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An Interesting Case of Papilledema in Scrub typhus

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Abstract

Scrub typhus has an increased incidence in the recent past. It is a rickettsiae disease caused by Orientia tsutsugamushi. The systemic manifestations of Scrub typhus mainly involves liver, kidney, spleen and Central nervous system and this is reported mostly from South India. We describe the first case of scrub typhus meningitis with bilateral papilledema. As there is a recent increase in scrub typhus cases being reported worldwide, a concurrent increase in the neurological complication has to be anticipated. The diagnosis in our case was made based on the clinical picture and a positive IgM ELISA for scrub typhus. The patient improved completely with oral doxycycline. We highlight the need for a high degree of clinical suspicion and acquaintance with the various central nervous system manifestations including papilledema to allow early diagnosis and treatment thereby reducing patient morbidity and mortality.

Keywords: Neurological manifestations; Scrub typhus; Papilledema

Introduction

Scrub typhus is a rickettsial disease caused by Orientia tsutsugamushi, the incidence of which is being on the rise in the recent past. There are several systemic manifestations of scrub typhus, including the involvement of the Central Nervous system which is reported mostly from South India. We are reporting a case of Scrub typhus from Delhi with Neurological manifestation.

Case summary

A 26-year-old software engineer from New Delhi presented with high-grade fever, headache, associated with myalgia and recurrent vomiting of 12 days duration. On examination, vitals were stable except for sinus tachycardia, and there was no pallor, icterus, clubbing, edema, cyanosis or lymphadenopathy. Cardiovascular, respiratory, per abdomen examination were normal. On the nervous system examination, she had bilateral papilledema and bilateral 6th nerve palsy. Investigations showed a total count of 7270 cell/mm3 with a polymorph predominant differential count, normal hemoglobin, and platelet counts and an erythrocyte sedimentation rate (ESR) of 13 mm/h. Blood urea was 13 mg/dL and serum creatinine was 0.5 mg/ dL. Total bilirubin was 0.9 mg/dL and direct 0.4 mg/dL, with albumin 3.0 gm/dL and total protein 7.1 g%. SGOT and SGPT were elevated (107 and 101 U/L, respectively) and serum ALP was 130U/L. Serum electrolytes and urine routine were normal, and the peripheral smear for the malarial parasite was negative. A lumbar puncture revealed mild lymphocytic pleocytosis (5 cells), high protein (74 mg), and normal glucose(61mg/dl). Her chest x-ray was normal, and USG abdomen showed mild hepatosplenomegaly. Blood and urine cultures, IgM Dengue, IgM Leptospira, HIV, HBsAg, anti HCV antibodies were negative. Thyroid profile, vasculitis profile was normal. Her CT and MRI brain were normal. With 12 days history of acute febrile illness and signs of raised ICP,

Possibilities of tubercular and bacterial meningitis were kept, and she was started on intravenous Ceftriaxone, Vancomycin, mannitol, and dexamethasone. Signs of raised ICP reduced, and her headache and vomiting completely subsided. However, the fever continued. As there was a h/o visit to a temple at Jharkhand 10 days before the onset of illness and the patient reported walking barefoot in hilly forest area for about 45mins to 1hour, a possibility of rickettsial infection was suspected, and she was searched for any eschar, and the same was

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absent. IgM ELISA for scrub typhus was sent, which came out to be positive with high titers (3.511). She was started on oral doxycycline 200 mg per day. Her fever responded to 2nd day of starting doxycycline therapy, and her liver functions returned to normal in 7 days. Bilateral 6th nerve palsy completely improved, and papilledema disappeared. She was discharged completely asymptomatic. She followed up after 2 weeks and had resumed her office work [1].

Discussion

Scrub typhus is usually underdiagnosed due to varied clinical presentations, limited awareness, and low index of clinical suspicion among the physicians. Central nervous system (CNS) involvement is an important complication of scrub typhus which ranges from meningitis to coma. Due to the presence of lymphocytic pleocytosis with increased CSF protein, TBM is a close differential diagnosis.

Both are endemic in India, so scrub IgM and CSF ADA levels may be helpful in differentiating these two and in avoiding prolonged empirical ATT in cases of lymphocytic meningitis [2].CSF analysis in scrub typhus usually shows modest elevation in the WBC count with lymphocyte predominance, a moderately elevated protein level or a normal to low sugar level(Kundavaram)[3]. Papilledema has rarely been described in previous studies of scrub typhus. In a study by SR Sharma et al published in 2015, papilledema was described in one patient who was a 23 year old male [4].In a study published in 1945 by Harold G et al the eyes of 451 patients with scrub typhus were studied weekly for evidence of disease. The external changes seen were Conjunctival injection occurred in 38%, Subconjunctival hemorrhages in 6.4%, Ecchymosis of eyelids in 1.0%, eschar on eyelid in 0.5%, Fixation nystagmus in 0.5%. The ocular changes seen were Engorgement of

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veins in 67%, Retinal edema in 36%, Retinal hemorrhages in 6.6%, Exudates in 4.9%, Uveitis in 1.3%, Vitreous opacities in 4.6%[5].

The clinical features, including the duration of fever and laboratory parameters such as CSF pleocytosis, CSF lymphocyte proportion >50%, and ALT values are helpful in differentiating scrub typhus from bacterial meningitis.6 The eschar, a pathognomonic clinical feature, is often not present, and as the larval bite is painless, a history of insect bite is unlikely to be solicited from the patient [6].

In a meta-analysis published in 2012 by Fang Y et al., he concluded that Doxycycline was found to act more quickly, but more adverse drug events occur when using this regimen compared to azithromycin and chloramphenicol.

Conclusion

In summary, we describe the first case of scrub typhus meningitis with bilateral papilledema. Considering the recent increase in scrub typhus in India, a proportionate increase in the neurological complication has to be anticipated. In this context, we hope this report will make physicians aware that the incidence is increasing in urban areas as well. And we emphasize the need for a high degree of clinical suspicion and familiarity with the various central nervous system manifestations to allow early diagnosis and treatment thereby reducing patient morbidity and mortality. **Financial disclosure:** There are no financial conflicts of interest to disclose.

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