



Unusual presentation of scrub typhus in a post-partum patient: a diagnostic dilemma

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ABSTRACT

Scrub typhus poses diagnostic dilemma in endemic countries, especially in peripartum period. We report an unusual case of scrub typhus in a postpartum female with features of puerperal sepsis along with worsening dyspnea owing to bilateral loculated, septate pleural effusion. Serological diagnosis and prompt treatment led to favorable outcome.

Key words: Complicated scrub typhus; Loculated pleural effusion; Postpartum infection; Scrub typhus

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INTRODUCTION

Scrub typhus is an acute febrile illness caused by *Orientia tsutsugamushi*, transmitted to humans by bite of larval stage of Trombiculid mite.¹ There are few case reports of scrub typhus² in pregnancy advocating high suspicion while dealing with a case who has returned or residing in endemic areas as overall outcome depends on early diagnosis and management. We describe an unusual case of scrub typhus in a postpartum patient who had complicated sequelae. Septate pleural effusion and clinical picture suggestive of puerperal sepsis was the cause for delayed diagnosis of scrub typhus. However, prompt treatment once diagnosed, led to a favorable outcome.

CASE REPORT

A 26 year old female from North India developed fever, abdominal pain and respiratory distress from second postpartum day after vaginal delivery in a nursing home. In view of fever in postpartum period with infected episiotomy wound and foul-smelling discharge, puerperal sepsis was suspected. Her physical examination did not reveal any eschar or rash. She was hemodynamically stable with tachycardia, her temperature was 102° F and her respiratory rate was about 30 per minute. Empirical antibiotic therapy (piperacillin-tazobactam) was started as *Escherichia coli* that grew in episiotomy wound, was sensitive to the same. Due to persistent

high grade fever, additional investigations were sent like urine and blood culture, and work up for malaria, dengue and leptospirosis was done. C-reactive protein and procalcitonin were found to be raised. Worsening of respiratory distress led to initiation of mechanical ventilation and her APACHE II score was 16 on admission to intensive care unit (ICU). Ultrasound showed hepatomegaly with bilateral septate pleural effusion, more on right than left side, for which pigtail catheter was inserted. She was weaned off the ventilator and extubated on day three of ICU admission but she did not sustain and required re-intubation.

Blood was collected for scrub typhus serology and ELISA for IgM antibody was put up using Scrub Typhus Detect IgM ELISA (InBios International, Inc., Seattle, WA, USA) following the manufacturer's instructions. The antigen used to coat the wells was a recombinant 56 kDa type specific antigen. The absorbance was read at 450 nm and an optical density (OD) of > 0.5 was considered positive. Patient's IgM ELISA for scrub typhus was positive (OD was 1.3).

She was started on doxycycline on day five of ICU stay. Her clinical condition started to improve within one week with resolution of septate pleural effusion and she could be weaned off the ventilator on day ten of ICU admission.

DISCUSSION

Scrub typhus presents atypically in peripartum period due to altered immune response system of body. Mahajan et al emphasized late presentation of patients with multiple organ involvement as a cause of high mortality.¹ Retrospective analysis of six prenatal and two postnatal women with scrub typhus revealed absence of typical features of eschar and lymphadenopathy in six of them.³ However, eschar

was documented in 55% of the patients of scrub typhus in a study from south India.⁴ Poor prognostic factors include requiring ICU care, high APACHE scores, hypoalbuminemia and absence of eschar.⁵

Systemic manifestations like splenomegaly, pneumonia, altered sensorium and acute kidney injury were also absent in our patient. Usual laboratory parameters are leucopenia with thrombocytopenia, coagulopathy, elevation of liver enzymes, proteinuria and elevation of creatinine but they are not diagnostic and may be present in puerperal sepsis also.⁴ The absence of characteristic clinical features and patient's presentation in immediate post-partum period with features of puerperal sepsis led to a delay in diagnosis and starting of treatment. Although pulmonary involvement especially pleural effusion is seen in 12-55% patients,⁶ septate bilateral pleural effusion as in our patient was unique. Wang et al have reported development of ARDS in 11.1% of patients with a mortality of 25%.⁷ The IgM ELISA used in our study has a sensitivity of 90-95% and has been shown to be comparable to the micro-immunofluorescence test in a previous study.^{8,9}

To conclude, scrub typhus should be included in diagnostic work-up of all cases of fever in endemic areas, especially in peripartum period even if characteristic clinical features are absent. Although an increasing number of scrub typhus is being reported in pregnant women, it is still underdiagnosed due to lack of awareness, unavailability and cost of diagnostic modalities and low index of suspicion among clinicians.⁴

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