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Case Report

A Case Report on Scrub Typhus in Pediatrics

Çocuklarda Çalı Humması: Olgu Sunumu

Adlin Ho, Narender Tatikonda, Venkat Sri Rangan P B

Aster Prime Hospital, Pediatrics & Neonatology, Hyderabad, India

ABSTRACT

A male child in his first decade presented to a tertiary hospital in the southern region of India with a 5-day history of fever spikes, non-bilious vomiting, decreased food intake, reduced urine output, and abdominal pain for three days. Examination revealed a black eschar on the left deltoid and axillary lymphadenopathy, raising suspicion of an insect bite. The child was admitted, initiated on antibiotics, and underwent a comprehensive fever profile, including tests for dengue, chikungunya, malaria, enteric fever, scrub typhus, CMV, EBV, and TB Quantiferon. A maculopapular chest rash appeared, and results indicated scrub typhus (weakly positive). Doxycycline was initiated, leading to resolution of the rash and fever. Early diagnosis and treatment of scrub typhus are crucial to prevent severe complications, such as organ failure and ARDS. This case underscores the significance of scrub typhus as cause of febrile illness in pediatrics.

Keywords: *Infectious disease, Scrub typhus, Rickettsial infection*

ÖZET

İlk on yaşındaki erkek bir çocuk, Hindistan'ın güney bölgesindeki bir üçüncü basamak hastaneye 5 günlük ateş yükseklikleri, safrasız kusma, azalmış gıda alımı, azalmış idrar çıkışı ve üç günlük karın ağrısı şikayetleri ile başvurdu. Muayenede sol deltoid bölgesinde siyah eskar ve aksiller lenfadenopati tespit edildi, bu da böcek ısırığı şüphesi uyandırdı. Çocuk yatırıldı, antibiyotik tedavisi başlatıldı ve dang, chikungunya, sıtma, enterik ateş, çalı humması, CMV, EBV ve TB Quantiferon testlerini içeren kapsamlı bir ateş profili yapıldı. Göğüste makülopapüler döküntü ortaya çıktı ve sonuçlar çalı hummasını (zayıf pozitif) gösterdi. Doksisiklin tedavisi başlatıldı ve döküntü ve ateşin kaybolmasına yol açtı. Çalı hummasının erken tanı ve tedavisi, organ yetmezliği ve ARDS gibi ciddi komplikasyonları önlemek için çok önemlidir. Bu olgu, çalı hummasının pediatride ateşli hastalık nedeni olarak önemini vurgulamaktadır.

Keywords: *Enfeksiyon hastalığı, Çalı humması, Riketsiyel enfeksiyon*

INTRODUCTION

Scrub typhus is an acute febrile illness caused by the intracellular bacterium *Orientia tsutsugamushi*. The infection is transmitted to humans by the bite of infected larval trombiculid mites, commonly referred to as "chiggers," found primarily in rural and forested regions across the Asia-Pacific, including India [1]. Once inside the human host, the bacteria spread through the bloodstream, resulting in disseminated vasculitis, perivascular inflammation, vascular leakage, and potentially severe end-organ damage.

Clinical presentation in pediatric patients can vary widely, making diagnosis challenging. Early symptoms are nonspecific and may include fever, headache,

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Correspondence / Yazışma: Adlin Ho · Aster Prime Hospital, Pediatrics & Neonatology, Hyderabad, India · hoadlin@gmail.com

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myalgia, and gastrointestinal symptoms such as vomiting and abdominal pain [1,2]. Characteristic findings, such as an eschar at the bite site and regional lymphadenopathy, are present in some cases but are often overlooked or absent in pediatric patients, complicating early identification. Additionally, scrub typhus can mimic other febrile illnesses endemic to India, such as dengue, malaria, and enteric fever, necessitating careful differential diagnosis to guide appropriate treatment.

