

## Case Report

### Scrub typhus: a case report

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#### ABSTRACT

Scrub typhus is a rare rickettsial disease which is endemic in the state of Himachal Pradesh. It is caused by bacteria called *Orientia tsutsugumasi* and transmitted by larvae of Trombiculid mites. Though rarely seen in the plains, it should be kept as differential for a patient presenting as fever with seizure. Eschar may or may not be seen in all cases. We report a case of scrub typhus in a patient who presented with fever and seizures but no eschar.

**Keywords:** Eschar, *Orientia tsutsugumasi*, Scrub typhus

#### INTRODUCTION

Fever is one of the most common presenting symptoms seen in day to day emergencies. Infections are the most common cause of fever. Though rare, Rickettsial diseases are now-a-days re-emerging as a cause of fever.<sup>1</sup> In India, most wide spread rickettsial disease is scrub typhus, endemic mostly in the hilly areas such as Himachal Pradesh, Jammu and Kashmir, Uttarakhand but some cases have been reported in West Bengal, Kerala and Tamil Nadu.<sup>2</sup> It is a zoonotic disease caused by the larvae of Trombiculid mites (chiggers) through vectors such as rats, field mice and shrews. Most common presenting symptom is fever, although headache, gastrointestinal symptoms such as vomiting, diarrhoea are also common. A classic eschar is usually seen at the site of the bite of the mite, though it is only seen in 35% of cases.<sup>3</sup> Seizures and encephalitis occur in severe cases.

#### CASE HISTORY

A 35 year old female patient, native of Himachal Pradesh, living currently in Amritsar presented with history of high grade fever from 15 days associated with chills and rigors. Fever was associated with headache and

4-5 episodes of diarrhoea and vomiting. Patient suffered an episode of seizure which was generalised tonic clonic in nature. After the episode, patient had post ictal confusion. There was no rash seen on the body. No eschar was found on general physical examination. No lymph nodes were palpable.

On examination patient had anaemia. There was hepatomegaly and Traube's space was dull on percussion. On further workup, patient had moderate dimorphic anaemia, normal renal function tests, raised liver enzymes and markedly raised alkaline phosphatase. Other markers of infection such as ESR were also raised. Blood film for malarial parasite was negative.

Dengue serology was negative. Lumbar puncture was done which showed mildly raised TLC and predominately lymphocytes with decreased glucose.

Leptospiral antigen was also negative. Keeping in mind that the patient belonged to Himachal Pradesh and presented with fever and seizures, Weil-Felix test for scrub typhus antigen (OX-K) was carried out which showed significantly raised titres (> 1:160). Patient was treated with Doxycycline 100mg bid for 7 days. Patient

improved clinically and was discharged in a satisfactory condition.

## DISCUSSION

Scrub typhus is also known as bush typhus or tsutsugumasi disease. The clinical severity of scrub typhus ranges from mild to fatal organ failure. The incubation period ranges from 7 to 21 days. *Orientia tsutsugamushi* targets the endothelial cells and macrophages through which it disseminates itself into the multiple organs via haematogenous and lymphogenous routes and predominantly locates in the macrophages of the liver and spleen.<sup>4</sup> The common symptoms include fever, headache, malaise, vomiting, diarrhoea and joint pains. In a review done by Taylor et al, the records of 19,664 patients from 89 studies were analysed and the clinical spectrum was noted. Fever and headache were universally present (90%), followed by conjunctival stuffiness (69%) and myalgias (60%). Other features such as cough (50%), abdominal pain (15%), vomiting (10%), epistaxis (6%) and seizures (<5%) were not so common.<sup>5</sup>

A characteristic papule may be seen at the site of bite which evolves into a black eschar. Though it is considered diagnostic but it may be seen only in 35% of cases.<sup>3</sup> Eschar is commonly seen in the groin, abdomen, chest and axilla. Fever is associated with a macular rash which is characteristically of fleeting variety. It is seen in 40% of cases and even harder to appreciate in dark skinned individuals.<sup>6</sup> Scrub typhus can be complicated by encephalitis, acute renal failure, myocarditis, pneumonia, acute respiratory distress syndrome and multiple organ dysfunction syndrome.<sup>7</sup> Scrub typhus is difficult to recognize because the symptoms and signs are often nonspecific. The nonspecific presentation and lack of the characteristic eschar leads to misdiagnosis and under-reporting. On the other hand, diagnostic facilities are not available in all places. Therefore, the precise incidence of the disease is unknown. Mortality rates in untreated patients range from 0-30%.<sup>8</sup>

Diagnosis of scrub typhus is made by either demonstrating the titres of the antigen (OX2, OX19 and OXK) using Weil Felix test (>1:80) or an optical density (OD) > 0.5 for IgM by ELISA. Confirmation is done by detection of rickettsial DNA on PCR from eschar or serum samples. Other investigations can also assist in deciding upon appropriate management of patients. There may be leucocytosis or leucopenia with or without thrombocytopenia. Liver transaminases may be raised. On ultrasonography, abdominal lymphadenopathy with or without hepatosplenomegaly can be seen. Chest radiology may show bilateral infiltrates.<sup>9</sup> In our patient, classical signs (eschar, rash, lymphadenopathy) were absent and was purely diagnosed by keeping this

possibility in mind as patient belonged to area known for this disease.

The treatment of scrub typhus includes a tetracycline which is usually Doxycycline (200mg in two divided doses) for 7-14 days. Chloramphenicol can also be used. Macrolides such as Roxithromycin and Azithromycin are also effective. Macrolides and Rifampicin are usually used when conventional therapy fails.<sup>10</sup>

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