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Unusal Presentation of Dengue Fever as Pyomyositis

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ABSTRACT:
Dengue is the most common and widespread arthropod-borne arboviral infection. Symptoms include fever, headache, muscle, and joint pains, and a characteristic skin rash. Although viral myositis is common, myositis caused by the dengue virus is not commonly reported. The case of serologically confirmed dengue fever complicated by pyomyositis associated with a tenfold increase in serum creatine phosphokinase is presented.

Keywords: Dengue, Creatinine phosphokinase, Myositis

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INTRODUCTION:

Dengue is the most common and widespread arthropod-borne arboviral infection in the world today. The geographical spread, incidence, and severity of dengue fever (DF) and dengue hemorrhagic fever (DHF) are increasing in the Americas, South-East Asia, the Eastern Mediterranean, and the Western Pacific.[1] With the recent epidemic of dengue; there have been increased report of cases of dengue fever with unusual manifestation. Dengue fever associated with myositis with or without rhabdomyolysis and acute renal failure is extremely rare.[2] We report a case of a 22-year-old male who presented with dengue fever complicated by pyomyositis, surgical debridement of pus and antibiotic coverage lead to complete recovery without residual damage.

CASE REPORT:

A 22-year male, no comorbidities, presented with complaints of high-grade fever with chills for the last 3 days with no diurnal variation and was not associated with any skin rash, bleeding, or joint pains. He also had myalgia and headache for the last 3 days, diffuse abdominal pain, and vomiting for 2 days. Myalgia was predominantly in lower limbs and gradually progressing and he was unable to walk due to severe pain. He did not have any bowel and bladder complaints, respiratory distress, or neurological symptoms.

Upon general examination, he was conscious, oriented, and febrile with a temperature of 100°F, pulse was 118/ minute, blood pressure was 90/70mm of Hg and respiratory rate was 24/min. The patient had bilateral pedal edema, pitting in nature extending up to mid-thigh. On per abdominal examination, he had 2 cm palpable liver below right subcostal margin and mild splenomegaly. On neurological examination, the patient had bilateral lower limb weakness with proximal and distal power 3/5. It was associated with marked tenderness on active and passive stretching of the muscles.

On investigation, his Hemoglobin was 12.6mg/dl, total leucocyte count was 2270/mm^3, platelet count was 78000/mm^3. Peripheral smear for malarial parasite and rapid malarial antigen was negative, Dengue NS1 was negative, Dengue IgM was positive and Dengue IgG was equivocal.

He was started on intravenous fluid therapy along with antipyretic. A daily complete blood count was done which showed a gradual fall of platelet count as low as 30000/mm^3 and hematocrit was monitored for hydration therapy. Bilateral pedal edema did not subside and it extended to the groin.

His fever did not subside despite adequate antipyretic; further investigation revealed serum Procalcitonin- 10.33 ng/ml, Creatine Phosphokinase- 2705 IU/l (normal 30-200), Lactate Dehydrogenase- 322.20 IU/l (normal <248), total protein- 4.30 gm/dl with serum Albumin- 2.5gm/dl. Urine examination was normal without myoglobinuria. Serum electrolytes, renal profile, and other biochemistry markers were normal. Ultrasonography of bilateral lower limbs was suggestive of intermuscular fluid in both thighs with diffuse soft tissue edema bilaterally with mild suprapatellar effusion on the right side. Blood cultures and swab cultures from both thighs were negative.

Reference was given to the surgery department. Bilateral thigh debridement was done with secondary suturing with skin grafting of both legs were done. There was a massive slough and pus was present on the right thigh extending up to the popliteal fossa and superiorly up to the gluteal region. About 3 liters of pus was removed, pus pockets in gluteal regions were drained separately, thorough surgical wash

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given and dressing done. In subsequent two sittings, wounds were closed with secondary suturing with a split skin graft. Aerobic culture revealed heavy growth of Extended-spectrum beta-lactamases (ESBL) producing Escherichia coli.

The patient was treated with intravenous antibiotics, intravenous albumin, antipyretics, and supportive management. Nutritional support and intensive physiotherapy were given. The patient recovered well gradually and was discharged home after a long stay at the hospital.

DISCUSSION:

Dengue viruses belong to the genus Flavivirus of the Flaviviridae family. There are 4 distinct types of dengue viruses (DENV1–4), all of which can cause dengue fever. The dengue viruses are transmitted to humans through the bite of the infective Aedes Aegyptus female mosquitoes.[3] The common symptoms of the dengue infection range from mild to high-grade fever, severe headache, retro-orbital pain, joint and muscle ache, and rash. The symptoms normally appear 3–14 days after the infective mosquito bite. The neurological complications of the dengue virus infection include meningitis, encephalitis, acute disseminated encephalomyelitis, transverse myelitis, and Guillain Barre Syndrome. Recently, a rise in cases of acute dengue myositis has been reported. [4] Myositis, rhabdomyolysis, and acute renal failure are known to occur as a sequel of severe viral infections like influenza A and B virus, HIV, coxsackieviruses, and cytomegalovirus. [1]Dengue fever associated with myositis with or without rhabdomyolysis and acute renal failure is extremely rare. Most of these manifestations of dengue fever are underreported, recognized, or not casually linked to dengue fever. Musculoskeletal manifestations of dengue fever include polyarthritis, rhabdomyolysis, and myositis with elevated CPK. [5]Direct viral invasion of the muscle fibers and generation of myotoxic cytokines such as tumor necrosis factor have been described as the possible mechanism for dengue virus-associated myositis.[6]

One study emphasizes the importance of serum CK in patients with fever and myalgias with or without overt muscle weakness and concludes that increased serum CK levels in the context of fever and myalgias should be considered as dengue fever even before serological confirmation, with a positive predictive value of 84% and negative predictive value of 98%. [7,8] Though the patients with dengue fever commonly present with myalgia, associated myositis may go undiagnosed due to the lack of clinical suspicion and necessary investigations. Myositis seen in dengue fever is usually acute onset, short-lasting and benign. Few present with elevated CPK levels and they rarely go on to develop rhabdomyolysis and acute renal failure. [1,9] A few cases of dengue fever associated with acute myositis with or without rhabdomyolysis which was confirmed by muscle biopsy and EMG has been reported in the past. [1,10]

In this case, the appropriate timely intervention of myositis has prevented the lethal complication of rhabdomyolysis and acute renal failure and there was complete recovery of the patient without any residual damage.

This is suggested that patients with serologically confirmed dengue fever with myalgia should measure serum creatinine kinase levels and urine analysis to be done for hemagglutination for early diagnosis of myositis which might be complicated with rhabdomyolysis and acute renal failure. [10] If myositis and rhabdomyolysis are detected early, then potential lethal complications can be prevented.

CONCLUSION:

Myositis and rhabdomyolysis associated with dengue fever are recognized complications. Clinicians should be vigilant and ask for necessary investigations at the appropriate time to prevent life-threatening complications like acute renal failure. All the dengue fever patients presenting with severe myalgia should undergo measurement of Creatinine phosphokinase and early appropriate interventions to prevent lethal outcomes. A timely intervention can reduce morbidity and mortality.

Authors Contribution:
Hozefa Runderawala: Construct the Manuscript, References and Detailing, Title
Priyanka Anvekar: Proof Read, Plagiarism and Finesse

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