VIDEO IN CLINICAL MEDICINE

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Opsoclonus in a Patient with Scrub Typhus Infection: A Rare Neurological Manifestation

Rashmi Meena, Gargee Ratan**, S Anuradha***, Sumeet Singla*****

A 36-year-old man, presented with a fever with chills for 1 week and abdominal pain and vomiting for 1 day. There was no history of cough, shortness of breath, abnormal body movements, altered sensorium, headache, decreased urine output, jaundice, or bleeding manifestations. On examination, the patient was conscious and oriented to time, place, and person. His vitals were stable. A typical *'cigarette burn'* eschar was noted over his chest (Fig. 1). The rest of the general physical and systemic examinations were unremarkable. On the 3rd day of hospitalisation, he developed chaotic, multidirectional eye movements consistent with opsoclonus (Video). Repeated neurological examination was normal with normal cerebellar function. Laboratory investigations showed thrombocytopenia (40,000), elevated ESR (91), hyperbilirubinaemia (Total bilirubin - 3.5 mg/dL), and abnormal liver (AST 133 U/L, ALP 388 U/L) and kidney function tests (urea - 106 mg/dL/1.3 mg/dL). Scrub typhus IgM ELISA was positive, while other infectious causes were ruled out. MRI of the brain revealed gliosis and encephalomalacia as sequelae of prior traumatic brain injury with a normal cerebellum.

The patient was treated with tablet doxycycline for 10 days, along with supportive management. The patient showed clinical improvement during hospitalisation and was discharged in stable condition.

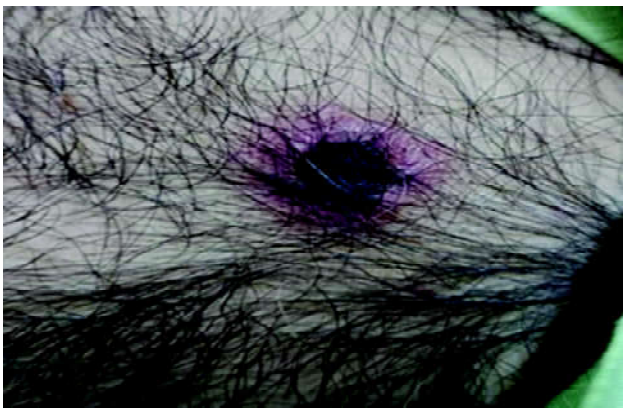

Fig. 1: *Eschar over his chest.*

Scrub typhus, a significant public health issue, is caused by the rickettsial bacterium *Orientia tsutsugamushi*, which is predominantly found within the Tsutsugamushi Triangle. Its incidence has been reported as 4.6 per 1,00,000 over a decade, with a case fatality rate of 13.6%[1]. Systemic manifestations typically emerge in the second week of illness and may include central nervous system involvement, such as meningitis, encephalomyelitis, encephalopathy, and occasionally cranial nerve palsies or ocular symptoms[2,3].

Opsoclonus, a rare neurological manifestation, is an uncommon presentation of scrub typhus. This condition, often accompanied by myoclonus, cerebellar dysfunction, or extrapyramidal signs, typically resolves during the febrile phase of the disease. Opsoclonus arises from dysfunction of Purkinje cells in the dorsal vermis, leading to disrupted inhibitory control of saccadic burst neurons in the pontine reticular formation. This disruption results in disinhibition of the cerebellar fastigial nucleus, causing the characteristic abnormal eye movements.

Ravikar Ralph *et al* reported a case series on opsoclonus, a rare neurological manifestation of scrub typhus, in 18 patients out of 1,650 cases over five years at a teaching hospital from India. Opsoclonus occurred after a median of 11 days from fever onset, with 94% showing myoclonus, 67% cerebellar dysfunction, 33% extrapyramidal syndrome, and 17% aseptic meningitis. CSF analysis revealed mildly elevated WBC counts, high protein levels, and normal glucose, while brain MRI was unremarkable in 75% of cases. The case-fatality rate was 5.5%, and complete neurological recovery occurred by 12 weeks post-discharge. Opsoclonus typically arises during the resolving febrile phase and resolves with appropriate treatment[4].

Opsoclonus is generally associated with parainfectious, paraneoplastic, or other causes. It is more commonly observed in children, where neuroblastoma is the most frequent malignancy, and paraneoplastic causes are more

Post-Graduate Student, **Senior Resident, ***Director Professor, ****Professor, Department of Medicine, Maulana Azad Medical College and Lok Nayak Hospital, New Delhi - 110 002.

Corresponding Author: Dr S Anuradha, Director-Professor, Department of Medicine, Maulana Azad Medical College, New Delhi - 110 002. Tel: 9968604279, E-mail: drsanuradha@gmail.com

prevalent than parainfectious ones.

This case report and video underscores the growing variability and complexity of neurological presentations associated with scrub typhus. Opsoclonus-myoclonus syndrome (OMS) is typically recognized as a well-defined paraneoplastic syndrome, likely driven by an antibody-mediated mechanism. In contrast, parainfectious OMS appears to have a favourable prognosis, provided the underlying infection is effectively treated.

References

1. Bonell A, Lubell Y, Newton PN *et al*. Estimating the burden of scrub typhus: A systematic review. *PLoS Negl Trop Dis* 2017; 11 (9): e0005838.
2. Neela A, Gohil R, Tagore R, Ta V. Opsoclonus: A Rare Neurological Manifestation in a Patient With Scrub Typhus Infection. *Cureus* 2024; 16 (9): e70058.
3. Rana A, Mahajan SK, Sharma A *et al*. Neurological manifestations of scrub typhus in adults. *Trop Doct* 2017; 47 (1): 22-5.
4. Ralph R, Prabhakar AT, Sathyendra S *et al*. Scrub Typhus-Associated Opsoclonus: Clinical Course and Longitudinal Outcomes in an Indian Cohort. *Ann Indian Acad Neurol* 2019; 22 (2): 153-8.