JK SCIENCE pISSN: 0972-1177

CASE REPORT

Myositis in Scrub Typhus: Atypical Presentation

Parth Sharma, Sahil Attri, Aprajita Garg*, Karan Sharma

Abstract

Scrub infection is caused by *Orientia tsutsugamushi*, due to the bite of a chigger. It has a wide presentation, including febrile illness, ARDS (acute respiratory distress syndrome), and encephalopathy. However, we report a rare case of myosistis in Scrub Typhus.

Key Words

Scrub Typhus, Myositis, Muscle Biopsy, Creatine Kinase MM

Introduction

An illness in tropical nations, tropical pyomyositis is characterized by suppuration in the skeletal muscles. Staphylococcus aureus is the bacteria that is most frequently implicated. The quadriceps, glutei, pectoralis major, biceps, and iliopsoas are among the muscular groups that are frequently involved[1]. However, in Southeast Asia, scrub typhus infection has become more prevalent as a cause of acute febrile illness. However, muscle involvement in scrub infection is a rare complication not often reported in India. It is caused by *Orientia tsutsugamushi* and is disseminated through the bite of the "chigger" mite, a larval form of the Leptotrombidium species[2].

Case Report

Here is a case report of a 39-year-old male from Yamuna Nagar, Haryana. He presented to GMCH-32 Chandigarh with complaints of fever x 18 days and painful and progressive bilateral thigh swelling x 7 days. His fever was documented up to 103^0F, continuous throughout the day. Fever was associated with generalized erythematous, non-itching papular rashes all over his body. 1 week after the fever, he developed painful progressive swelling in both lower limbs, predominantly in his thighs, pain increased with active or passive movement. No history of trauma, shortness of breath, chest pain, pain in the abdomen, bleeding from any orifice, or altered mental status. On Clinical examination, his axillary temperature was 101.4^0 F. Local examination revealed blackish-brown patches around 4 x 3 cm on both thighs, they were tender and swollen, and no palpable fluctuance was present. Rest systemic examination was normal.

Investigation: USG whole abdomen was s/o hepatomegaly (16.8 cm in midclavicular line) and splenomegaly (12.8 cm), but no ascites. His CBC was s/o bi-cytopenia as anemia (Hb-8.9 gm/dl), thrombocytopenia (93 x 10^9/L), and neutrophilic leukocytosis (TLC- 12.8 x10^9/L, Neutrophils-81%). Inflammatory markers were raised CRP-513, ESR-88. LFT showed transaminitis (SGOT/SGPT- 502/128 IU/L). Ultrasonography of the thighs was suggestive of subcutaneous edema. Venous compression Doppler showed no absence of color flow and no evidence of any non-compressible venous segment excluding deep vein thrombosis of femoral veins. His Creatine kinase levels were elevated (1045 U/L). Urine Myoglobin was negative. Indirect IgM Elisa for Scrub antibodies was positive. Muscle Biopsy was consistent with Myositis. Repeat CK levels were found to be reduced by 506. HBV, HCV, and HIV 1,2 serology was negative, as mentioned in Table 1. A muscle biopsy from the right vastus lateralis showed neutrophilic and mononuclear infiltration at low magnification [Figure 1]. On high magnification, ragged muscle fibers and regenerating muscle fibers could be seen [Figure 2].

The patient was empirically started on Ceftriaxone 1 gm I.V. BD and Doxycycline 100 mg I.V. Local swelling was managed with Magnesium Sulphate ointment dressing twice daily. To ensure adequate hydration I.V. fluids were given based on Inferior Vena Cava diameter keeping it between 1.5 to 2 cm using M-Mode Ultrasound. Daily

Department of General Medicine & *Department of Pathology, Government Medical College and Hospital, Chandigarh India.

Correspondence to: Dr. Parth Sharma, Department of General Medicine, Government Medical College and Hospital, Chandigarh, India.

Manuscript Received: 29.10.2024; **Revision Accepted**: 25.02.2025;

Published Online First: 10th July, 2025

Open Access at: https://journal.jkscience.org

Cite this article as: Sharma P, Attri S, Garg A, Sharma K. Myositis in Scrub Typhus: Atypical Presentation . JK Science 2025; 27(3):188-89

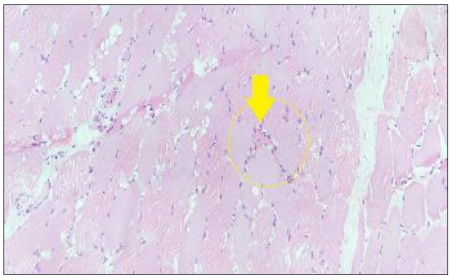

Figure 1: Low Power Magnification (x 10) of Striated Muscle Fibers from Right Vastus Lateralis Showing Lymphomononuclear Infiltration.

