

Case Report

An unusual manifestation of scrub typhus presenting with splenic infarct: a case report

Anuj Arora^{1*}, Sultan Nawahirsha¹, Babu Kumar¹, Durga Krishnan²

¹Department of Medical Gastroenterology, Chettinad Hospital and Research Institute, Kelambakkam, Tamil Nadu, India

²Department of General Medicine, Chettinad Hospital and Research Institute, Kelambakkam, Tamil Nadu, India

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*Correspondence:

Dr. Anuj Arora,

E-mail: njarora90@gmail.com

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ABSTRACT

Scrub typhus has a wide range of clinical presentation varying from mild symptoms like fever, chills, headaches, myalgias, gastric ulcerations and hepatitis to more fatal conditions like pneumonia and encephalopathy caused by disseminated vasculitis with splenic infarct being a rare complication. We report a case of 50-years old male with scrub typhus who presented as multiple splenic infarcts.

Keywords: Scrub typhus, Splenic infarct, *Orientia tsutsugamushi*

INTRODUCTION

Scrub typhus is tropical fever caused by a gram-negative organism *Orientia tsutsugamushi*. It is usually transmitted to humans by the bite of infected larval forms of trombiculid mites.¹ Scrub typhus normally presents with fever, myalgias, headache, abdominal pain and gastrointestinal disturbances.^{2,3} In few cases they tend to present with more serious complications such as interstitial pneumonia, acute respiratory distress syndrome, hepatitis, acute renal failure, encephalopathy and myocarditis, and all are attributed to focal and/or disseminated vasculitis. However, splenic involvement is rare, and there are only a few documented cases.⁴⁻⁶ We reported a case of scrub typhus infection manifesting with splenic infarct in a tertiary care hospital in South India.

CASE REPORT

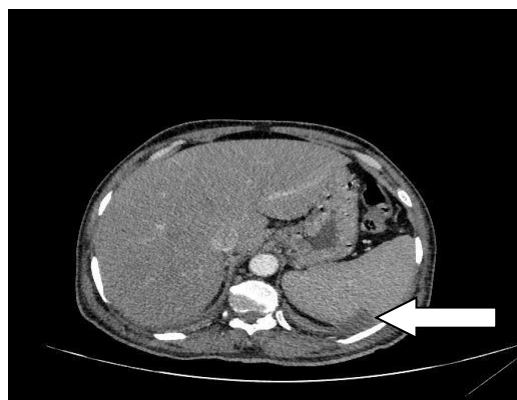
A 50-year-old male farmer and cattle rearer, with no known co-morbidities presented with high grade intermittent fever, abdominal pain with distension for 5 days, which was associated with vomiting and breathlessness NYHA II. Patient did not have myalgia, headaches, or chest pain at the time of presentation. On

examination, patient was febrile, had bilateral pitting pedal edema and muddy conjunctiva with normal vitals. Examination of the abdomen revealed central black crust with erythematous rim on left lateral abdomen (Figure 1) with uniform distension and generalized tenderness more in the left hypochondrium, left lumbar and umbilical region. Rest of the systemic examination was normal.

His complete blood count showed neutrophilic leukocytosis. Amylase and lipase were normal. Liver function tests showed direct hyperbilirubinemia with mild transaminitis. Scrub typhus IgM test (by ELISA) returned positive. In view of persistent abdominal pain, CT abdomen was done which revealed multiple wedge-shaped areas with broad base towards peripheries seen in splenic parenchyma suggestive of splenic infarcts (Figure 2). The investigations are mentioned in Table 1. Blood culture was negative. Workup for hypercoagulable state were negative. A 2D echocardiography showed a normal left ventricular function with an ejection fraction of 65%, no evidence of endocarditis and no regional wall abnormalities. Patient was started on azithromycin and doxycycline and became asymptomatic 72 hours after initiation of the treatment. He was discharged after completion of the antibiotic regimen.

Table 1: Basic lab parameters from day of admission.

Parameters	Day 1	Day 2	Day 3	Day 4	Day 5
Hemoglobin (g/dl)	13.3		12.6		12.5
TLC (cells/ μ l)	17300		12300		6000
Neutrophils (%)	91.4		86		66
Platelets (lac/ μ l)	1.50		1.19		1.60
BUN (mg/dl)	25	28	25		14
Creatine (mg/dl)	1.41	1.81	1.55		0.92
Sodium (meq/l)	121	129	133		137
Potassium (meq/l)	4.0	3.6	3.4		3.9
S. bilirubin T/D (mg/dl)	3.30/2.603			2.7/2.094	
AST (U/l)	61			89	
ALT (U/l)	49			52	
ALP (U/l)	229			150	

**Figure 1: Eschar (central black crust with erythematous rim) on left lateral abdomen at day 2 of fever.****Figure 2: Splenic infarct in CECT abdomen.**

