Dengue Encephalitis: A Rare but Dreaded Complication of Dengue Fever

Sir,

Neurological manifestations in dengue fever have an incidence of 4.3%–13%.[1] However, dengue encephalitis, a direct neuronal infiltration by the dengue virus, is an extremely rare disease.

A 63-year-old female presented with a history of high-grade fever for 3 days. Initial evaluation revealed hemoglobin of 13.4 g%, total leukocyte count of 2860/mm³, platelets of 42,000/mm³, and dengue NS1Ag positivity. The patient was managed conservatively as a case of dengue fever with intravenous fluids and supportive treatment. On day 3 of admission, the patient’s platelets dropped to 11,000/mm³, which was managed with transfusions of four units of random donor platelets. On day 4, the patient started having progressive difficulty in speaking and ascending motor paresis followed by altered sensorium. The patient was immediately intubated and placed on mechanical ventilation. Further, intravenous immunoglobulin (Ig) and methylprednisolone were administered for 5 days. Magnetic resonance imaging (MRI) brain showed hyperintense T1 and T2 signal patterns in the brainstem region, suggestive of viral encephalitis [Figure 1]. Despite all efforts and aggressive intensive care management, the patient continued to deteriorate and succumbed to her illness on the 11th day.

Dengue initially was thought to be a nonneurotropic virus. The neurological manifestations can be attributed to the following three factors: (a) secondary to systemic manifestation, (b) neurotropic effect, and (c) postinfection sequelae including immune-mediated reactions.[2] Dengue encephalopathy is usually secondary to multisystem derangement such as shock, hepatitis, coagulopathy, and concurrent bacterial infection, whereas dengue encephalitis is due to direct neuronal infiltration by the dengue virus.[3] The common symptoms of dengue encephalitis are headache, seizures, and altered consciousness. Typical symptoms of dengue fever such as myalgias, rash, and bleeding are only seen in <50% of encephalitis cases. The common criteria used to diagnose dengue encephalitis are (a) fever, (b) signs of acute cerebral involvement, (c) presence of anti-dengue IgM antibodies or dengue genomic material in the serum and/or cerebrospinal fluid, and (d) absence of other causes of viral encephalitis and encephalopathy.[4] Our patient had a fever, altered sensorium with neurological deficits, altered sensorium, and dengue-IgM in her blood. Findings of neuroimaging studies such as MRI in dengue encephalitis are mostly nonspecific and can also be present in another viral encephalitis such as herpes and Japanese encephalitis.

Neurological manifestations in this disease are increasingly recognized but are poorly understood. Dengue is not classically...
a neurotropic virus, although recent evidence exists of direct neuronal injury. It is important to be aware of the uncommon presentations of dengue and detect them early. Dengue encephalitis, though a rare diagnosis, should be considered a differential diagnosis in the cases of febrile encephalopathies in tropical areas. Reporting such cases is, therefore, important for a thorough understanding and prompt management of such patients for a better outcome.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

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