Clinical Image / *Klinik Görüntü*

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Perioral Petechiae Associated with Meningococcemia

Meningokoksemi İlişkili Perioral Peteşi

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Introduction

Invasive meningococcal diseases are a major cause of mortality and morbidity worldwide. Meningococcemia is an infectious disease with sudden onset, rapid course and high mortality. *Neisseria meningitidis* is a gram-negative diplococcus that is an obligate human pathogen. The clinical spectrum of meningococcal disease may progress from self-limiting febrile illness to rapidly progressive septic shock (1). Here, we report a case of meningococcal infection presenting with fever and intense perioral petechiae.

Case Report

A seven year-old male patient with no previous known disease presented to us with complaints of intense redness around the mouth, rash all over the body, arthralgia and fever for one day. His past medical history was unremarkable. His family history included a history of bacterial ingitis in his brother when he was three years old. Physical examination was as follows: Body temperature= 38.4°C, peak heart rate= 100/min, blood pressure= 95/60 mmHg, petechiae on the soft palate, around the mouth, on the trunk, genital area and extremities (Figure 1,2). Other system examinations were normal. Blood tests revealed C-reactive protein= 3 mg/L, leukocytes= 7960/mm^3, neutrophils= 5080/mm^3, hemoglobin= 13.8 g/dL, platelets= 193000/mm^3, INR= 1.18, aPTT= 26 seconds, other routine biochemical tests were normal. Ceftriaxone (100 mg/kg/day, two doses) was started intravenously with a prediagnosis of meningococcemia. Hemogram and coagulation tests taken intermittently during follow-up were normal. There was no deterioration in vital signs. Petechial rashes disappeared from time to time and new rashes appeared but no ecchymotic lesion developed. Blood culture

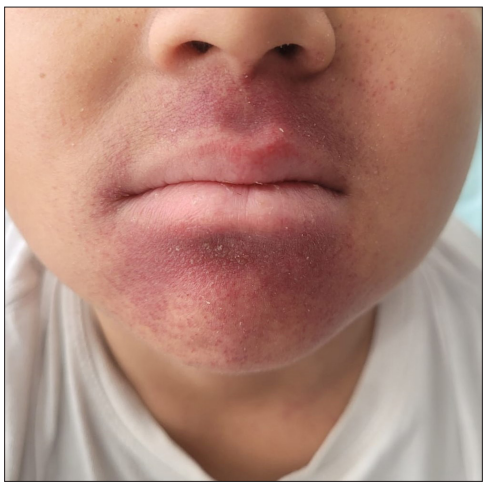

Figure 1.

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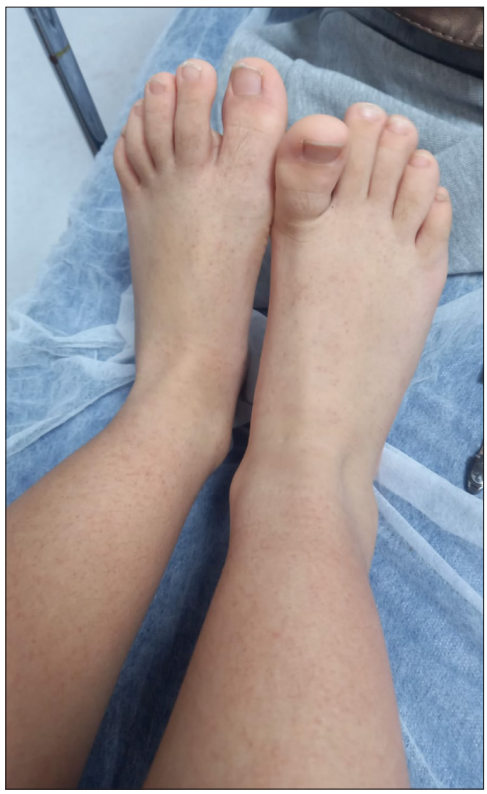

Figure 2.

was negative. *N. meningitidis* polymerase chain reaction was performed in the blood, and it was non-group positive. Immunologic evaluation was performed because the patient's brother also had a history of ingitis. Total complet (CH) 50 and immunoglobulin G, A, M and peripheral lymphocyte subgroup distribution according to age were normal. Ceftriaxone treatment was completed for seven days, and the patient was discharged. After discharge, a hearing test was performed, and the results were normal and there were no pathologic findings in neurologic evaluation. At six-month intermittent follow-up, he had no additional problems.

