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JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Series

Open Access, Volume 3

Dengue fever with atypical presentation in a tertiary care center in North India: Case series

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Received: Jun 02, 2022
Accepted: Jul 05, 2022
Published: Jul 12, 2022
Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/1941

Abstract

Background: Dengue fever is a dreaded arboviral infection of utmost global importance having 4 serotypes: DENV1, 2, 3, and 4. Dengue fever and severe dengue are the two clinical spectrums commonly classified. However, unusual or atypical manifestations are often overlooked causing significant fatality. This series of 6 case of dengue fever fill the lacunae of knowledge gaps.

Case presentation: All the 6 cases presented to Max Super Specialty Hospital, Vaishali from august to October of 2021. The mean age does 40.83 years (range 23-69 years) comprise 5 male and 1 female. The group had life threatening complications like ischemic stroke, intracranial hemorrhage, subdural hematoma, encephalitis, cardiomyopathy, acute myocardial infraction, acute kidney injury, acute liver failure, which were atypical manifestations in dengue patients.

Conclusions: Dengue is one the biggest challenge to public health all over world, especially developing countries like India. Dengue fever presenting with atypical manifestations cause delay in diagnosis, leading to fatal outcome. Clinicians should be well aware of these atypical manifestations of such a common arboviral disease as these are often underreported and overlooked.

Keywords: Dengue fever; Ischemic stroke; Intracranial hemorrhage; Subdural hemorrhage; Cardiomyopathy; Acute myocardial infraction.

Introduction

Dengue fever is the most common arboviral infection in the Southeast Asia. Four related, antigenically different serotypes: DENV-1, DENV-2, DENV-3, DENV-4 has been described. There is significant burden of dengue infection in northern India, especially in Delhi region, causing huge impact on public health and economics. Clinical presentation of dengue fever varies from asymptomatic subclinical infection to multi organ dysfunction causing death. Atypical or unusual presentation of dengue fever leads to delay in diagnosis causing significant mortality and morbidity. Knowledge of these atypical manifestations leads to early detection of these manifestations causing prompt management averting adverse outcome. We present this case series of 6 case of dengue fever with atypical manifestations admitted in Max super specialty hospital, Vaishali, Ghaziabad.

Case presentations

Case 1: Dengue fever with ischemic stroke

A 69 year old male admitted with high grade fever with nausea, vomiting since last 5 days followed by persistent hiccups from 2 days. On arrival, his vitals were pulse rate 94/ min,

B.P. 110/70 mmHg, respiratory rate 22/min, SpO_2 95% and was conscious, oriented to time, place and person. He had exaggerated deep tendon reflex with Babinski sign positive. Laboratory investigations revealed leucopenia, thrombocytopenia with transaminitis (TLC 2.06 x 10^9/L, platelet count 90 x 10^9/L, SGOT 98 U/L, SGPT 70 U/L GGT 109 U/L, ALP 111 U/L). Dengue NS1 was positive. He was managed with intravenous fluids and other supportive measures. However, his sensorium worsened gradually over next 2 days, so MRI brain showed acute infarct in the left half of Pons with minimal extension into the left brachium pontis (Figures 1 and 2) and was managed accordingly after taking neurology opinion. Chest and limb physiotherapy was continued and was discharged in stable condition after 21 days of admission.

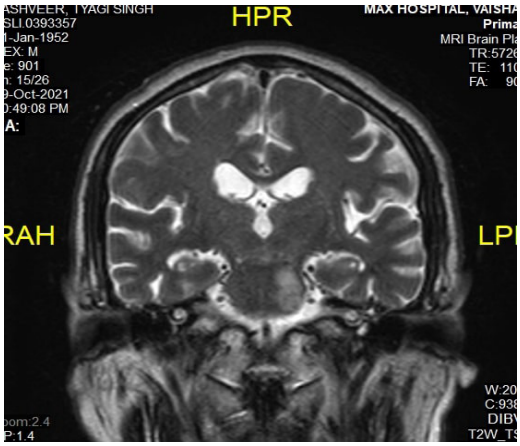

Figure 1:

Figure 2:

Case 2: Dengue shock syndrome with intracranial hemorrhage (ICH) and cardiomyopathy

A 30 year old male admitted with dengue fever (dengue IgM ve), was referred from another centre where he was admitted from last 6 days. On admission, he was disoriented and confused, and his vitals were pulse rate 178/ min, B.P. 60/20 mmHg, respiratory rate 28/ min, SpO_2 94%. He was intubated and was put on ventilatory support along with inotropic support. Ryle's tube revealed bloody aspirate. Blood count revealed thrombocytopenia with mild transaminitis and acute kidney injury. Cardiac enzymes revealed elevated trop I (>26.5). CT brain was done which revealed right basal ganglia bleed with intra ventricular extension with mass effect associated midline shift with subarachnoid haemorrhage with subacute infract in bilateral cerebellum (Figure 3). Multidisciplinary approach was followed, and neurology, neurosurgery, nephrology and critical care team was involved and his treatment was continued. He had cardiac arrest two days after admission, however he could not be revived and declared dead.

Figure 3:

Figure 4:

CASE 3: Dengue fever with Subdural Hematoma (SDH) and Acute Respiratory Distress Syndrome (ARDS)

A 25 year male admitted with dengue fever (Dengue NS1 ve), was referred from another centre in drowsy condition with blood stained frothy sputum. Vitals at admission were pulse rate 128/ min, B.P. 80/50 mmHg, respiratory rate 27/ min, SpO_2 96%. Blood count revealed thrombocytopenia with transaminitis (platelet count 22,000/L, Total bilirubin 2.72 mg/dl, direct bilirubin 1.8 mg/dl, SGOT 2460, SGPT 1150). He was intubated and put on ventilator. HRCT chest showed bilateral symmetrical

consolidation with ground glass opacifications in perihilar region of both lung. He had sudden seizure so CT brain revealed acute subdural hematoma along with left fronto temporo parietal lobe convexity (Figure 4). Multidisciplinary approach was followed and critical care, neurology, opinion was taken and managed accordingly. However, his condition further deteriorated and had cardiac arrest 5 days after admission and was declared dead.

