Case Report

Bilateral Symmetrical Brachial Plexopathy in Association with Scrub Typhus: A Rare Presentation

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Abstract: Scrub typhus is a commonly encountered rickettsial disease of the Indian subcontinent caused by Orientia tsutsugamushi. It can be associated with various neurological manifestations. We report a case of 50 year old man with bilateral symmetrical brachial plexopathy associated with scrub typhus from the Garhwal region of Uttarakhand state. The initial manifestations were fever, bodyaches and weakness in both upper limbs. Laboratory reports confirmed the diagnosis of scrub typhus. EMG and NCV were strongly suggestive of upper brachial plexopathy. Patient was discharged in satisfactory condition.

Key Words: Brachial plexopathy, Scrub typhus

Introduction:
Scrub typhus is rampant in northern, eastern and southern India. Apart from these regions, recently it has also been reported from central India.(1) Humans are infected accidentally and the case fatality can be significantly high if the disease is not identified in time. So, it is imperative to differentiate scrub typhus from other febrile illnesses and to start specific treatment at the earliest to decrease morbidity and mortality. This disease can develop neurological complications like meningocerebrabilis, brachial plexopathy, Guillain barre syndrome etc. Herein, we report a rare case of bilateral brachial plexopathy associated with scrub typhus infection.

Case Report
A 50 year old male, chronic smoker was admitted to Neurology department with complaints of weakness in both the arms such that he could not lift his arms above shoulder, could not hold weight with his arms and could not write. He also complained of pain in both the arms which increased on walking when upper limbs were not supported. Patient gave history of fever 2 months back. Fever was accompanied with generalized bodyaches. On thorough investigations, blood culture showed no growth, malaria rapid test and dengue serology was negative. Scrub typhus IgM ELISA was positive. Hence diagnosis of scrub typhus was made and patient was treated with antibiotics like doxycycline and azithromycin. Patient was discharged from hospital in satisfactory condition.

Then after two months, the patient presented with complaints of pain and weakness in both upper limbs. On examination patient was conscious and oriented. Vital signs were normal. Central nervous system examination showed that power in shoulder muscles (flexor, extensor and abductor) were 0/5 whereas in elbow flexion and extension it was 3/5. Sensations were normal and nothing abnormal was detected on other system examination. On investigations, electromyography (EMG) showed large, polyphasic MVAP in biceps with incomplete recruitment suggestive of neurogenic potentials. NCV was also suggestive of upper brachial plexopathy. CSF analysis was normal. Viral markers were non-reactive. MRI cervical spine showed normal findings. Hence diagnosis of bilateral symmetrical brachial plexopathy, post scrub typhus was made. Patient was initiated on electrical muscle stimulation, physiotherapy along with supportive and symptomatic treatment and discharged with satisfactory condition.

Discussion:
Scrub typhus is an acute febrile illness caused by rickettsiae, *Orientia tsutsugamushi*. The disease is transmitted to humans through the bite of an infected chigger, the larval stage of trombiculid mite. (2)

The first report from this area was in 2010, when nine adult cases of scrub typhus were reported. (3) The reasons for emergence of scrub typhus in this part of India are not clear. The Garhwal region is hilly with a climate conducive for the breeding of the vector. The large scale deforestation along with ongoing infrastructural, industrial and river development projects may be facilitating human contact with and bites by infected chiggers thereby promoting disease acquisition.

Our patient who initially presented with fever and body aches, later on developed bilateral brachial plexopathy due to scrub typhus. Similar case has been reported by Singh SK et al where they reported unilateral brachial neuritis and eschar was noted in scapular region.(4) Another isolated case report of brachial plexus neuropathy with scrub typhus who improved on treatment also finds a place in literature.(5) Other important neurological complication of scrub typhus is meningoencephalitis which has been described by Gulati S et al. They have mentioned that seizures, delirium, cerebellitis, myelitis, cerebral hemorrhage, and hearing loss are the other neurological presentations of this infectious disease.(6) A patient of scrub typhus with pain indistinguishable from trigeminal neuralgia was reported, who improved clinically after treatment.(7) Another report mentions development of bilateral simultaneous facial nerve palsy in convalescent period, which improved on administration of steroids.(8)

Recognizing the full spectrum of clinical manifestations can help clinicians in considering appropriate differential diagnosis amongst the dengue fever like illnesses. Entomological studies are needed to study the density of the vector and to institute vector control measures in order to prevent this relatively benign, yet potentially fatal, clinical entity from spiralling into a major public health issue To the best of our knowledge, this is the first case reported to have bilateral brachial plexopathy after scrub typhus infection. Though literature search mentions case reports with unilateral brachial neuritis post scrub typhus.

**Conclusion:**

To conclude, scrub typhus may present with a wide spectrum of neurological manifestations. Knowledge of these manifestations will enable clinicians to consider scrub typhus as one of the differential diagnosis of acute febrile illnesses with neurological involvement. Timely recognition of these complications is of paramount importance to ensure a favorable outcome.

**References**