

SCRUB TYPHUS: A RARE CASE REPORTED IN KADAPA REGION

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ABSTRACT

Scrub typhus is a common and an underdiagnosed cause of febrile illness in south Asia, caused by infection with *Orientia tsutsugamushi*. Inoculation of the organism at a cutaneous mite bite site causes localized pathological skin reaction termed an escher. We report a case of a 45-year-old male patient, who presented to hospital with high fever, chills and headache for 10 days. An Escher was presented in the lower iliac fossa region. His diagnosis of scrub typhus was confirmed by serum immunofluorescent assay and serological tests. He was successfully treated with doxycycline and other medications. Scrub typhus should be listed in the differential diagnosis of acute febrile illness associated with escher. Our report emphasizes the fact that a diagnosis scrub typhus should be suspected with the patient presenting with fever and laboratory evidence of immunofluorescent test and platelet count are helpful in early detection of the disease.

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INTRODUCTION

Scrub Typhus or tsutsugamushi disease is a febrile illness caused by bacteria of the family *Rickettsiaceae* and named *Orientia tsutsugamushi*. Scrub typhus is endemic areas are the South Pacific, Asia and Australia [1]. It also occurs in Nepal, Northern Pakistan, Japan, Taiwan, China and South Korea. In India, the disease had occurred among troops during World War II in Assam and West Bengal and in 1965 Indo Pak war [2]. It is known to occur all over India, including Southern India [3] and Northern India [4]. It is estimated that about 1 billion people may be at risk for this disease with the annual incidence of one million new cases [5]. The ricketts are transmitted from rodents to human by the bite of larval stage *Leptotrombidium mites* (chiggers) [6]. After the initial infections the rickettsial spreads systematically and the infected person develops the symptoms like fever, malaise, myalgia, maculopapular rash, headache, and profuse sweating, bronchitis, lymphadenopathy and gastrointestinal disturbances [7]. If left untreated, the disease may sometimes progress to anuria, pulmonary edema, or cardiac failure. The diagnosis of a rickettsial illness can be confirmed by serological testing. In Indian sub-continent are based on the clinical findings like Weil Felix test most commonly used. The disease response to antibiotics is excellent. The aim of the study is to present clinical manifestation, laboratory findings and treatment outcome of adult scrub typhus in RIMS hospital, Kadapa.

Case Presentation:

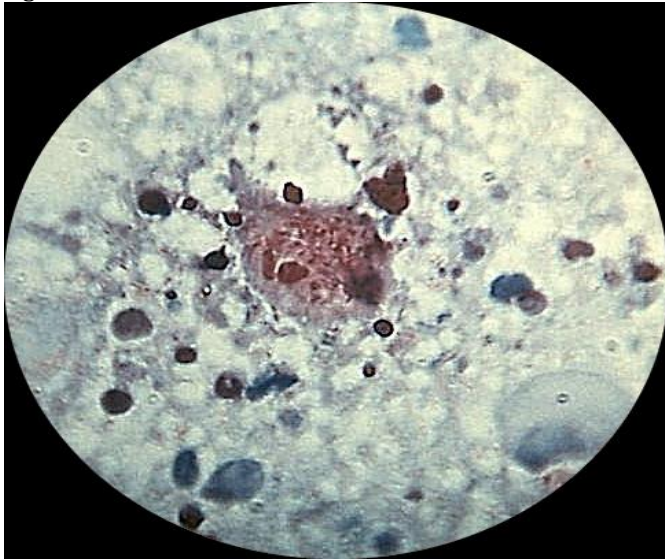
A forty year old male patient had attended to the RIMS hospital with chief complaints of high grade fever with chills since 9 days, breathlessness grade IV for 5 days, productive cough since 5 days, headache for 9 days, heart burn for 5 days, abdominal discomfort for 4 days and

