Guillain–Barre Syndrome: A Rare Occurrence Following Scrub Typhus

To the Editor,

We report a case of 42-year-old male, farmer by occupation, presenting with fever for 5 days and yellowish discoloration of urine for 2 days. He had moderate grade continuous fever for 5 days responding to antipyretics for few hours, without any rash, sore throat, or loose stools. There was no significant medical history. On examination, vital signs were normal; mild icterus and conjunctival injection were present without any rash, eschar, or lymphadenopathy. Abdominal examination revealed mild hepatomegaly. The routine blood investigations revealed hemoglobin 13.6 g/dL, total leukocyte count 5400/mm^3, bilirubin total 2.6 mg/dL, direct bilirubin 1.2 mg/dL, and serum glutamic oxaloacetic transaminase/serum glutamate pyruvate transaminase 67/59 IU/L. Serum lactate dehydrogenase, creatine kinase, and creatinine levels were normal. Malarial antigen and typhidot serology were negative. Viral testing for dengue, hepatitis B, hepatitis C, human immunodeficiency virus 1 and 2, herpes simplex virus, varicella zoster virus, cytomegalovirus, and Epstein–Barr virus by enzyme-linked immunosorbent assay was negative. Leptospiral and treponemal serology were also negative. Scrub typhus immunoglobulin (Ig) M antibody test was positive (solid-phase immunochromatographic assay). Abdominal scan showed mild hepatomegaly. He was treated with oral doxycycline 100 mg twice daily. Fever responded within 2 days of antibiotic therapy, but subsequently, he developed symmetric weakness involving both lower limbs which progressed to involve both upper limbs over the next 2 days. There was no history of numbness, paresthesia, backache, or bladder/bowel-related complaints. Neurological examination revealed hypotonia in all the limbs, with power Grade 3/5 (Medical Research Council grading) in the bilateral lower limbs and 4/5 in the bilateral upper limbs. Trunk and neck muscles were weak. Deep tendon reflexes were absent; plantar response was bilaterally flexor. Sensory and cerebellar examination was normal. Nerve conduction studies revealed prolonged distal latencies, reduced conduction velocities, and absent F responses involving motor nerves suggestive of demyelinating polyneuropathy with sparing of sensory nerve action potentials. Cerebrospinal fluid (CSF) examination, done following a week of neurological worsening, showed albuminocytological dissociation (3 mononuclear cells, protein – 76 mg/dL). Considering the diagnosis of acute inflammatory demyelinating polyradiculoneuropathy, the patient was given intravenous (IV) Ig at a dose of 2 g/kg body weight over 5 days. The patient improved over the next 2 weeks and discharged in stable condition. The weakness did not progress any further, and he gradually improved to regain complete motor strength with physiotherapy over the next few months.

Scrub typhus is caused by *Rickettsia tsutsugamushi*, a Gram-negative bacterium. It is transmitted through the bite of mites' larvae (chiggers).[1] Neurological involvement has been reported mainly in the form of meningitis and encephalitis.[2] There have been very few reports of involvement of peripheral nervous system.[3,4] Patients mostly presented with flaccid ascending quadriparesis with reduced deep tendon reflexes, a clinical profile consistent with Guillain–Barre syndrome (GBS), later confirmed with neurophysiological and CSF testing. Patients responded to immunotherapies including IV Ig. The pathophysiology is still not clear, proposing both direct toxic and immune-mediated effects. We conclude that scrub typhus should be kept as a differential diagnosis while treating postinfectious GBS.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Moon BP, Kim GT, Park CW, Rhew DH, Choi SK. A clinical study of 120 cases with tsutsugamushi disease. Korea J Infect Dis 1995;27:273-9.
2. Pai H, Sohn S, Seong Y, Kee S, Chang WH, Choe KW. Central nervous system involvement in patients with scrub typhus. Clin Infect Dis 1997;24:436-40.

3. Lee SH, Jung SI, Park KH, Choi SM, Park MS, Kim BC, *et al*. Guillain-Barre×syndrome associated with scrub typhus. Scand J Infect Dis 2007;39:826-8.
4. Sawale VM, Upreti S, Singh TS, Singh NB, Singh TB. A rare case of Guillain-Barre syndrome following scrub typhus. Neurol India 2014;62:82-3.

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