What Is Your Diagnosis? / *Tanınız Nedir?*

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Child with Fever, Rash and BCG Reactivation

Ateş, Döküntü ve BCG Reaktivasyonu ile Gelen Bir Çocuk

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A 33-month-old male patient under the supervision of the pediatric immunology division for recurrent herpetic eruptions, and receiving oral trimethoprim-sulfamethoxazole for prophylaxis, was admitted to the Pediatric Emergency Service of our hospital after maintaining a 39°C fever for three days. It was learned that the patient was lethargic and unresponsive to antifebrile medication administered at home. A physical examination of the patient revealed an erythematous eruption on the gluteal area that faded with several millimeters of pressure; hyperemia on the oropharynx and tonsils; a lymph node of 1.6 cm x 1cm diameter on the left anterior cervical region; and a 1-2/6 heart murmur in the tricuspid location. According to the laboratory findings, complete blood count values were hemoglobin - 11.6 g/dL; leukocyte number-12.600/mm^3; and platelet number - 288.000/mm^3, while biochemistry values were AST- 205 U/L; ALT - 281 U/L; total bilirubin - 4.03 mg/dL; and direct bilirubin - 2.68 mg/dL. Other biochemical values were normal. The sedimentation rate was 38 mm/hour, and C-reactive protein (CRP) was 18.4 mg/dL (normal range: 0.0-0.8 mg/dL). On the third day of fever, a distinct rash appeared on the scar area of the patient's Bacillus Calmette-Guerin (BCG) vaccination, while a red strawberry tongue and redness on the lips was observed on the fourth day, along with a bilateral conjunctival injection (Figure 1, 2). ECHO findings were normal.

What is Your Diagnosis?

Discussion: After Henoch-Schonlein purpura, Kawasaki disease is the second most commonly encountered form of childhood vasculitis in Turkey. First identified by Tomisaku Kawasaki in 1967, the disease is characterized by a clinical picture of acute fever that is more frequently observed in children under the age of five (1). The disease is commonly observed among Asians and inhabitants of the Pacific islands (2).

A Kawasaki disease diagnosis can be considered when a minimum five-day fever is accompanied by four of the five following criteria.

1. Bilateral bulbar non-exudative conjunctival injection,
2. Polymorphous erythematous rash (non-vesicular),
3. Changes in the oral mucosa and lips (erythema, chapping of the lips, strawberry tongue, widespread oropharyngeal hyperemia),
4. Changes in the extremities (erythema in the palms and on the soles; edema on the hands and feet; desquamation on the fingers and toes during the subacute period),
5. Cervical LAP above 1.5 cm (in general, unilaterally) (3).

Based on clinical experiences, however, the American Heart Association holds the view that diagnosis can be made without waiting for the fever to last five days, and that treatment can be started at an earlier stage to prevent the development of coronary artery diseases (2).

Another finding observed in Kawasaki disease, but which is not included in the diagnosis criteria, is erythema and induration on the BCG scar area. A study conducted on infant cases diagnosed with Kawasaki disease demonstrated accompanying erythema and induration on the BCG vaccination scar in 80% of babies and 18.2% of children older than 12 months (4). It has been hypothesized that the erythema in the BCG scar area can be attributed to an increase in such cytokines as IL-1 beta and TNF-alpha in the scar area, which leads to a cross reaction

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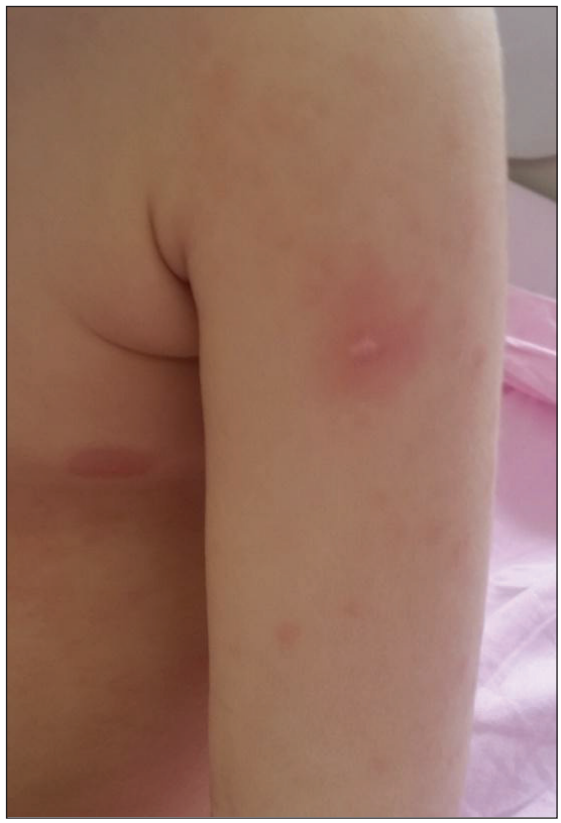

Figure 1. Rash and induration in the BCG vaccination scar area.

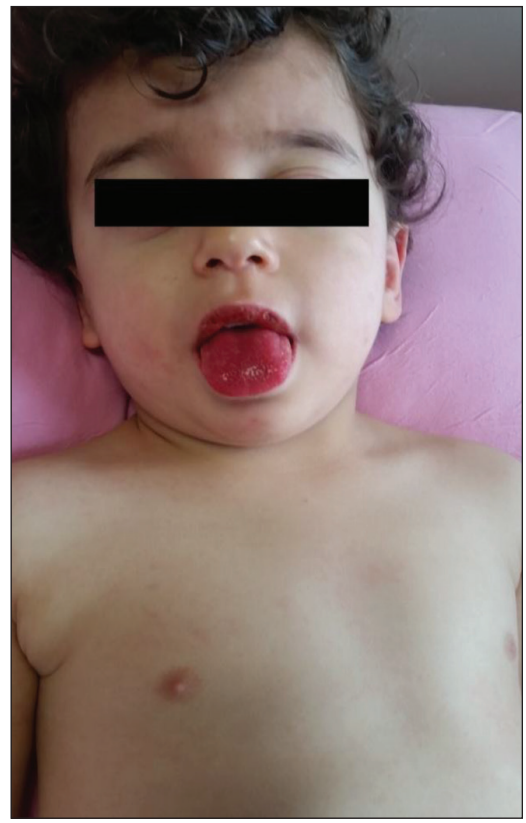

Figure 2. Red strawberry tongue and chapped lips.

between the mycobacterium HSP65 and the human Humalog HSP63 (1,5,6). Early diagnosis is vitally important in Kawasaki disease to prevent the emergence of coronary artery disease. There have been various studies in literature describing newly formed erythema in the BCG scar location as a possible early finding of the disease, appearing between the first and fourth days of onset (1). In countries that still include BCG in their immunization schedule, the reactivation of the BCG scar during the course of the disease may be advantageous for early diagnosis (1,7).

Based on the patient findings of erythema and induration in the BCG scar area, strawberry tongue and chapping of the lips, a papular eruption and a 1.6 cm x 1 cm diameter lymph node on the left anterior cervical area, treatment was commenced on the fourth day of fever, with 2 g/kg/day intravenous immunoglobin, 10 mg/kg/day methylprednisolone (for three days) and 3 mg/kg/day acetylsalicylic acid. The patient's fever began to drop one day after the start of the treatment, and the mucosal and skin findings regressed.

While erythema and induration in the BCG scar does is not included among the definite diagnosis criteria of Kawasaki disease, it is a useful finding for early diagnosis when considered together with the said criteria.

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