Medicon Medical Sciences
Volume 5 Issue 2 August 2023
Article Type: Case Report
ISSN: 2972-2721

A Rare Case of Acute Calculous Cholecystitis With multiorgan Dysfunction Complicated by Scrub Typhus

Karthikeyan Selvaraj[1], Kambala Prasanna Kumar[2]* and P Sasi Kumar[3]

[1]*Associate Professor, Department of General Surgery, SBMCH*

[2]*Junior Resident, Department of General Surgery, SBMCH*

[3]*Professor, Department of General Surgery, SBMCH*

***Corresponding Author:** Kambala Prasanna Kumar, Junior Resident, Department of General Surgery, SBMCH.

Received: June 27, 2023; **Published:** July 14, 2023

DOI: 10.55162/MCMS.05.146

Abstract

Orientia tsutsugamushi is a contributor to scrub typhus. is spread by a larval bite. Eschar formation, lymphadenopathy, rash, myalgia, fever, and chills are some of the symptoms it produces. Additionally, it may cause death and multiple organ failure. A rare cause of acute cholecystitis is scrub typhus. In this case report, a 68-year-old man with acute cholecystitis symptoms who did not respond to therapy was examined for scrub typhus because the area was endemic for the disease. After prescribing the doxycycline for scrub typhus, he became better. When a patient with cholecystitis presents in an area where scrub typhus is endemic, this condition should be taken into account as a trigger.

Keywords: Acute Cholecystitis; Scrub typhus; Multi-organ dysfunction

Introduction

Orientia tsutsugamushi is the causative agent of scrub typhus, an acute fever sickness spread by mites. A patient typically exhibits myalgia, headache, malaise, chills, and fever. Other symptoms and indications, including as rash, eschar, and lymphadenopathy, could also be present. Acute kidney injury(AKI), acute respiratory distress syndrome(ARDS), myocarditis, and even death [1, 2] can occur in a patient with a severe infection. Cholecystitis is an extremely rare consequence of scrub typhus. We describe a 68-year-old guy who had scrub typhus and showed up to our office with symptoms of acute cholecystitis and multi-organ dysfunction.

Case Presentation

A 68-year-old man who had complaints of acute abdomen discomfort for five days without any radiating pain, fever, nausea, and eight to nine episodes of vomiting with bile stained vomitus, reported to the emergency room. Patient had not passed stools for last four days. The patient had a pulse rate of 86beats per minute, blood pressure of 150/100mmHg, a respiratory rate of 16breaths per minute, a temperature of 101degrees Fahrenheit, and an oxygen saturation of 82% in room air. Patient was icteric.

On abdominal examination, there was voluntary guarding and right upper quadrant pain. Systemic examinations were normal, and there was no history of comorbidities. Neutrophilic leukocytosis was reported by laboratory testing, with a total leukocytic count of 13,000/mm-3 and 88% neutrophils. The amount of creatinine increased (220 mol/l). Hemoglobin, platelets, serum amylase and lipase, as well as coagulation profile and liver function tests, were all within normal ranges. Metabolic acidosis was detected by arterial blood gas.

A pericholecystic collection was visible on ultrasound, along with numerous cholelithiasis and a dilated gallbladder. After being diagnosed with severe acute cholecystitis, he was hospitalised and started on ceftriaxone and metronidazole. He became oliguric and his urine output dropped on the second day after being admitted in hospital. His heart rate increased to 110beats per minute and blood pressure to 180/100mmHg, respectively. He began taking amlodipine 10mg and labetalol intravenously. Investigations showed increased metabolic acidosis and declining renal function, with a creatinine level of 46 mol/l.

He was transferred to the ICU and given imipenem. He underwent intubation on the third day after being admitted due to acute respiratory distress and developing metabolic acidosis. His blood pressure increased to 220/110mmHg, and a Glyceryl Trinitrate (GTN) infusion was started.

After performing an urgent cholecystostomy, 150ml of the nonpurulent collection was drained and sent for culture. Purpuric rashes were found on the trunk and belly during inspection. Later, eschar development appeared on his trunk. He was diagnosed with scrub typhus. No purulent collection's culture report revealed no growth. On the same day, the patient began receiving 100mg of doxycycline twice daily. Hemodialysis was performed on him for one cycle.

The patient improved his general condition and recovered well. He was extubated after which intermediate critical care was given to him. He was transferred to the general ward three days later and released on the 12th day of his hospitalisation. Eight weeks later, he had a laparoscopic cholecystectomy, which discovered numerous gallbladder calculi. Post-op period was uneventful.

Figure 1: Eschar Lesion on Trunk.

