

Case Report

A Case Report of Scrub Typhus with Multiorgan Dysfunction from Aurangabad Maharashtra

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Received: 19/03/2016

Revised: 23/04/2016

Accepted: 28/04/2016

ABSTRACT

Scrub typhus is an acute febrile illness caused by *Orientia tsutsugamushi*. This disease remains undiagnosed due to nonspecific presentation and inadequate laboratory facilities. Few cases of rickettsial diseases are reported from Maharashtra. Considering mortality and public health importance of this condition we report a case of scrub typhus with multiorgan dysfunction from our region.

Key words: Scrub typhus, multi -organ dysfunction.

INTRODUCTION

Scrub typhus is a rickettsial disease caused by the organism *Orientia tsutsugamushi*. Scrub typhus exists as a zoonotic disease in nature between certain species of trombiculid mites and small mammals (mice, rats, shrews). The organism is transmitted through the trombiculid mites (chiggers) of *Leptotrombidium* species. ^[1] Infected chiggers are likely to be found in areas of heavy scrub vegetation during the wet season. ^[2]

Scrub typhus is an important cause of acute febrile illness and needs to be differentiated from other causes of febrile illnesses such as malaria, enteric fever, dengue, leptospirosis, infectious mononucleosis. ^[3,4] The presence of Rickettsial diseases in India has been documented in various parts of India. ^[4-8] Recent reports from India suggest resurgence of Scrub typhus infection is associated with considerable morbidity and mortality. ^[8]

Diagnosis and surveillance of the disease can be challenging particularly in the absence of specific laboratory diagnostic techniques and nonspecific clinical presentation of this disease. ^[3,5,7] Here, we present recently occurred case of scrub typhus with multiorgan dysfunction from our region.

CASE REPORT

A 56 year old male, electrician from Karadgaon, Taluqa Rahuri, District Ahmadnagar was admitted in intensive care unit of tertiary care hospital Aurangabad Maharashtra in December 2015. According to history given by his relatives he was having fever with chills and generalized weakness since eight days and vomiting and swelling all over body since four days. History of loose motions and rash all over body was present since one day. At the time of admission he was talking irrelevantly and was unable to recognize relatives. There was no history of insect bite, breathlessness, palpitations, sweating, bleeding and

convulsions. Patient developed fever and other symptoms after visit to Shirampur in Ahmadnagar district of Maharashtra. He had taken treatment; details of which are not known.

On General examination patient was conscious, disoriented, afebrile and his Blood Pressure was 120/70 mmHg, Pulse 98/ minute, Respiratory rate 20 cycles / minute. Patient had rash all over body which gradually progressed and became ecchymotic and later bullae were formed (Photograph -1). Conjunctival congestion was also present. Patient had bleeding from endotracheal tube, episodes of pulmonary oedema and hypernatraemia for which he received symptomatic treatment.

PHOTOGRAPH NO.1



On the same day evening, patients become tachypneic, tachycardic. He received injectable amoxicillin and clavulanic acid 1.2 g twice daily and tablet azithromycin 500 mg orally once a day for 7 days. He also received capsule doxycycline 100 mg twice a day from 7th to 10th day of admission.

Patient was having severe thrombocytopenia and severe hypoalbuminaemia. His serum creatinine blood urea and transaminase levels were elevated. Prothrombin time, clotting time, bleeding time and INR (International normalization ratio) was within normal limit. Peripheral blood smear was negative for malarial parasite. Blood sample was sent for Weil-felix test. It was positive for

antibody to OX- K Antigen (titre 320) and Antibody to OX-2 Antigen (titre 40). Test was negative for Antibody to OX-19 Antigen .Dengue test for Ns1 ag and IgG and IgM antibody was non-reactive.

