

## Dengue fever with myositis; a rare presentation

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### Introduction

Dengue fever is a common arthropod borne tropical infection caused by four serotypes of the dengue virus. Up to 50 million infections occur worldwide annually with 1% developing dengue haemorrhagic fever (1). Rarely patients develop expanded dengue syndrome which is characterised by isolated organopathy (1).

Dengue fever associated with myositis with or without rhabdomyolysis and acute renal failure is extremely rare (2, 3). Here we report a 12-year old boy who presented with dengue fever complicated with severe myositis.

### Case Report

A previously healthy 12-year old boy presented with fever for 5 days associated with severe myalgia. At the onset of the illness he also complained of headache, arthralgia, retro-orbital pain, nausea, vomiting and abdominal pain. He developed red coloured urine which settled by the 3<sup>rd</sup> day of the illness and was found to be positive for dengue Ns1 antigen.

His vital signs were normal with a temperature of 99.4 °F. His cardiovascular, respiratory, abdominal and central nervous system examination was normal. There were no bleeding manifestations or features of leakage.

Full blood count done on the 5<sup>th</sup> day of illness showed a WBC count of  $5.17 \times 10^3/\mu\text{L}$  with neutrophil predominance and platelet count was  $239 \times 10^3/\mu\text{L}$ . His initial creatine phosphokinase (CPK) was 38,840 U/L and aspartate aminotransferase (AST) and alanine aminotransferase (ALT) values were 2,866 U/L and 611 U/L, respectively. During the hospital stay CPK value rose to 40,310 U/L. Repeat AST and ALT were 2,843 U/L and 764 U/L, respectively. His serum creatinine remained normal throughout the illness and urine analysis was normal. Dengue IgM done by chromatographic immunoassay was positive on day 7 of the illness. At discharge on day 9, his CPK, AST and ALT were 16410 U/L, 707 U/L and 384 U/L, respectively. They all were normal at the follow up visit at 1 month. A summary of his investigations done during the hospital stay is given in the table.

**Table: Investigations done during the hospital stay**

Date	11/01/16	12/01/16	13/01/16	14/01/16	15/01/16
White cell count ( $10^3$ )	5.17	3.8	3.4	3.21	3.85
Platelet count ( $10^3$ )	239	144	133	185	230
AST (U/L)	2866	2843	2186	1460	707
ALT (U/L)	611	764	632	511	384
CPK (U/L)	38840		40310		16410

During the hospital stay patient was closely monitored for features of rhabdomyolysis and acute renal failure while continuing with the management of dengue fever. Aggressive fluid resuscitation, which is indicated in the prevention of rhabdomyolysis induced renal damage was not practiced. The fluid was administered at a controlled rate according to the National dengue guidelines to achieve a minimum urine output according to body weight. Patient did not develop acute renal failure and he recovered from dengue fever without further complications.

### Discussion

Myositis, rhabdomyolysis and acute renal failure are known to occur as a sequel of severe viral infections like influenza A and B virus, HIV, coxsackie viruses, and cytomegalovirus (4). Direct viral invasion of the muscle fibers and generation of myotoxic cytokines such as tumour necrosis factor have been described as the possible mechanism for dengue virus associated myositis (5). Muscle biopsy has revealed nonspecific perivascular mononuclear infiltration (4). 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 (4). A few cases of dengue fever associated acute myositis with or without rhabdomyolysis which was confirmed by muscle biopsy and EMG has been reported in the past (4).

We report a case of myositis associated with very high CPK levels. The patient did not develop rhabdomyolysis and/or acute renal failure and recovered fully without any complications.

### Conclusions

Myositis and rhabdomyolysis associated with dengue fever are recognized complications. Clinical suspicion and necessary investigations at the appropriate time can prevent life-threatening complications like acute renal failure. All the dengue fever patients presenting with severe myalgia should undergo measurement of CPK and early appropriate interventions to prevent hazardous outcomes.

### References

1. Impact of Dengue. WHO. [cited 2016 Feb 1]. Retrieved from: <http://www.who.int/csr/disease/dengue/impact/en/>
2. Gomes M, Muller K, Busch H, Uhl M, Kelly T, Huzly D, *et al.* An unusual cause of acute rhabdomyolysis. In: *Rheumatology (Oxford)*. March 2006; **45**(5): 643-4.
3. R Rengaraj, T Arulmozhi, M Dhanaraj. Acute Myositis. *Journal of the Association of Physicians of India* 2006; **54**: 149-50.
4. HK Aggarwal, Deepak Jain, Sunil Pawar, Promil Jain, Anshul Mittal. Dengue fever presenting as myositis: an uncommon presentation. *Research* 2014; **1**: 985. (DOI - [//dx.doi.org/10.13070/rs.en.1.985](http://dx.doi.org/10.13070/rs.en.1.985))
5. Gagnon SJ, Mori M, Kurane I, Green S, Vaughn DW, Kalayanaraj S, *et al.* Cytokine gene expression and protein production in peripheral blood mononuclear cells of children with acute dengue virus infections. *J Med Virol* 2002; **67**: 41-6.