Journal of Experimental and Clinical Medicine
https://dergipark.org.tr/omujecm

Case Report

J Exp Clin Med
2024; 41(2): 422-424
doi: 10.52142/omujecm.41.2.32

Crimean-Congo hemorrhagic fever: A case report of an atypical presentation

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Received: .19.04.2023 • **Accepted/Published Online:** 02.04.2024 • **Final Version:** 19.05.2024

Abstract

Crimean-Congo Hemorrhagic Fever (CCHF) is a tick-borne viral disease caused by a Nairovirus of the Bunyaviridae family. We report a case of CCHF in a 68-year-old male farmer with no history of tick exposure, presenting with fever, fatigue, headache, and hematuria. The patient was treated with ribavirin and supportive care. We also provide a review of the literature to highlight the importance of considering CCHF in the differential diagnosis of fever, even in the absence of a tick bite history.

Keywords: hemorrhagic fever, viral hemorrhagic fever, tick-borne disease, CCHF virus

1. Introduction

Crimean-Congo Hemorrhagic Fever (CCHF) is a severe, tick-borne viral disease with a high fatality rate, ranging from 5% to 50% (1). The CCHF virus causes CCHF, a member of the Nairovirus genus of the Bunyaviridae family. The virus is transmitted to humans by tick bites, particularly from the Hyalomma genus, or by contact with infected animals and humans (2). CCHF clinically presents with a sudden onset of fever, headache, fatigue, and hemorrhagic manifestations. We present a case of CCHF in a 68-year-old male without a history of tick exposure and review the literature to emphasize the importance of considering CCHF in the differential diagnosis of fever.

2. Case Presentation

A 68-year-old male farmer presented to our outpatient clinic with a two-day fever, fatigue, and headache history. His past medical history included a coronary bypass operation and hypertension. On further questioning, the patient reported hematuria. He denied any history of tick bites. Physical examination was unremarkable.

Laboratory investigations revealed pancytopenia (Hb: 10.6 g/dL, WBC count: 3879/mm3, platelet count: 136000/mm3), elevated liver function tests (AST: 246 IU/L, ALT: 124 IU/L, LDH: 311 IU/L), and creatine kinase of 1560 U/L. The coagulation profile was within normal limits, and hepatitis markers were negative. Urine microscopy revealed leukocyte 192/HPF erythrocyte 1988/HPF and hemoglobin 2+ in the urine dipsticks test. No bacteria were grown in the urine culture sent simultaneously. Serological tests for Brucella spp. were also negative. We admitted the patient to the hospital for further management.

On admission, the patient was alert, with a body temperature of 38.6°C, blood pressure of 130/70 mmHg, and heart rate of 78 bpm. We made a presumptive diagnosis of CCHF, and since we know that Hyalomma genus ticks carrying the CCHF virus are present in our province, especially in rural areas, since the clinical and laboratory findings of the patient were compatible with CCHF disease and since early treatment has a positive effect on prognosis, ribavirin treatment, and intravenous hydration was started immediately without waiting for serologic test results. PCR testing for Leptospira, Dengue virus antibody IFA IgM and IgG, and PCR testing for CCHF were sent to a reference laboratory.

At 48 hours post-admission, the patient's fever resolved. On the third day, his fatigue and headache improved, and laboratory parameters showed Hb: 10.8 gr/dL, WBC count: 6780/mm3, platelet count: 156000/mm3, AST: 128 IU/L, ALT: 66 IU/L, LDH: 230 IU/L, and creatine kinase of 680 U/L.

Leptospira PCR was negative, Dengue virus antibody IFA IgM negative, and IgG negative, while CCHF PCR was positive.

On the seventh day of treatment, laboratory parameters were Hb: 11.0 g/dL, WBC count: 9910/mm3, platelet count: 204000/mm3, AST: 36 IU/L, ALT: 28 IU/L, LDH: 120 IU/L, and creatine kinase of 103 U/L.

The patient had no active complaints, and his laboratory

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parameters normalized. He completed a 10-day course of ribavirin therapy and was discharged.

3. Discussion

This case report emphasizes the significance of considering CCHF in the differential diagnosis of patients presenting with fever, even without a tick bite history. Our patient's atypical presentation, without known tick exposure, highlights the need for heightened vigilance and awareness of CCHF among healthcare professionals, especially in endemic regions. Different studies report varying percentages of CCHF cases that have had contact with ticks.

Some studies suggest that a significant number of CCHF cases are linked to tick exposure, which highlights the disease's zoonotic nature (3-5). Nevertheless, it's essential to note that not all CCHF cases have direct ties to tick contact. Some cases may lack documented evidence of tick exposure, indicating possible alternative transmission routes or unidentified sources of infection. As a result, while tick contact remains a prevalent transmission route for CCHF, there are instances where the disease can occur without a clear history of tick exposure. This complexity underscores the importance of extensive surveillance and research to understand the various transmission routes and risk factors associated with CCHF epidemiology.

CCHF is characterized by non-specific symptoms, which can make its diagnosis challenging. Early clinical manifestations such as fever, headache, and fatigue are common in many infectious diseases, potentially leading to misdiagnosis or delayed diagnosis (6). Hemorrhagic manifestations, like the hematuria observed in our patient, may be indicative of CCHF but are not always present in the early stages of the disease (7). Consequently, a high index of suspicion is required to identify cases of CCHF, particularly in patients with atypical presentations.

CCHF's variable incubation period, ranging from 1 to 14 days, further complicates diagnosis (1). The nonspecificity of early symptoms and the potential for a prolonged incubation period may result in delayed diagnosis, which could have detrimental effects on patient outcomes. The initiation of ribavirin therapy in our patient's early stage of disease likely contributed to his favorable clinical course and recovery.

The fact that our patient did not report a history of tick exposure underscores the importance of considering alternative modes of transmission. Direct contact with infected animals or their tissues, exposure to infected human blood or body fluids, and potential aerosol transmission should be considered (8, 9). In this case, the patient's occupation as a farmer might have increased his risk for CCHF despite the absence of a tick bite history. Clinicians should, therefore, inquire about patients' occupational and environmental exposures when evaluating potential CCHF cases.

In endemic regions, healthcare professionals should maintain a high awareness of CCHF and be familiar with its various modes of transmission. Public health measures, such as educating the population on tick-bite prevention, proper handling of livestock, and safe disposal of animal products, may help reduce the risk of CCHF transmission (10). In addition, improved surveillance and early detection of CCHF cases can contribute to more effective containment and control of outbreaks.

In conclusion, this case report underscores the importance of considering CCHF in differential fever diagnosis, even in patients without a history of tick exposure. Early recognition and appropriate management are crucial for improving patient outcomes. Increased awareness of CCHF among healthcare professionals, particularly in endemic areas, is essential for promptly diagnosing and treating this life-threatening disease.

Conflict of interest

The author declares no conflict of interest.

Funding

This work did not receive any financial support.

Acknowledgments

The informed consent of the patient has been obtained.

Authors' contributions

Concept:C.S., Design C.S., Data Collection or Processing: C.S., Analysis or Interpretation C.S., Literature Search: C.S., Writing: C.S.

Ethical Statement

Approval from the ethics committee was not obtained, as this was a case report. An informed consent form was obtained from the patient.

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