

## Case Report

# Transient AV block: A rare finding in dengue fever

Jonnalagadda Vihari<sup>1</sup>, Neerukonda Sriteja<sup>2</sup>, Brijeshraj Swain<sup>1</sup>, Manasa Elika<sup>1</sup>

<sup>1</sup>Department of General Medicine, IMS and SUMH, Bhubaneswar, Odisha, <sup>2</sup>Department of General Medicine, Kasturba Medical College, Mangalore, Karnataka, India.



### \*Corresponding author:

Dr. Jonnalagadda Vihari  
PG Resident, Department  
of General Medicine, IMS  
and SUMH, Kalinga Nagar,  
Bhubaneswar, Odisha, India.

viharijtk5@gmail.com

Received: 30 April 2022  
Accepted: 30 July 2022  
Epub Ahead of Print: 12 September 2022  
Published:

DOI  
10.25259/AUJMSR\_20\_2022

### Quick Response Code:



## ABSTRACT

Dengue outbreaks occur in India virtually every year, in some or the other part. Patients with classic symptoms are incredibly straightforward to identify; however, a considerable proportion of cases identified with dengue fever may appear with unusual presentations, necessitating prolonged assessment of the patients and unnecessary referral to tertiary centers, regardless of risk or severity. We describe a second-degree Mobitz Type I atrioventricular block in a patient with dengue hemorrhagic fever that reverted to a normal rhythm during the recovery phase and showed no abnormalities after that.

**Keywords:** Dengue hemorrhagic fever, Conduction anomaly, Mobitz Type I atrioventricular block

## INTRODUCTION

Dengue fever has been a big concern in India, with endemic outbreaks occurring virtually every year and generating panic due to a lack of appropriate diagnostic procedures and care facilities. Patients with classic symptoms are incredibly straightforward to identify; however, a considerable proportion of cases identified with dengue fever may appear with unusual presentations, necessitating prolonged assessment of the patients and unnecessary referral to tertiary centers, regardless of risk or severity. As a result, to avoid these unneeded complications, a broad understanding of these unusual expressions must be present in the background. The cardiovascular system has been implicated in dengue fever in several earlier investigations. The majority of them are typically harmless and self-contained. Conduction anomalies in dengue patients should be studied since conduction blocks can be the first indicator of acute myocarditis in dengue hemorrhagic fever patients in shock. We describe a second-degree Mobitz Type I atrioventricular block in a patient with dengue hemorrhagic fever that reverted to a normal rhythm during the recovery phase and showed no abnormalities after that.

## CASE REPORT

A 40-year-old man reported to the emergency department with high-grade fever, chills, and rigor for 3 days, with no circadian change and getting relieved on medication. Fever is associated with generalized body ache, decreased appetite, nausea, and a few bouts of vomiting (non-bilious and non-projectile). There had been no history of coughing, abdominal discomfort, or bleeding from any body part. On general examination, there were no signs of clubbing, edema, lymphadenopathy, or icterus. His B.P was 110/70 mm Hg in the right arm supine posture, respiration rate 22/min, and pulse was 96/min regular low volume. His hemoglobin level was

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

©2022 Published by Scientific Scholar on behalf of Adesh University Journal of Medical Sciences & Research

11.2 g/dl, his platelet count was 26,000/mm<sup>3</sup>, and his total leukocyte count was 3600/mm<sup>3</sup>, with 56% neutrophils and 42% lymphocytes. Dengue fever was suspected because of the fever and thrombocytopenia; therefore, a dengue serology was performed, and the patient was found to be NS 1 positive and IgM antibody negative. As a result, the patient was diagnosed with dengue fever and given conservative therapy. On the 5<sup>th</sup> day of the sickness, the fever faded, but the patient began to experience dizziness and lightheadedness. His blood pressure was normal, but his pulse was erratic; therefore, an ECG was performed. A second degree AV block Mobitz Type I was found on the ECG. His Hb was 11.1 g/dl, TLC was 4300/mm<sup>3</sup>, platelet count was 60,000/mm<sup>3</sup>, Na<sup>+</sup> was 135 meq/L, K<sup>+</sup> was 4.27 meq/L, Mg<sup>++</sup> was 2.22 meq/L, and Ca<sup>++</sup> was 9.4 meq/L, according to a routine CBC. CPK-MB and arterial blood gas analysis were both normal. Thyroid function test was normal. There were no abnormalities seen on an echocardiogram. The patient had no complaints of head-spinning or dizziness the next day, nor did he have a fever episode, and his ECG returned to normal. The emergence and elimination of second degree Mobitz Type I AV block are depicted in [Figures 1-3]. On the 10<sup>th</sup> day of sickness, a dengue serology test was performed, and the IgM antibody was positive while the IgG antibody was negative. After the patient was discharged, an ECG was performed during a follow-up appointment 1 week later and determined to be normal.

## DISCUSSION

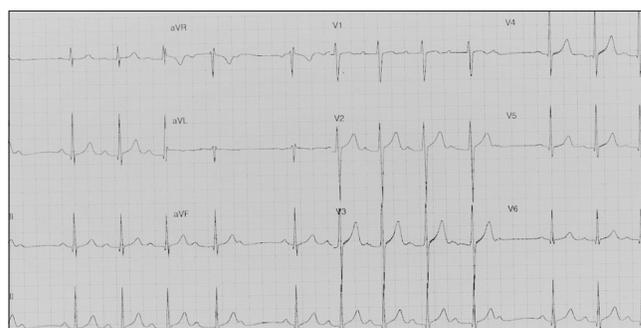
India is one of the world's most populous countries. Nearly every single year, from the end of July until the beginning of November, there is a dengue outbreak, which causes widespread alarm. This is mainly due to a problem of over- and under-diagnosis and poor management. Dengue virus is divided into four serotypes and belongs to the Flavivirus genus in the Flaviviridae family. The most hazardous kind is Type II.<sup>[1]</sup> These viruses are spread mainly by the *Aedes Aegypti* mosquito, often known as the Tiger Mosquito.<sup>[2]</sup> Mosquitoes mainly breed in fresh stagnant water and bite throughout the day, with a flying range of roughly 100 yards.

