

Splenic Infarct Due to Scrub Typhus

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ABSTRACT

Scrub typhus is a mite borne infectious disease that has the potential to involve multiple organs and can be fatal. Involvement of the abdomen in the form of hepatitis, gastric ulcerations and pancreatitis are well-documented, the pathology being disseminated vasculitis. However involvement of the spleen in scrub typhus is extremely rare and is reported only in a few autopsy studies. We report the case of a 50-year-old lady who presented with fever and left upper quadrant abdominal pain due to a splenic infarct due to scrub typhus.

Key words: Complication, Scrub typhus, Splenic infarct

INTRODUCTION

Scrub typhus is a zoonotic disease that is caused by a Gram-negative bacterium, *Orientia tsutsugamushi* and transmitted through the skin by the bite of the larval-stage (chigger) of trombiculid mite. It is widely prevalent in the Indian sub-continent and affects people who encounter scrub vegetation as part of their occupation or daily life. It clinically manifests with an acute onset of fever, headache and myalgia and may involve multiple organs. Severe complications include acute respiratory distress syndrome, hepatitis, renal failure, meningo-encephalitis and myocarditis with shock in a varying proportion of patients. The pathogenesis of these complications is focal or disseminated vasculitis. Scrub typhus is known to affect most of the intra-abdominal organs, the common ones being liver, gall bladder, kidneys, gastro-intestinal tract and the pancreas. However, clinical involvement of the spleen, though documented in autopsy studies is rarely reported.^[1] We report an unusual case of a 50-year-old lady who presented with fever and left hypochondrial pain which was confirmed to be due to a splenic infarct caused by Scrub typhus.

CASE REPORT

The present case report is about a 50-year-old lady with no pre-morbid illness presented with history of high grade intermittent fever with chills and rigors for 1 week. She also had a left upper quadrant abdominal pain for the past 5 days. On examination, she had left hypochondrial tenderness with a palpable spleen. There was no eschar. Rest of the systemic examination was unremarkable. Complete blood count showed hemoglobin-11.7 g%, total white blood cell count-7,000/cu mm (73% neutrophils) and platelet count-115,000/cu mm. Liver function tests showed an elevation in liver enzymes (serum glutamic oxaloacetic transaminase-174 U/L and serum glutamic pyruvic transaminase-117 U/L) and alkaline phosphatase was 382 U/L. Serum creatinine was 1.1 mg%. Serum amylase and lipase levels were normal. The diagnosis of Scrub typhus was confirmed by a positive IgM enzyme linked immunosorbent assay. Three blood cultures were negative and other infectious etiologies such as malaria, enteric fever, dengue fever and leptospirosis were ruled out by appropriate serological tests. Computed tomography (CT) imaging of the abdomen revealed a well-defined, non-enhancing lesion in both arterial and venous phases (4.4 cm × 3.3 cm × 6.5 cm) suggestive of an infarct in the anterior aspect of the upper pole of the spleen [Figure 1]. Doppler study of the spleen showed normal caliber and flow in the splenic vein and

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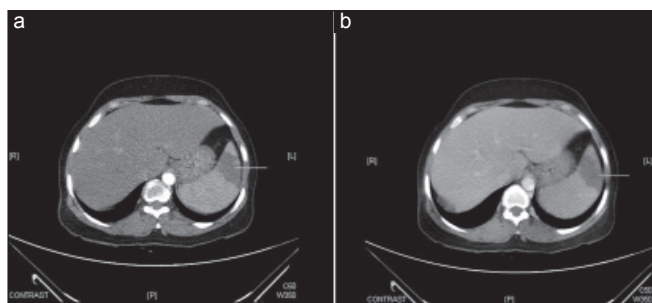


Figure 1: Computed tomography abdomen with contrast shows a well-defined non enhancing area in both arterial (a) and venous phases (b) measuring 4.4 cm × 3.3 cm × 6.5 cm in the anterior aspect of the upper pole of spleen with sharply demarcated margins-features suggestive of a splenic infarct

artery. Trans-thoracic echocardiography did not show any vegetation. She was started on oral doxycycline and intravenous azithromycin with which she had significant improvement in abdominal pain and became afebrile in 48 h. She was discharged after successfully completing a course of doxycycline and azithromycin.

DISCUSSION

Scrub typhus is a vector borne bacterial infection commonly seen in an area known as ‘tsutsugamushi triangle’ which extends from northern Japan and Far East Russia in the north, to northern Australia in the south, and to Pakistan and Afghanistan in the west. It has been found to account for up to 50% of undifferentiated febrile illness that occur in some parts of India and can range from a self-limiting disease to, if not promptly diagnosed and appropriately treated, a fatal illness due to multi-organ dysfunction.^[2]

The most common gastrointestinal symptoms of scrub typhus patients are vomiting, nausea, diarrhea, hematemesis and malena, which may be seen in one fourth of patients. The common findings on examination include hepatomegaly and jaundice. Abdominal pain is seen in about 22% of patients with scrub typhus and such patients are often subjected to surgical exploration.^[2] Common abdominal findings seen on Ultrasonography and CT imaging are splenomegaly, peri-portal edema, gall bladder wall thickening and intra-abdominal lymphadenopathy. Gastro-intestinal tract erosions and bleeding ulcers are frequently seen in upper gastro-duodenoscopy.^[3] Some unusual abdominal complications include acute acalculous cholecystitis, duodenal ulcer perforation, peritonitis, pancreatic abscess and acute pancreatitis.^[4,5] Although splenomegaly is seen in 8% of patients with scrub typhus, complications involving the spleen are extremely rare. To the best of our knowledge, there are only 2 cases of splenic infarcts due to scrub typhus reported so far.^[6]

Scrub typhus is known to cause infarcts in other organs as well. A case of acute myocardial infarction and a case of cerebral infarction complicating scrub typhus have been reported before.^[7,8]

Splenic infarction is a well-known complication of malaria, infective endocarditis, infectious mononucleosis, cytomegalovirus infection and babesiosis. In malaria, it is secondary to sequestration of parasitized *red blood cells* (RBCs) in the splenic micro-circulation whereas embolic phenomenon is responsible for the same in infective endocarditis. In infectious mononucleosis, the probable pathogenesis is insufficient blood flow to oxygenate the entire spleen during its acute enlargement. In babesiosis, the various mechanisms considered are micro thrombi, sequestration of parasitized RBCs and local inflammatory response.

It is now well-established that vasculitis is the cause of major complications following scrub typhus infection. The pathogenesis is focal or disseminated vasculitis, which is a result of either direct invasion of endothelial cells and phagocytes by the rickettsia or immune response by the body or more commonly a combination of both. The abdominal pain due to splenic infarction in our patient is probably secondary to vasculitis following scrub typhus infection and it promptly resolved following appropriate antibiotic therapy.

CONCLUSION

Based on the above case study it can be concluded that as splenic infarction is not a well-known complication of scrub typhus clinicians may not consider the possibility and thus may be underdiagnosed. Acute left hypochondrial pain in a patient with scrub typhus should be investigated by abdominal ultrasonography and/or CT.

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