

**MASKED BY THE RASH: ATYPICAL SCRUB TYPHUS PRESENTING AS PERICARDITIS AND POLYSEROSITIS****General Medicine****Dr. Muhammed Shafeeq Ali.A**

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ABSTRACT

A 24-year-old male presented with fever and chest pain, initially suspected to have acute pericarditis as a sequela of chickenpox infection. Further workup revealed scrub typhus as the underlying etiology. We report this case to highlight an atypical presentation of scrub typhus with polyserositis, including pericardial involvement.

KEYWORDS**INTRODUCTION**

Scrub typhus is a mite-borne infectious disease caused by the obligate intracellular gram-negative bacterium *Orientia tsutsugamushi* (formerly *Rickettsia tsutsugamushi*) [1]. Rodents serve as the primary reservoir, while the larvae of trombiculid mites (chiggers) act as both reservoir and vector. Human transmission occurs through chigger bites during feeding on human tissue fluid.

The disease spectrum ranges from mild, self-limiting febrile illness to severe multi-organ dysfunction and death. After an incubation period of 6–21 days, common presenting symptoms include fever, headache, myalgia, cough, and gastrointestinal complaints. Classical findings such as eschar, regional lymphadenopathy, and maculopapular rash are uncommon in endemic populations. Notably, fewer than 50% of Western patients develop an eschar, and less than 40% exhibit a rash, typically appearing on days 4–6 of illness [2].

Case Presentation

A 24-year-old male presented to the emergency department with intermittent high-grade fever and pleuritic chest pain of two days' duration. Two weeks prior, he had developed vesicular rashes and blisters diagnosed as chickenpox, for which he received homeopathic treatment. About five days into the illness, he experienced throat discomfort and myalgia. After crusting of the skin lesions, he developed fever followed by chest pain.

He was referred to our tertiary care center due to ST-segment elevation (leads II, III, aVF) seen on ECG at a local hospital. Initial investigations revealed: total leukocyte count $15.5 \times 10^9/L$, CRP 328 mg/L, ESR 120 mm/hr, AST 56 U/L, ALT 97 U/L, and ferritin 1088 ng/mL. ECG was consistent with acute pericarditis. Transthoracic echocardiography showed normal biventricular function with no regional wall motion abnormalities. Chest X-ray revealed minimal left-sided pleural effusion. Abdominal ultrasound showed grade I fatty liver and borderline splenomegaly.

A provisional diagnosis of acute pericarditis was made, and the patient was started on aspirin, corticosteroids, and empirical antibiotics, with initial symptomatic improvement.

On day 2 of admission, the patient developed diffuse abdominal pain with dyspeptic symptoms. A contrast-enhanced CT (CECT) scan of the chest and abdomen showed mild hepatosplenomegaly, bilateral renal cortical cysts, minimal ascites, and bilateral pleural effusions. He was initiated on intravenous pantoprazole infusion.

Further evaluation for tropical infections revealed a positive IgM for scrub typhus, prompting initiation of intravenous doxycycline. Subsequently, the abdominal pain became localized to the right hypochondrium and worsened on leaning forward.

Repeat chest X-ray on day 6 showed cardiomegaly and moderate bilateral pleural effusions. Follow-up echocardiography revealed mild pericardial effusion. Intravenous methylprednisolone was administered for 3 days, resulting in significant symptomatic improvement. Inflammatory markers declined (CRP decreased to 149 mg/L), though intermittent fever persisted.

The patient reported bedbug exposure in his hostel but denied any recent travel, animal exposure, or tick bites. No eschar was noted on physical examination.

He was discharged after clinical improvement with advice for outpatient follow-up. A PET-CT was planned if fever persisted beyond two weeks.

DISCUSSION

Scrub typhus has protean manifestations ranging from self-limiting febrile illness to severe systemic complications such as hepatitis, pneumonitis, myocarditis, meningoencephalitis, and multi-organ dysfunction. Serositis involving the pleura, pericardium, and peritoneum has been described but is relatively uncommon.

In this case, scrub typhus mimicked viral pericarditis, and the patient developed features of polyserositis (pericardial, pleural, and peritoneal involvement) without an eschar. Awareness of such atypical presentations is essential in endemic regions.

According to the European Society of Cardiology (ESC) 2015 guidelines, a diagnosis of acute pericarditis requires at least two of the following [3]:

- Typical chest pain (sharp, pleuritic, positional)
- Pericardial friction rub
- ECG changes: diffuse ST-segment elevation or PR depression
- New or worsening pericardial effusion

Classical ECG features of acute pericarditis evolve through four stages [3,4]:

1. Diffuse concave ST-segment elevation with upright T waves
2. PR-segment depression (except in aVR)
3. T-wave inversion
4. Normalization of ECG

The diffuse ST-elevation pattern of pericarditis is distinguishable from the regional ST-elevation seen in myocardial infarction. Sinus tachycardia is frequently observed. Low voltage or electrical alternans should raise suspicion for pericardial effusion or tamponade.

While pericardial involvement in scrub typhus is rare, clinicians should maintain high suspicion in febrile patients from endemic areas, especially when serositis is present. Timely diagnosis and doxycycline therapy remain the cornerstone of management. Corticosteroids may

be considered in selected inflammatory or immune-mediated presentations.

CONCLUSION

This case underscores an unusual presentation of scrub typhus as polyserositis with acute pericarditis. In endemic areas, a high index of suspicion for scrub typhus is warranted in patients with febrile serositis, even in the absence of eschar. Prompt diagnosis and doxycycline therapy can prevent complications and improve outcomes.

- Scrub typhus can masquerade as viral pericarditis with systemic inflammation.
- Always consider endemic tropical infections in febrile serositis, even without classical signs like eschar.
- Early initiation of doxycycline is critical.
- Corticosteroids may aid recovery in refractory inflammatory complications.

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