

A Case Report of Acute Cerebellitis as a presenting feature of Dengue Fever

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Abstract: Dengue is the most common mosquito-borne viral infection worldwide. There is increased evidence for dengue virus neurotropism, and neurological manifestations could make part of the clinical picture of dengue virus infection in at least 0.5%–7.4% of symptomatic cases. Cerebellitis is an inflammatory syndrome resulting in acute cerebellar dysfunction, which may occur as a primary infectious, postinfectious, or postvaccination disorder^[1]. We report a case of a 53 year old male who presented with bilateral cerebellar signs as the presenting feature of dengue.

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I. Introduction

Dengue is the most common arthropod-borne viral (arboviral) illness in humans. It is transmitted by mosquitoes of the genus *Aedes*, which are widely distributed in subtropical and tropical areas of the world. Approximately 40% of the world population (2.5 billion people) may be at risk, and 75% of them are living in the Asia-Pacific region^[2]. It is caused by infection with 1 of the 4 serotypes of dengue virus, which is a Flavivirus (a genus of single-stranded nonsegmented RNA viruses). Infection with one dengue serotype confers lifelong homotypic immunity to that serotype and a very brief period of partial heterotypic immunity to other serotypes, but a person can eventually be infected by all 4 serotypes. An encephalitis largely restricted to the cerebellum, cerebellitis may occur due to a host of viral agents, including enteroviruses, herpesviruses, HIV, dengue and rabies. Bacterial infections have also been associated with cerebellitis, including *Borrelia burgdorferi* (Lyme disease), *Mycoplasma pneumoniae*, *Legionella*, and *Coxiella burnetii* (Q fever). In addition, cerebellitis may follow immunizations such as hepatitis, smallpox, and measles vaccination, or may occur without evidence for an antecedent or concurrent factor. In many cases, however, the precise causative agent is not isolated.

II. Case Report

We report a case of a 53 year old man who presented with the chief complaints of:

Fever

Unsteadiness of gait

The patient was a non-smoker and had no history of any other chronic illnesses. The family history was non-remarkable. There was no history of intake of any drugs. On examination, the patient had scanning dysarthria, marked horizontal nystagmus with bilateral dysmetria, dysidiadochokinesia and incoordination. The signs were more prominent on the right side. The patient's gait was wide-based and ataxic with a tendency to fall to the right side more than the left. The patient was positive for Dengue non structural (NS) protein antigen 1 test and IgM antibody. Appropriate treatment was initiated and the patient recovered from febrile episode within 11 days but cerebellar symptoms lasted for another 6 days.

The Magnetic Resonance Imaging (MRI) of the brain was normal and the cerebellar signs resolved by the 17th day of the illness.

III. Discussion

Neurological complications of dengue have been lassified into dengue virus encephalopathy, dengue virus encephalitis, immune-mediated syndromes (acute disseminated encephalomyelitis, myelitis, Guillain–Barré syndrome, neuritis brachialis, acute cerebellitis), neuromuscular complications (hypokalemic paralysis, transient benign muscle dysfunction and myositis), and dengue-associated stroke. Common neuro-ophthalmic complications are maculopathy and retinal vasculopathy. Pathogenic mechanisms include systemic complications and metabolic disturbances resulting in encephalopathy, direct effect of the virus provoking encephalitis, and postinfectious immune mechanisms causing immune-mediated syndromes. Dengue viruses should be considered as a cause of neurological disorders in endemic regions. Cerebellar syndrome in association with dengue fever is a rare presentation. Acute cerebellitis following dengue infection has been recently described.^[3] The presence of anti-dengue immunoglobulin M (IgM) in blood and CSF confirms the diagnosis. Most patients have a self-limiting course with complete recovery, and clinical symptoms spontaneously resolve within 2–3 weeks after dengue infection. The case report is believed to be medically significant because of the rarity of association of acute cerebellitis with dengue fever, as a presenting feature .

References

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