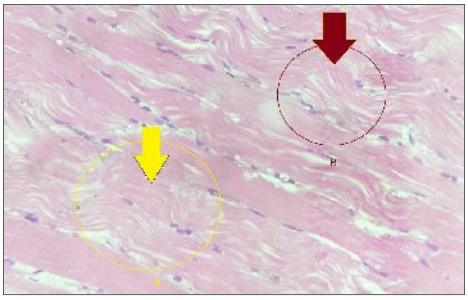

Figure 2: High Power Magnification (x 40) Showing Ragged Muscle Fibers (Yellow - a) and Regenerating Muscle Fibers with Randomly Distributed Enlarged Nuclei (red - b).

Platelet count monitoring was done. The patient showed significant improvement in symptoms and he was discharged when his platelet count showed a daily rising trend and showed improvement in fever and appetite.

Differentials diganosis of such as polymyositis, Pyomyositis, cellulitis, and deep vein thrombosis were considered. However, presence of thrombocytopenia, positive serology of Scrub,biopsy showing myosistis dramatic response to doxycycline established the diagnosis of myositis with scrub typhus.

Discussion

Infective myositis is an uncommon group of inflammatory myopathies caused by a wide range of infective agents.[3] Under normal conditions, skeletal muscle tissue is inherently resistant to bacterial infections[2]. Hematogenous bacterial infiltration of damaged muscle can lead to abscess formation. In 15% to 30% of cases, pus may be sterile, and blood cultures often have low positive rates[4].

The available literature about infectious myositis describes etiologies like Viral (HIV, Human T-Lymphotropic Virus, Coxsackie virus), Bacterial (Staphylococcus, Streptococcus, E. Coli, Pseudomonas), Parasites (African trypanosomiasis, Tenia Solium, Toxoplasma gondii), Fungi (Aspergillus), Spirochetes (Borrelia burgdorferi). A case report included 33 patients of Scrub typhus and showed muscle involvement in 13 patients, with raised enzyme levels[5]. There have been only a few reports available regarding Scrub Typhus as an etiology for infectious myositis[5-9]. Therefore, this case report helps to add to the literature on this rare disease.

Orientia tsutsugamushi is a zoonotic disease. Eschar at the bite site is thought to be a pathognomonic sign but it doesn't always emerge in 40% to 50% of cases. Scrub typhus can result in jaundice or transaminitis, meningoencephalitis, acute renal injury, disseminated intravascular coagulation, and acute lung injury[9].

The possible mechanism of muscle damage in Scrub Typhus is attributed to vasculitis, correlating with histopathological findings. Production of proinflammatory cytokines (TNF-α, IL-6), myotoxins, and impaired local metabolism can lead to muscle dysfunction. Bacterial infections particularly *Staphylococcus aureus* are a common cause of, but muscle injury due to Scrub is uncommon[10].Scrub Typhus shows good response to doxycycline. Alternative treatment with Azithromycin is prescribed in pregnant women and children.

Conclusion

Scrub Typhus can rarely present as myositis and rhabdomyolysis. Awareness is important for early diganosis and management.

Financial Support and Sponsorship : Nil

Conflict of Interest: Nil

References

1. Levin MJ, Garden P, Waldvogel F. Tropical pyomyositis: an unusual infection due to Staphylococcus aureus. N Engl J Med 1971; 284(4):196-8.
2. Grandsen WR, Ekysyn SJ, Philips I. Staphylococcus aureus bacteremia: 400 episodes. BMJ. 1984; 288(6413):300-305.
3. Narayanappa G, Nandeesh BN. Infective myositis. Brain Pathol 2021; 31(3):e12950.
4. Kim DM, Won KJ, Park CY, Yu KD, Kim HS, Yang TY, et al. Distribution of eschars on the body of scrub typhus patients: a prospective study. Am J Trop Med Hyg 2007; 76:806-9.
5. Kalita J, Misra UK, Mani VE, Mahadevan A, Shankar SK. A study of muscle involvement in scrub typhus J Neurol Sci 2015;348:226–30.
6. Kumar BA, Kumar AS, Sharvanan E. Rhabdomyolysis in scrub typhus: An unusual presentation Int JPrev Med. 2013;4(12):1472–5.
7. Ki YJ, Kim DM, Yoon NR, Kim SS, Kim CM. A case report of scrub typhus complicated with myocarditis and rhabdomyolysis BMC Infect Dis. 2018;18:551.
8. Young PC, Hae CC, Lee KH, Hoon CJ. Tsutsugamushi infection-associated acute rhabdomyolysis and acute renal failure Korean J Intern Med. 2003;18:248–50.
9. Manikandan V, Mehrotra S, Anand S, Maurya V. Tropical pyomyositis: revisited. Indian J Surg. 2017; 79:33-7.
10. Kumar BA, Kumar AS, Sharvanan E. Rhabdomyolysis in scrub typhus: an unusual presentation. Int J Prev Med. 2013; 4(12):1472-5.