



# Concurrent Dengue Hemorrhagic Fever and Hepatitis Coinfection in a Young Adult: A Case Report

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## Abstract:

Dengue fever, a mosquito-borne viral infection, commonly presents with fever, headache, myalgia, and thrombocytopenia. Hepatic involvement, characterized by elevated liver enzymes, is a recognized complication of dengue infection. However, coinfection with hepatitis in Dengue Hemorrhagic Fever (DHF) is uncommon. Here, we report a case of a 25-year-old male presenting with DHF complicated by acute hepatitis coinfection. The patient exhibited fever, abdominal pain, jaundice, thrombocytopenia, and markedly elevated liver enzymes. Laboratory investigations confirmed Dengue NS1 antigen positivity and concurrent acute hepatitis. This case underscores the importance of recognizing and managing coinfections in patients with dengue fever to prevent complications and improve outcomes.

## Introduction:

Dengue fever, caused by the Dengue virus transmitted by Aedes mosquitoes, is a significant public health concern in tropical and subtropical regions. While hepatic involvement is a common manifestation of dengue infection, coinfection with hepatitis viruses is rare. Coinfection poses diagnostic challenges and may result in more severe clinical outcomes. Herein, we describe a case of DHF complicated by acute hepatitis coinfection in a young adult male.

## Case Presentation:

A 25-year-old male presented to the emergency department with a 6-day history of high-grade fever, headache, myalgia, and abdominal pain. Physical examination revealed icteric sclerae, hepatomegaly, and petechiae on the extremities. Laboratory investigations showed thrombocytopenia (platelet count  $<50,000/\mu\text{L}$ ) and markedly elevated liver enzymes (AST, ALT, and total bilirubin). Dengue serology was positive for NS1 antigen and IgM antibodies, confirming

acute Dengue infection. Additionally, serological tests for hepatitis A, B, and C were positive, indicating concurrent acute hepatitis coinfection. Abdominal ultrasound demonstrated hepatomegaly without evidence of biliary obstruction.

Table 1

Case report's laboratory test

Test (normal range)	25/12/2022	25/12/2022	26/12/2022	28/12/2022	30/12/2022
	15:19 hrs	20:43 hrs	6:43 hrs	5:58 hrs	8:55hrs
Hemoglobin (12-16)	11.2	11.3	11.3	11.1	12.2
Hematocrit (36-46)	22.4	20.6	21.9	27.7	32.8
Platelets (150000-475000)	58000	43000	20000	77000	153000
Leukocytes (4500-11000)	3500	3530	4010	4740	5350
Neutrophils Seg (1400-6600)	1890	1271	1162	1422	2300
Neutrophils Ab (0-400)	0	0	0	0	0
Eosinophils (0-500)	0	71	80	95	161
Lymphocytes (1300-3500)	1365	1906	2486	2891	2621
Bilirubin total (0-1.1)	4.76	-	-	5.16	

### Discussion:

Coinfection with dengue fever and hepatitis presents diagnostic and management challenges. The etiology of hepatitis in dengue infection may involve direct viral cytopathic effects, immune-mediated mechanisms, and cytokine dysregulation. Concurrent hepatitis may exacerbate the severity of dengue illness and increase the risk of complications, including liver failure and hemorrhage. Prompt recognition and multidisciplinary management are essential for optimal outcomes in such cases. Further research is needed to elucidate the mechanisms and risk factors for coinfection and to guide therapeutic strategies.

### Conclusion:

This case highlights the rare occurrence of concurrent Dengue Hemorrhagic Fever and hepatitis coinfection in a young adult male. Clinicians should be vigilant for coinfections in patients with dengue fever, especially in endemic regions. Prompt diagnosis, supportive care, and close monitoring are crucial for preventing complications and improving outcomes in such complex cases. Further studies are warranted to better understand the epidemiology, pathophysiology, and management of coinfections in dengue fever.

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