Case Report:

Scrub typhus with typical cutaneous lesion

M.S.Sridhar, S. Jahangeer
Department of General Medicine, Sri Venkateswara Medical College, Tirupati

ABSTRACT

A patient with scrub typhus was successfully treated with doxycycline following 'spot diagnosis' based on the presence of typical eschar in association with fever. The diagnosis was promptly suspected at the first referral consultation. Early diagnosis and treatment are important because this disease can be associated with considerable morbidity and simple effective treatment is easily available.

Key words: *Scrub typhus, Tsutsugamushi disease (fever), Eschar, Doxycycline*

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INTRODUCTION

Scrub typhus is an acute febrile zoonotic illness. It has been well documented in several states of India like Haryana, Jammu and Kashmir, Himachal Pradesh, Uttaranchal, West Bengal, Assam, Maharashtra, Kerala and Tamilnadu and Andhra Pradesh.[1] It is considered to be an important military disease and the public health importance of the disease underestimated due to difficulties in clinical diagnosis and lack of laboratory facilities.[2] The case history of a patient who presented with typical features of the disease and who responded promptly to the conventional recommended treatment is described here.

CASE REPORT

A 41-year-old male security guard in a public sector undertaking was referred by his employer for evaluation and management of unresolved fever of one week duration. His duty spot is at the threshold of the office which is located in a compound situated near hilly area. This area was once the fringe zone of forest and still has scrubs in the locale.

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The illness started as high grade intermittent fever associated with chills and rigors. He had body pains and head ache. On the same day he noticed a small red solid lesion, with a central black spot over right groin (Figure 1). During next four days the lesion gradually increased in size and black spot took appearance of a large thick black scab (Figures 2-5).

Ten years earlier, he underwent orchidectomy on right side, was diagnosed to have seminoma testis and had received radiotherapy for the same. There was history of ethanol abuse and 20 pack years of beedi smoking. His body mass

Figure 1: Typical lesion with eschar and surrounding erythema seen on the 8th day

Corresponding author: Dr M.S. Sridhar, Professor, Department of General Medicine, Sri Venkateswara Medical College, Tirupati.
e-mail: sridhar.ms68@gmail.com

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Figure 2: The same lesion with oedematous and fleshy edges on 12th day

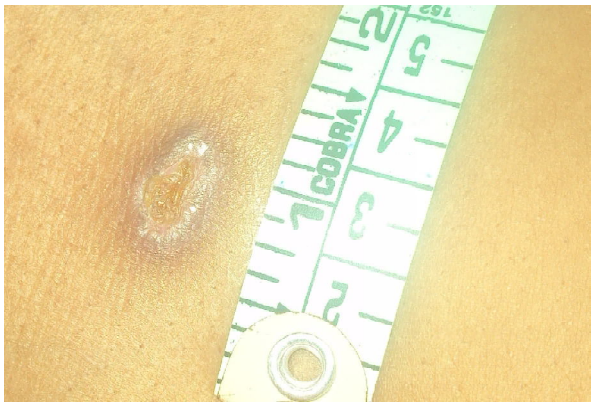

Figure 3: The healing ulcer at follow up after one month

Figure 4: The skin lesion at 6 weeks

Figure 5: The skin lesion at follow up after 2 months

index was 21.4 kg/m^2. Other vital data were within normal limits.

The skin lesion over right groin was 1.5 cm in diameter and had a central black eschar. The lesion was surrounded by a broad rim of erythema. The lesion was painless, non-itchy and non-tender. There was no regional lymph node enlargement. The patient was investigated earlier for possible malaria and peripheral blood smear was negative. Other laboratory investigations were as follows: total leukocyte count 6500/mm^3 with a differential count of polymorphs 65%, lymphocytes 30% eosinophils 4% and monocytes 1%. Erythrocyte sedimentation rate was 18 mm at the end of the first hour; blood glucose 100 mg/dL; blood urea 25 mg/dL; serum creatinine 0.9 mg/dL. Urinalysis revealed traces of albumin, 3-4 pus cells/high power field (HPF) and 5-6 epithelial cells/HPF. Chest radiograph, electrocardiogram and ultrasonography of abdomen were normal. Weil-Felix test was done in the 2nd week of illness and was OXK positive 1 in 160 dilution and negative for OX19 and OX2.

At the time of consultation, a spot diagnosis of scrub typhus was considered and a course of oral doxycyline 100 mg twice a day was prescribed. Within 24 hours patient became afebrile and asymptomatic except for the persistent skin lesion (Figures 2-4). He was advised follow up. At one week follow up the scab had separated, leaving a fairly deep, punched out but clean ulcer (Figure 5).

