

Acute Onset Peripheral Neuropathy in a Patient with Scrub Typhus

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DOI: <https://doi.org/10.52403/ijrr.20230966>

ABSTRACT

The neurological complications of scrub typhus can have a wide spectrum of presentations involving both central and peripheral nervous system, meningoencephalitis and meningitis being the most common. Involvement of the peripheral nervous system in scrub infection is not commonly reported, here we present a case of A 70-year-old male diagnosed with scrub typhus fever and presented with peripheral neuropathy. Duloxetine and methyl cobalamin combination along with gabapentin were used for management and the patient was partially improved gradually over a period of six days.

Keywords: scrub typhus, scrub infection, scrub typhus fever, orientia tsutsugamushi

INTRODUCTION

Scrub typhus fever is endemic in tropical regions of India and the causative organism is orientia tsutsugamushi a gram-negative bacterium that causes acute febrile illness, rash, eschar, myocarditis, and even meningitis and neuropathy. It can be diagnosed with a scrub rapid antigen test or by the presence of antibodies against the organism. Scrub typhus is transmitted to humans through the bites of infected larval mites. Scrub typhus-induced meningitis or meningoencephalitis is reported in 14-38% of cases, with differential diagnosis being tubercular meningitis and cerebral malaria.

CASE REPORT

A 70-year-old male known case of hypertension was admitted to our hospital with ten-day history of severe burning pain in bilateral lower limbs, severe enough to alter the patient's sleeping habits, along with a history of intermittent fever for the previous 8 days. There was no history of headache, cough, dyspnoea, or pain in the abdomen.

On examination, the patient was fully conscious oriented to time place person and showed no neurological deficit. His pulse was 112 per minute was febrile (101-degree F), respiratory rate was 20 breaths per minute, and his blood pressure was 118/78mm of hg. He has 98% oxygen saturation on room air. There was a non-blanching erythematous rash present on right lumbar region of abdomen, and 'Henna' stains on both feet which the patient had applied as a local remedy for the severe burning pain, pictures for the same provided below, patient also had significant sensory deficit bilaterally with reduced vibration sense over the great toe and medial malleolus. There was no pedal edema, no lymphadenopathy no cyanosis and no signs of peripheral vascular disease. The rest systemic examination was unremarkable.



A nerve conduction study was performed which showed motor axonal affection of bilateral peroneal nerves with slow nerve conduction velocity of 46.08 m/s in the right lower limb below the knee and 51.25 m/s on the left side. Other hematological and biochemical investigations revealed thrombocytopenia, raised liver enzymes (ALT/AST), deranged electrolytes, and raised creatinine. Serological tests for scrub

typhus and dengue were ordered which were positive for scrub typhus IGM and dengue IGM antibody. Peripheral blood smear showed thrombocytopenia. Chest radiography did not reveal any abnormality. Routine urine examination showed no abnormality. A summary of important investigations is provided in the table below.

	Result value	Reference range
SGOT(AST)	441.16	5-35 U/L
SGPT	351.51	13-41 U/L
SERUM CREATININE	2.51	0.7-1.4 mg/dl
Sodium	132	136-145 mmol/l
potassium	2.8	3.5-5.1 mmol/l
Chloride	103	97-111 mmom/l
Scrub typhus IGM	POSITIVE	
Dengue IGM	POSITIVE	
Peripheral blood smear	Thrombocytopenia	

The patient was managed conservatively with antipyretics, antiemetics, and hydration was maintained. Tablet Duloxetine hydrochloride with methyl cobalamin 20mg along with tablet Gabapentin 100 mg and injection Vitcofol-C (combination of vitamin C, folic acid, vitamin B12, and niacinamide) were given for the neuropathic symptoms. Tablet doxycycline 100mg twice daily and tablet cefixime 200mg twice daily were given for scrub typhus fever and patients improved drastically. The patient became afebrile after the second day of antibiotics whereas the neuropathic symptoms were relieved by the third day of admission. The hematocrit values improved within three days of treatment. The patient was discharged on the 6th day with uneventful recovery. And was followed up

in the Outpatient department for a repeat nerve conduction study which showed.

DISCUSSION

In this case, the treatment approach involved addressing both the underlying infection and peripheral neuropathy symptoms. Antibiotics such as doxycycline or azithromycin are commonly used in treatment of scrub typhus. Additionally, medications like duloxetine and gabapentin can help manage neuropathy symptoms by reducing pain and improving nerve function. Methyl cobalamin, a form of vitamin B12, is often used as a supplement to support nerve health.

CONCLUSION

This case report highlights the association between scrub typhus and acute onset peripheral neuropathy. The exact mechanism of nerve damage in scrub typhus is not fully understood, but it is thought to be related to an immune-mediated response to the infection. It is important to note that the partial improvement observed suggests a positive response to the medications. However, it is crucial for the patient to continue their treatment and follow up at regular intervals.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this article: Pankaj Gandhi, Yunus Nagori. Acute onset peripheral neuropathy in a patient with scrub typhus. *International Journal of Research and Review*. 2023; 10(9): 613-615. DOI: <https://doi.org/10.52403/ijrr.20230966>
