Case Report

Acute Pericarditis: Unusual cardiac presentation of dengue fever

Adnan Bashir Bhatti1, Farhan Ali and Siddique Akbar Satti

Department of Medicine, Capital Development Authority (CDA) Hospital, Islamabad, Pakistan

*Correspondence Info:
Adnan Bashir Bhatti, MD
Department of Medicine,
Capital Development Authority (CDA) Hospital,
Islamabad, Pakistan
E-mail: dr.adnanbashir@gmail.com

Abstract

Dengue fever is a mosquito-borne infection. It can affect any part of the body. We are reporting a very unusual presentation of dengue fever. A 40 years old male presented with high grade fever; he developed severe anterior chest pain and diagnosed as a case of acute pericarditis.

Keywords: Parasitemia, Plasmodium falciparum, blood, Olea europaea, artesunate.

1. Introduction

Dengue is the most rapidly spreading mosquito-borne viral disease in the world. An estimated 50 million dengue infection occur annually and approximately 2.5 billion people live in dengue endemic countries1. Dengue is a systemic and dynamic disease. It has a wide clinical spectrum that includes both severe and non-severe clinical manifestations2. The cardiac complications in dengue are not common; dengue pericarditis is extremely rare due to early diagnosis of dengue myocarditis3. Acute pericarditis is an inflammation of the sac surrounding the heart. Sudden onset sharp, dull and steady pain in anterior chest wall; relieving with sitting up and leaning forward with pericardial rub are characteristic features4,5.

2. Case Report

Forty years old hypertensive but normoglycemic male presented in an emergency department of Capital Development Authority (CDA) Hospital, Islamabad, Pakistan, with complaint of high grade fever, severe retro-orbital pain, myalgia, itching all over his body and severe anterior chest pain for the last four days. Pain was sharp and worsens with inspiration and lying down. Pain was alleviated with sitting up and leaning forward. There was no history of cough, epigastriac pain or discomfort; no history of chest wall injury and deep venous thrombosis. His past medical, surgical, family, socioeconomic and allergic history were unremarkable. He was taking ACE inhibitor for control of blood pressure. His pulse rate 120/min (regular); blood pressure 110/70; temperature 104°F; respiratory rate 22/min and oxygen saturation 96%. Pericardial rub was present on left sternal border along with petechial rash on both arms and legs on physical examination.

Laboratory studies revealed leukopenia, thrombocytopenia and proteinuria. Blood complete picture showed hemoglobin 13 gm/dl, total leukocyte count 2.2x10^9/ul; lymphocytes 50%; platelet count 76 x10^9/ul; ESR 10; alanine aminotransferase (ALT) 76 IU/L; aspartate aminotransferase (AST) 49 IU/L; Urine examination showed positive proteinuria. Serum C reactive protein was raised. Electrocardiogram (ECG) showed saddle shaped ST elevation and low voltage. Serum creatine kinase (CK-MB) and Troponin I were raised. X-ray chest was normal but echocardiography showed thin layer of pericardial effusion (4mm). NS1 Ag was positive for dengue fever initially. The diagnosis of acute pericarditis due to dengue fever was made and patient was admitted in coronary care unit for further management.

A serial blood complete picture and blood chemistry were done on daily basis. On 8th day of admission her investigation revealed hemoglobin 13 gm/dl, total leukocyte count 4 x10^9/ul, lymphocytes 25%, platelet count 150 x10^9/ul, ESR 10, serum creatine kinase (CK-MB) and Troponin I were within normal range. Echocardiography showed no pericardial effusion, electrocardiogram was normal and dengue serology IgM was positive. On day 10th of admission her all laboratory profile was normal and he was discharged in stable condition and advised for follow up visit.

3. Discussion

Cardiac manifestation of dengue fever are very rare but cardiac rhythm disorder such as AV blocks, atrial fibrilition, ectopic ventricular beats and sinus node dysfunctions have been reported during episodes of dengue hemorrhagic fever6. Our case is extremely rare because very few cases have been reported till now in the literature of isolated pericarditis. Nagarman et al7 described three cases of pericarditis with myocarditis. Wiwanmit8 reported two cases of myocarditis out of thousands of dengue fever cases in Thailand.

Dengue pericarditis can be seen in the form of myopericarditis. The pathogenesis is believed to be the extension of dengue myocarditis into the pericardium rather than circulating immune complex8. We made diagnosis of dengue hemorrhagic fever according to WHO criteria; fever 3-5 days, bleeding tendencies, thrombocytopenia platelet below 100,000/mm3 with positive IgM Dengue result5. The diagnosis of acute pericarditis was made according to European society of cardiology guidelines9. In our case CK-MB and Troponin I were raised. Brandt et al10 showed that Troponin and CKMB were elevated in acute pericarditis. Bonnefy et al11 showed that Troponin I were elevated only in those cases of acute pericarditis who had ST elevation in ECG. Acute pericarditis is associated with a moderate increase in serum creatine kinase (CK-MB)12 and Troponin I. These both markers are of myocardial injury so myocardial infarction should be ruled out before making diagnosis of acute pericarditis. The elevation of these substances is also related with inflammation of myocardium13.

In our case we ruled out myocardial infarction. The elevated markers are transient and return to normal in week, persistent increased indicate myocarditis14. In our case elevated markers returned to normal within week. NSAIDs are mainstay in treatment in viral and idiopathic pericarditis. The goal is to reduce pain and inflammation. ECG and Echocardiography findings were attributed to pericarditis. In our case CK-MB and Troponin I were also on higher side. In our case there were no features of myocarditis. In our case NSAIDs were contraindicated due to thrombocytopenia so we treated our case with Acetaminophen.
4. Conclusion

Acute pericarditis is very unusual presentation of dengue fever. Clinician should be aware of this complication of dengue fever. Acute pericarditis should be suspected in patient who presented with severe chest pain along with fever in dengue epidemic area. Early diagnosis can prevent life threatening cardiac problems.

References
5. http://circ.ahajournals.org/content/112/13/1921.full.