

# Skin Rashes on Leg in Brucellosis: a Rare Presentation

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**Abstract-** Brucellosis is the most widespread zoonotic infection in the world. The disease is endemic in countries bordering the Mediterranean Sea. It is an important re-emerging infectious disease. This disease is closely associated with the evolution of mankind as an agrarian society linked to the practice of shepherding and popularization of animal husbandry. The patients with this disease are typically present with chills, fever, asthenia and sweating. This paper describes a patient with brucellosis and skin rashes on the leg. A 41-year-old man presented with fever, ataxia, and dysarthria. He was a shepherd. The patient reported the loss of appetite, arthralgia and weight loss during previous five months. Finally, he was diagnosed with brucellosis by positive blood culture and high titer for *Brucella* agglutination test. The clinical manifestation of brucellosis is very broad, ranging from asymptomatic infection to serious debilitating disease. Current patient had skin rashes on his leg. Brucellosis must be considered in the differential diagnosis of acute infections, especially if there is a history of fresh milk product ingestion and living in an endemic region.

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## Introduction

Brucellosis is a disease of animals (zoonosis) that under certain circumstances can be transmitted to humans. Although it occurs worldwide, brucellosis is more common in countries that do not have effective public health and animal health programs (1).

Brucellosis has undoubtedly evolved as a disease since man first domesticated animals. It is still an important public health problem and endemic in many countries, especially in Mediterranean areas, parts of South and Central America, and east and western Africa (2).

Brucellosis is caused by small, fastidious gram-negative *coccobacilli* of the genus *Brucella*. *B. melitensis* is the most invasive one and causes the most severe disease. The infection because of *B. melitensis* is a common disease, and humans are commonly infected through ingestion of raw milk, cheese, meat, or through direct contact with infected animals, products of conception, or animal's excreta (3).

Human brucellosis has a wide clinical spectrum. Hence, it has various diagnostic difficulties as it mimics many other diseases. The disease also produces a variety of nonspecific hematological abnormalities (4).

This disease is a multisystem disease that may present with a broad spectrum of clinical manifestations

and complications. Skin lesions occur in approximately 5% of patients with brucellosis (5-8). Many nonspecific often transient lesions are reported including rashes, papules, ulcers, abscess, erythema nodosum, petechiae, purpura, and vasculitis (7). Contact dermatitis was once a common finding among veterinarians exposed to infected animals (5-7). In this study, we describe a patient with brucellosis with skin rashes on the leg.

## Case Report

A 41-year-old man presented to Abalfazl Clinic of Tabas (South of Khorasan Province, Iran) in 2013 with fever up to 39°C. He was a shepherd and gave a history of low-grade fever, chilly sensation, cold sweating, loss of appetite, arthralgia, and 13 Kg weight loss during the previous 3 months.

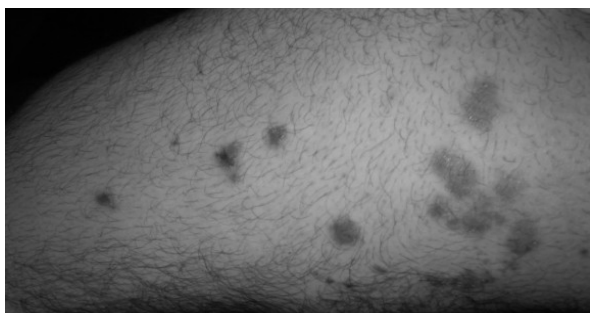
Results of laboratory tests made on admission were as follow: White blood cell count: 2720/mm<sup>3</sup> with 92% Neutrophils, Platelet count: 67000/mm<sup>3</sup>, Hemoglobin: 11 g/dL, C-reactive protein: 17 mg/dL, Erythrocyte sedimentation rate: 22 mm/h, Blood urea nitrogen (BUN): 38 mg/dL, Creatine (Cr): 3.2 mg/dL, SGOT: 327 mg/dL, and SGPT: 159 mg/dL.

Serological tests for *salmonellosis*, *Epstein-Barr virus* (EBV), and HIV and hepatitis B virus were

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negative. The patient had maculopapular lesions as skin rashes on his left leg (Figure 1).



**Figure 1.** Skin rashes on the left leg

Blood culture had been performed before antibiotic therapy. *Brucella* agglutinin titer was positive at 1/200 titration (4+). Blood cultures were positive that confirmed brucellosis disease. Then the patient was treated with doxycycline 100/day for 7 weeks, and rifampicin 600 mg/day, beginning on the 11th day of hospitalization. Seven days after treatment, the fever came down (35°C) and the skin lesions vanished.

## Discussion

Brucellosis is still one of the infectious diseases which are widespread in the Middle East (5). The cutaneous manifestations of brucellosis are due to direct inoculation. Cutaneous lesions occur in about 5–10 per cent of patients with brucellosis (5-8). Similar to current patient, Akcali *et al.*, described cutaneous findings associated with brucellosis in 8 (5.71%) of 140 patients. Reported skin lesions were maculopapular. Of patients who exhibited cutaneous lesions, 62.5% experienced a period of acute brucellosis (9). They also used doxycycline and rifampicin as one of treatment regimens of their patients.

Milionis *et al.*, has described a shepherd presenting with fever and diffuse maculopapular rash due to *Brucella melitensis* infection. Their patient was a 49-year-old Albanian shepherd admitted because of a two weeks history of intermittent fever, fatigue, anorexia, generalized myalgias, malodorous sweating, and erythro-violaceous maculopapular rash appeared the day before admission. The rash was in the trunk, arms, and legs (10). Current patient also had symptoms such as fever, cold sweating, and maculopapular lesions.

Omidi *et al.*, has reported a 32-year-old man with history of consumption of cheese made from raw milk and diffuse maculopapular rash during the course of *Brucella* infection. Their patient had fever,

splenomegaly, mild hepatomegaly, and pruritic maculopapular exanthema over the trunk, arms and legs (11). In present study, our patient also had maculopapular rashes on his left leg.

In conclusion, skin rash could represent a rare manifestation of a relatively common infectious disease such as brucellosis.

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