DOI:10.34084/bshr.743053 e-ISSN 2587-1641

Journal of Biotechnology and Strategic Health Research

Case Report / Olgu Sunumu

http://dergipark.org.tr/tr/pub/bshr

A Case of Acute Brucellosis that Presenting With Cutaneous Manifestations: Case report

Deri Bulguları ile Başvuran Bir Akut Bruselloz Olgusu/ Olgu sunumu

Sevil Alkan Çeviker[1], Emine Kübra Dindar Demiray[2]

[1] Kütahya Sağlık Bilimleri Üniversitesi, S. B. Evliya Çelebi Eğitim ve Araş. Hast., Enfeksiyon Hastalıkları ve Klinik Mikrob., Kütahya

[2] Bitlis Devlet Hastanesi, Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Bölümü-Bitlis

ORCID ID: Sevil Alkan Çeviker 0000-0003-1944-2477, Emine Kübra Dindar Demiray 0000-0001-6459-7182

***Sorumlu Yazar / Corresponding Author:** Uzm Dr. Sevil Alkan Çeviker, **e-posta / e-mail:** s-ewil@hotmail.com

Geliş Tarihi / Received : 27-05-2020 **Kabul Tarihi / Accepted:** 08-06-2020 **Yayın Tarihi / Online Published:** 31-08-2020

Atıf Gösterimi/How to Cite: Alkan Çeviker S., Dindar Demiray E.K. A Case of Acute Brucellosis that Presenting With Cutaneous Manifestations/ Case report, J Biotechnol and Strategic Health Res. 2020;4(2):184-187

Abstract

Brucellosis can present with various clinical manifestations due to its wide variety of organ involvement. In very rare cases of brucellosis, skin lesions can sometimes be the only indicator of the disease in the acute stage of the disease, which may lead to a misdiagnosis of the disease or a delay in diagnosis. We aimed to emphasize that brucellosis should be considered in the differential diagnosis of diseases which cause skin symptoms in people with risk factors living in endemic regions, and that appropriate serological and microbiological tests should be performed.

Keywords Brucellosis, Cutaneous Manifestations

Öz

Bruselloz çok çeşitli organ tutulumu yapma özelliği nedeniyle farklı klinik tablolarla prezente olabilir. Brusellozda çok nadir de olsa deri lezyonları akut hastalık evresinde bazen hastalığın tek göstergesi de olabilir ve bu da hastalığın yanlış tanısına veya tanının gecikmesinde neden olabilir. Her iki alt ekstremitede basmakla solmayan peteşiler ve ateş yüksekliği dışında bulgusu olmayan bu vaka sunumu ile endemik bölgelerde risk faktörü olan kişilerde cilt bulgularına neden olan hastalıkların ayırıcı tanısında, brusellozun da düşünülmesi gerektiğini ve uygun serolojik ve mikrobiyolojik tetkiklerinin istenmesinin gereğini vurgulamayı amaçladık.

Anahtar kelimeler *Bruselloz, Deri Bulguları.*

INTRODUCTION

Brucellosis, also known as undulant fever, is caused by a gram-negative, immobile, capsule-free coccobacillus and an endemic zoonotic disease in our country. It can cause infection in those consuming unpasteurized milk and dairy products, those living in rural areas, those having close contact with animals, livestock raisers, slaughterhouse workers, veterinarians, farmers, and rarely in laboratory workers. It can present with various clinical manifestations due to its wide variety of organ involvement[1,2].

Skin and soft tissue symptoms of brucellosis were first described in 1889. Cutaneous manifestations of brucellosis is the most prominent in B.melitensis. Although cutaneous manifestations may indicate that brucellosis is really localized to the skin or subcutaneous tissue, they may also occur due to endotoxins, other systemic symptoms (e.g. thrombocytopenia) or drugs used in treatment (tetracycline-induced photosensitivity). Cutaneous manifestations may appear in the early stages of the disease and are added to other signs and symptoms of brucellosis. However, skin lesions can sometimes be the only indicator of the disease in the acute stage of the disease, which may lead to a misdiagnosis of the disease or a delay in diagnosis[2,3,4].

In this case report, we aimed to emphasize that brucellosis should be considered in the differential diagnosis of diseases which cause skin symptoms in people with risk factors living in endemic regions, and that appropriate serological and microbiological tests should be performed.