DISCUSSION

Scrub typhus is a zoonotic disease transmitted to humans by tick bite. It is one of the tropical fever syndromes with varied manifestations. The frequency of scrub cases tends to increase during the rainy seasons as these mites tend to lay eggs during this season and it's the larval stages of these mites that tend to bite and inoculate the organism into the skin of patients. Scrub infections are more common in

the South and Eastern Asia, Pacific islands and Northern parts of Australia.^{7,8}

The clinical features include fever (83.3%), myalgia (76.9%), maculopapular rash (46.2%), eschar (66.7%), upper respiratory and gastrointestinal symptoms noted in about 11.5% and neurological symptoms seen in about 2.6% of patients.⁹ Due to wider manifestations, infection tends to be under diagnosed or wrongly diagnosed. The diagnosis is usually made with scrub IgM ELISA having a sensitivity of 86.5%.

In India around 50% of undiagnosed febrile illness turned to be scrub typhus due to lack of proper diagnostic tools and lack of clinical suspicion. The common gastrointestinal manifestations include vomiting 65%, nausea 60%, diarrhea 45% hematemesis and melaena in about 25% while hepatomegaly is seen in 40%, jaundice 35%, abdominal pain 20%.¹⁰ Most common CT abdomen findings in scrub typhus involves hepatomegaly noticed in 74.4% followed by splenomegaly seen in 66.7%. Other radiological manifestations commonly seen in scrub include ascites (53.8%), gallbladder thickening (29.5%), pleural effusion (30.8%) and splenic infarcts seen in about 3.8% of patients.⁹ Most common infectious causes of splenic infarcts include malaria, babesiosis, while few of the uncommon causes include mycoplasma pneumonia, CMV, EBV, bartonella. It is also noticed in kala-azar and leptospirosis.¹¹

CONCLUSION

As tropical fever syndromes present with a wide range of symptoms varying from fever, cough, cold, myalgia, abdominal distension, high index of suspicion should be made especially in resource poor settings careful attention to the history and physical examination with judicious use of investigations ultimately helps in the diagnosis. Splenic infarct should be suspected in all patients with scrub typhus having left hypochondrial tenderness. Early diagnosis and prompt treatment is a must.

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Ethical approval: Not required

REFERENCES

1. Traub R, Wisseman CL. The ecology of chigger-borne rickettsiosis (scrub typhus). *J Med Entomol*. 1974;11(3):237-303.
2. Lee N, Ip M, Wong B, Lui G, Tsang OT, Lai JY et al. Risk factors associated with life-threatening rickettsial infections. *Am J Trop Med Hyg*. 2008;78(6):973-8.
3. Smadel JE, Ley HL, DierckS FH, Traub R, Tipton VJ, Frick LP. Immunization against scrub typhus. I. Combined living vaccine and chemoprophylaxis in volunteers. *Am J Hyg*. 1951;53(3):317-25.
4. Silpapojakul K, Varachit B, Silpapojakul K. Paediatric scrub typhus in Thailand: a study of 73 confirmed cases. *Trans R Soc Trop Med Hyg*. 2004;98(6):354-9.
5. Ogawa M, Hagiwara T, Kishimoto T, Shiga S, Yoshida Y, Furuya Y, et al. Scrub typhus in Japan: epidemiology and clinical features of cases reported in 1998. *Am J Trop Med Hyg*. 2002;67(2):162-5.
6. Allen AC, Spitz S. A Comparative Study of the Pathology of Scrub Typhus (Tsutsugamushi Disease) and Other Rickettsial Diseases. *Am J Pathol*. 1945;21(4):603-81.
7. Rapmund G. Rickettsial diseases of the Far East: new perspectives. *J Infect Dis*. 1984;149(3):330-8.
8. Kelly DJ, Fuerst PA, Ching WM, Richards AL. Scrub typhus: the geographic distribution of phenotypic and genotypic variants of *Orientia tsutsugamushi*. *Clin Infect Dis*. 2009;48(3):S203-30.
9. Kim KY, Song JS, Park EH, Jin GY. Scrub typhus: radiological and clinical findings in abdominopelvic involvement. *Jpn J Radiol*. 2017;35(3):101-8.
10. Thu A, Supanaranond W, Phumiratanaprapin W, Phonrat B, Chinprasatsak S, Ratanajaratroj N. Gastrointestinal manifestations of septic patients with scrub typhus in Maharat Nakhon Ratchasima Hospital. *Southeast Asian J Trop Med Public Health*. 2004;35(4):845-51.
11. Cunha BA, Dieguez B, Varantsova A. Lessons learned from splenic infarcts with fever of unknown origin (FUO): culture-negative endocarditis (CNE) or malignancy? *Eur J Clin Microbiol Infect Dis*. 2018;37(6):995-9.

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