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Case Report

A rare case of clinically diagnosed scrub typhus myocarditis from Teaching Hospital Jaffna

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Introduction

Scrub typhus is a mite-borne disease caused by *Orientia tsutsugamushi*. Myocarditis is a rare but potentially life-threatening complication and early diagnosis is crucial as recovery depends on supportive measures and appropriate antibiotics. We present a case of a patient with scrub typhus myocarditis at Teaching Hospital, Jaffna, who made a full recovery following standard care in the ward setup.

Case Report

A previously healthy, 29-year-old, postpartum mother of six months presented with a six-day history of intermittent high-grade fever. She complained of generalized mild headache without photophobia or neck pain. She had no vomiting, abdominal pain, urinary symptoms, chest pain, cough or shortness of breath. There was no contact with muddy water. She did not recall any tick bites. However, she complained of a black, painless lesion on her abdomen without itching. Her urine output was reduced without body swelling. There were no bleeding manifestations including any per vaginal bleeding. Her pregnancy and the postpartum period up to this episode was uneventful. On examination, she had a temperature of 104 F but was not pale or icteric. Capillary refill time was <2 seconds. Her blood pressure was 95/60 with a pulse rate of 150/min. sPO2 was 97% on room air. She had a well demarcated, crusted, necrotic lesion on her abdomen suggestive of an eschar. There were no other rashes or wounds. Auscultation of the heart was normal. Other systems examination was unremarkable. Her investigations revealed a WBC of 4.08*10^9/L (neutrophils 2.68, lymphocytes 1.23), Hb 11.1g/dL, PLT 68*10^9/L, CRP 299.9 mg/L, Na 135mmol/L, K 4.2mmol/L, serum creatinine

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64umol/L, ALT 42U/L, AST 61U/L, ALP 129U/L, total protein 68g/L, albumin 25g/L, globulin 42g/L, total bilirubin 6.3umol/L, INR 0.87 and LDH 535U/L. Her ECG showed sinus tachycardia with ST depressions in leads II, III and aVF. Her troponin I was elevated at 1.37ng/mL. (cutoff value<0.12) Blood and urine cultures were sterile. Ultrasound scan of the abdomen was normal. 2D Echocardiogram showed an ejection fraction of 40-45% with global hypokinesia and no regional wall motion abnormalities, which was suggestive of myocarditis. A diagnosis of scrub typhus myocarditis was made based on the clinical presentation and investigations. She was started on IV meropenem 1g tds and oral doxycycline 100mg bd along with antipyretics and antiemetics. She was referred for cardiology opinion and oral furosemide 20mg mane, oral metoprolol 12.5mg bd and S/C enoxaparin 40mg daily was commenced with close monitoring of platelet counts. Total daily fluid intake was maintained at 2L with strict monitoring of intake and output. Blood pressure, pulse rate and O_2 saturation were monitored. With treatment she started to recover. Fever spikes settled by day 04. Tachycardia also settled with improvement of clinical status. Her platelet counts started to rise with reducing CRP levels and stable renal and liver functions. She was given 7 days of antibiotics and discharged as she made a full recovery. Clinic follow up was arranged along with review by the cardiology team. After two months, repeat 2D Echo showed normal ejection fraction without residual hypokinesia.

Discussion

Typhus is a zoonotic infection with multiorgan involvement [1]. It is particularly prevalent in Southeast Asian countries including Sri Lanka. There is a higher prevalence of the disease in the Northern Province, but it is often underdiagnosed due to the scarcity of serological investigations. However, the presence of an eschar, with other systemic manifestations can establish clinical diagnosis even without serological tests.

There are several types of typhus with clinical importance. Epidemic typhus is a potentially lethal, louse-borne disease caused by *Rickettsia prowazekii.* It is now a rare disease, and only a few foci of epidemic typhus still exist in the world today, especially in Africa [1]. Endemic (murine) typhus is a flea-borne disease caused by *Rickettsia typhi*. Infection occurs worldwide, with the majority of cases occurring in areas where rats accumulate in large numbers. The disease is often mild and self-limiting [2].

Scrub typhus is a mite-borne disease caused by *Orientia tsutsugamushi.* It has been estimated that up to 1 million cases occur annually in southeast Asia[3]. The reservoir and vector are larval trombiculid mites of the genus *Leptotrombidium.* These mites live on vegetation where moisture and temperature conditions are ideal [3]. A painless papule often appears at the site of the bite. There will be subsequent central necrosis which, in turn, leads to the formation of a characteristic eschar with a black crust (3,4). This may be overlooked unless a careful clinical examination is performed. Clinical manifestations can range from mild signs and symptoms to multiorgan failure and death. The presence of myocarditis and pneumonitis / ARDS is associated with high morbidity and mortality [4].

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Myocarditis, as a clinical manifestation of scrub typhus, is often overlooked until it presents in a fulminant form. The supporting investigations are the abnormal ST-segment changes in the ECG, elevated cardiac troponin, low ejection fraction with global hypokinesia in echocardiogram and inflammatory hyperaemia, oedema, necrosis and contractile dysfunction in the cardiac magnetic resonance. The gold standard for diagnosing myocarditis is myocardial biopsy, which is only rarely used. Early diagnosis is crucial before patients develop cardiogenic shock. Cardiac recovery is often excellent in those who survive, but it depends on haemodynamic support and administration of appropriate antibiotics [4,5].

References

1. Angelakis E, Bechah Y, Raoult D. The History of Epidemic Typhus. Microbiol Spectr. 2016 Aug;4(4). https://doi.org/10.1128/microbiolspec.PoH-0010-2015
2. Azad AF. Epidemiology of murine typhus. Annu Rev Entomol. 1990;35:553-69. https://doi.org/10.1146/annurev.en.35.010190.003005
3. Mahajan SK. Scrub typhus. JAPI. 2005 Nov;53(955):269. https://www.researchgate.net/profile/Sanjay-Mahajan-2/publication/7263231_Scrub_Typhus/links/58f6189faca272bbe78ee30f/Scrub-Typhus.pdf
4. Tsay RW, Chang FY. Serious complications in scrub typhus. Journal of microbiology, immunology, and infection= Wei mian yu gan ran za zhi. 1998 Dec 1;31(4):240-4. PMID: 10496165
5. Lee CS, Hwang JH, Lee HB, Kwon KS. Risk factors leading to fatal outcome in scrub typhus patients. The American journal of tropical medicine and hygiene. 2009 Sep 1;81(3):484-8 https://doi.org/10.4269/ajtmh.2009.81.484