Preliminary data suggests that there is transient disruption in the function of the endothelial glycocalyx layer, which functions as a molecular sieve, selectively restricting molecules within plasma according to their size, charge and shape(1). The disease is mainly characterized by three phases, the febrile phase, the critical phase and the recovery phase. The febrile phase is characterized by high temperature, headache, myalgia, arthralgia and mild hemorrhagic manifestations. During the critical phase a systemic vascular leak becomes apparent around the time of defervescence, evidenced by increasing hemoconcentration, hypoproteinemia, pleural effusion and ascites. Bleeding manifestations and thrombocytopenia are common. A transient increase in APTT is also noted. Dengue infections may give rise to many complications such as liver failure, disseminated intravascular coagulation, encephalopathy, acute renal failure, hemolytic uremic syndrome and myocarditis. The European Society of Cardiology (ESC) 2013 consensus statement suggested the presence of at least one clinical and one diagnostic criterion for the diagnosis of clinically suspected myocarditis. Clinical criteria include acute new-onset, or worsening dyspnea, chest pain, palpitations, and/or unexplained shock. The diagnostic criteria include ECG or Holter changes, raised cardiac biomarkers, functional and structural abnormalities on cardiac imaging, and tissue characterization on cardiac magnetic resonance (CMR) imaging(2). Myopericarditis has been reported in a rare fraction of cases of confirmed acute pericarditis with elevated troponin but without LV systolic dysfunction(3). In this report we describe and discuss myopericarditis in an IgM positive case of dengue.

Case Report

A 21-year-old male, with no known co morbidities from dengue endemic region came to the emergency ward with complaints of fever since 5 days, headache, chest pain since one day. The fever was sudden in onset, intermittent type and associated with chills and rigor. It decreased on medications. No history of sore throat, cough, diarrhea, dizziness, skin rashes, joint pains, night sweats, urinary tract symptoms. No history of recent travel, exposure to sick contacts or illicit drug use. The patient complained of headache and retroorbital pain. No history of blurring of vision, nausea, vomiting. The chest pain was retrosternal "stabbing" type of pain. It was sudden in onset and rapidly progressive with no radiation. It increased on exertion with no relieving factors. No history of palpitations, breathlessness, orthopnea, pedal edema, syncope. On admission and initial examination, he was febrile (Temperature: 101F) with a blood pressure of 108/68 mm of Hg. There were no signs of pallor, icterus, cyanosis, clubbing, lymphadenopathy, edema. His respiratory, abdominal and nervous systems were normal. cardiovascular examination was unremarkable.

Laboratory Studies

PARAMETERS	
HAEMOGLOBIN (gm/dl)	14.6
WBC COUNT (Cells/cumm)	11,000
PLATELETS (Cells/cumm)	1,40,000
RBC COUNT (millions/cumm)	4.91

Our patient had dengue IGM (ELISA) test which was positive. Initial ECG (Figure 1) showing insignificant changes. However, ECG was repeated (figure 2) in view of persistent chest pain after 6 hours which showed diffuse ST elevations and PR depressions.

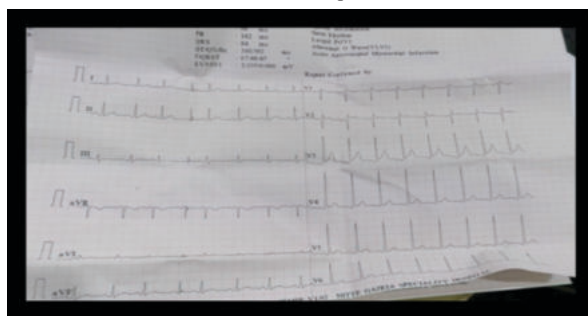


Figure1

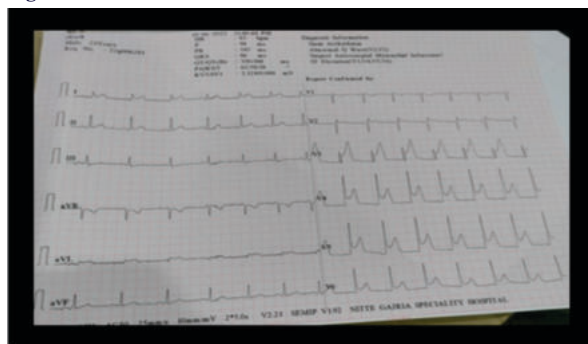


Figure 2

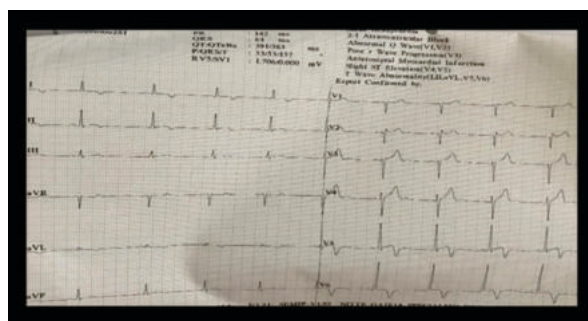


Figure 3

Troponin T was 0.866ng/ml (significant). CRP was 28.44mg/L. HIV,

HbsAg and HCV spots being Negative. Procalcitonin-negative. ECHO showed normal biventricular function. Coronary angiogram suggestive of Normal epicardial coronaries. Patient was managed with NSAIDS. Patient symptoms improved within 72hrs. Patient was followed up after 2 weeks, he was asymptomatic, ECG showed t wave inversion in lateral chest leads (figure 3) and 2DECHO being normal.

DISCUSSION

During the 19th century, dengue was considered a sporadic disease, causing epidemics at long intervals. However dramatic changes have occurred in this pattern in the last 50 years and its incidence has increased 30-fold with significant outbreaks. Cardiac involvement in dengue and its pathogenesis have been seldom described and poorly investigated. This report sheds light on the same. The mechanism of myocardial damage in dengue could be due to the release of inflammatory mediators and/or the direct action of the virus on cardiomyocytes. We have demonstrated the course of clinical dengue myopericarditis to a certain degree. However, the clinical characterization of the cardiac manifestations in this case was not complete.

CONCLUSION

Dengue Virus can produce atypical manifestations such as myopericarditis by a possible direct virus action on cardiomyocytes, though relatively uncommon as an isolated feature and its response to therapy is favorable

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