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Case Report

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A Patient with Brucella with initial Manifestations similar to Crimean Congo Fever

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Abstract

The unusual manifestations of brucellosis as an endemic disease involving multiple organ systems include headache, confusion, acute abdomen, psoas abscess, endocarditis, perinephric mass, insulin resistance, and cauda-equina syndrome. In this paper we report a patient with such situations that was initially diagnosed and treated for Crimean-Congo hemorrhagic fever (CCHF) with partial improvement of symptoms after Ribavirin therapy and readmission for brucellosis and improvement of symptoms after combination therapy for the later diagnosis. A 31-year-old male patient was attended with intermittent fever and chill plus myalgia, melena, and hematuria since one week ago. He had also generalized abdominal pain and loss of appetite with a body mass index of 19 kg/m². He had a history of ten neonatal deaths of livestock in the last month. In laboratory tests, the liver enzymes were raised and pancytopenia was present. Patient received therapeutic dose of Ribavirin plus Apotel and the general status were improved. After one month, the patient was readmitted for fever plus right hip and knee pain, and the brucella IgG was in borderline level (10.36). He received treatment for brucellosis including Amikacin, Doxycycline, and Rifampin. The Wright and Coomb's Wright tests were positive. The general health was improved and the patient was discharged with administration of Doxycycline 100 mg twice a day and Rifampin 600 mg once a day. Totally, according to the reported case, it should be emphasized that Ribavirin is effective in the treatment of brucellosis.

***Keywords*:** Brucella, Crimean-Congo Hemorrhagic Fever, Unusual Manifestation

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Introduction

The unusual manifestations of brucellosis as an endemic disease involving multiple organ systems include headache, confusion, acute abdomen, psoas abscess, endocarditis, perinephric mass, insulin resistance, and cauda-equina syndrome (1-3). Ribavirin, a guanosine analog that produces broad-spectrum activity against several RNA and DNA viruses, was firstly discovered by Witkowski et al. in 1972 (4, 5). While initially it was approved only for the management of severe respiratory syncytial virus infection in children, it has been used for the treatment of Lassa

fever virus infection, influenza A and B, and other pathogenic germs (4-7).

Ribavirin has been utilized as an antiviral drug for several decades (5). Also there are some reports about efficacy in the treatment of brucellosis (6); this matter is not yet completely established. In this paper we report a patient with such situations that was initially diagnosed and treated for CCHF with partial improvement of symptoms after viral therapy with Ribavirin and readmission for brucellosis and improvement of symptoms after combination therapy for the later diagnosis.

Case Presentation:

A 31-year-old male patient was attended with intermittent fever and chill plus myalgia, melena, and hematuria since one week ago. He had also generalized abdominal pain and loss of appetite with a body mass index of 19 kg/m². He had a history of ten neonatal deaths of livestock in the last month and also the use of local dairy products. Intermittent diarrhea and constipation were also reported. The fever was in the afternoon. The right hip pain was accompanied with claudication that was improved after three days and then the left foot pain was initiated. In laboratory tests, the liver enzymes were raised and pancytopenia was present (Table 1). The Wright and 2ME-Wright tests were negative, however, the family history was positive for brucellosis (brother).

Table 1. Initial and final laboratory tests

Laboratory tests	Initial	Final
Leukocyte	3100	10400
Erythrocyte	5.03 mil	4.99 mil
Hemoglobin	9.8	9.6
Platelet	110	349
Urea	24	34
Creatinine	1.1	0.9
SGOT	530	92
SGPT	451	210
Alkaline Phosphatase	247	282

Patient received Ribavirin with therapeutic dose plus Apotel injection and then the general status was improved. The leukopenia and thrombocytopenia were normalized and the liver enzymes were decreased (Table 1). CCHF test was negative. Also, the hepatitis B and HIV tests were negative. The patient was discharged with good general health.

After one month, patient was readmitted for fever plus right hip and knee pain, and the brucella IgG was in borderline level (10.36). He received treatment for brucellosis including Amikacin, Doxycycline, and Rifampin. The Wright and Coomb's Wright tests were positive. Liver enzymes were normal (SGOT=49.9 U/L; SGPT=38.1; Alkaline phosphatase=138 IL/L). There was mild anemia (Hemoglobin=9.5). Blood culture was positive for Pseudomonas and urine cultures were negative. The general health was improved and the patient was discharged with administration of Doxycycline 100 mg twice a day, and Rifampin 600 mg once a day.

Discussion

Crimean-Congo hemorrhagic fever is a tick-borne disease, often associated with hemorrhagic manifestations and high case fatality rate of 10 to 50 percent (7, 8). It may respond to Ribavirin but the response by brucellosis is less reported (6). Both infectious causes resemble brucellosis and non-infectious causes may resemble CCHF (9). Especially physicians working in endemic regions should have knowledge of probably longer incubation periods after a tick bite (10). Ayatollahi et al. (11) reported nine CCHF

cases from Iran who all of them were negative for brucellosis. But differentiation from each other is not mandatory because both would respond to Ribavirin (12).

Metin et al. reported a case of brucellosis mimicking Crimean-Congo hemorrhagic fever (13). Our patient may be such a case. It means that the reported patient may not be actually a CCHF infection case and even the initial admission may have been due to brucellosis but would respond to Ribavirin. Also Karakeçili et al. also presented a case of brucellosis and Crimean-Congo hemorrhagic fever coinfection in an endemic area (14). Our reported case may also have been a coinfection.

Similar to our patient a 13-year-old boy was reported by Almiş et al. as a case of brucellosis misdiagnosed as Crimean-Congo hemorrhagic fever (15). On the other hand, for negative suspected Crimean-Congo hemorrhagic fever cases in an endemic area subclinical infections with Crimean-Congo hemorrhagic fever virus should not be remembered because Ribavirin would treat both infections (16, 17). Totally, according to the reported case, it should be emphasized that Ribavirin is effective in the treatment of brucellosis.

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Conflict of interest

The authors have no conflict of interest in this study.

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Ethical Statement

The study protocol was approved by the Ethics Committee of Iran University of Medical Sciences. The patient who participated in the study provided written informed consent after receiving information about the purpose and procedures of the study. The confidentiality and anonymity of the patient's data were ensured throughout the study.

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