Clinical Case Report

Surgical manifestations of scrub typhus: A diagnostic dilemma

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ABSTRACT

Scrub typhus, a zoonosis caused by Orientia tsutsugamushi, is a systemic febrile illness. The disease presents with diverse clinical manifestations, ranging from subclinical disease to multiorgan failure and fatal disease. It may rarely present as an acute abdomen which may lead to a diagnostic dilemma. We describe two serologically confirmed cases of scrub typhus presenting as acute abdomen—one mimicking acute appendicitis and the other acute cholecystitis, both managed non-operatively. A high index of suspicion, along with subtle indicators in the history and clinical examination help avoid unnecessary surgery in such cases.


INTRODUCTION

Scrub typhus can present with diverse clinical manifestations ranging from subclinical disease to multiorgan failure and death. However, the commonest presenting features are fever, headache and myalgia.1 The presentation with an acute abdomen, mimicking surgical disease, is rare. We describe two serologically confirmed cases of scrub typhus presenting with acute abdomen—one mimicking acute appendicitis and the other acute cholecystitis.

THE CASES

Case 1

A 50-year-old woman presented with progressively worsening right upper abdominal pain, bilious vomiting and neck stiffness of 3 days’ duration. There was history of fever for the past 1 week. Physical examination revealed tenderness with guarding in the right hypochondrium. A provisional diagnosis of acute cholecystitis was considered. Ultrasoundography of the abdomen revealed a cholelithiasis with no features of acute cholecystitis. In view of the recent onset of neck stiffness, analysis of the cerebrospinal fluid was done, which was suggestive of aseptic meningitis. Blood for malarial parasites as well as serology for Widal agglutination test, leptospirosis and dengue were non-reactive.

The immunoglobulin M (IgM) ELISA for scrub typhus was reactive. Secondary examination did not reveal any eschar. She was treated with azithromycin and doxycycline and made an uneventful recovery.

Case 2

A 22-year-old man presented with high-grade fever and pain in the right lower abdomen for 2 days with associated breathlessness. This was preceded by headache for 10 days. Clinical examination revealed generalized abdominal tenderness with rebound tenderness, particularly at McBurney’s point. A clinical diagnosis of acute appendicitis was considered. His total leucocyte count was 13 800/mm^3 and platelets were 88 000/mm^3. His biochemical profile showed a total bilirubin of 2.6 mg/dl (conjugated 2.1 mg/dl), aspartate transaminase (AST) of 1420 IU/L, alanine transaminase (ALT) of 785 IU/L and alkaline phosphatase of 110 IU/L. Ultrasonography of the abdomen revealed hepatosplenomegaly with ascites, and a few 8 mm sized mesenteric lymph nodes in the right iliac fossa. Since there was no convincing evidence of acute appendicitis, parenteral antibiotics were started, and the patient was evaluated for the cause of his fever. Blood for malarial parasites, Widal agglutination test, blood and urine cultures, serology for dengue and leptospirosis were negative. IgM ELISA for scrub typhus was reactive. Secondary examination did not reveal any eschar. He was treated with azithromycin and doxycycline, with which the fever subsided in 24 hours and pain subsided in 48 hours.

DISCUSSION

Scrub typhus is a zoonosis caused by the Gram-negative cocobacillus Orientia tsutsugamushi, belonging to the family Rickettsiaceae. It is transmitted by trombiculid mites, also called ‘chiggers’ (Leptotrombidium deliense), found in areas of heavy scrub vegetation. It is endemic in the ‘tsutsugamushi’ triangle, which includes Japan, Taiwan, China, South Korea, Nepal, northern Pakistan, Papua New Guinea and the Australian states of Queensland and northern New South Wales.2 In India, scrub typhus has been reported from all over the country.3,4

Scrub typhus can present with a variety of clinical manifestations. This is because the target cells for Orientia tsutsugamushi are endothelial cells and macrophages, and it disseminates into multiple organs, via haematogenous and lymphogenous routes, including the liver and spleen.5

The typical symptoms of scrub typhus are fever, rash and presence of a necrotic eschar, which is pathognomonic.3,6,7 However, it is rarely seen in Southeast Asia and the Indian subcontinent.5,10 Another common finding is lymphadenopathy,9,11 which was absent in our patients. Patients with scrub typhus may also present with neurological symptoms ranging from aseptic meningitis to frank meningoencephalitis. However, recovery is complete when treated with appropriate antibiotics. The clinical features and cerebrospinal fluid findings can mimic tuberculous meningitis, which has to be carefully excluded.12

Gastrointestinal symptoms such as nausea, vomiting, diarrhoea and pain abdomen are also common.13,14 Abnormal endoscopic findings in these patients correlate with clinical severity.15 Severe complications such as encephalitis, cardiomyopathy, acute renal failure and disseminated intravascular coagulation, may also develop. Renal and hepatic dysfunction at admission are predictors of poor outcome.8

The presentation of scrub typhus as acute abdomen is rare, with a few isolated case reports of patients presenting as acute acalculous...
cholecystitis, acute pancreatitis and acute appendicitis. Some patients have even undergone surgery with no improvement in symptoms postoperatively, and non-specific changes in the resected surgical specimens. In both our patients, the diagnosis of acute cholecystitis and acute appendicitis was made on clinical suspicion. However, there were many features that did not fit into the initial diagnosis. In the first case, presentation with fever and neck stiffness was unusual for the diagnosis of acute cholecystitis. Also, the radiological imaging did not support the clinical diagnosis. A possible cause for this patient’s pain was hepatitis, as has been reported earlier.

The second patient also presented with fever and a preceding headache, both atypical for appendicitis. Again, imaging did not support the clinical diagnosis. The right iliac fossa pain was probably secondary to mesenteric lymphadenopathy. Both these cases highlight the importance of considering alternative diagnoses when the clinical signs do not fit the initial diagnosis. If fever is the presenting symptom, scrub typhus is one of the differential diagnoses that needs to be considered. A diagnosis of scrub typhus can be confirmed by serology and appropriate antibiotics started. Doxycycline remains the drug of choice; however, azithromycin is used in pregnancy and in those with renal failure. The exact duration of therapy is uncertain. Our patients made an uneventful recovery after a 7-day course of doxycycline.

Conclusion
Scrub typhus should be considered in the differential diagnosis of acute febrile illness associated with gastrointestinal symptoms, especially when fever is the presenting symptom. Though eschar is pathognomonic of the disease, it is not commonly seen, and its absence does not rule out the disease. Appropriate medical management in the form of doxycycline or macrolides, and close observation may avoid unnecessary surgery in serologically confirmed patients with clinical findings of an acute abdomen.

REFERENCES

DESHPANDE et al.: SURGICAL MANIFESTATIONS OF SCRUB TYPHUS