burning urination for 5 days . His Physical examinations were body temperature 39.8°C, pulse rate 96/minute, respiratory rate 20/minute, and blood pressure of 100/70 mmHg. There was an escher in the right iliac fossa region [figure 1]. A complete blood count showed Hb 11.6 gms/dl, total white blood cell count 19600 cells/cumm with 70% neutrophils, lymphocytes 22% and platelets 14000 cells/cmm. Urine analysis with urea-29 mgs/dl, creatinine 1.2 mgs/dl and electrolytes were normal. Serum was collected for scrub typhus antibody titer of >1:6400 and IgM titer of <1:300 [figure 2]. Treatment with tablet doxycycline 100mg BID, tablet Paracetamol 1 gram OD and tablet pantaprazole 40mg OD. His clinical signs significantly improved and platelet count came to 1, 20,000 on the fourth day without fever. Unfortunately the platelet count came down to 2000 cells/cmm, transferred 2 small packets of blood cells with high platelet concentration. The patient was discharged on the day 5 without any complaints and advised the patient to review after one week.

Figure 1: ESCHER ON THE Right LOWER ILIAC FOSSA REGION



Figure 2 : IMMUNOFLUORESCENT ASSAY TEST



DISCUSSION

Scrub typhus is an acute infection disease that is transmitted to humans by the larval stage (chigger) of *trombiculid mites*. Rickettsial infections are not common but one such community based study involving several districts of Tamil Nadu showed that scrub typhus and rickettsial diseases were widely distributed in the state [9]. We report a case of scrub typhus that occurred in RIMS hospital, Kadapa, A.P. The causative organism is an intracellular gram-negative bacteria, *Orientia tsutsugamushi*. Humans are accidentally hosts and the disease is transmitted through skin by the bite of the larval stage of infected chiggers [5]. Disease occurrence is more in the rainy season and occurs in persons who engage in occupational or recreational behavior that brings them into contact with mite-infested habitats such as brush and grass. Clinical symptoms include sudden onset of high grade fever and associated headaches, myalgia, and regional lymphadenopathy [7]. Necrotic eschar at the inoculating site of the mite is the single most pathognomic feature of scrub typhus [6]. The disease usually runs a benign course but complications are not uncommon and include myocarditis, pneumonia, meningoencephalitis, gastrointestinal bleeding, acute renal failure and respiratory distress [10].

The clinical symptoms of scrub typhus like fever, headache, myalgia and cough cannot helpfully distinguish scrub typhus from other infections. In this case, patient had high grade fever and headache with eschar. The incubation period of the disease is about 6-18 days after the exposure [1]. Its onset usually sudden, but it can be insidious. Generalized lymphoedenopathy detected in this case and is found in about 85% of patients after exposure. A mucleopapular rash is mostly observed by the end of the first week of illness. Other common manifestations include splenomegaly (43%), conjunctivitis (29%), pharyngitis (28%), and hepatomegaly (13%) [11]. A necrotic eschar on right iliac fossa was observed in this case, which is a typically found in the 60% of the primary infections and secondary ones. Generally, it is found in the lower extremities [12].

The diagnosis of scrub typhus is based on exposure history, clinical symptoms, and serological studies. The diagnosis in this case was based on the clinical symptoms: fever, chill and headache, eschar and the serological test confirmed by specific immunofluorescent assay titer of

1:6400. A specific IgM titer of greater than 1:50 is recognized as significant [13].

In this case, the patient was successfully treated with doxycycline. As chloramphenicol, rifampicin azithromycin, tetracyclines are proven to be an effective treatment of scrub typhus and Telithromycin is a promising new antibacterial agent for patient with scrub typhus [14]. We believe ours is the fortune case report in Indian literature where the scrub typhus case was confined using the specific immunofluorescent assay.

Doxycycline remains the antibiotic of choice for treatment of scrub typhus. Chloramphenicol, azithromycin and rifampicin are other antibiotics useful for the treatment of this infection [8]. In our study the patient were treated with doxycycline which is a synthetic antibiotic derived from tetracycline. Doxycycline inhibits protein synthesis and thus bacterial growth by binding to 30S and possibly 50S ribosomal subunits of susceptible bacteria. The patient had responded well with the treatment provided with doxycycline and recovered well.

CONCLUSION

Scrub typhus is endemic in many parts of India and all clinicians should be well aware of the disease. The case is reported for the importance of the typhus group of the fever as an important differential diagnosis in cases of fever with eschar in individuals predisposed due to their outdoor activities. An empirical therapy with doxycycline should be started if there is a high risk of suspicion. An early diagnosis and treatment can prevent further complications.

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