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# Scrub Typhus in Pregnancy Leading to Preterm Delivery - A Case Report

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**Abstract** **Case Report**

Scrub typhus in an uncommon cause of acute febrile illness during pregnancy and the impact of scrub typhus on pregnancy is still unclear. It has been reported to be associated with increased fetal loss. The disease has similarities with other tropical febrile illnesses and hence the diagnosis can often be missed. We report an uncommon case of acute febrile illness due to scrub typhus in pregnancy leading to preterm labor and delivery

**Keywords**: acute febrile illness, Scrub typhus, preterm delivery.



## INTRODUCTION

Scrub typhus is a rickettsial infection caused by the parasite *Orientia tsutsugamushi.* The disease is endemic in the Asia –pacific region and is transmitted to humans by the bite of larva (chigger) of the mites [1]. The symptoms and signs of scrub typhus include fever, headache, myalgia, eschar and rash that occur after an incubation period of 6-21 days [2]. The clinical manifestations of the disease vary in severity from mild to fatal, with high mortality rate in untreated cases.

Scrub typhus is rare during pregnancy and the impact of scrub typhus on pregnancy is still unclear. It has been reported to be associated with increased fetal loss [3]. We report an uncommon case of acute febrile illness due to scrub typhus in pregnancy leading to preterm labor and delivery.

## CASE REPORT

A 29-Year old gravida 3, para 2, live 2 at 35 weeks of gestation presented to Obstetrics emergency department with history of high grade fever with chills, severe headache and myalgia for the past one week. She was booked and immunized. She perceived fetal movements and there was no history suggestive of labor pains or leaking per vaginum. There was no history of cough, breathlessness, skin rash, joint pains, vomiting, diarrhea, burning micturition, jaundice or bleeding manifestations. There was no history of diabetes mellitus, or hypertension. Her past obstetric history was uneventful and had spontaneous vaginal delivery. On general physical examination there was no pallor, icterus, pedal edema, lymphadenopathy, rashes or eschar; her temperature was 40 degrees Celsius, pulse rate 100 beats/minute, blood pressure 110/70 mmHg and respiratory rate 20/min. Cardiovascular and respiratory system examinations were normal. Blood and urine samples were sent for laboratory investigations. Investigations reports were as follows: hemoglobin 10.2 g/dL; total leucocyte count 8500 cells/mm3; differential count 74% neutrophils, 20% lymphocytes, 4% eosinophils and 2% monocytes; platelet count 1,56,000/ mm3; ESR 50 at the end of first hour. She was started on antipyretics and empirical treatment with intravenous ceftriaxone 2 g single dose per day. Urine routine and culture reports were normal. Liver and renal function tests and serum electrolytes were normal. Peripheral smear was negative for malarial and filarial parasites. Dengue serology and Widal test for enteric fever were negative. Serology for HIV and hepatitis B surface antigen (HBsAg) were negative. Abdominal ultrasonography showed mild splenomegaly. Blood culture was sterile.

Fever spikes continued to persists despite intravenous ceftriaxone for 4 days. It was then decided to send her blood sample for scrub typhus serology which turned out to be positive. She was prescribed Azithromycin 500mg once daily dosing for 5 days. She became afebrile and her symptoms improved drastically within a day of starting therapy. However, she complained of labor pains on the same day. On examination, fundal height corresponded to 32 weeks,

cephalic presentation, uterus was acting, and fetal heart rate was good. Per vaginal examination revealed cervix to be fully effaced and 4 cm dilated, membranes present and pelvis was adequate. She was diagnosed to have preterm labor and shifted to labor room for monitoring. She had a preterm delivery; the baby weighed 2.1 Kg with good Apgar score. The baby was shifted to neonatal intensive care unit for preterm care. Serology of the neonate was negative for scrub typhus specific IgM antibodies. The neonate was shifted to mother's side on the 6$^{th}$ post natal day.

## DISCUSSION

Scrub typhus is an uncommon cause of acute febrile illness in pregnancy. The clinical manifestations of scrub typhus are similar in pregnant as well as non-pregnant women and include fever with chills, headache and myalgia [4]. The disease has similarities with other tropical febrile illnesses and hence the diagnosis can often be missed. Characteristic eschar at the site of tick bite is pathognomonic of scrub typhus. However, the occurrence of eschar is rare in South-east Asian population and can be missed in dark skin individuals [4]. Scrub typhus can lead to disseminated vasculitis resulting in significant vascular leakage and end organ damage. Severe scrub typhus related complications include shock, coma, respiratory failure and renal failure. Early diagnosis and treatment results in favorable outcome.

Oral tetracycline and doxycycline are the drugs of choice in non-pregnant women, but are contraindicated in pregnancy (FDA category D drugs) [5]. Chloramphenicol, a FDA category C drug, is found to be effective against scrub typhus in pregnant and non pregnant women and can be prescribed with caution in late trimester pregnancy [6]. Azithromycin, a FDA category B is documented to be highly effective against scrub typhus infection in pregnancy. Single dose regimen as well as 3-5 day course regimen of azithromycin has been found to be effective [7]. Rapid defervescence is characteristically noted after initialization of azithromycin therapy [8].

As scrub typhus is uncommon during pregnancy, its clinical impact on pregnancy outcome has not been well elucidated in literature. Most of the cases have favorable pregnancy outcome. However, abortion and stillbirth have been reported in few untreated cases [3,8]. In our case, the woman had a preterm delivery following initiation of azithromycin therapy. Few cases of neonatal scrub typhus have been reported [9,10]. In our case, screening for scrub typhus was negative in the preterm neonate.

## CONCLUSION

Scrub typhus in an uncommon cause of acute febrile illness during pregnancy. In the reported case, preterm delivery may be attributed to scrub typhus infection in pregnancy. However, further metacentric studies and literature review are required to confirm or refute the association between scrub typhus and preterm labor.

**Informed Consent:** A written and signed informed consent from the individual, who is the subject of this case report has been obtained, prior to submission of this manuscript for publication.

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