Case Report

Scrub Typhus Presenting as Multi-Organ Dysfunction

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ABSTRACT

Scrub typhus is being increasingly reported in India. It is acute febrile illness caused by orientia tsutsugamushi and is transmitted by bite of larval stage trombiculid mite or chigger. It should be considered in the differential diagnosis of patients with acute febrile illness, including those with altered sensorium, pneumonitis, atypical pneumonia, acute respiratory distress syndrome (ARDS), thrombocytopenia, and abnormalities in liver function tests. We here with present a case of Scrub Typhus withMultiorgan failure. Attempt to secure a central line made us notice an eschar over right nipple which is diagnostic of scrub typhus.

Key words : scrub typhus, ARDS, eschar.

Introduction -

Fever can be caused by many medical conditions ranging from benign to potentially serious.

As aptly said by William Osler-

> Humanity has but three great enemies: fever, famine and war;
>
> Of these by far the greatest, by far the most terrible, is fever.

Scrub typhus is being increasingly reported in India[1]. It is highly endemic in suburban region. It is an acute febrile illness caused by orientia tsutsugamushi and is transmitted by bite of larval stage trombiculid mite or chigger[2]. Only a few cases of scrub typhus complicated by ARDS have been discussed in the literature to date[1]. Here in we report the case of a patient who presented with fever complicated by ARDS and deranged liver and kidney function. Our patient was initially thought to have dengue fever or malaria. Then an eschar was noted on right breast while securing central line and subsequently she was investigated and found to be positive for scrub typhus and was successfully treated at our institute. Due to the non-specificity and diversity of the initial presenting symptoms, a lack of awareness about the disease amongst physicians, and the lack of accessibility to facilities for sero diagnosis in developing countries, there is a chance of underdiagnosis during the early stage. At the same time, early diagnosis and prompt treatment are crucial to prevent life threatening complications

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Case Report -

40-year-old female presented with high-grade fever, headache since 7day, cough and dyspnoea of 3 days duration. On examination she was febrile with temperature of 38^0c, pulse rate 124/min, respiratory rate 34/m oxygen saturation (SpO2) was 74%,. She had pallor, icterus, Subconjunctival haemorrhage and cyanosis. Her respiratory system examination revealed bilateral coarse crepitations. She had mild hepatomagaly. But normal neurological and cardiovascular examination. Clinical diagnosis of Viral Haemorrhagic fever was entertained & proceeded for investigations & management. A central line access was sought for fluids. During insertion a dried eschar like lesion was noted over the right breast ***(Figure 1)*** This findings made us to think on the line of Scrub Typhus. Hence IgM for scrub typhus was sent and patient was put on doxycycline & symptomatic treatment. Chest X-ray showed bilateral fluffy shadows in the lung fields. An ultrasound examination of the abdomen revealed minimal ascites along with hepatosplenomegaly. The partial pressure of arterial oxygen / fraction of inspired oxygen ratio (pO2/FiO2) was <200 . Patient was then supported by mechanical ventilation Routine laboratory evaluation showed haemoglobin of 10.7 gm%, hematocrit of 38%, white blood cell

count of 13,000/mm, with 62% neutrophils, 30% lymphocytes, 1% monocytes, and 1% eosinophil, a platelet count of 2 lakhs/l, and random blood sugar of 118 mg%, with serum urea-84mg/dl and creatinine 2.6 mg/dl. A peripheral blood smear for malaria parasites, HIV, HbS Ag, antiHCV IgM, and the Widal test, dengue test were negative. Total bilirubin was 2.5 mg%, AST-103 IU/l, ALT-150 IU/l, and ALP was 203 U/l. Her coagulation profile was also deranged. IgM for scrub typhus was reported positive. Hence a final diagnosis of scrub typhus with multi organ dysfunction was kept. She responded to treatment, and was discharged in a stable state. At the time of discharge her Renal & Liver functions were normal. The eschar also healed without leaving any scar.

Discussion -

The clinical and laboratory features of scrub typhus are notoriously non-specific. Spectrum of scrub typhus ranges from fever, sore throat, cough, myalgia, headache, rash, and the formation of an eschar to life threatening encephalitis, interstitial pneumonia, myocarditis, pericarditis, cardiac arrhythmia, acute renal failure, acute liver failure (ALF), and acute respiratory distress syndrome (ARDS).[1] The painless chigger bite can occur on any part of the body but it is often located in areas that are hard to examine such as the genital region, or axilla. ***(Figure 2)*** An eschar forms at the bite site in about half of primary infections, which begins as small papules, enlarge, undergo central necrosis and acquire a blackened crust to form lesions resembling a cigarette burn[3]. The presence of an eschar may be considered the most important clinical finding for the diagnosis of scrub typhus[4]. ARDS is a grave complication of scrub typhus, and yet it has seldom been discussed1. In a casecontrol study by Wang et al., the association of ARDS with scrub typhus was widely evaluated. It was reported that approximately 11% of scrub typhus patients progressed to ARDS. The mortality rate among these ARDS cases was 25%[1]. Antibiotics conventionally used for treating scrub typhus are doxycycline and chloramphenicol[5]. Macrolides may prove useful in children and pregnant women6. Hence scrub typhus being easily curable infectious disease must be kept in mind as a rare differential diagnosis in cases of fever.

Fig 1 : **showing blackened crust lesions (eschar) resembling a cigarette burn**

Fig 2 : **showing Trombiculid mite (chigger)**

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