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Case Report

Scrub typhus masquerading as puerperal sepsis

Anju Singh[1], Gaurav Khastgir[1]*, Pradip Kumar Saha[1], Rashmi Bagga[1], Vikas Suri[2]

[1]Department of Obstetrics and Gynecology, Post Graduate Institute of Medical Education and Research, Chandigarh, India
[2]Department of Internal Medicine, Post Graduate Institute of Medical Education and Research, Chandigarh, India

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***Correspondence:**
Dr. Gaurav Khastgir,
E-mail: gauravkhastgir1996@gmail.com

ABSTRACT

Scrub typhus is a zoonotically transmitted febrile illness caused by *Orientia tsutsugamushi* and transmitted by the larval stage of the leptotrombiculid mite. It is the most common rickettsial illness worldwide and has re-emerged as a major cause of Acute Undiffrentiated Febrile Illness (AUFI). It has a varied presentation ranging from a mild self-limiting illness to a life threatening condition with multi organ failure in 35 to 50% cases. Acute onset fever with pain abdomen, rashes, lymphadenopathy and eschars are the usual manifestations. The presentation, however, may be varied in pregnancy and the postpartum period due to altered immunological response of the body. A 33 year old lady presented on day 13 post-partum with high grade fever and hypotensive shock. An initial diagnosis of puerperal sepsis was made and empirical antibiotics started. Due to persistent high grade fever, with fluid refractory hypotension, a complete septic work up including Scrub typhus serology was sent which was found to be positive. Injection doxycycline was added to the treatment regimen following which the fever and rashes subsided and general condition improved.

Keywords: Scrub typhus, Puerperal fever, Puerperal sepsis, Acute undifferentiated febrile illness

INTRODUCTION

Scrub typhus or chigger borne typhus is a zoonotically transmitted febrile illness caused by a gram-negative bacterium of the Rickettsiaceae family, *Orientia tsutsugamushi*. It was first identified in Japan and found to be transmitted by the larval stage of the leptotrombiculid mite, typically known to feed on wild rats.[1] Rarely, it may even be transmitted by blood transfusion as studies have shown that *O. tsutsugamushi* can survive in stored blood, at temperatures of 4°C.[2] The disease is endemic to a geographically distinct 'Tsutsugamushi triangle' including Asia, Australia and islands in the Indian and Pacific Oceans.[3]

It is one of the most common and clinically important rickettsial infections worldwide, with about a million cases being reported annually.[4] Over the years, scrub typhus has re-emerged as a major cause of acute undifferentiated febrile illness (AUFI) and is a grossly unrecognised public health problem in our country. The disease has a varied distribution, with cases being reported across the nation. In certain parts of India, it accounts for 30-50% cases of AUFI and with approximately a third of cases requiring hospital admission due to multiple organ involvement.[5,6]

We describe an atypical presentation of scrub typhus masquerading as puerperal sepsis two weeks post normal vaginal delivery. Once identified as the cause, treatment with doxycycline resulted in a favourable outcome.

CASE REPORT

A 33 year old lady presented to the emergency on day 13 post-partum in hypotensive shock, with high grade fever. She initially had history of intermittent high grade fever

with loose stools on day 4 postpartum for which she received antibiotics at a private hospital on an outpatient basis.

The patient had feeble peripheral pulses with tachycardia and hypotension (pulse 120/min and BP 70/40 mmHg). Her abdomen was soft, non-tender and local examination was unremarkable with no foul smelling discharge per vagina. However, erythematous rashes were noted on bilateral upper and lower limbs (Figure 1). A suspected diagnosis of puerperal sepsis was made and the patient was started on Injection ceftriaxone and metronidazole. Injection doxycycline was added empirically keeping in mind the differential diagnosis of tropical infections.

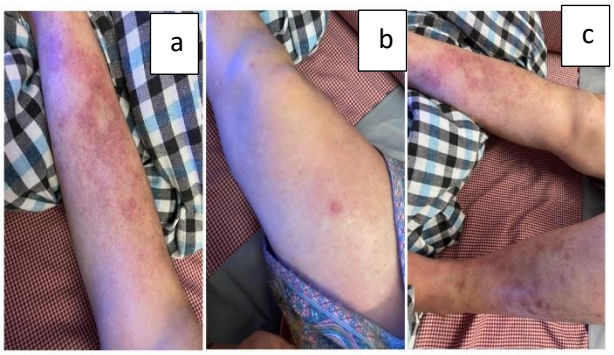

Figure 1: Erythematous rashes on bilateral upper and lower limbs.

In view of fluid refractory hypotension, inotropes were started and she was shifted to HDU. On investigation, total counts were raised up to 70,800/µl and antibiotics were hiked to meropenem and vancomycin. Chest X-ray showed minimal right sided pleural effusion and Ultrasonography (USG) of the abdomen showed moderate ascites. Ascitic tap was done followed by USG guided pigtail insertion. Culture of the fluid showed growth of *Staphylococcus aureus*.

Due to persistent high-grade fever (up to 103°F), repeat investigations including blood, urine and cervical swab cultures and work up for malaria, dengue, scrub typhus and leptospirosis were sent. Serum procalcitonin was 18 ng/ml and total leucocyte counts were raised (50,500/µl). Blood culture showed the growth of *Acinetobacter* species. Injection cefoperazone and sulbactam were added to the treatment regimen.

Blood samples for scrub typhus serology and Enzyme liked immuno sorbent assay (ELISA) for IgM antibody was put up using scrub typhus detect IgM ELISA patient's IgM ELISA for scrub typhus was positive (OD was 1.3).

Injection doxycycline was continued and over the next week her general condition improved with fever subsiding and inotropes being tapered off. The rashes on bilateral upper and lower limbs resolved on day 8 of admission (Figure 2).

