

Opsoclonus in Scrub Typhus

Sir,

We read with great interest the article entitled “Scrub Typhus-Associated Opsoclonus: Clinical Course and Longitudinal Outcomes in an Indian Cohort” by Ralph *et al.*^[1] wherein the authors have elegantly described opsoclonus as a rare neurological manifestation of a rickettsial infection, scrub typhus. We have the following additional comments to make on the article:

1. Opsoclonus is a rare neuro-ophthalmic disorder that affects children more than adults and is characterized by conjugate, involuntary, multidirectional saccadic eye movements, also referred to as “saccadomania,” and pathophysiologically is believed to be due to the disordered balance of the “burst” neurons and “omnipause” neurons dictating saccadic limits, located in the brainstem. Usually a paraneoplastic disorder, especially in children, parainfectious causes of opsoclonus have been uncommonly described. In addition to scrub typhus, some other agents include viruses [mumps, rubella, human immunodeficiency virus (HIV), cytomegalovirus (CMV), Epstein Barr virus (EBV), Coxsackie B, and West Nile virus],^[2,3] *Mycobacterium tuberculosis*, and bacteria (*Salmonella*, *Streptococcus*, and *Borrelia*).^[4]
2. The authors have proposed an immune-mediated mechanism led by T2-hypersensitivity reaction targeting self-antigens in culprit sites, which is self-limited. As per this study, the resolution occurred spontaneously over 2 days to 2 weeks. Going by the parable of an immune-mediated process triggered by an infectious agent, such as postherpetic anti-NMDAR autoimmune encephalitis,^[5] usual time for development of symptoms following herpes simplex infection is a median of 32 days compared to 11 days in postscrub typhus opsoclonus. Resolution tends to take weeks to months. Rapid resolution of symptoms in this series of patients with scrub typhus seems counterintuitive and suggests additional/novel pathogenetic mechanisms deserving further exploration. It is possible that auto-antibodies only transiently and weakly bind to the self-antigen without causing any modification or damage and detach easily, leading to the fast reversal of symptoms. It is interesting to note that while other complications of scrub typhus have a basis in vasculitic injury due to endothelial invasion,^[6] this neurological complication is seemingly favored predominantly by an autoimmune basis, suggesting that multipronged pathogenic mechanisms operate in this condition.
3. The authors have suggested a role of steroids to shorten the duration of this complication although spontaneous resolution seems to be the rule as per this large study and have pointed out a case where glucocorticoids were administered. High-dose intravenous immunoglobulin

therapy has also been used in parainfectious opsoclonus-myoclonus syndrome (OMS) and seems to have a better response than steroids although scientific evidence is very limited.^[7] In fact, parainfectious and idiopathic OMS responds better to immunoglobulin therapy than paraneoplastic OMS so much so that it has been proposed as a differentiating feature.^[8]

Opsoclonus as a distinct entity or in association with other movement disorders is an interesting clinical syndrome and the authors have added an important infectious agent to the list of treatable causes of the syndrome.

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Conflicts of interest

There are no conflicts of interest.

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