Pancreatitis in Scrub Typhus

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ABSTRACT

Scrub typhus is a rickettsial infection prevalent in most parts of India. Acute pancreatitis with pseudocyst formation is a rare complication of this condition. This paper reports acute renal failure, pancreatitis and pseudocyst formation in a 48-year-old female with scrub typhus. Ultrasonography of the abdomen revealed a bulky pancreas with fluid seen along the body of the pancreas in the lesser sac. The infection was successfully treated with doxycycline and supportive treatment. Pancreatitis was managed conservatively. This case report highlights the importance of identifying and managing uncommon complications of a common tropical disease for optimum outcome.

Key words: Pancreatic pseudocyst, Pancreatitis, Scrub typhus

INTRODUCTION

Scrub typhus is caused by the rickettsial organism Orientia tsutsugamushi and is transmitted by the bite of trombiculid mites - chiggers.[1] The symptoms of infection include fever with chills, headache and lymph node involvement. The site of inoculation is usually marked by an eschar. The spectrum of disease presentation is wide and complications include pneumonia, acute renal failure, disseminated intravascular coagulation and septic shock. Acute pancreatitis however has only rarely been reported as a complication of scrub typhus. Two cases of acute pancreatitis in scrub typhus arose in a setting of mixed infection.[2-5] Pancreatic pseudocyst formation in scrub typhus has been reported only once.[2] We report a case of scrub typhus presenting with pancreatitis with pseudocyst formation.

CASE REPORT

A 48-year-old female homemaker from a rural area was admitted with complaints of intermittent high fever, abdominal pain and vomiting, and reduced urine output. On examination, she had a pulse rate of 110/min, blood pressure 130/80 mmHg and was afebrile. Conjunctiva were pale and sclera were icteric and no rash was noted. On abdominal examination, diffuse tenderness was elicited and hepatomegaly was present. Hemoglobin was 8.0 g/dL, platelet count 64,000/μL, leukocyte count 10,300/μL with 78% neutrophils and 18% lymphocytes. Erythrocyte sedimentation rate was 88/min. Total bilirubin was 3.5 mg/dL, direct bilirubin 2.3 mg/dL, aspartate aminotransferase 47 IU/L, alanine aminotransferase 64 IU/L and alkaline phosphatase 125 IU/L. Total protein was 6.4 g/dL, albumin and globulin were 3.1 g/dL and 3.3 g/dL, respectively. Serum urea was 174 mg/dL and creatinine was 4.5 mg/dL. Urine analysis revealed 2-4 white cells/high power field, 15-20 red cells/high power field and no casts. Serum amylase was 2662 U/L and lipase was 3822 U/L. The test for malarial parasite by quantitative buffy coat was negative. Blood culture remained sterile after 7 days of incubation and immunoglobulin M (IgM) antibodies to leptospira by enzyme linked immunosorbent assay (ELISA) were negative. Weil-Felix test showed significant titers of OX K - 1:320, OX 19 - 1:80, OX 2 - 1:40 and IgM antibodies to Orientia tsutsugamushi by ELISA were positive.

The patient was treated with doxycycline 200 mg/day and ceftriaxone 2 g/day alongside supportive measures. The initial ultrasound scan performed on the 3rd day of admission revealed hepatosplenomegaly, features of acute medical renal disease and ascites. No abnormalities were noted in the pancreas. However, the patient continued to have abdominal pain and a review ultrasound scan was performed on the 9th day, which showed fluid along

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Table 1: Investigations from day 1 to day 9 of admission

Investigation	Normal value	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 8	Day 9
Hemoglobin (g/dL)	10-14	8	—	—	—	7.5	—	—	—
Hematocrit (%)	35-45	25.4	—	—	—	—	—	—	—
Platelets (/μL)	150,000-400,000	64,000	126,000	—	—	214,000	—	—	—
TLC (/μL)	4000-11,000	10,300	—	—	—	24,000	—	—	—
Total bilirubin (mg/dL)	0.3-1.9	3.5	—	—	—	1	—	—	—
Direct bilirubin (mg/dL)	0-0.3	2.3	—	—	—	0.6	—	—	—
AST (U/L)	10-40	47	—	—	—	17	—	—	—
ALT (U/L)	10-40	64	—	—	—	23	—	—	—
ALP (U/L)	40-140	125	—	—	—	109	—	—	—
Urea (mg/dL)	6-21	174	175	142	95	63	40	33	—
Creatinine (mg/dL)	0.6-1.1	4.5	4.2	3.2	2.1	1.7	1.4	1.4	—
Amylase (U/L)	40-140	-	2662	1490	—	1104	—	—	326
Lipase (U/L)	0-160	-	3822	1706	—	791	—	—	278

TLC: Total leukocyte count; AST: Aspartate aminotransferase; ALT: Alanine aminotransferase; ALP: Alkaline phosphatase

the body of the pancreas in the lesser sac indicative of a pancreatic pseudocyst. Contrast enhanced computerized tomography of the abdomen was not carried out in view of the deranged renal parameters. The patient was stable upon discharge on the 11th day and on follow-up 6 weeks later, all symptoms had resolved. Lab investigations through the course of hospital stay are given in Table 1.

DISCUSSION

Scrub typhus is a zoonotic disease widely prevalent over a large region of Asia known as the "tsutsugamushi triangle" including India, Japan, Indonesia and other countries.[6] In South India, outbreaks may occur during cooler months and scrub typhus is considered a reemerging infectious disease.[7-9] In spite of the endemic nature of the disease in South-East Asia, the lack of diagnostic tools is a cause of under-reporting of scrub typhus. One study indicates that up to 50% of acute febrile illnesses in rural Tamil Nadu in South India may be due to scrub typhus.[10]

Clinical manifestations of scrub typhus vary widely and it is difficult to rule out other causes in the initial stages. Diagnoses of enteric fever, leptospirosis and dengue fever, among others, are all to be considered.[11] The eschar at the site of the chigger bite, which is considered characteristic of the infection, may in fact often be absent in patients in South-East Asia.[12] Clinical suspicion and serological tests mark the mainstay of diagnosis, including the Weil-Felix test, which is highly specific, but not very sensitive[10] and ELISA to detect specific antibodies. Complications of scrub typhus include pneumonitis, acute respiratory distress syndrome, acute renal failure, myocarditis and septic shock.[13]

Gastrointestinal manifestations are not uncommon in scrub typhus, with symptoms such as nausea, vomiting, diarrhea and hematemesis or melena being reported, along with signs of hepatomegaly jaundice and abdominal pain.[14] Liver enzymes are commonly elevated.[13,14] Pancreatitis however, is a very rare complication of scrub typhus. Two previous studies have reported pancreatitis in mixed infections of scrub typhus with dengue[3] and scrub typhus with leptospirosis.[4] Only one case report exists of pancreatitis in a setting of solitary scrub infection.[2] A study of 136 cases of scrub typhus in Taiwan reported only four cases as being complicated by pancreatitis.[5] The mechanism of pancreatitis in infective conditions is thought to be due to bacterial translocation through various proposed mechanisms.[15] However, in the case of scrub typhus the mechanism of pancreatic involvement remains unclear; although, some authors have theorized that vasculitis may be the cause.[2]

In the setting of unusual complications of tropical disease, it is important to look for mixed infections. Acute pancreatitis with pancreatic pseudocyst formation is rare in the setting of solitary scrub typhus infection, but nevertheless must be picked up early if clinical suspicion exists. Antibiotic therapy for the rickettsial infection along with supportive therapy for pancreatitis including intervention if advised can result in a good outcome for the patient.

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