

Case Report

An unusual presentation of scrub typhus with lateral rectus palsy in a child

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Received: 07 January 2023

Revised: 04 February 2023

Accepted: 09 February 2023

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ABSTRACT

Scrub typhus, an acute febrile infectious disease prevalent in the “Tsutsugamushi triangle”, is a mite-born rickettsial zoonosis, caused by *Orientia tsutsugamushi*. Although the clinical presentation is protean, it rarely causes abducens nerve palsy. We report a 13-year-old previously healthy Indian boy who presented with a recent onset right abducens nerve palsy, headache and fever but without the classic dermatological manifestation (“eschar”) of the disease. After exclusion of common infectious and other causes, he was finally diagnosed with scrub typhus associated with an abducens nerve palsy, which responded to doxycycline therapy.

Keywords: Scrub typhus, *Orientia tsutsugamushi*, Meningitis, Lateral rectus palsy

INTRODUCTION

Scrub typhus, a zoonotic disease, is currently being recognized as a significant contributor to the infectious diseases in India. It is an acute febrile illness caused by gram negative bacteria *Orientia tsutsugamushi* and endemic to the geographical region in Asia-Pacific rim called Tsutsugamushi triangle, transmitted by larval mites of *Leptotrombidium deliense* group, which leave behind a characteristic eschar at the bite site.^{1,2} It has various clinical manifestations including fever, maculopapular rash, eschar, history of tick exposure etc. Central nervous system involvement in the form of altered sensorium and or meningitis is frequently observed in scrub typhus.³ However, isolated cranial nerve involvement is uncommon and so far only 6 cases have been reported in the literature.³⁻⁸

CASE REPORT

A 13-year-old otherwise healthy male child presented with complaints of fever since 1 week, headache since 3 days and diplopia since 1 day, he was treated with IV

antibiotics from outside hospital and referred here in view of persistent symptoms. Physical examination revealed maculopapular rash over upper limb and back of chest with unilateral lateral rectus palsy which progressed to bilateral later with GCS of E4V5M6. He was hemodynamically stable and systemic examination was normal. Workup was done for fever with broad differentials, total leucocyte counts was 6700 cells/mm³, c reactive protein was elevated (139-87-37-2.4), Scrub typhus IgM was positive.

Management of scrub typhus (Doxycycline, azithromycin) was initiated. Ophthalmology examination revealed papilledema with progressive bilateral lateral rectus palsy, anti-edema measures (Glycerol, acetazolamide) was initiated, eye patch was given to reduce the side effects of diplopia. We suspected encephalopathy secondary to typhus causing raised ICT and lateral rectus palsy. But child did not had any signs of meningeal irritation like neck rigidity, photophobia or signs of raised ICP like vomiting, bradycardia, hypertension or focal neurological deficits. MRI with MRA brain done to look for features of meningitis or vasculitis was normal. Child improved gradually during

hospital stay, papilledema was resolving, eye movements improved and was discharged on doxycycline with ocular exercises to be continued.

DISCUSSION

Neurological manifestations of scrub typhus may include aseptic meningitis, meningoencephalitis, sensorineural hearing loss, seizures and stroke resulting from cerebral infarction. Isolated cranial nerve involvement in scrub typhus has been rarely reported in the literature. The proposed hypothesis behind cranial nerve palsy is scrub typhus-induced vasculitis in vasa vasorum leading to micro infarction of nerves.⁸

In our case, the onset of abducens nerve palsy coincided with fever, and it got completely resolved after treatment with doxycycline. This suggests that abducens nerve palsy in the index patient was possibly due to underlying scrub typhus. Moreover, the patient did not have other risk factors (e. g., hypertension, diabetes, hypercholesterolaemia, old age) which are commonly associated with idiopathic or ischaemic abducens nerve palsy. All patients mentioned in literature with similar presentation have recovered completely after doxycycline therapy. So, it is suggested to include scrub typhus as differential in patients presenting with fever and rash and isolated lateral rectus palsy. Even isolated cases of 8th nerve and 3rd nerve palsies have been seen associated with scrub typhus.^{9,10}

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 diagnoses of acute febrile illness.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Chiramel JJ, Thirumalesh PV. An unusual presentation of scrub typhus with lateral rectus palsy in a child. Int J Contemp Pediatr 2023;10:404-5.