CASE

A 68-year-old woman presented to our outpatient clinic with fever, weakness, chills, and non-itchy rashes on both her legs. She had complaints of fever, weakness, and chills that began three days ago. Cefuroxime axetil 1000 mg/day was started with a preliminary diagnosis of urinary tract infection by her family physician. She was admitted to our outpatient clinic because her complaints did not regress despite two days of treatment and rashes appeared on both her legs. Then, she was hospitalized for further examination and treatment. It was learned that she was a livestock raiser, ate raw milk cheese and did not have any chronic disease. On physical examination, fever was 38.5 °C, blood pressure was 130/80 mmHg and pulse rate was 90/minute. She had petechiae on both her legs that did not fade under pressure (Picture 1). In addition, the liver was palpable 3 cm below the costal margin and the traube's space was closed. Other system examinations were normal. In laboratory tests, leukocyte count was 4100/mm3, platelet count was 15.6000/mm3, hemoglobin level was 12.1 gr/dl, erythrocyte sedimentation rate (ESR) was 85 mm/hour, and C-reactive protein (CRP) level was 125 mg/L. Liver and kidney function tests and coagulation tests were within normal limits. Blood and urine cultures were sent to the Clinical Microbiology Laboratory due to her fever. The Rose Bengal test was performed with the pre-diagnosis of brucellosis and found positive. The Coombs Wright test was found positive at a titer of 1:640.

The urine culture had no growth. The blood cultures reported Brucella spp.

The growing microorganisms were identified using the VITEK® 2 Compact (Biomerieux clinical diagnostics, France) in our hospital's microbiology laboratory. She was administered doxycycline 200 mg/day and rifampicin 600 mg/day. Skin biopsy could not be done because the patient rejected. Skin lesions began to fade at 72 hours after treatment and then completely cleared on the 7th day of treatment. Leukopenia, CRP and ESR values returned to normal values during follow-up. Her clinical and laboratory findings showed improvement. She was discharged from the hospital with doxycycline 200 mg/day and rifampicin 600 mg/day on the 7th day of hospitalization to complete the overall treatment time to 42 days. She made regular visits to our outpatient clinic after discharge.

DISCUSSION

Skin lesions may rarely be the first sign in the acute phase

of brucellosis. It has been reported that endotoxins (which are released during direct hematogenous spread of B. melitensis), hypersensitivity reaction, neutrophil response, macrophages, and immune complex accumulation may be effective in the formation of skin lesions in brucellosis[5]. Skin lesions such as nonspecific petechiae, purpura, erythema nodosum, urticaria or psoriasis-like lesions, papillated ulcers, and vasculitis can be seen in brucella infections[6,7]. Ariza et al.[7] showed that 27 (6%) of 436 cases with brucellosis had skin lesions. It has been reported that the most common skin lesions are disseminated violet-erythematous, papulonodular eruptions (71%) and erythema nodosum-like lesions (11%)[7]. Various studies have indicated that 2.4-13.6% of brucellosis cases had skin lesions various skin lesions (such as nonspecific petechiae, purpura, erythema nodosum, papillated ulcers, and vasculitis)[8-12]. In the present case report, the patient had petechiae on both her legs that did not fade under pressure and Brucella spp. were grown in blood culture.

Skin symptoms can be seen in all ages and both genders in endemic regions[3]. However, there are also some studies in the literature reporting that skin findings are more common in women[8]. Our case was a 68-year-old female patient with non-itchy rashes on both her legs.

In the study of Buzgan et al.[9] involving1028 cases of brucellosis, skin lesions were detected in 2.4% of acute brucellosis cases, in 3.2% of subacute brucellosis cases, in 2.1% of chronic brucellosis cases, and in 2.4% of all brucellosis cases. Of these cases, 13 had maculopapular and urticarial lesions, 9 had petechiae and purpura, and 3 had erythema nodosum. Our case had acute brucellosis.

Systemic complaints may accompany skin findings in brucellosis[3]. Kaya et al.[13] reported a patient with peripheral neuropathy associated with brucellosis having an extensive macular rash on the trunk and extremities and a complaint of numbness in bilateral hands and feet. Erdem et al.[14] also reported a case of brucellosis presenting with high fever and maculopapular rashes all over the body. In the present case report, some systemic symptoms such as fever, weakness, and chills accompanied skin findings.

It has been suggested that tissue cultures obtained from brucellosis cases with skin involvement may help diagnose skin involvement[14,15]. Nagore et al.[16] indicated that skin biopsy showed leukocytoclastic vasculitis in a case of brucellosis with skin involvement. In the present case report, skin biopsy could not be done because the patient did not approve. However, brucellosis was diagnosed with blood culture and serological tests.

