

Acute Dengue Myositis: A Case Report

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ABSTRACT

Dengue is an arthropod-borne viral infection caused by genus flavivirus. The most important flaviviruses that cause fever and myalgia syndrome are dengue viruses 1–4. Dengue viral infection causes many complications such as pneumonia, bone marrow failure, hepatitis, retinal hemorrhages, maculopathy, and myositis. Neurologic complications such as encephalitis, Guillain–Barre syndrome, phrenic neuropathy, subdural hematoma, and cerebral vasculitis are less common. Limited case series have indicated the possibility of skeletal muscle invasion causing myositis. We present a case of a 54-year-old male who presented with high-grade fever and muscular pain in both upper and lower limbs. His serum creatine kinase (CPK) value was 619 U/L. He was managed conservatively and low-dose corticosteroids were given. Our case highlights the severe muscle involvement in dengue infection which is a rare entity.

Keywords: Creatine kinase, Flavivirus, Myositis.

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CASE DESCRIPTION

A 54-year-old male, a shopkeeper by occupation, presented with high-grade fever and myalgia of 3-day duration. He was also having conjunctival congestion and diffuse muscle tenderness. During lower limb movements, he felt pain but power and tone were normal. On the 6th day, his fever resolves but had severe muscle pain and local tenderness over thigh, lower limbs, and upper limbs but power and tone were normal and no evidence of oliguria. On investigations are as follows: Complete blood count (CBC) has platelet count 28,000/mm³ on presentation and total leukocyte count (TLC) = 3800/mm³. On the 6th day, platelet count was 50,000/mm³ and TLC = 4000/mm³. A complete examination of urine showed 0–1 pus cells and no red blood cells (RBCs). Total serum creatine kinase (CPK) was done (in view of muscle pain and tenderness) which was 619 U/L (normal <149 U/L). Serum creatinine was 0.79 mg. Dengue antibody titer immunoglobulin M (IgM) was strongly positive suggesting recent infection. Leptospira antibody was negative. Ultrasonography abdomen was done which shows gallbladder wall edema—reactive with normal kidney and liver. The patient was started on low-dose corticosteroid (prednisolone) which was given for a week and the patient improved and CPK was sent which came out to be normal (89 U/L).

DISCUSSION

Dengue virus can affect multiple systems of the body—like brain, spinal cord, liver, blood and bone marrow, and musculoskeletal system.^{1–3} With recent epidemic of dengue fever, there was an increase in reported cases of unusual and rare manifestation of dengue fever—one of which is myositis.^{4–6} Musculoskeletal manifestation of dengue fever includes polyarthritis, rhabdomyolysis, and myositis with elevated CPK.^{7–10} Acute severe myositis can be caused by various viruses like HIV-1 and HTLV-1. Myositis can be further lead to complications with rhabdomyolysis, myoglobinuria, and acute renal failure—which can further cause multiorgan failure and death. Dengue virus is a rare but potential cause of acute myositis. Dengue is associated with viremic phase with prostration and myalgia. Myositis which is because of dengue can mainly be due to the production of inflammatory cytokines such as tumor necrosis factor (TNF) and interferon-alpha,^{11,12} as direct invasion of muscle by

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virus has not being consistently demonstrated. Dengue virus is shown to increase TNF production in humans. Muscle biopsies in dengue patient show inflammatory infiltrates and foci of myonecrosis that is similar to histological appearance of other viruses that cause severe myositis. Our 54-year-old male presented with fever and myalgia was dengue immunoglobulin M positive (IgM+) and was having severe pain in both upper and lower limbs. His power decreased from 5/5 to 4/5. Laboratory investigation including CPK which was markedly raised (619 U/L). In some cases, myositis may lead to rhabdomyolysis that can further lead to acute renal failure.¹³ Our patient with myositis was managed conservatively and given low-dose corticosteroids (prednisolone) for 7 days and he recovered gradually with CPK—became normal to 89 U/L. Serum CPK is a diagnostic tool in detecting dengue myositis. Elevated CPK levels remain the most sensitive indicator of myositis. Though it is a rare complication, it should be kept in mind by physicians while treating dengue patients.⁶

CONCLUSION

We describe dengue as a rare but potential cause of acute myositis. It is associated with viremic phase with prostration and myalgia. The patient with dengue myositis has increased serum CPK; such a patient should be evaluated for rhabdomyolysis and acute renal failure which are potentially preventable complication.

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