

CASE REPORT

Scrub typhus masquerading as HELLP syndrome and puerperal sepsis in an asymptomatic malaria patient

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<http://dx.doi.org/10.5339/qmj.2016.2>

Submitted: 26 November 2015

Accepted: 15 February 2016

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Cite this article as: Karim HMR, Bhattacharyya P, Kakati SD, Borah TJ, Yunus M, Scrub typhus masquerading as HELLP syndrome and puerperal sepsis in an asymptomatic malaria patient, Qatar Medical Journal 2016;2 <http://dx.doi.org/10.5339/qmj.2016.2>

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ABSTRACT

Scrub typhus and malaria can involve multiple organ systems and are notoriously known for varied presentations. However, clinical malaria or scrub typhus is unusual without fever. On the other hand, altered sensorium with or without fever, dehydration, hemorrhage and hemolysis may lead to low blood pressure. Presence of toxic granules and elevated band forms in such patients can even mimic sepsis. When such a patient is in the peripartum period, it creates a strong clinical dilemma for the physician especially in unbooked obstetric cases. We present such a case where a 26-year-old unbooked female presented on second postpartum day with severe anemia, altered sensorium, difficulty in breathing along with jaundice and gum bleeding without history of fever. Rapid diagnostic test for malaria was negative and no eschar was seen. These parameters suggested a diagnosis of HELLP (Hemolysis, Elevated Liver enzymes, Low Platelet) syndrome with or without puerperal sepsis. Subsequently she was diagnosed as having asymptomatic malaria and scrub typhus and responded to the treatment of it. The biochemical changes suggestive of HELLP syndrome also subsided. We present this case to emphasize the fact that mere absence of fever and eschar does not rule out scrub typhus. It should also be considered as a differential diagnosis in patients with symptoms and signs suggesting HELLP syndrome. Asymptomatic malaria can complicate case scenario towards puerperal sepsis by giving false toxic granules and band form in such situations.

Keywords: Scrub typhus, HELLP syndrome, puerperal sepsis, atypical presentation, asymptomatic malaria

INTRODUCTION

While malaria remains a global public health issue, there is a re-emergence of scrub typhus especially in India and its neighboring countries.^{1,2} Both of these vector born diseases may be complicated with bleeding, hemolysis, elevated liver enzymes, low platelet counts, acute respiratory failure, altered sensorium and acute renal failure etc.^{3,4} In a pregnant and peripartum patient these presentations may mimic HELLP (Hemolysis, Elevated Liver enzymes, Low Platelet) syndrome or puerperal sepsis especially in unbooked cases. We present such an atypical case after obtaining consent from the patient to emphasize the fact that we should not forget to consider the possibilities of malaria and scrub typhus with multiple organ dysfunction syndrome (MODS) masquerading as HELLP syndrome in peripartum patients in endemic areas.

CASE

A 26-year-old primigravida, primipara, unbooked lady was referred to the present hospital on second postpartum day with severe anemia, shortness of breath, abdominal pain, drowsy – with a Glasgow Coma Scale of 13/15 and history of controlled primary postpartum hemorrhage. She was found to have respiratory rate of 36/min, feeble pulse (116/min) and blood pressure of 86/56 mm Hg. Teeth and gums were coated with a thin film of blood. Icterus, pedal edema and severe pallor were also noted. The patient was afebrile and there was no history of fever. Investigations performed in the previous hospital revealed leucocytosis along with increased liver enzymes (AST 104 u/L and ALT 96 u/L) and low platelet counts (60,000/dl). She was immediately transferred to the intensive care unit with a probable diagnosis of HELLP syndrome with or without puerperal sepsis. Neither eschar nor rash were found on inspection. Rapid diagnostic test (RDT) for malaria, hepatitis B, C, E and human immunodeficiency virus were negative. Arterial blood gas analysis showed hypoxia with PaO₂/FiO₂ of 240, metabolic acidosis (pH 7.22) with serum lactate 4.2 mmol/L and hemoglobin of 3.4 gm/dl with normal blood sugar levels. Total leucocyte counts (TLC) were 13,800/dl (94% neutrophils) with toxic granules and 12% band forms. Immediate fluid resuscitation was started with Ringer's Lactate and packed red blood cells (PRBC) were started as soon as it arrived. A total of 4 units each of PRBCs, fresh frozen plasma and platelets were