Cutaneous lesions in brucellosis are capable of healing without sequelae[3]. Nagore et al.[16] reported that skin lesions regressed at 48 hours of tetracycline and rifampicin combination therapy in a case of cutaneous brucellosis with leukocytoclastic vasculitis. Ural et al.[17] also reported that skin lesions regressed on the 5th day of doxycycline and rifampicin combination therapy. In the present case report, skin lesions began to fade at 72 hours after treatment and then completely disappeared on the 7th day of treatment.

CONCLUSION

As a result, blood cultures should be taken and serological tests should be performed for the diagnosis of brucellosis especially in patients living in endemic areas and presenting with fever and skin rashes since skin involvement in brucellosis is an extremely rare clinical picture.

Kaynaklar

1. *Gwida M, Al Dahouk S, Melzer F, Rosler U, Neubauer H, Tomaso H. Brucellosis- regionally emerging zoonotic disease? Croat Med .2010;51(4): 289–95.*
2. *Alp E, Doğanay M. Bruselloz. In: Topçu Wilke A, Söyletir G, Doğanay M. (eds) İnfeksiyon Hastalıkları ve Mikrobiyolojisi. 4.baskı. s.863-7. Nobel Tip Kitabevi.,İstanbul: (2017)*
3. *Kudwah AJN.Deri ve Yumuşak doku Bruselllozu. In: Madkour MM (eds). Bruselloz.1. baskı. İstanbul: Nobel Kitabevi, 2008:192-8.*
4. *Bayhan GI, Akbayram S, Ozaydin Yavuz G, Oner AF.Cutaneous side effects of doxycycline: a pediatric case series.Cutan Ocul Toxicol. 2017;36(2):140-4.*
5. *Balabanova-Stefanova M, Starova A, ArsovskaBezhoska I. Cutaneous manifestations of brucellosis. Maced J Med Sci .2010;3(3):257-62.*
6. *Young EJ, Tarry A, Genta RM, Ayden N, Gotuzzo E. Thrombocytopenic purpura associated with brucellosis: Report of 2 cases and literature review. Clin Infect Dis. 2000;31:904-9.*
7. *Ariza J, Servitje O, Pallares R,Fernández Viladrich P, Rufí G, Peyrí J, et al. Characteristic cutaneus lesions in patients with brucellosis. Arch Dermatol. 1989;125:380-3.*
8. *Metin A, Akdeniz H, Buzgan T, Delice I. Cutaneous findings encountered in brucellosis and review of the literature. Int J Dermatol .2001; 40(7):434-8.*
9. *Buzgan T, Karahocagil MK, Irmak H, Baran AI, Karsen H, Evirgen O ve ark. Clinical manifestations and complications in 1028 cases of brucellosis: a retrospective evaluation and review of the literature. Int J Infect Dis .2010; 14(6):469-78.*
10. *Kartal ED, Özgüneş I, Çolak H, Usluer G. Altmış sekiz bruselloz olgusunun sistem tutulumları açısından değerlendirilmesi. Flora Derg 2004;9(4):258-65.*
11. *Artüz F, Oram Y, Lenk N, Özek UZ, Allı N. Brusellozlu hastalarda görülen deri lezyonu, Turk J Dermatol .1994;4(2):94-6.*
12. *Akcali C, Savas L, Baba M, Turunc T, Seckin D. Cutaneous manifestations in brucellosis: a prospective study. Adv Ther .2007;24(4):706-11.*
13. *Kaya S, Kostakoğlu U. Maküler döküntü ve periferik nöröpati ile seyreden bir bruselloz olgusu. Mikrobiyoloji Bul. 2009;43(1):147-51.*
14. *Erdem HA, Taşbakan M, Pullukçu H, Sipahi OR, Kıvrak EE, Yamazhan T. Yaygın Makülopapüler Döküntü İle Seyreden Bir Bruselloz Olgusu. ANKEM Derg.2014;28(3):110-3.*
15. *Albayrak A, Kadi M, Döner N, Sener E. Two brucellosis cases with vasculitic skin lesions. Rheumatol Int. 2014;34(4):575-6.*
16. *Nagore E, Sanchez-Motilla JM, Navarro V, Febrer MI, Aliaga A. Leukocytoclastic vasculitis as a cutaneous manifestation of systemic infection caused by Brucella melitensis, Cutis. 1999;63(1):26-7.*
17. *Ural O, Findik D. Clinical microbiological case: A 22-year-old-man with fever and maculopapular rash, Clin Microbiol Infect .2002;8(4):245, 252-3.*