

Infection Prevention 2020: Dengue cerebellitis in an adult male: A case report & literature review - Kathrine Bernadette Apostol - The Medical City Ortigas

Kathrine Bernadette Apostol

The Medical City Ortigas, Philippines

Introduction: Purely cerebellar syndromes complicating dengue fever in an adult patient with risk factors for stroke are rare. Our literature review identified only 5 other similar cases, all from tropical countries. The incidence of dengue fever has grown exponentially around the globe in recent years. In Malaysia, dengue fever abnormal signals were seen in his cerebellum, cerebellopontine angle, midbrain, and pons is a public health threat due to its alarming rise in morbidity and mortality rates. At present, there are 18 688 confirmed patients with dengue infection. His blood pressure was 150–160/80–90 mmHg during this acute episode. Dengue fever is on the rise in tropical countries. In Sri Lanka, nearly 45,000 patients were reported in 2012. With the increasing numbers, rare manifestations of dengue are occasionally encountered. We report a patient who presented with bilateral cerebellar signs as the presenting feature of dengue. A 45-year-old previously healthy female from the suburbs of Colombo, Sri Lanka presented with an acute febrile illness associated with unsteadiness of gait a preliminary diagnosis of acute brainstem stroke was entertained given his background of multiple underlying illnesses. The magnetic resonance imaging (MRI) of his brain revealed hyper intense signals at the right corona radiate and left frontal lobe in keeping with old stroke

Case: This is a case of a 36-year old hypertensive and dyslipidaemia Filipino male treated as a case of dengue fever. On the fourth day of his illness, he suddenly presented with cerebellar symptoms. Neuroimaging done was negative. We report a case of a diabetic patient with cerebellitis associated with dengue fever. Our literature review identified only 4 other similar cases, all from Sri Lanka. Our report underscores the importance of recognizing this rare neurological syndrome associated with dengue fever. Several viral infections are reported to cause cerebellitis, such as varicella zoster, Epstein-Barr, herpes simplex, measles, HIV, and coxsackie. Cerebellitis can be primary infective, post-infective, or post-vaccination. Among the 5 cases, 4 (including ours) are likely primary infective and 1 is likely post-infective. His dyslipidaemia and hypertension were managed accordingly with medications. His dengue was managed with IV fluid hydration and serial full blood count monitoring. All of his neurologic symptoms resolved spontaneously within 2 weeks.

Discussion: Dengue fever can manifest with neurological features ranging from 0.5% to 21% of in-hospital cases. In multiple case reports, patients with dengue cerebellar syndrome

all recover spontaneously without permanent neurological sequelae. The pathogenesis of neurological syndromes remains to be elucidated. Direct invasion of the virus and immune-mediated mechanisms are postulated to cause the neurological sequelae. Five out of the six known cases, including that of our patient had unremarkable neuroimaging findings. The exact pathology of neurological syndromes in dengue fever is yet to be established. Which resolved within a few days? He could not recall his brain computed tomography (CT) results and had remained well with modified Rankin scale (mRS) of 0/6 upon discharge. His presenting vital signs, including glucose level, were stable. Apart from petechial in his lower limbs, his physical examination was unremarkable. Full blood count revealed haemoglobin 15.1g/dL, haematocrit 43%, white blood cell $3.3 \times 10^9/L$, and platelet $81 \times 10^9/L$. His alanine transaminase was 59 U/L. Renal profile was normal. Cerebellar syndrome associated with dengue infection was first reported by Weeratunga et al as a case series

Dengue non-structural protein antigen 1 test and IgM antibody testing both became positive indicating acute dengue infection. She recovered from the febrile episode within 9 days since the onset of fever but cerebellar symptoms outlasted the fever by one week. The magnetic resonance imaging of brain was normal and cerebellar signs resolved spontaneously by day 17 of the illness as a case report in 2014. Our case (the fifth case) and the literature review demonstrate that patients with dengue cerebellar syndrome tend to recover spontaneously without permanent neurological sequelae. Dengue IgM was detected on day 5 of illness. However, due to the positive serum Immunoglobulin M (IgM) of the subjects, we can conclude that this may be immune mediated. Another possible pathology is the direct invasion of the virus. However, the predilection for the cerebellum is not yet known.

Conclusion: Physicians should be made aware of such complications as dengue is epidemic in our setting. Since dengue causes a hyper-coagulable state with a higher risk for stroke, stroke should still be ruled out by neuroimaging.