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CASE REPORT

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Rare case report of deep vein thrombosis associated with brucellosis in Iran

Majid Ghafouri[1] | **Mojtaba Danafar**[2] | **Azar Shokri**[1]

[1]Vector-borne Diseases Research Center, North Khorasan University of Medical Sciences, Bojnurd, Iran

[2]Student Research Committee, North Khorasan University of Medical Sciences, Bojnurd, Iran

Correspondence
Azar Shokri, Vector-borne Diseases Research Center, North Khorasan University of Medical Sciences, Bojnurd, Iran.
Email: azar_sh1969@yahoo.com

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Abstract

Brucellosis caused by species of Brucella is among the most prevalent zoonotic diseases that can involve any organ. Here we present a case of deep vein thrombosis due to brucellosis. We described a 62 old male farmer with a history of brucellosis and deep vein thrombosis on his right leg.

KEYWORDS

brucellosis, deep vein thrombosis, Iran

1 | INTRODUCTION

Brucellosis caused by species of *Brucella* is among the most prevalent zoonotic diseases that can involve any organ. Here we present a case of deep vein thrombosis due to brucellosis. We described a 62 old male farmer with a history of brucellosis and deep vein thrombosis on his right leg.

Brucellosis is a cosmopolitan zoonotic disease that mainly affects persons with close contact with domestic animals and their products.[1] The infection is caused by Gram-negative intracellular, nonmotile, nonsporulating, nontoxigenic, nonfermenting, facultative cocco-bacilli bacteria of genus *Brucella* with more than ten species. The disease is endemic in many countries including Iran, and the incidence of the disease is estimated to be 500,000 cases annually all around the world.[2] Brucellosis is a multisystemic disease with a broad spectrum of clinical manifestations and can be potentially lethal due to complications.[3] Despite common osteoarticular complications in endemic regions, the vascular complication is almost rare.[4] Hereby, we describe a case of deep vein thrombosis (DVT) in Bojnurd, Northeast of Iran.

2 | CASE REPORT

A 62-year-old male farmer, with symptoms of deep vein thrombosis was referred to our hospital. His main complaint was pain and swelling of right calf muscle. His symptoms were started with irregular fever, dyspnea, and malaise two months earlier. He had no history of brucellosis in his family. Also, he claimed to have opium addiction. Laboratory tests were asked for further evaluation. In physical examination, his legs were asymmetric and the left shin obviously was larger than the right one. The rest of the physical examinations were normal. The patient underwent Doppler ultrasonography (Figure 1).

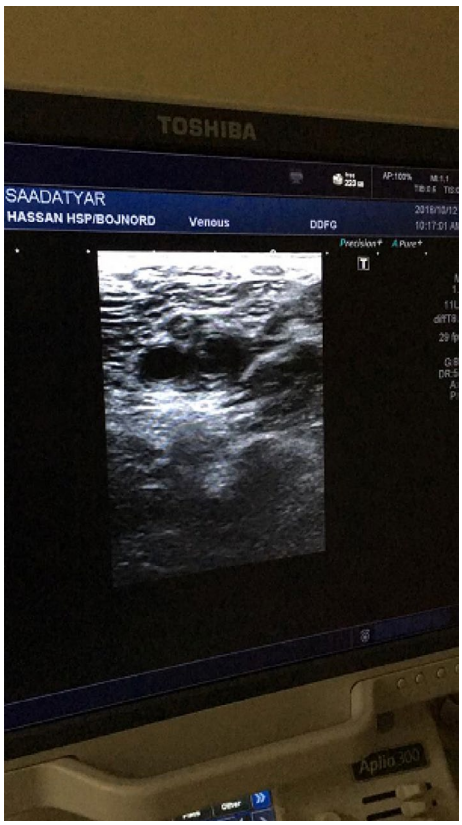

FIGURE 1 Doppler ultrasonography showing deep vein thrombosis

3 | DIFFERENTIAL DIAGNOSIS, INVESTIGATIONS, AND TREATMENTS

Laboratory analyses revealed the following results: RBC: 5.1×10^{12}/L, hemoglobin 14.3 g/L, and white blood cells 12.5×10^{9}/L (65% neutrophils). Erythrocyte sedimentation rate (ESR) was 20 mm/h. C-reactive protein (CRP) was positive (+2). All laboratory parameters including protein C and S, antiphospholipid antibodies (IgM, IgG), anticardiolipin antibodies (IgM, IgG), anti-lupus anticoagulant IgG, Factor V Leiden, and prothrombin G20210A (Factor II) were within normal range. The tubal standard agglutination test (Wright test) and 2ME reduction test were positive (in a titer of 1/1280 and 1/640, respectively). A Doppler ultrasound study revealed right popliteal vein thrombosis (Figure 1). There was no effusion in sonographic evaluation of right hip joint. Subcutaneous soft tissue edema in right lower extremity was reported. The patient was diagnosed with thrombophlebitis due to brucellosis. He was advised to have bed rest with right leg elevation. The patient was treated with rifampicin 300 mg twice a day, cotrimoxazole 800 mg twice a day, azithromycin 200 mg once a day, and two days later rivaroxaban 15 mg twice a day for the first three weeks and 20 mg once a day. Also, enoxaparin 60-unit S.C twice a day was prescribed. Some days later, his leg pain and swelling decreased and he walked without any help. Nine days after the onset of this treatment, thrombophlebitis was cured. Warfarin was prescribed and discontinued after six months. Follow-up of the patient showed no abnormality approximately after 1 year.

4 | DISCUSSION

Brucellosis is among the most prevalent zoonotic diseases all around the world. Iran is an endemic region for disease, and the annual incidence rate of human and animal infection is still considerable.[2] Deep vein thrombosis is a rare complication of brucellosis and its pathogenesis has not been described well.[5,6] The probable mechanisms are including the occurrence of granulomatous endophlebitis, inflammation and injury of perivascular tissue, a transient hypercoagulable state, or the immune reaction in the vessel wall to the *Brucella* antigen.[7] Nine reports are available from 1973 to 2012 which are describing deep vein thrombosis associated with brucellosis in endemic regions.[8,9] Protein S deficiency with DVT was observed during infection with *Salmonella typhimurium* and HIV infection.[10,11]

Vascular complications of *Brucella* infection have rarely been reported in the medical literature. In our patient, antiphospholipid antibodies, anticardiolipin antibodies, anti-lupus anticoagulant IgG, Factor V Leiden, and prothrombin G20210A (Factor II) were normal. Also, local infection adjacent to his right leg deep veins was not observed during his illness. Therefore, it is possible that endothelial damage induced directly by *Brucella*, or indirectly by toxins or cytokines, was responsible for the patient's DVT.

5 | CONCLUSION

Due to the nonspecific manifestations of acute brucellosis, it is suggested that the infection should be considered in patients suffering from DVT, particularly in those coming from brucellosis-endemic areas.

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CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

All authors are equally contributed to the design, analysis, and presentation of this study. MG is a specialist in

infectious disease and is involved in study design. MD involved in study design and writing. AS involved in study design, writing, submission, and revision.

ETHICS APPROVAL

Applicable.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

DATA AVAILABILITY STATEMENT

All the data are available without restriction.

ORCID

Azar Shokri https://orcid.org/0000-0002-0593-8853

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