Two Case Reports of Complicated Scrub Typhus Fever
Myocarditis and Late Fetal Loss

A.K Badrinath[1], K. Suresh[2], B. Karthikeyan[3], Suresh Babu .S[4]
[1] Professor, [2] Associate Professor, [3] Assistant professor, [4] Junior resident, Department of General Medicine, Sri Manakula Vinayagar Medical college and hospital , Kalitherthalkuppam, Puducherry.

ABSTRACT

Scrub typhus fever is a re-emerging infectious disease and its incidence is on increase in South India in recent. Scrub typhus fever can present with a variety of presentations from a self-limiting disease to fatal multiorgan dysfunction. Scrub typhus can cause myocarditis although there are very few case reports. Here we present a patient with scrub typhus fever with fever and hypotension who developed ventricular tachycardia and was reverted and discharged after prolonged hospitalization. There are also case reports of scrub typhus fever during pregnancy associated with fetal loss. The second case was a pregnant woman with fever had an inevitable fetal loss due to scrub typhus infection

Key words: Scrub typhus fever, myocarditis, fetal loss

Corresponding author address: A.K.Badrinath, Professor, Department Of General Medicine, Sri Manakula Vinayagar Medical College and Hospital, Puducherry.
M: 9894442647. E-Mail: akbsts@yahoo.co.in

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INTRODUCTION

Scrub typhus is an acute febrile illness caused by the rickettsial organism Orientia tsutsugamushi. There are several studies of complicated scrub typhus fever with hepatits, acute renal failure, acute respiratory distress syndrome, meningoencephalitis and disseminated intravascular coagulation. Myocarditis and fetal loss though rare, can be expected complication of scrub typhus fever.

CASE REPORT: 1

A 30 year old female patient presented with history of fever for 16 days associated with chills and myalgia and was relieved with medications. Patient had history of vomiting and loss of appetite. No other past co morbidities. On examination patient was conscious & oriented with T- 101F, pulse – 98/min, BP – 60/40 mm Hg, Cardiac and Respiratory examination were normal. Per abdomen revealed hepatospleenomegaly and central nervous system was intact.

Patient was admitted with the diagnosis of fever for evaluation with septic shock and evaluated.

Patient was started on inotropes, iv fluids and iv antibiotics (inj. Ceftriaxone 1g iv BD) and monitored. Initial investigations revealed anemia with thrombocytopenia (Hb – 9.1g%; Platelets – 93000). Her renal function tests and serum electrolytes were normal. Liver enzymes were elevated. ECG showed low voltage complexes with 'T' wave flattening and chest X ray was normal. Inspite of inotrope support and antibiotics patient had persistent hypotension and serum cortisol (ACTH stimulation test) was normal. A low dose of inj. Hydrocortisone 50 mg iv 6th hourly started. Fever profiles Malarial antigen test, Dengue serology, Leptospirosis antibody test, VDRL and blood cultures were negative. ANA profile was negative. Scrub typhus antibody test (ELISA method) was reactive suggesting scrub typhus fever and patient was started on C. Doxycycline 100 mg BD on day 5 of admission.

On day 7 of admission patient sustained a Ventricular tachycardia and was reverted with 200J DC shock and connected to mechanical ventilator by endotracheal tube intubation. After few hours again the patient sustained a Ventricular tachycardia and she was reverted to sinus rhythm after 2 DC shocks, inj. Magnesium sulphate 2g iv over 10 min and inj. Amiodarone 300 mg iv stat. She was started on inj. Amiodarone iv infusion. Cardiac enzymes were done the next day and was elevated (CKMB – 81 and Troponin I was positive). 2D Echocardiography showed global hypokinesia of the LV with EF 45% with moderate Mitral regurgitation and mild pericardial effusion. Patient had persistant tachycardia with heart rate varying between 130-145/min and anasarca. Patient also developed ventilator associated pneumonia and treated with appropriate antibiotics (ET culture positive for E.Coli & Pseudomonas). After prolonged ventilatory support and hospital stay of 25 days patient improved and was discharged with vitals stable.

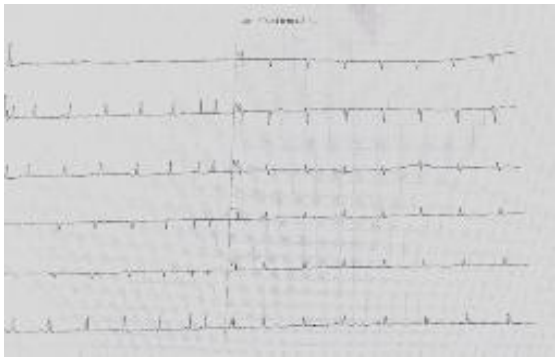

Image 1: Ecg of the patient on admission with sinus tachycardia and T wave changes and low voltage complexes