Fever, headache, rash, retro-orbital discomfort, severe myalgia, and arthralgia are common symptoms of this condition. Some people show severe signs such as shock, albeit this is significantly less common than the number of cases diagnosed with dengue fever.

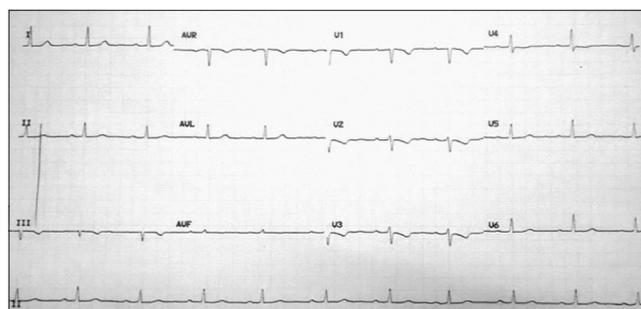
Acute abdominal pain, diarrhea, severe gastrointestinal bleed, severe headache, convulsions, altered sensorium, encephalopathy, intracranial hemorrhage, irregular pulse or heart rate, severe breathing difficulties, severe liver failure, obstructive jaundice, acute renal failure, and disseminated intravascular coagulation are some of the more unusual



**Figure 1:** ECG showing the normal cardiac rhythm on the day of admission.



**Figure 2:** ECG on the day 5 of admission showing the second degree AV block Mobitz Type I.



**Figure 3:** ECG on day 6 showing normal pattern.

dengue symptoms.<sup>[3]</sup> AV blockage, arrhythmia, and myocarditis have all been recorded as unusual cardiac symptoms.

Large-scale research is required to know the pathogenic basis of AV node dysfunction. Drug history, hyperkalemia, hypermagnesemia, and hypothyroidism which are usually the reversible causes of AV block are ruled out in our patient. Because the patient had no record of a chronic condition and had recovered entirely on conservative therapy, other infectious diseases were ruled out, concluding that the block was caused by dengue fever, which might have caused some form of AV node conduction anomaly.<sup>[4]</sup> Cardiac arrhythmias in dengue fever patients have been reported in myocarditis patients and have resulted in bouts of fainting and sometimes

even sudden death; consequently, extensive monitoring, and examination of conduction abnormalities are required during the illness.<sup>[5]</sup> Khongphatthallayothin *et al.* from Thailand previously documented Mobitz Type I AV block during the recovery period of dengue infection.<sup>[6]</sup> Sharma and Zaheer described a case of variable atrioventricular blockage in an 18-year-old boy with dengue fever who experienced Mobitz Type I AV block with AV dissociation, which resolved spontaneously.<sup>[7]</sup> On the 5<sup>th</sup> day, our patient had a second-degree Mobitz Type I AV block that resolved fully, demonstrating that dengue fever can produce reversible AV node conduction abnormalities.

## CONCLUSION

In patients with dengue hemorrhagic fever, Mobitz Type I AV block can be benign, and diligent monitoring alone may be enough. Awareness of this illness and its progression may help avoid overevaluation and transfer of these individuals to higher-level facilities. The clinical distinction between dengue hemorrhagic fever and myocarditis may be difficult in some instances. Patients who come in shock with heart block must be thoroughly diagnosed and closely watched. These AV blockages in dengue cases have been recorded seldom in the past. There is currently a shortage of data, necessitating more follow-up and reporting of cardiac conduction anomalies in dengue hemorrhagic fever.

## Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Malavige GN, Fernando S, Fernando DJ, Seneviratne SL. Dengue viral infections. *Postgrad Med J* 2004;80:588-601.
2. Deen JL, Harris E, Wills B, Balmaseda A, Hammond SN, Rocha C, *et al.* The WHO dengue classification and case definitions: Time for a reassessment. *Lancet* 2006;368:170-3.
3. Gulati S, Maheshwari A. Atypical manifestations of dengue. *Trop Med Int Health* 2007;12:1087-95.
4. Vijayaraman P, Ellenbogen KA. Bradyarrhythmias and pacemakers. In: Hurst's *The Heart*. Vol. 2. New York: McGraw-Hill Medical; 2011.
5. Promphan W, Sopontammarak S, Pruekprasert P, Kajornwattanakul W, Kongpattayothin A. Dengue myocarditis. *Southeast Asian J Trop Med Public Health* 2004;35:611-3.
6. Khongphatthallayothin A, Chotivitayatarakorn P, Somchit S, Mitprasart A, Sakolsattayadorn S, Thisyakorn C. Mobitz Type I second degree AV block during recovery from dengue hemorrhagic fever. *Southeast Asian J Trop Med Public Health* 2000;31:642-5.
7. Sharma JK, Zaheer S. Variable atrio-ventricular block in dengue fever. *J Indian Acad Clin Med* 2014;15:252-4.

**How to cite this article:** Vihari J, Sriteja N, Swain B, Elika M. Transient AV block: A rare finding in dengue fever. *Adesh Univ J Med Sci Res*, doi: 10.25259/AUJMSR\_20\_2022