Result of microbiology investigations is shown in table no.1

Table No.1 Showing result of microbiology investigations

Sr. No	Name Of The Test	Result
1	Widal test	Negative
2	IgG , IgM Antibody test for Leptospira	Non-reactive
3	Antibody test for HIV	Non-reactive
4	Test for detection HbsAg Antigen	Negative
5	Weil-Felix Test For Rickettsia OX-19 OX-2 OX-K	No Agglutination Agglutination(1:40) Agglutination(1:320)

On Gram stained smear of specimen from ecchymotic lesion no bacterial pathogen was found. His blood culture report was sterile. Abdominal USG was suggestive of bilateral medical renal disease, marginal splenomegaly and chest radiograph was showing minimal right sided pleural effusion. CT (Computed tomography) scan of brain was normal .On eye examination no evidence of papilloedema or retinal bleeding was reported by ophthalmologist. Based on clinical findings and all laboratory investigations this case was diagnosed as a case of acute hemorrhagic fever (scrub typhus). In spite of all supportive measures patient’s condition deteriorated and he died due to cardiorespiratory arrest and mutiorgan dysfunction.

DISCUSSION

Scrub typhus is a rickettsial disease caused by *Orientia tsutsugamushi*, is spread by bite of larva of trombiculid mites. [9]

The clinical manifestations of this disease range from sub-clinical disease to organ failure to fatal disease. Deaths are attributable to late presentation, delayed diagnosis, and drug resistance. [3] In present case patient belongs to rural area therefore the correct duration of illness cannot be guaranteed and he presented very late.

Rickettsial diseases are generally incapacitating notoriously difficult to diagnose, and untreated cases have fatality rates as high as 30-35%. [10] Mortality is significantly higher in patients with CNS dysfunction or renal failure and those requiring vasoactive agents for shock. [5] Most of the cases were reported in cooler months. [4,6]

The disease presents with nonspecific signs and symptoms. Clinical presentation of fever with rash / myalgia occurs in many other febrile illnesses like Dengue fever or Leptospirosis, presence of gastrointestinal complaints could be used as a differentiating feature for suspecting scrub typhus. [6] In our case patient had gastrointestinal signs and symptoms.

Knowledge of the preferential areas where eschars form is very important for clinical diagnosis of scrub typhus. [11] Though eschar and lymphadenopathy is pathognomonic of disease it may not be commonly seen and its absence does not rule out scrub typhus. [3,4,6,12,13] Both eschar and lymphadenopathy was absent in our case.

Among important laboratory parameters patient had raised transaminases, blood urea, serum creatinine, serum bilirubin, alkaline phosphatases and low serum albumin levels are present in this case. Raised transaminases levels were also reported in various studies. [5-8,14]

Diagnosis of rickettsial illness has most often been confirmed by serology testing but serological evidence of infection occurs no earlier than second week of illness thus specific diagnosis may not be available until after patient has recovered or died. [10]

Weil-felix test is highly specific but lack sensitivity. [3,9,10,12] But due to lack of availability of definitive test in India it can be a useful tool when used and interpreted in correct clinical context. [3] In present case Weil-Felix test was positive and it showed significant titre of antibodies against OX-K antigen.

Empirical therapy with doxycycline and macrolides is treatment of choice for scrub typhus. [4,6,10,15] In our case patient received antimicrobial agents like doxycycline, azithromycin and amoxicillin and clavulanic acid.

In spite of supportive measures and antimicrobial therapy patients' condition deteriorated and he died of various complications.

CONCLUSION

Scrub typhus is a serious acute febrile illness associated with significant mortality. High index of suspicion and availability of diagnostic facilities will be the key to reduce mortality caused by the disease. Therapeutic trial of empirical therapy for scrub typhus is justified in patients with undifferentiated febrile illness. The factors associated with risk of infection should not be neglected and requires attention from public health authorities.

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How to cite this article: Siddique SG, Wyawahare AS, Bhalchandra MH et al. A case report of scrub typhus with multiorgan dysfunction from Aurangabad, Maharashtra. *Int J Health Sci Res.* 2016; 6(5):416-419.
