



Thrombocytopenia and Fever during Dengue Epidemic Can Be Scrub Typhus: A Case Report

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ABSTRACT

In India scrub typhus despite being endemic is grossly underreported, reason being clinical presentation overlapping with other tropical fevers, specific diagnostic facilities lacking in most areas, and low degree of clinical suspicion. Diagnosis is also further masked if it occurs during the epidemic of other tropical fevers like dengue and malaria. Clinically it manifests as febrile illness with constitutional symptoms like fever, rash, myalgia and headache to fatal complications like ARDS, myocarditis, meningoencephalitis, acute renal failure and gastrointestinal bleeding. High degree of clinical suspicion and early diagnosis is important because of an excellent response to treatment and thereby reducing associated life threatening complications. Authors report a case report of scrub typhus presenting as fever with thrombocytopenia, conjunctival chemosis and bilateral bronco-pneumonia during the time when dengue fever is an epidemic.

INTRODUCTION

Fever with thrombocytopenia is usually grouped under the tropical infections including Scrub Typhus, malaria, leptospira and dengue. Scrub typhus is endemic to a geographically distinct region (south east asian countries). In India, the disease is prevalent in northern and eastern parts of the country with sporadic case report from rest of the country. Scrub typhus is a febrile illness caused by gram negative obligate intracellular parasite bacteria *Orientia tsutsugamushi*. It is a zoonotic disease, natural cycle involving the trombiculid mite and the small mammals such as field mice rats and shrews. Human get infected by the infected larvae chiggers. The organism multiplies at the local site with characteristic eschar, regional lymphadenopathy and subsequent dissemination leading to systemic diseases.

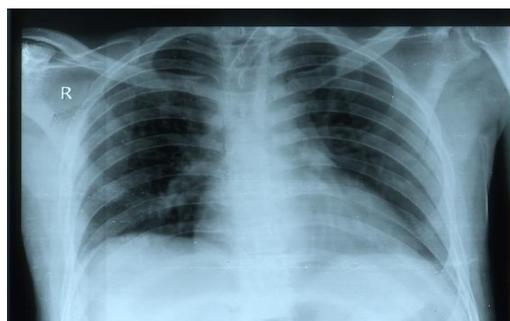
CASE REPORT

A 28 years old male farmer by occupation was presented with high grade fever since 8 days followed by pedal edema and shortness of breath since 4 days which was associated with dry cough. There was no history of orthopnea and paroxysmal nocturnal dyspnea. History of conjunctival bleed was present since 4 days. Patient took treatment from local practitioner from village, but treatment records were not available. There was no history of travel to another place. On examination blood pressure was 94/68mmHg, pulse rate was 88/min, respiratory rate was 30/min and patient was febrile on touch. There was no jaundice and cyanosis, but pedal edema was present. Detailed clinical examination revealed eschar on the right iliac crest with superficial scab. Tender lymphadenopathy was present in right inguinal region. Tender

hepatomegaly was present with shifting dullness and spleen was not palpable. Cardiovascular examination reveals no abnormality. Examination of chest revealed bilateral basal crepitations, which were more present on right side. Blood was sent for respective investigations and patient was empirically put on tab doxycycline and intravenous ceftriaxone. Investigations revealed hemoglobin of 13.6g/dl, platelets count 90,000/mm, blood urea 107mg /dl, serum creatinine 0.8mg/dl, blood sugar 71mg/dl, serum electrolyte : sodium 142 mg/dl, potassium 3.7mg/dl, chloride 106mg/dl, pH was acidic 7.22 with bicarbonate level 17 mg/dl, X ray chest suggestive of interstitial pneumonia. Malaria card test and PBF for MP were negative. Leptospiral IgG and IgM enzyme-linked immunosorbent assay (ELISA) test was negative, IgM ELISA for scrub typhus was also positive with titres of 2.5. Patient condition was improved after 2nd day of antibiotic and supportive management. Blood urea and blood pH normalizes and platelets count also became normal. On the fifth day of admission patient was discharged with advice to continue tab. Doxycycline for three days. Follow up was uneventful.



CONJUNCTIVAL CONGESTION



INTERSTITIAL PNEUMONITIS



ESCHAR ON BACK

DISCUSSION

Tropical fevers consisting of malaria, dengue, scrub typhus and leptospirosis have got common clinical presentation including fever, thrombocytopenia with multiorgan dysfunction¹. Diagnosis is difficult to achieve because of clinical overlap. Scrub typhus being important among this group presents with varied clinical features. The causative agent of scrub typhus is rickettsia tsutsugamushi, reservoir of infection being trombiculid mite and infection is maintained in nature transovarially. The larva (chigger) feed on vertebrate host that picks up the rickettsiae. The incubation period is usually 6-21 days^{1,2}. Scrub typhus clinically manifests as fever, intense generalised headache, diffuse myalgias and in many patients rash and eschar at the site of chigger bite. The diagnosis is suggested by the clinical history (including visit to endemic areas) and physical findings are confirmed by serology testing or biopsy of an eschar.

Severe infection may be complicated by interstitial pneumonia, pulmonary edema, ARDS, circulatory collapse and meningoencephalitis characterised by delirium, confusion and seizures. Death may occur as a result of these complications, usually late in the second week of the illness. Sometimes it may present without rashes although with conjunctival chemosis and pneumonia adding onto delay and confusion in diagnosis as in the present case³.

Serum sample should be sent for ELISA and Weil Felix reaction for OXK. Patient treated with appropriate antibiotics typically become afebrile within 48 hours of starting the therapy^{4,5}. This

response to treatment may be useful diagnostically; failure of defervescence within 48 hours is often considered evidence that scrub typhus is not present, and that an alternate diagnosis such as malaria or dengue should be considered^{8,9,10}.

Patients are treated with doxycycline (100mg bid orally for 7-15 days), azithromycin (500mg orally for three days), or chloramphenicol (500mg qid orally for 7-15 days). Some cases of scrub typhus in Thailand are caused by strains that have high doxycycline or chloramphenicol minimum inhibitory concentration (MICs) but that are susceptible to azithromycin and rifampicin⁶.

Scrub Typhus in India is grossly under-diagnosed in India because of its clinical presentation with overlap, low index of suspicion, limited awareness and non-availability of diagnostic facilities⁴. The infection manifests as a non specific febrile illness and often confused with other tropical fever syndromes complicating the diagnosis. In epidemic of other tropical fevers like malaria and dengue it is often neglected due to less degree of clinical suspicion. Severity varies from subclinical illness to severe fatal illness with multiple organ system involvement. Careful history and examination should be done, so that it is diagnosed treated and promptly treated so as to prevent the associated complication and burden on ICU settings. In this case report patient presented us when dengue fever was at peak. He was referred to us as a suspected case of dengue fever with fever, thrombocytopenia and diffuse conjunctival chemosis. As there were no systemic rashes alternative diagnosis was thought. Detailed clinical examination revealed eschar and regional inguinal lymphadenopathy. Serology was sent for rickettsia and patient was started on doxycycline. Patient responded and serology tested positive for rickettsia.

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