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## Brucella Presenting With Pancytopenia

### Pansitopeni ile Kendini Gösteren Brucella: Olgu Sunumu

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#### Abstract:

**Introduction:** Brucellosis is an infectious disease that can be acquired through direct contact with infected animals, ingestion of raw milk and dairy products from infected animals and / or through the inhalation of infectious droplets. They can involve other systems, especially reticuloendothelial system, resulting in different clinical pictures. The most common complaints are fever, arthralgia and sweating. While anemia and thrombocytopenia are common in patients with brucellosis, pancytopenia is a rare complication.

**Case Report:** A 13-year-old girl referred to our hospital from another hospital because of fever, abdominal pain and pancytopenia in blood tests. Case history included goat, dog, cow contact and consumption of cheese from raw milk. Brucella Immuncapture (tube + comms) was detected as 1/5120 titer. Brucellosis treatment was planned to be completed in 6 weeks.

**Discussion and Conclusion:** When investigating the etiology of pancytopenia in areas where brucellosis is endemic, like our country, it should be kept in mind that acute brucellosis may cause pancytopenia together with other reasons.

**Key Words:** *Brucellosis, Pancytopenia*

**Giriş:** Bruselloz enfekte hayvanlardan insanlara doğrudan temas, süt ve süt ürünlerinin taze olarak tüketilmesi ve/veya enfekte damlacıkların inhalasyonu ile bulaşabilen bir enfeksiyon hastalığıdır. Başta retiküloendotelial sistem olmak üzere diğer sistemleri de tutabilmekte ve sonuçta farklı klinik tablolar ortaya çıkmaktadır. Brusellozlu olgularda anemi ve trombositopeni yaygın olarak görülebilirken pansitopeni nadir bir komplikasyondur.

**Olgu Sunumu:** On üç yaşında kız olgu 5 gündür devam eden ateş, karın ağrısı ve dış merkezde bakılan kan tetkiklerinde pansitopeni olması nedeniyle hastanemize başvurdu. Olgunun özgeçmiş sorgulamasında keçi, köpek, inek teması ve çiğ süttten peynir tüketimi mevcuttu. Brucella Immuncapture (tüp+comms) 1/5120 titre olarak sonuçlandı. Bruselloz tedavisinin 6 haftaya tamamlanması planlandı.

**Sonuç ve Tartışma:** Ülkemiz gibi brusellozun endemik olduğu bölgelerde pansitopeni etiyolojisi araştırılırken diğer nedenlerle birlikte akut brusellozun pansitopeni yapabileceği akılda tutulmalıdır.

**Anahtar kelimeler:** *Bruselloz, Pansitopeni*

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## Introduction:

Brucellosis is an infectious disease that can be acquired through direct contact with infected animals, ingestion of raw milk and dairy products from infected animals and / or through the inhalation of infectious droplets<sup>(1)</sup>. The agent of brucella is small, immobile, gram-negative coccobacillus<sup>(1-3)</sup>. The species that infect humans are *Brucella abortus*, *Brucella melitensis*, *Brucella suis* and rarely *Brucella canis*<sup>(4)</sup>. The incubation period varies from less than 1 week to several months and most cases become ill within 3-4 weeks after they exposed to the agent<sup>(2)</sup>. After transmission, they multiply in the regional lymph nodes and pass into the blood. They can involve other systems, especially reticuloendothelial system, resulting in different clinical pictures<sup>(1,5)</sup>. The most common complaints are fever, arthralgia and sweating<sup>(6)</sup>. While anemia and thrombocytopenia are common in patients with brucellosis, pancytopenia is a rare complication<sup>(7)</sup>. Here, we present a case of brucellosis and its management while investigating the cause of pancytopenia.

## Case Report:

A 13-year-old girl referred to our hospital from another hospital because of fever, abdominal pain and pancytopenia in blood tests. Case history included goat, dog, cow contact and consumption of cheese from raw milk. She had moderate status on physical examination with pale skin and mucosa and there was 0.5 cm mobile lymphadenopathy in bilateral upper cervical region. Other system examinations were normal. In the blood tests of the case, leukocyte count was 4340/mm<sup>3</sup>, absolute neutrophil was 890/mm<sup>3</sup>, hemoglobin was 8.6 g/dL, platelet was 72000/mm<sup>3</sup>, AST was 100 U/L, ALT was 46 U/L and LDH was 726 U/L. Sedimentation was 13 mm/hour, C-reactive protein was 65 mg/L (< 5 mg/L). In peripheral blood smear; 36% lymphocyte, 48% monocyte, 12% bands and 4% segmented neutrophils were detected. Blasts cells or atypical cells were not found. Platelets were observed in 4-7 clusters. There was mild hypochrome and anisocytosis in erythrocytes. Throat, blood, urine cultures and viral serology were taken. *Brucella* Immuncapture (tube + commbs) was detected as 1/5120 titer then rifampicin (20 mg / kg / day) and doxycycline (4 mg / kg / day) were started. *Brucella* spp. was found in the blood culture which was taken during the fever period. Laboratory parameters of the case improved during follow-up. Brucellosis treatment was planned to be completed in 6 weeks.

## Discussion and Conclusion:

Brucellosis is widespread issue in our country and continues to be an important public health problem. It is difficult to diagnose it due to various clinical findings at every age<sup>(3,6)</sup>.

Hematological changes are also common in brucellosis, which can affect all systems<sup>(8)</sup>. Mild hypochromic and microcytic anemia may be observed in brucellosis. Anemia varies between 44-74%. Leukopenia and thrombocytopenia may be seen during the course of the disease<sup>(9)</sup>. Pancytopenia has been reported in various rates such as 3-21%<sup>(4,10)</sup>. Hemoglobin value of our case was 8,6 g/dL, absolute neutrophil value was 890/mm<sup>3</sup> and platelet value was 72000/mm<sup>3</sup>. The combination of anemia, neutropenia and thrombocytopenia in the case was evaluated as pancytopenia. In pathogenesis of pancytopenia, which is a rare complication, hypersplenism, diffuse intravascular coagulation, hemophagocytosis, bone marrow suppression, and platelet destruction are responsible<sup>(10)</sup>. It is reported that pancytopenia, which can be seen during the course of brucellosis, responds to treatment and clinical findings and laboratory findings improve<sup>(9,10)</sup>. In our case, pancytopenia improved with appropriate antimicrobial treatment.

Wright agglutination is the most commonly used serological diagnostic method in brucellosis; Titers of 1/160 and above are considered significant. Wright agglutination test was positive at 1/5120 titer in the case.

Blood culture positivity in the diagnosis of brucellosis may vary between 15-70% depending on the method used<sup>(7)</sup>. In our case, we were able to produce the causative agent in blood culture. When investigating the etiology of pancytopenia in areas where brucellosis is endemic, like our country, it should be kept in mind that acute brucellosis may cause pancytopenia together with other reasons. Pancytopenia in brucellosis can be resolved in a short time with appropriate treatment.

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