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CASE REPORTS

ISOLATED MYOCLONUS FOLLOWING DENGUE INFECTION

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ABSTRACT
Myoclonus is a sudden, brief, involuntary muscle jerk. Myoclonus is highly prevalent but rarely occurs as an isolated finding in children. It can be due to various etiologies like hypoxia, metabolic disorders, storage disorders, post infectious, and neurodegenerative disorders. In the literature, myoclonus has been reported with viral encephalitis, upper respiratory tract infections or streptococcal infection. Opsoclonus myoclonus syndrome can develop after dengue infection. We present an 11 years old girl with isolated myoclonus following dengue viral infection which was a transient benign phenomenon and it completely recovered over a period of time.

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Introduction

Myoclonus is defined as a sudden, brief, shock-like involuntary movement caused by muscular contractions or interruptions of tonic muscle activity.[1] This movement disorder affects all the age groups and can appear as an isolated finding or as a symptom of different diseases.[2] Myoclonus has been described in acute encephalitis due to a variety of viral agents which either directly invade the central nervous system (CNS), or by an immunological process (post infectious).[3] In either case, the clinical picture is of an acute illness characterized by seizures, alterations in consciousness, and focal neurological signs. Dengue viral infection is one of the common viral agents causing encephalitis and other neurological complications. Neurological manifestations of dengue infection are variable from encephalitis to transient opsoclonus myoclonus syndrome (OMS)[4,5] Here, we present an 11 years old girl with myoclonus, as an isolated phenomenon, after dengue infection without any features of encephalitis or OMS.

Case Report

An 11 years old girl presented with myoclonic jerking of both upper limbs and neck for one month. She was recovered from dengue fever (Dengue ELISA IgM positive) one week before the onset of jerks. Initially child had 2-3 jerks per day, involving upper limbs only, each lasting for up to 20 seconds, without loss of consciousness or other epileptic phenomena. These jerks gradually increased in frequency upto 10-15 episodes per hour and spread to neck also. She was otherwise normal between attacks. Jerks were always present in wake state only. She was the only one child of non-consanguineous parents with normal developmental history. There was no family history of similar illness. She had completed her immunization according to Indian Academy of Pediatrics (IAP) schedule. General and systemic examination revealed no abnormalities. Child's weight was 32 kg. Magnetic resonance imaging (MRI) of the brain was normal. Electroencephalogram (EEG) showed runs of polyspike/spikes at about 5/6 per second, associated with the episodes of jerking. Cerebrospinal fluid (CSF) analysis was normal. CSF measles IgG antibody was negative. Anti-nuclear antibody profile was negative. Serum copper and ceruloplasmin levels were normal. Child was treated with clonazepam. Treatment with clonazepam improved the jerks but made her very drowsy. When clonazepam was discontinued, the jerks became more intense and exacerbated to noise, sudden movement. She was advised to take sodium valproate 300 mg two times a day and piracetam 400 mg three times a day. She showed an excellent response to these drugs and the myoclonus subsided almost completely in four months. Valproate was tapered and stopped slowly over four months. The child has remained normal without any jerks for past six months.

Discussion

Myoclonus is a paroxysmal event occurring in a great amount of disorders of different nature. Myoclonic movements have many possible etiologies, anatomic sources, and pathophysiologic features. Myoclonus is often symptomatic, related to several conditions such as hypoxia, infective encephalitis, metabolic disorders, drug induced and toxic disorders, storage diseases, and neurodegenerative disorders.[2] However, myoclonic jerks can also appear as a transitory phenomenon after an infectious illness such as influenza or chicken pox[6] or gastrointestinal infections by Enterovirus 71[7] and even after infections of the upper respiratory tract or influenza- like syndromes.[8] The interval between the initial illness and onset of myoclonus is short. Myoclonus developed in our patient following dengue viral infection. In our patient, the interval to onset of myoclonus was one week.

Neurological features of dengue infection have

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been reported in 0.5% to20% of patients in recent years.[9,10] Neurological complications of dengue virus infection are classified into three categories based on pathogenesis as proposed by Murthy, Marzia and colleagues:[1] metabolic disturbance, e.g., encephalopathy;[2] viral invasion, including encephalitis, meningitis, myositis, and myelitis;[3] autoimmune reactions, including acute disseminated encephalomyelitis, neuromyelitis optica, optic neuritis, myelitis, encephalopathy, and Guillain-Barre syndrome (GBS).[9,10] Verma et al reported two patients with OMS followed by dengue viral infection which completely recovered on follow up period.[5] Our patient had only isolated myoclonus without any other manifestations. As per literature review, this is the first report of isolated myoclonus followed by dengue viral infection.

Why some patients should develop myoclonus without clinical or investigative evidence of structural damage of the CNS following non-specificor uncomplicated infectious illnesses is unclear. The pathophysiological origin of the myoclonus in our case is uncertain. As might be expected therefore it appears that post-infectious myoclonus is a heterogenous entity and probably an immune mediated phenomenon.

Conclusion

Myoclonic jerks can occur as isolated phenomenon, after a dengue viral infection without any features of encephalitis or OMS.

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Compliance with Ethical Standards

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References:

1. Fahn S, Marsden CD, Van Woert MH. Definition and classification of myoclonus. Adv Neurol. 1986;43:1-5
2. Pranzatelli MR. Myoclonus in childhood. Semin Pediatr Neurol. 2003;10:41-51
3. Farrel DF, Swanson PD. Infectious diseases associated with myoclonus. In: Charlton MH, ed. Myoclonic seizures. Amsterdam: Excerpta Medica. 1975:77-110.
4. Carod-Artal FJ, Wichmann O, Farrar J, Gascón J. Neurological complica¬tions of dengue virus infection. Lancet Neurol. 2013;12:906-919
5. Verma R, Sharma P, Garg RK, Atam V, Singh MK, Mehrotra HS. Neurological complications of dengue fever: experience from a tertiary center of north India. Ann Indian Acad Neurol.2011; 14: 272-78
6. Bhatia K, Thompson PD, Marsden CD. "Isolated" postinfectious myoclonus. J Neurol Neurosurg Psychiatry. 1992;55:1089-1091
7. Lu HK, Lin TY, Hsia SH, Chiu CH, Huang YC, Tsao KC, et al. Prognostic implications of myoclonic jerk in children with enterovirus infection. J Microbiol Immunol Infect. 2004;37:82-87
8. Mink J, Kurlan R. Acute postinfectious movement and psychiatric disorders in children and adolescents. J Child Neurol. 2011;26: 214-217
9. Murthy JM. Neurological complication of dengue infection. Neurol India. 2010;58:581-4.
10. Sahu R, Verma R, Jain A, Garg RK, Singh MK, Malhotra HS, et al. Neurologic complications in dengue virus infection: a prospective cohort study. Neurology. 2014;83:1601-9.