Discussion

Gallstone complications commonly include acute cholecystitis. Pathophysiology of acute cholecystitis has been linked to cystic duct constriction, an increase in inflammatory mediator levels, and bile infection. For severe cholecystitis, antibiotics, pain relief, and gallbladder drainage are advised [8]. The gallbladder may develop gangrenous and result in perforation peritonitis if untreated. Scrub typhus is challenging to diagnose based just on clinical symptoms. Therefore, laboratory testing are required to confirm the diagnosis. Rapid and trustworthy tools for point-of-care serological testing in environments with limited resources include immunochromatographic test kits. The InBios Scrub Typhus DetectTM test kit has great specificity and sensitivity, according to a recent meta-analysis [9, 10]. Cholecystitis is a very uncommon consequence of scrub typhus. In this example, acute cholecystitis could not be solely attributable to cholelithiasis because the patient's condition worsened after receiving typical treatment for acute cholecystitis, including antibiotics and gallbladder drainage. However, the addition of doxycycline 100mg twice daily to the regimen, which is the conventional treatment for typhus, led to a rapid improvement in the patient. Twenty of 330patients in an Indian hospital-based study who had scrub typhus as a complication experienced acute cholecystitis [15]. Vasculitis and perivasculitis have been linked to the aetiology of

cholecystitis in scrub typhus [11, 16]. Additionally, vasculitis can result in skin rashes, as were seen in the aforementioned case. A clue to the diagnosis of scrub typhus is the presence of eschar, a localised necrotic lesion that develops at the site of the chigger bite. However, dark-skinned South Asians may find it challenging to detect its presence [1, 17]. Systemic hypertension in the aforementioned case may have been caused by widespread vasculitis, which improved along with scrub typhus treatment. Scrub typhus was confirmed by a fast IgM test, the patient recovered quickly after starting therapy with doxycycline, and the patient's poor response to the recommended course of treatment for acute cholecystitis. In comparison to controls who only had acute cholecystitis, Lee et al. found that patients with acute cholecystitis complicated by scrub typhus required a longer hospital stay [11]. When cholecystitis aggravated by scrub typhus is diagnosed and treated promptly, recovery time can be accelerated.

Conclusion

We explained that scrub typhus can affect several organs. Because there is no vaccine available to prevent scrub typhus, avoid contact with infected chiggers. It is critical to avoid dense vegetation and bush when visiting endemic areas. Personal hygiene must be maintained.

References

1. G Xu., et al. "A review of the global epidemiology of scrub typhus". PLoS Neglected Tropical Diseases 11.11 (2017): e0006062.
2. M Zhang., et al. "Scrub typhus: surveillance, clinical profile and diagnostic issues in Shandong, China". The American Journal of Tropical Medicine and Hygiene 87.6 (2012): 1099-1104.
3. KB Karki., et al. "Descriptive epidemiology of scrub typhus in Nepal". Kathmandu (2017).
4. DR Murdoch., et al. "The etiology of febrile illness in adults presenting to Patan hospital in Kathmandu, Nepal". The American Journal of Tropical Medicine and Hygiene 70.6 (2004): 670-675.
5. A Bastola., et al. "Aftermath earthquake in Nepal: burden of scrub typhus cases and their presentations". Journal of Tropical Diseases 5.1 (2017): 236.
6. SD Blacksell., et al. "Serological and blood culture investigations of Nepalese fever patients". Transactions of the Royal Society of Tropical Medicine and Hygiene 101.7 (2007): 686-690.
7. B Basnyat. "Typhoid versus typhus fever in post-earthquake Nepal". The Lancet Global Health 4.8 (2016): e516-e517.
8. M Yokoe., et al. "TG13 diagnostic criteria and severity grading of acute cholecystitis (with videos)". Journal of Hepato-Biliary-Pancreatic Sciences 20.1 (2013): 35-46.
9. K Saraswati., et al. "Scrub typhus point-of-care testing: a systematic review and meta-analysis". PLoS Neglected Tropical Diseases 12.3 (2018): e0006330.
10. V Anitharaj., et al. "Serological diagnosis of acute scrub typhus in southern India: evaluation of InBios Scrub Typhus Detect IgM Rapid Test and comparison with other serological tests". Journal of Clinical and Diagnostic Research 10.11 (2016): DC07-DC10.
11. H Lee., et al. "Acute cholecystitis in patients with scrub typhus". Journal of Korean Medical Science 30.11 (2015): 1698-1700.
12. GA Deshpande., et al. "Surgical manifestations of scrub typhus: a diagnostic dilemma". National Medical Journal of India 28.1 (2015): 12-13.
13. SJ Lee., et al. "A case of scrub typhus complicated by acute calculous cholecystitis". Korean Journal of Family Medicine 33.4 (2012): 243-246.
14. S Charoenphak, P Rattanawong and S Sungkanuparph. "Acute cholecystitis as an unusual presentation of scrub typhus: a report of two cases and review of the literature". The Southeast Asian Journal of Tropical Medicine and Public Health 48.1 (2017): 143-149.
15. R Kumar., et al. "Clinical profile of scrub typhus in pregnancy in subHimalayan region". The Journal of Obstetrics and Gynecology of India 66.1 (2016): 82-87.
16. K Hayakawa., et al. "A case of scrub typhus with acalculous cholecystitis, aseptic meningitis and mononeuritis multiplex". Journal of Medical Microbiology 61.2 (2012): 291-294.

17. S Rajapakse., et al. "Clinical manifestations of scrub typhus". Transactions of the Royal Society of Tropical Medicine and Hygiene 111.2 (2017): 43-54.

Volume 5 Issue 2 August 2023