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An intriguing case of acute abdomen.

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ABSTRACT

We describe a 43 year old lady who presented with features of acute abdomen and jaundice. During the course of her illness, her clinical status worsened until serology confirmed antibodies to *Orientiatsutsugamushi*. A diagnosis of Scrub typhus was reached and doxycycline was initiated which led to an uneventful recovery. In endemic areas, patients presenting with acute abdomen must be scrutinized to have scrub typhus.

Keywords: Scrub typhus, Acute abdomen, Unusual presentation, *Orientiatsutsugamushi*

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INTRODUCTION

Scrub typhus is a common acute febrile illness in the south Asian population. The spectrum of clinical manifestations of this disease is diverse ranging from mild and self-limiting to various complications such as Acute Respiratory Distress Syndrome (ARDS), multi organ failure and death [1]. However, it can rarely present as an acute abdomen. The singularity and usualness of this presenting complaint and a pressing need to create awareness among treating physicians in areas endemic to scrub is the motivation behind reporting this case.

Case Presentation

A forty year old female with no premorbid illnesses presented to the emergency department with history of fever of seven days duration, progressively increasing right upper abdominal pain radiating to the back with associated abdominal distention of 5 days duration. General examination revealed pallor, deep jaundice and high spiking fever of 102°F. Abdominal examination revealed severe tenderness in the right hypochondrium with abdominal guarding, distended abdomen, sluggish bowel sounds and a positive Murphy's sign. Systemic examination was otherwise normal. Based on the above clinical features, a provisional clinical diagnosis of Acute Cholecystitis with ascending cholangitis/acute hepatitis was contrived. Injectable piperacillin-tazobactam and metronidazole was initiated in conjunction with supportive care with IV fluids and analgesics.

Salient blood investigations on Day 1 revealed hemoglobin of 8.4 g/dL, total WBC count of 4400 cells/mL and platelet count of 33000 cells/mL. Liver function tests were abnormal with total bilirubin of 7.1 mg/dL, direct bilirubin 6.0 mg/dL. Serum transaminases were also elevated with AST (Aspartate transaminase) of 97 IU/L, ALT (Alanine transaminase) of 90 IU/L and ALP (Alkaline phosphatase) was 183 U/L. Malarial parasite by QBC method was negative. Blood cultures were drawn for work up of fever. An ultrasonography of abdomen and pelvis revealed cholelithiasis but no evidence of cholecystitis, intrahepatic or extrahepatic cholestasis. Chest X-ray was essentially normal.

The patient continued to spike fever with worsening jaundice and increasing severity of abdominal pain. Repeat clinical examination revealed severe guarding and sluggish bowel sounds. An emergency contrast enhanced CT scan of the abdomen was carried out that revealed features consistent with USG of the abdomen. A surgical opinion was sought and the patient was advised to be kept nil per oral with constant monitoring of abdominal girth to look for worsening abdominal distention.

The patient continued spiking fever despite 5 days of intravenous piperacillin tazobactam and metronidazole. Blood cultures were sterile and serological markers for infectious etiology were negative. Oral doxycycline was empirically started after sending serological markers for scrub typhus.

Within 24 hours of starting doxycycline, the fever subsided with dramatic improvement in general wellbeing of the patient. There was a remarkable diminution of pain abdomen and abdominal distention. Bowel sounds were clearly audible.

Repeat hematological parameters showed improved platelet count and total leucocyte count. Abnormalities in the liver function tests were ameliorated.

IgM antibodies to Orientia tsutsugamushi were positive confirming the diagnosis of probable scrub typhus. However, repeated examination did not reveal the presence of an eschar.

DISCUSSION

Scrub typhus is an easily diagnosable and treatable acute febrile illness caused by *Orientia tsutsugamushi*. It is an obligate intracellular gram negative parasite that survives within vertebrate as well as arthropod hosts [2]. It is transmitted by the bite of the larval stage of trombiculid mites, commonly known as chiggers. It is common in the Asia-Pacific region with intermittent spates in the Indian subcontinent [3].

The clinical manifestations of the disease is varied. A possible explanation to this is the fact the endothelial cells and macrophages form the target cells for *Orientiatsutsugamushi* and these cells disseminate into a multitude of organs via the lymph and blood [4].

The clinical presentation of the disease commonly involves fever, headache and myalgia and regional lymphadenopathy. The presence of an eschar, which marks the site where the mite has fed, is pathognomonic and confirmatory [5]. However, eschars are not commonly seen in populations of the Southeast Asian and Indian subcontinent [6].

It is extremely rare and unusual for acute abdomen to be the presenting complaint in scrub typhus and consequently, there is a high degree of confusion while diagnosis. An extensive literature search revealed only 5 case reports with nine patients of scrub typhus presenting as an acute abdomen [7-11]. Scrub typhus mimicked acute acalculous cholecystitis in four patients, acute appendicitis in two patients and peritonitis in one patient. Five out of the nine patients underwent surgical exploration but to no avail.

In our patient, although an initial suspicion of acute cholecystitis was present, scrub typhus was confirmed serologically. The probable cause of pain abdomen could have been due to acute hepatitis causing swelling of the liver and stretching of the encasing Glissons capsule. Appropriate antibiotic therapy with doxycycline is found to be efficacious in the treatment of scrub typhus [12].

Prompt and early diagnosis of scrub typhus can avoid significant morbidity and mortality. As delayed diagnosis and treatment can greatly predispose the patient to severe complications such as septic shock, ARDS, multi organ failure and fatality, efforts for swift diagnosis is essential. It is of paramount importance that acute abdomen be kept in mind as a possible presentation for scrub in order to avoid unnecessary surgery and added costs to the patient.

CONCLUSIONS

This middle aged lady presented with features of surgical causes of acute abdomen. Despite profound investigations, the cause of pain abdomen could not be established. Hence medical causes of pain abdomen due to endemic infectious diseases were considered.

Despite the fact that the correct diagnosis and treatment was attained, prior diagnosis could be achieved with lesser investigations.

The case signifies the importance of reviewing the patient and looking for differential diagnosis when there is a lack of response to initial treatment.

Table 1: Hematological and Biochemical parameters

Value	On admission	Worsening	Recovering
Hb g/dL	8.4	8.5	7.0
TLC cells/mm ³	4.4	6.7	9.0
Neutrophils %	22	35	72
Platelet cells/mm ³	40,000	33000	58000
Urea mg/dL	36	43	48
Cr mg/dl	1.1	1.3	1.1
T. Bil mg/dL	7.1	8.2	6.6
D. Bil mg/dL	6.0	7.1	5.7
AST IU/L	97	117	45
ALT IU/L	90	85	50
ALP IU/L	183	165	131

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