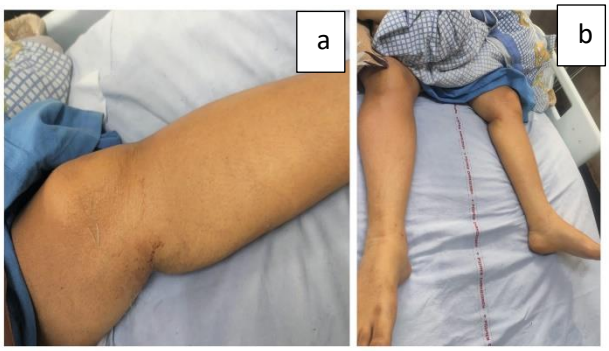

Figure 2: Resolved rashes on upper and lower limbs.

DISCUSSION

Scrub typhus has a varied presentation ranging from a mild self-limiting illness to life threatening disease with multi-organ involvement in 35-50% cases.[7] Acute onset fever associated with myalgia, vomiting, headache and breathlessness are the common presenting features.[8,9] Pain abdomen has been hypothesised to be a result of vasculitis of the gastrointestinal tract. If thoroughly searched for, eschars may be identified at the site of inoculation in a highly variable percentage (10-92%) of individuals.[10] When untreated, scrub typhus may lead on to varied complications like meningoencephalitis, interstitial pneumonia and cardiac dysfunction with a mortality rate of up to 25%.

Scrub typhus in puerperium have been reported earlier with varied presentation likely due to the altered immunological response of the body. In a retrospective study done by Poomalar et al, the classical presenting features of eschar and lymphadenopathy were found to be absent in six out of eight patients.[11] However the absence of eschars coupled with hypoalbuminemia and higher APACHE scores are said to be indicators of poor prognosis and outcome.[12]

Our patient presented with high grade fever with atypical rash, not responding to parenteral antibiotics. Classical clinical features of scrub typhus such as hepatosplenomegaly, lymphadenopathy were absent in the index case. The labarotory parameters of leukocytosis, thrombocytopenia, and liver and renal function tests were not diagnostic as they are deranged in puerperal sepsis and hence, not specific.[13] Being in an endemic zone, scrub typhus serology is routinely sent as a part of septic work in febrile patients in our institute. This aided in the timely detection and initiation of necessary treatment, leading to a favourable outcome in our case.

The recommended treatment regimen includes doxycycline 100 mg, twice daily for 7-14 days. Alternatively, azithromycin may be used in antenatal women as it is not harmful to the developing foetus. Although most patients have shown a favourable outcome, the cause of mortality is mainly attributed to delayed diagnosis and multi organ involvement.[14]

CONCLUSION

Scrub typhus must be considered as one the differentials in patients presenting with acute febrile illnesses, even in the absence of characteristic clinical features, especially in endemic areas to aid in early detection and appropriate management.

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REFERENCES

1. Coleman RE, Monkanna T, Linthicum KJ, Strickman DA, Frances SP, Tanskul P, et al. Occurrence of Orientia tsutsugamushi in small mammals from Thailand. Am J Trop Med Hyg. 2003;69(5):519-24.
2. Mcphee SJ, Papadakis MA, Lm T. Current Medical Diagnosis and Treatment. Current Medical Diagnosis and Treatment. McGraw Hill: 2008.
3. Jiang J, Richards AL. Scrub Typhus: No Longer Restricted to the Tsutsugamushi Triangle. Trop Med Infect Dis. 2018;3(1):11.
4. Taylor AJ, Paris DH, Newton PN. A Systematic Review of Mortality from Untreated Scrub Typhus (Orientia tsutsugamushi). PLoS Negl Trop Dis. 2015;9(8):e0003971.
5. Isaac R, Varghese GM, Mathai EJM, Joseph I. Scrub typhus: prevalence and diagnostic issues in rural Southern India. Clin Infect Dis. 2004;39(9):1395-6.
6. Varghese GM, Trowbridge P, Janardhanan J, Thomas K, Peter JV, Mathews P, et al. Clinical profile and improving mortality trend of scrub typhus in South India. Int J Infect Dis. 2014;23:39-43.
7. Watt G, Parola P. Scrub typhus and tropical rickettsioses. Curr Opin Infect Dis. 2003;16(5):429-36.
8. Kawamura A, Tanaka H. Rickettsiosis in Japan. Jpn J Exp Med. 1988;58(4):169-84.
9. Mathai E, Rolain JM, Verghese GM, Abraham OC, Mathai D, Mathai M, et al. Outbreak of scrub typhus in southern India during the cooler months. Ann N Y Acad Sci. 2003;990:359-64.
10. Vivekanandan M, Mani A, Priya YS, Singh AP, Jayakumar S, Purty S. Outbreak of scrub typhus in Pondicherry. J Assoc Physicians India. 2010;58:24-8.
11. Girija S, Rajan A, Sathiyanarayanan J, Mangaiyarkarasi T, Saban P, Sunil S, et al. Scrub typhus-An emerging disease in South India. IJRRMS. 2013;3(4):11-3.
12. Kim DM, Kim SW, Choi SH, Yun NR. Clinical and laboratory findings associated with severe scrub typhus. BMC Infect Dis. 2010;10:108.
13. Varghese GM, Janardhanan J, Trowbridge P, Peter JV, Prakash JA, Sathyendra S, et al. Scrub typhus in South India: clinical and laboratory manifestations, genetic variability, and outcome. Int J Infect Dis. 2013;17(11):e981-7.
14. Mahajan SK, Rolain JM, Kashyap R, Gupta D, Thakur S, Sharma A, Kaushal SS, Raoult D. Scrub typhus complicating pregnancy. J Assoc Physicians India. 2009;57:720-1.

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