Brucellosis in an HIV-positive patient: a case report

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Brucellosis is still one of the infectious diseases which are widespread in the Middle East. HIV infection, more than any other infectious disease, is a disease of coinfections. HIV permits the reactivation of dormant pathogens or increases the susceptibility to other pathogens, especially *Brucella*. This article presents an HIV-positive patient that was affected by brucellosis in Yazd, Iran.

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Introduction

Brucellosis has been an emerging disease since the discovery of *Brucella melitensis* by Bruce in 1887 [1]. Subsequently, an increasingly complex pattern of strains has emerged with the identification of *Brucella abortus, Brucella suis, Brucella neotomae, Brucella ovis, Brucella canis*, and, more recently, types infecting marine mammals [1]. This disease is an occupational zoonotic disease that may vary from an acute febrile disease to a low-grade, ill-defined disease [1]. HIV infection, more than any other infectious disease, is a disease of coinfections, as the HIV virus cripples the immune system and allows the reactivation of dormant pathogens or increases the susceptibility to other pathogens [2].

The dramatic decline of the CD4 marker level in HIV-infected patients predisposes them to organisms that are mostly eradicated via cell-mediated immunity [2–4]. Therefore, a frequent association could be anticipated within geographical areas in which both brucellosis and HIV are prevalent [4,5]. Because of its unspecific and mistrustful clinical features, the prevalence rate of brucellosis is almost often underestimated in HIV-positive populations of *Brucella* endemic countries [5,6].

The diagnosis of chronic Brucellosis is frequently difficult to prove and brucellosis has been rarely described in patients with HIV [6]. This case presents an HIV-positive patient that was affected by brucellosis.

Case report

A 41-year-old male, a milk vendor who rears sheep, was presented to a clinic in Shiraz with complaints of fever with chills and rigors on and off in nature over a period of 17 days, in addition to vomiting, body pains, pancytopenia, and headache. Moreover, tests for HIV and hepatitis C virus (HCV) were positive. Then, he was

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presented to Yazd with fatigue, pancytopenia, and platelets below 10 000. We started an antituberculosis treatment for him. On initial evaluations, bone marrow aspiration and biopsy showed negative results.

The patient's general physical examination did not show any abnormality, except for tenderness in the right hypochondrium. Routine hematological examination revealed mild leucopenia of 49% with a relative lymphocytosis of 46%. Urine examination was within normal limits. Peripheral smear for malarial parasite was negative. HIV antibodies were proved by enzyme-linked immunosorbent assay. Routine blood culture (brain–heart infusion broth, Himedia) did not show any bacterial growth even after 9 weeks of incubation and widal test titers were insignificant. Attempts to isolate any infecting organisms from blood were unsuccessful. As the clinical symptoms continued to persist, the serological tests for brucellosis were done. The serum was subjected to the slide agglutination test with a drop of *Brucella* abortus plain antigen (Institute of Veterinary Preventive Medicine, Ranipet). The presence of agglutination was assessed by naked eye examination. Positive agglutination was further subjected to the standard agglutination test by the tube dilution method. The patient had high agglutinin titers of 640, which is considered as significant.

Finally, the patient improved with brucellosis treatment (tetracycline 250 mg, four times a day for 6 weeks along with streptomycin, 1 gm/day for 4 weeks) and discontinuation of antituberculosis treatment.

Discussion

Brucellosis is a disease of animals (zoonosis) that under certain circumstances can be transmitted to humans [1]. It is still an important public health problem and endemic in many countries [1]. HIV infection, more than any other infectious disease, is a disease of coinfections [2–5]. It allows the reactivation of dormant pathogens or increases the susceptibility to other pathogens especially *Brucella* [3–7]. Our case was a 41-year-old male that had HIV and hepatitis C virus-positive tests. The patient was a milk vendor by profession who has come into contact with infected raw milk and the body fluids of infected sheep. Clinical symptoms included fever with chills, in addition to vomiting, body pains, pancytopenia, and headache. He had high agglutinin titers of 640, which proved brucellosis and responded to treatment. Although the presentation of this case was not unusual, the association with HIV is a scarce occurrence. This is comparable with the study of Sarguna *et al*. [7] that presented an unusual case of brucellosis which was reported in a patient infected with the human immunodeficiency virus, who sought medical advice for fever of long duration accompanied by myalgia and headache [7]. Furthermore, similar manifestations of brucellosis in patients with HIV infection have been reported in other studies [2–7].

Conclusion

Brucellosis has to be investigated as a firmly significant differential diagnosis in any HIV-positive patient with myalgia, fever, or other unexplained conditions, especially in brucellosis endemic regions of the world.

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Conflicts of interest

There are no conflicts of interest.

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