



## A Case of Brucellosis Admitting with Bleeding

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### Abstract

*During the course of an acute brucellosis infection, severe thrombocytopenia, ITP and bleeding are rarely seen and can be misleading for hematological diseases. Our case was a 20-year-old male patient. He had admitted to the Emergency Room with the complaints of gingival bleeding and bleeding of his pimples. His platelet count was  $1.6 \times 10^3$  / $\mu$ L and he was hospitalized with the preliminary diagnoses of ITP or hematological malignancy. Despite steroids and IV immunoglobulin treatment, his thrombocytopenia did not improve and he further developed melena. A bone marrow biopsy was planned. No significant pathology was detected in the examination of bone marrow aspiration. Brucella tube agglutination test had been ordered to identify the etiology of thrombocytopenia. Its result was reported as 1/160 (+) leading to an hemoculture. The hemoculture resulted in the growth of Brucella mellitensis. Therefore the patient was diagnosed as Brucellosis. Steroid has stopped, with the administration of antimicrobial treatment, his platelet count started improving from second day onwards. All his hemotological findings improved with this treatment. The fact that the patient had findings of severe thrombocytopenia and bleeding resulted in considering a preliminary diagnosis of hematological malignancy. In our country which is endemic for Brucellosis, the differential diagnosis of several patients admitting with different hematological presentations should definitely include Brucella.*

**Keywords:** Brucellosis, thrombocytopenia, bleeding

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## Introduction

Some Brucellosis patients present with severe anemia, leukopenia and clotting disorders that can be mistaken for hematological diseases. Thrombocytopenia observed in Brucellosis is generally in the form of isolated thrombocytopenia. From clinical and laboratory perspective, it can mimic ITP. The pathogenesis of the thrombocytopenia seen in Brucellosis is not clear. Different mechanisms like hypersplenism, hemophagocytosis, increasing of platelet clearance due to platelet damage caused by endo and exotoxins, platelet adhesion to vascular surfaces and bone marrow suppression are all thought to play a role [1]. In this report, a case of brucellosis with severe thrombocytopenia was presented.

## Case report

20-year-old male patient admitted to the Emergency Room with the complaints of gingival bleeding and the bleeding of the pimples on his face. His platelet count was  $1.6 \times 10^3 /\mu\text{L}$  and he was hospitalized by the Internal Medicine Department with a preliminary diagnosis of ITP. Steroid treatment was initiated. However, on the third day of his hospitalization, he developed melena and IV immunoglobulin treatment was started as no response could be obtained from corticosteroids. The patient was given approximately 40 Units of platelet suspension, however his platelet count did not increase significantly. Hematology Unit decided to perform a bone marrow biopsy. An increase in megakaryocytes and erythroid activity was detected. On physical examination, his axillary body temperature measurement was:  $37.2^{\circ}\text{C}$ , heart rate was 99/min and rhythmic. There were bilateral cervical lymphadenopathy, subconjunctival hemorrhage in the left eye, widespread ecchymosis involving the left deltoid muscle and ecchymotic lesions at the injection sites. On cardiological examination, 2/6 systolic murmur was heard on mesocardiac point. Laboratory test results were as follows: WBC:  $4540/\text{mm}^3$ , hemoglobin:  $10.3\text{g/dL}$ , RBC:  $3.867.000/\mu\text{L}$ , Platelets:  $4200/\mu\text{L}$ , ESR:  $34\text{ mm/h}$ , CRP:  $13.8\text{mg/L}$  (N:0-5), AST:  $44\text{ U/L}$ , ALT:  $34\text{ U/L}$ , LDH:  $508\text{ U/L}$ . Abdominal ultrasound was normal. Tests were ordered to identify the etiology of thrombocytopenia. As the patient was subfebrile, the tests that were ordered reported Brucella tube agglutination test positivity at a titer of 1/160. Ceftriaxone was administered and hemocultures were obtained. Wright test performed a week after was also reported positive with a titer of 1/320. 4 days later the hemoculture results reported the growth of *Brucella mellitensis* and the patient was

transferred to Infectious Diseases Department. The treatment was complemented with doxycycline and rifampicin. The platelet count was 35.000 on day 2, 54.000 on day 3, 121.000 on day 5. Due to the presence of cardiac murmur, echocardiography was performed. Endocarditis was not identified. Ceftriaxone treatment was stopped on day 14. Doxycycline and rifampicin were continued for 6 weeks.

The patient came with findings of severe thrombocytopenia and bleeding. He was followed-up with preliminary diagnosis of an hematological malignancy. The subfebrile condition did not primarily lead to an infectious pathology. The fact that he was diagnosed with Brucellosis and successfully treated with specific medications makes it worthwhile to present this case.

## Discussion

Brucellosis is a zoonotic disease frequently encountered in Turkey. Brucellosis can present with bone marrow involvement and pancytopenia. The rate of pancytopenia was reported as 3–21% [1]. The possible mechanisms for the thrombocytopenia seen in Brucellosis are hypersplenism, intravascular coagulation, septicemia associated bone marrow suppression, hemophagocytosis and peripheral immunological breakdown of platelets [2]. Brucellosis cases might mimic primary hematological diseases. In some rare cases of Brucellosis, thrombocytopenia can be very severe and the most disturbing finding for the patient can be bleeding. In Brucellosis cases presenting with bleeding, short-term high-dose steroids and intravenous immunoglobulins can be administered. In the literature there are reports of Brucellosis cases who were primarily considered to have ITP or hematologic malignancies as they had presented with severe thrombocytopenia and bleeding. Severe thrombocytopenia leading to bleeding is reported to have been seen in 8% of the cases in Turkey [3]. Sevinc et al. reported a young girl admitting with thrombocytopenia and purpura, upon confirmation of her diagnosis as Brucellosis, they reported a rapid improvement of thrombocytopenia with specific treatment [4]. A case reported from Italy admitted with severe epistaxis, hematuria, purpura of the skin; following antimicrobial treatment her hematological problems improved [5]. In 3 cases reported by Ozen et al., there was severe isolated thrombocytopenia and they had admitted with the complaints of bleeding and purpuric rash. Despite administration of high dose steroids, the thrombocytopenia could not be treated and with antimicrobial treatment hematological findings improved and platelet counts increased [6]. Our case

admitted with gingival bleeding and bleeding of his pimples. While on steroid and IVIG treatment, his thrombocytopenia deteriorated and he developed melena. Together with the establishment of Brucellosis diagnosis and initiation of specific treatment, thrombocytes started increasing on day 2 and came to normal levels on day 6. As the case for other patients in the literature, hematological symptoms were corrected in a short while.

In conclusion, in our country which is endemic for Brucellosis, the differential diagnosis of several patients admitting with different hematological presentations should definitely include Brucella.

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