Erythema multiforme-like lesions in the course of infectious mononucleosis

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Abstract

Background: The rash in infectious mononucleosis is usually diffusely macular.

Main observations: A 15-year-old boy presented to us with high grade fever, sore throat, malaise, body aches, and polyarthralgia. He developed annular, erythematous, and non-scaly eruptions on chest and right arm. Blanching erythema was noted on his trunk. He had bilateral tender cervical lymph nodes, severe pharyngeal congestion, petechiae on soft palate, uvular edema, infraorbital edema, and marginal tender hepatomegaly. Investigations revealed lymphocytosis and activated atypical lymphocytes in the peripheral smear, and positive monospot test. The boy subsequently recovered in one week with total disappearance of his rash. Epstein-Barr virus-related infectious mononucleosis was considered the most likely diagnosis for our patient.

Conclusions: To our knowledge, this atypical case is the third reported case of annular lesions in infectious mononucleosis. Dermatologists and other clinicians should be alerted to this special presentation of primary EBV infection.

Introduction

In most patients primary Epstein Barr virus (EBV) infections are subclinical and their diagnosis is established based on laboratory results.¹ Most adults show serological evidence of previous, asymptomatic, EBV infection.² For children and adolescents, a triad of fever, pharyngitis and lymphadenopathy would suggest infectious mononucleosis (IM) caused by primary EBV infection.²

Some patients with IM also manifest with discrete palatal petechiae, uvular edema, infraorbital edema^{3,4} or ulcers in the ano-genital area.⁵ Rash is a fairly common finding and is usually diffusely macular and is indistinguishable from other viral exanthems by physical examination alone.^{3,4}

We report here a 15-year-old boy with an annular cutaneous eruption. Investigations revealed that IM is the most likely underlying diagnosis.

Case report

A 15-year-old boy was seen with a three-day history of high grade fever, sore throat, malaise, body aches, and arthralgia of elbows and knees, followed by an acute onset of an annular skin rash. He had no history of similar rash and had no history of erythema multiforme or hypersensitivity reaction to beta-lactams including oral penicillins cephalosporins and other drugs. His close contacts did not develop similar rashes. He has not been in contact with ticks or animals. His past health was good. Cefotaxime was prescribed by previous medical practitioners caring for the patient.

The boy was referred to our hospital. Examination revealed febrile (oral temperature 38.3°C) and fatigued boy with tachycardia (104/min). There was no pallor and no jaundice. Multiple annular, erythematous, and non-scaly eruptions of round and oval shape were noted on chest

and right arm (Fig. 1). The lesions were not painful or pruritic. The Wood's light examination did not reveal fluorescence. Blanching erythema was noted on his trunk. Systemic examination revealed bilateral tender cervical submandibular and postauricular lymph nodes, severe pharyngeal congestion, discrete petechiae on soft palate, uvular edema, and symmetrical infraorbital edema. These findings were confirmed by repeated examinations by several clinicians, and well documented in the clinical records. We did not take clinical photographs to document these findings. There was marginal tender hepatomegaly. No splenomegaly was noted. Tenderness was noted on bilateral elbows and knees but no definite sign of polyarthritis was noted. His chest was clear. His blood pressure and pulse were normal. We found no evidence of cardiomegaly or pericarditis. No abnormal heart murmur was noted.

Figure 1

Annular, erythematous, and non-scaly eruptions on chest and right arm.

Complete blood picture revealed relative lymphocytosis (total leukocyte count $10 \times 10^3/\mu\text{l}$, 58% being lymphocytes). His platelet counts and random blood glucose were normal. Other investigations including anti-streptolysin-O titer, liver function tests, urinalysis and chest X-ray revealed no abnormality. Throat swab culture was insignificant. Antibodies against HIV were negative. Skin scrapings for potassium hydroxide smear and fungal culture were negative. We suspected IM due to primary EBV infection. We recommended skin lesional biopsy but it was declined by his parents.

Monospot test was found to be positive. Peripheral blood smear revealed activated atypical lymphocytes, whose count was 29%.

The boy was given supportive case consisting of bed rest and paracetamol tablets as per the necessity. He subsequently recovered uneventfully within one week with total disappearance of his annular eruptions leaving behind a faint pigmentation. Abdominal examination six weeks later revealed no hepatomegaly.

Discussion

Primary EBV infection can cause significant mortality and morbidity.^{1-3,6,7} The incidence of severe primary EBV infections and IM was reported to be rising.⁸ Prompt clinical suspicion and diagnosis are pertinent. The recognition of atypical clinical signs may be the first important step in diagnosis for some patients.

There have been two reported cases of annular erythema-multiforme-like lesions in patients with IM, one being a 7-year-old girl who was taken oral amoxycillin,⁹ and another a 23-year-old woman with no significant drug history.¹⁰ Annular cutaneous lesions have also been reported in patients with chronic EBV infection.¹¹⁻¹³ To our best knowledge, our patient might represent the third reported case of annular lesions in EBV-related IM. Cefotaxime prescribed by previous medical practitioners caring for the patient could have been a precipitating factor in the development of such eruption. Differential diagnoses for this case included rheumatic fever, pityriasis rosea, erythema annulare centrifugum, tinea corporis, secondary syphilis, viral rashes such as norovirus infection, and non-specific viral exanthems. However, the bilateral tender cervical lymph nodes, pharyngeal congestion, palatal petechiae, uvular edema, symmetrical infraorbital edema, and marginal tender hepatomegaly were highly suggestive of IM.

The diagnosis of IM was also substantiated by positive monospot test, lymphocytosis, and activated atypical lymphocytes in the peripheral blood smear. Owing to constraints in resources and facilities, we were unable to proceed to EBV serology and polymerase chain reaction studies for EBV DNA in plasma and peripheral blood mononuclear cells. We also lack in the facilities to investigate for other viruses associated with IM such as primary cytomegalovirus infection. However, the detection of atypical lymphocytes was reported to be fairly sensitive in the diagnosis of primary EBV infection.¹⁴ Atypical lymphocytes have also been reported to be common in primary EBV infections.¹⁵ Some authors recommend the application of additional tests to confirm primary EBV infection only when monospot test is negative.¹⁶ Therefore, despite the unavailability of specific EBV serology and PCR investigation results, there is in our opinion sufficient evidence for the diagnosis of EBV-related IM. We consider the underlying mechanism of annular lesion formation in EBV infection unknown at the present state of knowledge.

We have previously investigated the association between primary EBV infection and reactivation with one annular scaly eruption, which is pityriasis rosea.¹⁷ However, we found no significant association.

Conclusions

Annular cutaneous lesions are fairly uncommon in infectious mononucleosis. Dermatologists and other clinicians should be alerted to this special presentation of primary EBV infection.

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