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A case report of Scrub Typhus mimicking Dengue from a non-endemic region in Telangana state of South India

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Abstract:*Scrub typhus is an acute febrile illness, with varied clinical pictures which can involve multiple organ systems and can result in significant morbidity and mortality. This zoonotic infection is caused by the obligate intracellular bacteria* Orientiatsutsugamushi, *which is transmitted to humans by the bite of the larval trombiculid mite. In South and Southeast Asia and the Asian Pacific rim, scrub typhus is a major public health threat.However, from this part of the country, Telangana, Scrub Typhus is not very frequently seen or diagnosed often. We report a case of fever with rash which was suspected to be Dengue fever in view of clinical features and endemicity but eventually turned out to be Scrub typhus*

Keywords: *Scrub Typhus, Telangana, Fever with rash*

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I. Introduction

Scrub typhus can present with varied clinical features which bring different diagnoses as differentials. The endemic areas of scrub typhus in India are mostly in the northern and north eastern parts, though endemic pockets are distributed throughout the country. In Telangana State, from South India, not many cases are seen, probably due to the climatic zone and unfavorable conditions for the rickettsial bacteria carrying vector. We report a case of a 7years old boy from central part (Siddipet district) of Telangana who presented with clinical features which initially made us think of Dengue fever as the most probable diagnosis, but eventual lab work up confirmed Scrub Typhus fever which was reconfirmed by the response to Doxycycline.

II. Case Presentation:

A 7 years old boy, from Siddipet district of the central part of Telangana state in South India presented to our institute with complaints of moderate to high grade on and off fever for about 5 days, dry cough for 2 days and one episode of black colored stoolson day 3 of fever, but no other signs of bleed from any other site. Since day 3 of illness, parents also noticed mild facial puffiness. Child was on oral antipyretics and 3rd generation cephalosporins, despite which child continued to be ill. Child was brought to our hospital on day 6 of illness. At presentation, on examination child hadvital parameters with in normal limits but with mild facial puffiness, left axillary lymphnodes enlarged however subcentimetric and discrete, generalized flushing predominantly limbs and also spleen was palpable about 2cm below left costal margin, liver was 2 cm below right costal margin. We considered the first possibility of Dengue fever in view of ongoing epidemic and also typical clinical features that suggest dengue.

Investigations showed low normal leukocyte counts and thrombocytopenia. Chest X-ray showed interstitial infiltrate pattern, predominantly perihilar. Dengue serology, Widal test, blood culture and malarial tests were negative but Scrub Typhus IgM was unequivocally positive. In the light of investigations, environmental history was reviewed with more details which revealed history of playing in bushes and monkey menace which started recently in their locality. Child was started on Doxycycline, for which child responded grossly. Diagnosis of Scrub Typhus was made. Child was followed after completion of Doxycycline for 7 days, organomegaly and rash improved.

III. Discussion

Scrub Typhus is an important cause of acute febrile illness often fatal mainly seen in South and East Asia and Pacific. *Orientiatsutsugamushi*, the etiological agent of Scrub Typhus fever is transmitted via the bite of the larval stage (Chigger) of trombiculid mite. Humans areaccidentally infected when encroached in to the mite-infested areas. However, the infection can occur in diverse habitats such as seashore, rice fields, and even semi-deserts [1,2]. Living at the edge of the village, living in the houses near grassland, vegetable field or ditch,

house yard without cement floor, piling weeds in the house or yard, all of these were risk factors for scrub typhus infection.[3] Fields and hilly areas, and autumn, rainyclimates pose the maximum risk.[4]

Fever is the most common feature of scrub typhus and in endemic areas it is one of the causes of "fever of unknown origin." The varied clinical manifestations include subclinical disease to organ failure to fatal disease.[2] After ruling out common tropical infections that cause these clinical features, like malaria, leptospirosis and dengue fever, many of these cases remain undiagnosed.[5] Scrub typhus is grossly under-diagnosed in India due to its nonspecific clinical presentation, clinical features suggestive of dengue/leptospirosis/complicated malaria and limited awareness and low index of suspicion among clinicians because of nonendemic geographical locality and also lack of diagnostic facilities.[7] The infection manifests clinically as a nonspecific febrile illness often accompanied by headache, myalgia, nausea, vomiting, diarrhea, cough or breathlessness. Severity varies from subclinical illness to severe illness with multiple organ system involvements, which can be fatal, unless diagnosed early and treated.[1] Serious complications of scrub typhus are not uncommon and may be fatal; they include pneumonia, myocarditis, meningoencephalitis, acute renal failure and gastrointestinal bleeding[6]

Doxycycline 4mg/kg/day is the treatment of choice for scrub typhus with a maximum of 200mg/day. Other antibiotics useful for the treatment of this infection are chloramphenicol, azithromycin and rifampicin. Rapid resolution of fever following doxycycline is so characteristic that it can be used as a therapeutic test.[1] Azithromycin has been proved more effective than doxycycline in doxycycline-susceptible and doxycycline-resistant strains causing scrub typhus.[2] In this case, the patient presented from a non-endemic area and also clinical features similar to dengue. Initially, we suspected dengue with sepsis or leptospirosis. In the clinical examination, we could not find the eschar however that wouldn't take away from the diagnosis of scrub typhus [8]. Child was started on symptomaticmanagement and in the lines of dengue, however wen child was clinically not improving and dengue serology was unequivocally negative, possibility of rickettsial fever was considered and was started on doxycycline; the Scrub typhus serology came to be positive. Child showed gross improvement in clinical features. Doxycycline was continued for a total duration of 10 days.

IV. Conclusion

Scrub typhus is not exclusive to restricted geographical areas or is not that it is not seen in the southern tropical climatic regions of India, in this case, Telangana state. One has to keep all clinical possibilities in mind rather than restricting to only endemic diseases, though uncommonly seen, for a timely and appropriate management before the onset of complications.

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