Discussion

Since meningococcemia is a rapidly progressing disease and rapid diagnosis, early antibiotic and supportive treatment are related with the outcome of the disease, the diagnosis of meningococcemia should be made clinically in the presence of mild symptoms and at the onset of the disease (2).

Purpuric eruptions due to local mechanical causes may be observed in children. In the presence of petechial or purpuric lesions, immediate and complete investigation of the underlying hematologic disorder is necessary. Case reports of perioral petechiae are usually associated with local trauma. In the reported case report, perioral petechiae were observed in a nine-year-old male patient as a result of sucking a bottle cap (3). Our patient is the first case reporting intense perioral petechiae during the course of meningococcemia.

Invasive meningococcal disease may progress rapidly and may be life-threatening even after appropriate treatment is initiated. Parenteral antibiotic therapy should be initiated as soon as possible to reduce the complications of infection. Cefotaxime, ceftriaxone or penicillin are preferred as initial therapy in patients with a clinical diagnosis of invasive meningococcal disease. Early and aggressive fluid resuscitation is associated with better survival in pediatric patients. The recommended duration of antibiotic treatment for both ingitis and septicemia is 5 to 7 days (4). Meningococcemia was suspected in our patient with fever and petechiae. Appropriate fluid replaced and ceftriaxone treatment was initiated. Vancomycin was not considered to be added to the treatment since the general condition of the patient was good, fever did not persist, and vital signs did not deteriorate. On the fourth day of treatment, the polymerase chain reaction test result was positive for *N. meningitidis*.

Rapid diagnosis is important in invasive meningococcal disease. However, traditional methods take time. Especially due to early antibiotic treatment, the causative agent cannot be shown in culture most of the time. Therefore, non-culture-based methods are sensitive, specific and valuable for early diagnosis and prevention (5). In a study, it has been shown that culture negativity is not associated with lower bacterial load and less severe cases. However, polymerase chain reaction methods have been shown to be significantly more sensitive than culture in laboratory confirmation of invasive meningococcal disease (6). In a patient compatible with meningococcemia clinic, blood polymerase chain reaction was positive for *N. meningitidis* group B but blood culture was negative (7). A 10-year-old patient had clinical findings compatible with invasive meningococcal disease. The causative agent could not be demonstrated in blood and cerebrospinal fluid cultures, but the diagnosis was confirmed by polymerase chain reaction in both cerebrospinal fluid and blood. There are many similar cases in the literature (8). Our patient did not have a history of antibiotic intake before culture, but the causative agent could not be demonstrated in culture.

Previous reports have indicated that carrying common defective structural polymorphisms of the mannose-binding lectin gene (MBL2) greatly increases an individual's risk of developing invasive meningococcal disease. However, recent data and all other available evidence suggest that MBL2 structural polymorphisms do not predispose children or adults to invasive meningococcal disease (9). Although it is widely accepted that complet deficiencies caused by rare genetic variants increase the risk of invasive bacterial infection, there is still a lack of information about the association of common genetic variants in the complet system with disease susceptibility (10). Individuals with deficiency in components of alternative and terminal complet pathways are considered susceptible to invasive, recurrent meningococcal infections (11).

Children presenting with fever and petechiae should be treated as meningococcemia until proven otherwise. As in our patient, petechial eruptions may be concentrated in certain regions in some patients.

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