Scrub Typhus during Pregnancy: A case report

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SUMMARY
A 28 year old gravid 3 para 2 suffered from fever, cough and myalgia for 3 weeks and did not respond to empirical antibiotic therapy. Her investigations revealed Leucocytosis and the platelets were normal. Weil felix test done though late was positive and she responded well to a course of Azithromycin. She developed fetal distress and the neonate did not have neonatal typhus. It is easy to miss the diagnosis of scrub typhus unless specific history of chigger bite is elicited and the work up of fever during pregnancy should also include Weil Felix test so as to diagnose early.

Introduction:

Scrub typhus during pregnancy is rare and 22 cases have been reported so far\(^1\). It is endemic in South East Asia and reported to occur in cooler months in increased frequency\(^2\). An out break of Scrub typhus was reported in our region in 2009\(^3\). The treatment is simple with antibiotic therapy if diagnosed early and usually the diagnosis is delayed because of lack of suspicion of the disease. If undiagnosed it can lead to complications and the mortality can be as high as 30%\(^4\).

Case:

A 28 year old gravida 3 para 2 live 1 presented 34 weeks of pregnancy with complaints of fever for 15 days and cough with expectoration for the same duration. She gave history of multiple petechial rashes for one week duration. Her initial haemogram showed Hb of 8.4gm\% WBC-16,900/cmm; N 55%; E 7%; L 38%. Platelets—3,61,000. She was given symptomatic treatment with tab paracetamol on out patient basis in Medical OPD. Fever spikes reduced but she was feeling weak and unable to carry out her daily household work. She was given empirical Amoxycillin but no relief of symptoms.

After 3 weeks, she was hospitalised and the investigations are as follows. Hb 9 gm\% WBC-13000; N-80% L 16%; Metamyelocytes-3%; Myelocytes-1%; Platelets-2,000; Peripheral smear- normocytic normochromic RBCs with spherocytes; No malarial parasites; Widal negative; Dengue NS1 negative. Random blood sugar-62 mg%; Blood urea 15 mg%; Serum creatinine-0.5mg%; Total bilirubin-1 mg% Total protein 5.7 Gm%; ALT 114; Alk Phosphate 132 -Serum electrolytes—Na+ 134 meq/l; k+ 3.6 meq/l; Weil Felix positive OX-19<20; OX2-160; OX K <20 She was treated with Tab. Azithromycin 500 mg twice daily for 5 days after which she felt well being and her fever subsided completely. Retrospective history revealed the eschar at the time of beginning of fever and chigger bite.

Pregnancy evaluation revealed a term fetus with good cardiac activity. USG revealed Oligohydramnios at 40 weeks hence induction of labour was undertaken. There was thick meconium stained liquor and fetal heart deceleration in second stage and the baby was delivered by vacuum extraction. The baby was alive male weighed 2.7 kg apgar was 5/10 at 1 min and 7/10 at 10 min and was kept in Nursery and tested for neonatal typhus which was negative. She was discharged home after 5 days.

Discussion:

Scrub typhus is a rickettsial disease caused by Orientia tsutsugamushi and is endemic in some regions like Japan, China and South korea. Epidemics are common in Nepal, Pakistan and India. It is transmitted to humans through the bite of trombiculid mite larvae (chiggers). The clinical manifestations are the same in pregnant and non-pregnant individuals and a high index of suspicion is necessary when history of bite with chigger is not available. The clinical manifestations include high fever with chills, rash, headache myalgia cough, conjunctivitis, lymphadenopathy, spleenomegaly and these are not specific to scrub typhus and hence misdiagnosis is common. Eschar is found in 60 % of cases.\(^5\) The clinical diagnosis was dependent on the presence of eschar and rash and sometimes only eschar may be seen without rash.\(^6\) This patient gave history of rash and on retrospective history she revealed to have had an eschar. The gold standard for diagnosis is immunoflorecence antibody test (IFA) as it is 92% sensitive but Weil Felix test is also acceptable as it is specific.

Serious complications of scrub typhus occur as usually it is not suspected and hence not diagnosed.
early. The fatal complications include pneumonia, myocarditis, menigoencephalitis, acute renal failure and gastrointestinal bleeding. Complications reported during pregnancy are spontaneous abortion, stillbirth, preterm delivery and IUGR. A case series of pregnant women with scrub typhus was published by Yeon-sook Kim and colleagues from Korea and they found that the clinical features were the same as that of non-pregnant women and the pregnancy outcome was favourable when treated with single dose Azithromycin. The present case did not respond to penicillin group of antibiotics and had good recovery with azithromycin. Doxycycline and chloramphenicol which are employed in non pregnant state are contraindicated in pregnancy and the response to ciprofloxacin is not good and hence during pregnancy Azithromycin should be the drug of choice.

Vertical transmission is possible when Scrub typhus occurs toward the perinatal period and the woman is not diagnosed and treated and the route of transmission may be transplacental. Neonatal scrub typhus is again difficult to diagnose and the neonate may present with encephalopathy, cardiorespiratory difficulties and can result in mortality. Hence it is essential to screen the neonate of women for scrub typhus.

**Conclusion:**

It is easy to miss the diagnosis of scrub typhus as this is rare except in endemic areas and the diagnostic work up of febrile illness during pregnancy should include Weil-felix test along with other tests like Widal, serology for malaria, urine culture etc.,

**References:**

4. ACOEM Practice guideline. shttps://www.acoem.org/

Mesenchymal stem cells (MSCs) are known to have a highly plastic differentiation potential that includes not only adipogenesis, osteogenesis, and chondrogenesis, but also endothelial, cardiovascular, and neovascular differentiation. Although present in only very small numbers in peripheral blood, in recent years stem and progenitor cells have been implicated in ventricular remodeling and are thought to be of great clinical significance in the pathophysiology of heart failure and atheromatosis. Previous studies have indicated that MSCs derived from peripheral blood, apart from their multilineage potential, can also be used for cellular and gene therapies. Human MSCs isolated from adult bone marrow provide a model for the development of stem cell therapeutics and could find application in the cardiovascular system.

Normal circadian rhythm of blood pressure (BP) shows a diurnal variation with the highest BP levels reached during the morning and then declining to a trough value around midnight. In the early morning, an abrupt and steep acceleration of BP occurs on arising from sleep. There is an increased risk of stroke, myocardial infarction, and sudden death in the first few hours after waking.

It has been hypothesized that high creatine kinase (K) activity could be a genetic factor responsible for primary hypertension.

High CK has also been associated with failure of antihypertensive therapy.

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