The disease's rapid progression and potential for complications, including acute respiratory distress syndrome (ARDS), multiple organ failure, and septic shock, underscore the importance of prompt diagnosis and initiation of treatment, typically with antibiotics like doxycycline or azithromycin. The recognition of scrub typhus within national fever profile guidelines highlights its growing prevalence and clinical importance in pediatric febrile illness, particularly in endemic regions.

CASE REPORT

A 4-year-old boy from Hyderabad presented to a clinic with a 2-day history of swelling and non-radiating pain in the left arm, progressively worsening with hand movement, accompanied by fever and redness over the arm. Examination revealed a tender nodular swelling over the left deltoid and left axillary lymphadenopathy. With no significant medical history, allergies, or similar complaints in the household, he was diagnosed with a possible soft tissue bacterial infection secondary to an insect bite and prescribed syrup Co-Amoxiclav. Five days later, the patient presented to a tertiary hospital with high-grade fever, vomiting, decreased urine output, abdominal pain, and non-productive cough. Examination findings included hepatomegaly, a dry tongue, a red throat, and a non-pruritic maculopapular rash on the chest, along with redness and swelling of the left deltoid and cervical lymphadenopathy. Investigations revealed hepatosplenomegaly on ultrasound, urinary ketones, elevated liver enzymes (AST 187 U/L, ALT 216 U/L), and a progressively rising CRP (0.962 mg/dL to 2.597 mg/dL). Serological tests for common infections like dengue, typhoid, malaria, EBV, and CMV were negative, but the scrub typhus IgM was weakly positive. Lyme disease IgM was initially positive, but was suspected to be a false-positive. Quantiferon-TB Gold was positive, likely indicating latent tuberculosis. Blood cultures showed no growth. A diagnosis of scrub typhus was made based on clinical presentation and serology. Initial treatment with azithromycin was later switched to doxycycline after thorough counseling due to concerns about tooth discoloration. The patient's condition improved with subsiding fever and regressing rash within 48 hours of initiating Doxycycline. He was discharged after being afebrile for 48 hours, with a follow-up recommendation for repeat Lyme disease testing via Western blot or PCR to rule out the possibility of coinfection, though this was considered unlikely.

Figure 1. Black Eschar

DISCUSSION

Scrub typhus, caused by *Orientia tsutsugamushi* [1] and transmitted through mite bites, is an emerging cause of febrile illness among pediatric patients in endemic areas. Its nonspecific clinical presentation often complicates timely diagnosis, with symptoms such as fever, rash, and lymphadenopathy sometimes overlooked. The presence of eschar and regional lymphadenopathy can aid in diagnosis [2] but their subtlety may lead to underrecognition. If untreated, scrub typhus can progress to severe complications, including multi-organ failure, acute respiratory distress syndrome (ARDS), and encephalitis [3]. Early and accurate diagnosis is essential to improve outcomes, particularly as the incidence of scrub typhus rises in endemic regions. Doxycycline remains the treatment of choice, demonstrating efficacy in reducing symptom duration and preventing life-threatening complications.

In this case, while Lyme disease antibodies tested positive through Western blotting, the clinical

presentation strongly favored scrub typhus. Recent studies have highlighted the poor predictive value of Lyme disease serology in specific contexts, with high rates of false-positive results, underscoring the importance of correlating laboratory findings with clinical features. Misdiagnosis can result in inappropriate or prolonged treatment, depriving patients of timely therapy for the actual condition [4]. This case highlights the importance of considering scrub typhus as a differential diagnosis in febrile illnesses, especially in endemic areas. It emphasizes its inclusion in India's national fever profile as a reflection of its growing prevalence.

CONCLUSION

This case emphasizes the need for timely diagnosis and prompt treatment of scrub typhus in pediatric patients, particularly in endemic regions. Clinicians should consider scrub typhus as a differential diagnosis in pediatric febrile cases to initiate effective treatment swiftly and avoid severe complications.

Patient Consent Form / Hasta Onam Formu

The parents' of this patient consent was obtained for this study.

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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