



## A CASE REPORT OF ACUTE SUBDURAL HAEMATOMA DUE TO DENGUE HAEMORRHAGIC FEVER

### Internal Medicine

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### ABSTRACT

A 18-year-old male was admitted with high-grade fever and severe headache since 5 days. Dengue-specific IgM antibody was positive. History of head trauma was absent. Investigations revealed haemoglobin 10.3 g/dl, haematocrit 29%, normal leukocyte count 9000/mm<sup>3</sup>, and platelet count 11,000. Headache was very severe that it was not relieved by analgesics. CT Brain was done for further evaluation. CT brain showed left fronto parietal Acute Subdural Haematoma with midline shift.

### KEYWORDS

Dengue Hemorrhagic Fever, Subdural Hematoma

### INTRODUCTION

Dengue is a mosquito-borne disease caused by any one of four closely related dengue viruses (DENV-1, -2, -3, and -4). Infection with one serotype of DENV provides immunity to that serotype for life, but provides no long-term immunity to other serotypes. Thus, a person can be infected as many as four times, once with each serotype. Dengue viruses are transmitted from person to person by Aedes mosquitoes (most often Aedes aegypti) in the domestic environment. Epidemics have occurred periodically in the Western Hemisphere for more than 200 years. In the past 30 years, dengue transmission and the frequency of dengue epidemics have increased greatly in most tropical countries. Approximately, 50-100 million cases of dengue infection occur each year throughout the world.<sup>1</sup> The overall mortality in dengue infection is 1-5% without treatment and less than 1% with adequate treatment; however, severe disease carries a mortality of 26%.<sup>2,3</sup>

Dengue hemorrhagic fever (DHF) has a wide spectrum of bleeding manifestations including life-threatening hematemesis/melena, intracranial hemorrhages, or epidural spinal hematoma.<sup>4,5</sup>

Neurological or central nervous system (CNS) involvement/complications of dengue are exceedingly rare, with a reported incidence of <1%.<sup>6</sup>

DHF is currently defined by the following four World Health Organization (WHO) criteria:

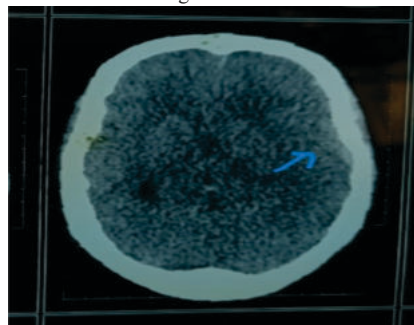
- Fever or recent history of fever lasting 2–7 days.
- Any hemorrhagic manifestation.
- Thrombocytopenia (platelet count of less than 1 lac)
- Evidence of increased vascular permeability.

### Case Study

A 18-year-old male was admitted with high-grade fever and severe headache since 5 days. History of head trauma was absent. On examination, the patient was conscious and alert. Vitals were bp-110/70 mmhg, Pulse rate – 60/min, spo2 – 97% on Room air. Petechial rash was present over body. Neurological examination revealed no signs of meningeal irritations, a Glasgow Coma Scale (GCS) score was 15. Investigations revealed haemoglobin 10.3 g/dl, hematocrit 29%, normal leukocyte count 9000/mm<sup>3</sup>, and platelet count 11,000. Dengue-specific IgM antibody was positive. Other investigations showed the following: serum bilirubin 1.4 mg/dl, serum glutamate oxaloacetate transaminase (SGOT) 21 IU/l (normal 9-45 IU/l), serum glutamate pyruvate transaminase (SGPT) 16 IU/l (normal 9-45 IU/l), prothrombin time 14 (normal 12-16) seconds and international normalized ratio (INR) 1.1 (0.8-1.2).

Computed tomography (CT) scan brain showed left fronto parietal acute Subdural Haematoma with midline shift of 4 mm towards right. [Figure 1]. Diagnosis of DHF was considered on clinical and investigational background. Adequate fluid replacement therapy was initiated. 8 units of platelets were transfused. He was treated with analgesics and anti-edema measures. Patient was managed conservatively for SDH as per neurosurgeon and neurophysician

opinions. Thrombocytopenia resolved within 4 days, and interval scanning showed gradual resolution of SDH. He had symptomatic improvement and was discharged.



**Figure 1: CT brain image of the patient**

### DISCUSSION:

Four serotypes of dengue virus have been recognized. Infection with one serotype does not confer immunity to the subsequent infection with other serotypes. However, it causes severe disease manifestation such as Dengue Hemorrhagic Fever [DHF] or Dengue Shock Syndrome. DHF presents with bleeding manifestations including intracranial hemorrhages and epidural spinal hematoma.

Kumar *et al.* reported a patient who presented with atypical acute SDH due to DHF.[8] Mittal and Jain reported a 27-year-old patient with DF who had clinical features suggestive of aseptic meningoencephalitis and within 6 days developed bilateral SDH and pure motor quadriparesis due to axonal polyneuropathy.[9] Jain *et al.* reported a 22-year-old patient who presented with clinical features suggestive of DSS and had associated spontaneous acute SDH. He succumbed to the illness.[10] A study by Bhoi *et al.* on cranial CT and MRI changes in dengue encephalitis reported one patient with DSS who had cerebellar hematoma and SDH.[11]

### CONCLUSIONS

Severe forms of dengue illness are common in areas, where the virus is an endemic or epidemic. Hemorrhagic complications greatly increase mortality, and while neurological complications, including CNS hemorrhage, are very rare, they can be fatal. There should be a high clinical suspicion of intracranial hemorrhage when neurological complications manifest, and urgent neurosurgical review should be sought.

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