DISCUSSION

Scrub typhus is caused by *Orientia tsutsugamushi* and transmitted by the bite of infected larvae of the mite *Leptotrombidium deliense*. It is a zoonoses with humans being accidental, dead end hosts.[3] Scrub typhus was

first described by Hashimoto from Japan.[2] It is considered to be the most commonly reported rickettsial infection in India. In India, it is present in whole of the Shivalik ranges from Kashmir to Assam, Eastern and Western Ghats and the Vindhyachal and Satpura ranges in the central part of India. The distribution of the disease corresponds with the distribution of *Leptotrombidium deliense* and *Leptotrombidium akamushi*. The vector mite is now known to be present in diverse ecological niches called "*mite islands*". Within the mite islands there may be a limited area of intensive transmission of rickettsiae called "*typhus island*". Outbreaks of scrub typhus have been repeatedly been reported in India both among civilians and personnel of the Armed Forces.[4-8]

Human infection takes place when man accidentally picks up an infective larval mite while walking, sitting, or lying on the infested ground. Scrub typhus has a broad clinical spectrum varying from mild or inapparent infection to organ failure and death. In about half the patients, a skin ulcer may develop after the onset of fever at the site of the mite bite. The ulcer is approximately 5 mm to 20 mm in diameter and fills with fluid, eventually rupturing and forming a black eschar. Such eschar is formed at the time symptoms are manifest. A macular rash may appear on the body on fifth to seventh day and last for a few hours to a few days. Complications such as pneumonitis, myocarditis, encephalitis and peripheral circulatory failure may occur. Deaths usually occur as a result of late presentation or a delayed diagnosis.[2,9]

Classical disease is seldom the rule, especially in people who are indigenous to the endemic areas and in whom the disease may be modified by partial immunity. All naturally acquired human infections have been associated with the outdoors and scrub vegetations. A high index of suspicion in occupational settings can aid timely clinical diagnosis.

The Weil-Felix (heterophile agglutination) test using *Proteus OXK* strain is still the most commonly used test, though it lacks sensitivity. Only half the patients will have positive Weil - Felix test during second week of illness. A four-fold rise in titre or a single reading of at least is 1:80 are considered significant.[2] Weil-Felix test can be a useful tool when used and interpreted in the correct clinical context.[10] Serologic evidence of infection occurs in the second week of illness.[6] Since specificity of Weil-Felix test is high, it can be used to identify new areas where rickettsial infections are prevalent.[7]

Oral tetracyclines in the dosage 500 mg four times a day or doxycycline 200 mg once (or 100 mg twice a day) for 7 to 14 days are the antibiotics of choice for the treatment of scrub typhus. Early treatment results in better outcomes and faster resolution.[2]

Avoidance of exposure to the vector and personal protective measures and area control of chigger vectors are the mainstay of prevention of scrub typhus.[11] Scrub typhus can be diagnosed and treated easily if only this entity is considered in the differential diagnosis of fever.

REFERENCES

1. Boorugu H, Dinaker M, Roy ND, Jude JA. Reporting a case of Scrub typhus from Andhra Pradesh. J Assoc Physicians India 2010;58:519.
2. Mahajan SK. Scrub Typhus. J Assoc Physician India 2005;53:954-8.
3. Vaidya R. Rickettsial diseases. Available at URL: http://www.whoindia.org/LinkFiles/HumanResourcesSection9- Textbook on Public Health and Community Medicine.pdf, 1049-1053. Accessed October 4, 2011.
4. Prasad BNBM, Das MR, Kasthuri AS. Scrub typhus: not a bygone disease. J Assoc Physcians India 1997;45:188-90.

5. Rajagopal R, Khati C, Vasdev V, Trehan A. Scrub typhus: a case report. Indian J Dermatol Venereol Leprol 2003;69:413-5.

6. Batra HV. Spotted fevers & typhus fever in Tamil Nadu. Indian J Med Res 2007;126:101-3.

7. Kamarasu K, Malathi M, Rajagopal V, Subramani K, Jagadeeshramasamy D, Mathai E. Serological evidence for wide distribution of spotted fevers and scrub typhus fever in Tamil Nadu. Indian J Med Res 2007;126:128-30.

8. Subbalaxmi MVS, Madisetty MK, Krishna Prasad A, Teja VD, Swaroopa K, Chandra N, et al. Outbreak of scrub typhus in Andra Pradesh – experience at a tertiary care hospital. J Assoc Physicians India 2014;62:490-6.

9. Berman SJ, Kundin WD. Scrub typhus in South Vietnam. A study of 87 cases. Ann Intern Med 1973;79:26-30.

10. Mahajan SK, Kashyap R, Kanga A, Sharma V, Prasher BS, Pal LS. Relevance of Weil-Felix test in diagnosis of scrub typhus in India. J Assoc Physicians India 2006;54:619-21.

11. Traub R, Wisseman CL Jr. Ecological considerations in scrub typhus. 3. Methods of area control. Bull World Health Organ 1968;39:231-7.