transfused. Resuscitation was monitored using serial serum lactate, central venous pressure and central venous oxygen saturation. The patients' hemodynamics and monitoring parameters showed progressive improvement. High vaginal swab, urine and blood samples for culture-sensitivity were taken. Injection piperacillin and tazobactam were infused empirically suspecting puerperal sepsis within an hour of admission (after collecting culture samples). The patient had developed acute kidney injury and antibiotic doses were adjusted as per creatinine clearance. Urine for protein and serum lactate dehydrogenase was 2+ and 382 u/L respectively. By the next day, though urine output, hemoglobin & coagulation profile improved and bleeding stopped; her sensorium, thrombocytopenia and serum creatinine level did not. Bedside ultrasound abdomen showed mild hepatosplenomegaly. The patient remained afebrile; TLCs, urine and high vaginal swab gram stain were also not indicative of infection. These led us to reconsider the earlier provisional diagnosis of puerperal sepsis. Since the patient was hailing from a malaria and scrub typhus endemic area, peripheral blood smear (PBS) for malaria and IgM scrub typhus testing was done. PBS showed gametozoites of *plasmodium falciparum* & IgM antibody to *orientia tsutsugamushi* (SD Bioline) by solid phase immunochromatographic assay turned out to be positive. Antibiotic was changed to injection of ceftriaxone, azithromycin, artesunate and tablet doxycycline and the patient as well as the laboratory findings showed improvement over the next 48 hours and recovered uneventfully.

DISCUSSION

Pre-eclampsia in nulliparous population ranges from 3 to 10% worldwide and about 27.6% women with eclampsia have concomitant HELLP syndrome.^{5,6} Antenatal checkups are strongly recommended and are advocated worldwide, but are still quite common to find unbooked (i.e., no antenatal sessions before presenting for labor) obstetric patients. The anticipated high blood pressure of pregnancy induced hypertension may be masked at presentation if such a patient presents with sepsis or shock. In the presence of pedal edema, pallor, jaundice, altered sensorium, upper abdominal pain, gum bleeding, proteinuria etc., physicians still strongly tend to adhere to the clinical diagnosis of HELLP syndrome ignoring the presenting low blood pressure in such sick patients.

Tropical illnesses like malaria and scrub typhus are usually considered as a differential diagnosis in any patient with fever, thrombocytopenia and jaundice. However, unusual presentations of these diseases are not so uncommon.^{3,7,8} Both these diseases are notorious for their contributions to multiple organ involvement.

During pregnancy, *plasmodium falciparum* gets sequestered in the placenta and therefore may not be visible on a standard PBS – therefore false-negative results are expected.⁹ This is usually considered by physicians while managing such patients. The presence of gametocytes in the absence of fever indicated diagnosis of asymptomatic malaria. Gametocytes do not cause clinical disease but indicated that the patient was being infected with malaria parasites.¹⁰ Negative RDT also suggested absence of clinical malaria in the present illness too. However, what was unusual in the case was that the patient gave no history of suffering from malaria type fever in the past few years.

Scrub typhus is endemic in the "tsutsugamushi triangle," which extends from northern Japan and far-eastern Russia in the north, to northern Australia

in the south, and to Pakistan in the west. It is essentially an occupational disease among rural residents in the Asia-Pacific region.¹¹ The symptoms and signs are often nonspecific and suggest a wide range of differential diagnosis making it difficult to recognize and diagnose. Eschar, though regarded as pathognomonic, are found in only 4% to 13.3% of Indian patients.^{12,13} So, in the absence of fever and eschar, physicians usually tend to rule out scrub typhus especially in those patients whose nonspecific signs and symptoms suggests other common illnesses e.g., HELLP in peripartum patients.

CONCLUSION

Scrub typhus with MODS should be considered as differential diagnosis to HELLP syndrome in pregnant patients even in the absence of fever. Negative RDT does not rule out asymptomatic malaria in patients belonging to endemic areas. Peripheral blood smear for malaria along with IgM antibody to scrub typhus test should be done to rule out these diseases in such patients even if the patient presents without a history of fever.

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