



Scrub Typhus in Pregnancy: A Case Report

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Abstract

Scrub typhus is a rickettsial disease caused by Orientia tsutsugamushi. Clinical manifestations may vary in severity from a mild febrile illness to a fatal illness with multi organ dysfunction syndrome (MODS). Scrub typhus is uncommon during pregnancy, but when present can be associated with adverse outcomes. Acute respiratory distress syndrome (ARDS) is a well-known complication of Scrub typhus. Patients are usually admitted into the Intensive care units (ICU) when such complications have progressed. We, hereby report a case of Scrub Typhus in pregnancy with complications from Himachal Pradesh, India.

Keywords: Scrub Typhus, Pregnancy, ARDS.

Introduction

Scrub typhus is a rickettsial infection caused by *Orientia tsutsugamushi*. The disease is transmitted through the skin by the bite of larva (chiggers) of infected *trombiculid* mite.¹ Scrub typhus is generally seen in people whose occupational or recreational activities bring them into contact with ecotypes favourable with vector chiggers.² It causes a disseminated vasculitic and perivascular inflammatory lesions resulting in significant vascular leakage and end-organ injury.³ Clinical manifestations vary in severity from a mild febrile illness to a severe illness with multi organ dysfunction syndrome (MODS). Typical systemic features include fever, gastrointestinal disturbances, malaise, cough, myalgia, headache, rash, and lymphadenopathy. Severe complications include encephalitis, interstitial pneumonia, acute

renal failure and acute respiratory distress syndrome (ARDS). Mortality rates for untreated cases is 0-30%.⁴ Scrub typhus is not so common during pregnancy, when present can be associated with adverse maternal and foetal outcomes.^{5,6,7}

Case Report

A 20 year old primigravida at 24 weeks of gestation presented with high grade fever with chills and rigors and shortness of breath for two days. On examination she was febrile (temperature-104⁰ F), with tachycardia (pulse rate-130/min) and high respiratory rate (RR-30/min). Eschar was present in the right lumbar region. On chest auscultation fine crepitations were observed. Per-abdomen examination was normal, foetal movements were observed and foetal heart rate was normal on auscultation. Clinical impression

of severe sepsis with? ARDS secondary to? Scrub typhus was made. Routine investigations were sent and patient was shifted to ICU and was put on treatment with moist oxygen inhalation 40% @ 8 l/min, i.v. Azithromycin, antipyretics and other supportive treatment. Complete haemogram was unremarkable. Serology (IgM) for Scrub Typhus was positive. Chest X-Ray showed diffuse nodular infiltrates while ECG was normal. Tablet Rifampicin 600mg/day was added to the above treatment after laboratory confirmation of Scrub Typhus. On Day 2 of admission, the general condition of the patient deteriorated with increased respiratory distress, RR (50 to 60/min) and falling saturation values (SpO₂ 70 to 80%). Endotracheal intubation was done and patient was put on ventilatory support on Synchronized Intermittent-Mandatory Ventilation Mode (SIMV) (FiO₂ 100%, PEEP 5mmhg, RR 12/min, VT500ml). On chest auscultation crepitations were present bilaterally. Patient was started on I.V. Ceftriaxone+ Sulbactam 1.5gm twice daily, I.V. furosemide 10 mg thrice daily, I.V. morphine 4.5 mg twice daily, I.V. hydrocortisone 100mg thrice a day, and I.M. progesterone 200 mg stat, in addition to previous treatment. Despite above measures patient's condition worsened further following which she was put on Continuous mandatory ventilation (CMV) mode of ventilation with settings appropriate to lung protective ventilation in ARDS patient. Atracurium infusion @ 15 mg/ hour along with dexmedetomidine infusion @ 0.1-1 microgm/kg/hr were started. On day 4, patient's condition deteriorated further with SpO₂ 60% to 70% at FiO₂ 100%, B.P 94/60mmhg and pulse 120-130 beat/min. On the same day in the evening, patient developed sudden cardiac arrest. CPR was started immediately and I.V. adrenaline 1mg was given and repeated after every 2 minutes. CPR was continued for 20 minutes but patient did not show any signs of life and was declared dead. Hysterotomy was done to extract dead foetus on religious grounds.

Discussion

The clinical manifestations and the diagnosis of Scrub Typhus in pregnant women are similar to those of non pregnant adults.³ In pregnancy, it may be associated with adverse maternal and foetal outcomes.^{5,6,7} Early diagnosis and treatment are essential in order to reduce the mortality and the complications associated with the disease.³ In the present case, both history and examination supported the preliminary diagnosis of Scrub typhus which was confirmed after laboratory investigations. But as the patient was 24 weeks pregnant, with physiological changes in pregnancy, there are more chances of haemodynamic deterioration of the patient. The standard therapy in non-pregnant patient is Doxycycline and Chloramphenicol both of which are contraindicated in pregnancy. Azithromycin (category B) and Rifampicin, both are effective agents against Scrub Typhus.³ Even though the disease shows dramatic response to appropriate antibiotics, serious complications can occur and most of them have proved to be fatal. This patient developed ARDS with continuous deterioration in oxygenation, which ultimately lead to the death of the patient due to respiratory failure and sudden cardiac arrest. ARDS is a well known complication of scrub typhus, which is rarely reported but serious.⁸ In most of the intensive care units (ICU), the patients are usually admitted when such complications have progressed, mainly due to late or misdiagnosis, and hence, left untreated. In the ICU, aggressive management like appropriate ventilator strategy in ARDS patients and correction of haematological abnormalities etc. are imperative to prevent high mortality associated with these complications. Preventing sepsis and multiorgan failure can be possible in ICU with specific treatment protocols and supportive management.

Conclusion

Scrub Typhus in pregnancy may be associated with adverse maternal and foetal outcomes. Early diagnosis and treatment are essential in order to

reduce the mortality and the complications. Aggressive management in ICU like appropriate ventilator strategy in ARDS patients and correction of haematological and electrolyte abnormalities are required to prevent high mortality associated with these complications.

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