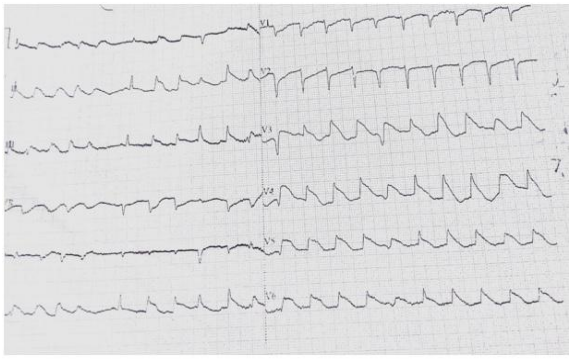

Image2: Ecg of patient shows absent P wave and broad QRS complex suggestive of Ventricular tachycardia

CASE REPORT 2:

A 22 year old female patient presented with fever for 4 days duration intermittent fever associated with chills. Patient also complained of body pain and headache. No history of

cough with expectoration or burning micturation. No discharge or spotting per vaginum. Patient is pregnant with 6 months of gestation. Patient has a male child 3 years old born by vaginal delivery. On examination patient was conscious and oriented; pulse – 110/min; blood pressure – 110/70 mm Hg and systemic examination was normal. Patient admitted with the diagnosis of fever for evaluation with 6 months of pregnancy and evaluated

Patient complete haemogram, blood glucose, renal function tests and liver function tests were normal. Patient started on antipyretics (paracetamol), iv fluids and inj. Ceftriaxone. Patient had continuous fever spikes. Malarial antigen test and dengue serology were negative. Scrub typhus - IgM antibodies by ELISA method was reactive – 2.052 (cut off value: 0.433). On day 3 of admission patient was started on tab. azithromycin 500 mg once daily. On day 3 of admission evening patient complained of decreased fetal movements and spotting per vaginum. On day 2 of admission at around 11.15 pm there was spontaneous expulsion of a dead male fetus of 1.25 kg followed by expulsion of the placenta of 250g. Patient's blood and urine cultures revealed no growth. Patient had fever spikes for another 2 days and then fever spikes decreased and patient was discharged.

DISCUSSION

Scrub typhus fever is now endemic in south india and more cases are being reported. It presents in most of the patients with fever, myalgia and lymphadenopathy. Liver and spleen may be palpable and blood investigations reveal thrombocytopenia with leucopenia, elevated liver enzymes (AST & ALT) may give a suspicion. A eschar may be present in half of the cases with scrub typhus fever. Diagnositic tests include serology, the indirect fluorescent antibody assay (IFA), rapid diagnostic tests by ELISA method and immunochromatographic methods for detection of IgM and IgG antibodies are available. The best method for diagnosis is PCR of the blood, lymph nodes and eschar. It is treated with doxycycline or azithromycin for 3 to 5 days. Fluroquinolones showed mixed results.[1,2]

Patients with scrub typhus fever may present with complicated disease with hepatitis, thrombocytopenia, ARDS, meningitis, multi organ dysfunction and myocarditis. Though myocarditis can be expected in scrub typhus fever there are very few reports. Our patient presented with shock and sustained a ventricular tachycardia due to scrub typhus infection and improved with DC shock, ventilator support, inotropes and supportive care. In most of the bacterial infections myocarditis may be a result of inflammatory process rather than the direct invasion of the microorganisms. A patient with scrub typhus fever with hypotension and ECG should be suspected of myocarditis. 'T' wave inversion, ST segment changes and tachycardia give a clue to myocarditis but mostly present as a result of systemic vascular involvement. The cardiac enzymes (CKMB & Troponin) are elevated in myocarditis and they may be a useful tool. NT pro BNP levels can also be used. A 2D Echocardiography tells about the cardiac function. However for a more definite diagnosis a myocardial biopsy is required but is a complicated procedure and patient clinical condition also should come into consideration. There was a case report of scrub typhus infection myocarditis confirmed by

endomyocardial biopsy by in 1991. Treatment is appropriate antibiotics with supportive care and mortality is high.[3,4,5]

Scrub typhus presents similarly in pregnant women. It can lead to poor pregnancy outcomes. There are case reports of scrub typhus fever during pregnancy leading to abortion, still birth and premature labour. There was a case series by Mathai et al of five cases of scrub typhus during pregnancy. Four patients had still birth and one had small for gestational age baby. There are case reports of vertical transmission of scrub typhus and perinatal transfer of infection from a mother with rickettsemia. In most of case reports azithromycin was the drug of choice during pregnancy. The other drugs used during pregnancy were chloramphenicol, ciprofloxacin, minocycline and doxycycline. However tetracyclines are not safer in pregnancy and chloramphenicol used around perinatal period may lead to grey baby syndrome.[6,7]

CONCLUSION

scrub typhus fever is re-emerging in various parts of India and any patient with acute febrile illness, it should be kept as a differential diagnosis. Early diagnosis and treatment is very important to prevent complicated illness and reducing fatality.

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