CASE 4: Dengue fever with acute kidney injury and acute liver failure

A 41 year male presented with high grade fever, nausea, vomiting from 5 days. He was confused and disoriented. His dengue NS1 antigen was positive. Blood count revealed thrombocytopenia (platelet count 45,000), acute liver failure and acute kidney injury (total bilirubin 6.8 mg/dl, direct bilirubin 5.4 mg/dl, SGOT 13783, SGPT 6708, INR 3.6, urea 62.6 mg/dl, creatinine 3.2 mg/dl). Arterial blood gas revealed severe metabolic acidosis with type II respiratory failure. He was intubated and put ventilator support and inotropic support. USG whole abdomen showed hepatomegaly with grade III fatty infiltration, thickened edematous Gall bladder, mild ascites. Multidisciplinary approach was followed and critical care, nephrology, gastroenterology team were involved and was managed accordingly. However, he developed sudden bradycardia after 3 days of admission followed by cardiac arrest and death.

CASE 5: Dengue fever with Intracranial Hemorrhage (ICH) and encephalitis

A 23 year male admitted with high grade fever from 7 days, shortness of breath and black stool from 3 days. His vitals were pulse rate 124/ min, B.P. 90/50 mmHg, respiratory rate 24/ min, SpO_2 94%. He was drowsy, arousable on painful stimuli, following simple commands. Laboratory investigations revealed thrombocytopenia (platelet count 55000/L) with normal renal and liver function. Dengue NS1 antigen was positive. He had an episode of seizure next day of admission so CT brain revealed left fronto temporal hemorrhage with mass effect with midline shift with multiple hypodense areas in brain bilaterally with intraventricular hemorrhage. MRI Brain revealed multiple lesions bilaterally distributed in brain with areas of hemorrhage with sub arachnoid hemorrhage with mass effect and left fronto temporal hemorrhage after Neurology opinion and was managed accordingly. However, he had cardiac arrest after having bradycardia and was not revived and declared dead.

CASE 6: Dengue fever with myocarditis presenting as acute myocardial infraction

A 57 year old female admitted with dengue fever (Dengue NS1 ve). She had high grade fever, nausea, vomiting and was admitted in another centre. She was referred after having bradycardia and hypotension. On arrival her vitals were pulse rate 46/ min, B.P. 70/40 mmHg, respiratory rate 28/ min, SpO_2 94%. ECG revealed ST segment elevation in leads V1 to V4. Laboratory investigation revealed thrombocytopenia (platelet count 55,000/ L) with raised Trop I (7.17), CK-MB (68). 2D ECHO revealed akinetic apical anterior wall, LVEF 32 – 35%. Multidisciplinary approach was followed and cardiology, critical care team were involved and was managed conservatively. She was discharged in stable condition after 6 days of admission.

Discussion

Our case series summarised 10 confirmed case of dengue fever with unusual manifestations, fatal in nature, in a single centre of North India. In these cases, males (n,5) outnumbered females (n,1). 2 of these patients had ICH, while other unusual manifestations enumerated were ischemic stroke, SDH, hepatic dysfunction, acute kidney injury, cardiomyopathy, acute myocardial infraction, encephalitis. These manifestations are under reported, and not linked to dengue fever.

Dengue presents with diverse clinical spectrum ranging from asymptomatic to life threatening multi organ failure. Ischemic stroke is rarely reported with hypothesized mechanism due to meningovasculitis and transient hypercoagulable state [1,2]. ICH is rare grave complication in dengue fever possibly due to coagulopathy, platelet dysfunction, thrombocytopenia, and vasculopathy [3,4]. Severe dengue includes varied spectrum of bleeding manifestations including ICH, epidural spinal hematoma, hematemesis/melena [5,6]. Nirdesh Jain et al also reported a case of dengue shock syndrome with SDH [7]. Encephalitis is an atypical manifestation with 0.5% incidence with ICH in only 1 out of 27 patients with dengue encephalitis in a study by Cam et al [8]. Hypothesized mechanism include fluid extravasation, cerebral edema, hyponatremia, liver failure, renal failure or direct neurotropic effect of dengue virus [5]. Although a rare manifestation of DHF, encephalopathy should, however, be investigated in endemic areas and during epidemics of dengue, as early diagnosis is essential for its management.

Dengue fever can present with varied cardiac manifestations including pericardial effusion, myocarditis, atrioventricular block, ectopic ventricular beats and atrial fibrillation.9Prevalence of myocarditis has been found to be 11.28% [10]. Direct viral invasion of myocardium or cytokine mediated immune injury are thought to be pathologic mechanism of myocarditis [11]. Acute myocardial infarction diagnosed with ST-segment changes and regional wall motion abnormality is extremely rare [12,13].

Liver dysfunction is one the well recognized complication presenting with nausea, vomiting, abdominal pain, and anorexia alerting the physician [14].

AKI is a frequent complication increasing morbidity and mortality having multifactorial etiology including intense systemic inflammation, hemodynamic instability, hemolysis, rhabdomyolysis, and acute glomerulitis [15].

Conclusion

Dengue fever presenting with atypical or unusual manifestations is a challenge in making early diagnosis and prompt management leading to poor outcome for the patients. Clinicians should be well aware of these manifestations so that it can help diagnose these manifestations early and initiate the management early leading to improved prognosis.

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