

One-year-old Infant with Rash

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A 12-month-old infant with a known history of G6PD deficiency and eczema, presented to our emergency room with a one-day history of fever, runny nose, and an exacerbation of eczema along with new skin lesions. The skin exhibited characteristics of pruritic, erythematous vesicles with a clear discharge, distributed across the flexor and extensor surfaces of the upper and lower limbs, as well as on the face and neck [Figure 1].



Figure 1: (a) Dried out crusted vesicles overlying eczematous plaques with few active intact vesicles over the knee. (b) Active vesiculopapular skin lesions over the arm.

Additional manifestations included tactile fever, diminished oral intake, and reduced activity without evident central nervous system involvement. There were no reported contacts with sick individuals. The patient had previously received two doses of amoxicillin for the skin lesions at a private hospital with no significant improvement. No urticaria or angioedema were observed, and assessments of other systems, including respiratory, gastrointestinal, musculoskeletal, and urinary, revealed no abnormalities. Laboratory findings indicated microcytic hypochromic anemia with predominant lymphocytosis, a CRP level of 12, and respiratory viral panel positivity for rhinovirus and enterovirus RNA. Consent for publication has been obtained from the patient's parents.

Questions

1. What is your diagnosis?
2. How to rule out other possible differential diagnoses?
3. How would you manage this infant?

Answers

1. Eczema coxsackium (EC).
2. By doing herpes simplex virus (HSV) and varicella zoster virus (VZV) polymerase chain reaction (PCR) from the skin lesions to rule out the possibility of eczema herpeticum and a bacterial swab culture looking for secondary bacterial infections.
3. EC has a self-limiting course, requiring hydration and, if necessary, antipyretics. In addition, optimizing eczema care which involves the use of moisturizers and topical steroids, if needed.

Discussion

Upon admission of our patient, the provisional diagnosis of eczema herpeticum was made, and he was commenced on fluid hydration along with intravenous acyclovir at a dose of 250mg/m² thrice daily. Skin lesion swabs tested positive for enterovirus and negative for VZV and HSV by PCR, supporting the diagnosis of eczema coxsackium. Bacterial culture from a skin lesion swab revealed no bacterial growth. Consequently, intravenous acyclovir was discontinued. There was spontaneous resolution of the lesions, which healed and crusted without further deterioration. He was discharged on the third day of admission in a stable condition.

Atopic dermatitis (AD) stands out as a prevalent allergic skin disorder among children, posing an increased susceptibility to recurrent bacterial and viral infections such as eczema herpeticum and coxsackium (EC) when inadequately controlled.¹ The term 'Eczema coxsackium' was first introduced during a coxsackie virus A6 (CVA6)-associated enterovirus outbreak in North America between 2011 and 2012.^{2,3} EC is caused by coxsackie viruses which are part of the genus enterovirus in the *Picornaviridae* family.^{1,2,4} It is more common in children, though recent cases in adults have been reported.¹ The manifestations of EC in children include oral ulcers and vesiculobullous lesions in the soles and palms similar to hand, foot and mouth disease. In addition, areas exhibiting active AD like flexures, extensor and the buttocks may develop vesiculopapular or vesiculobullous lesions similar to our patient.^{1,2} Differential diagnosis includes bullous impetigo, eczema herpeticum, and varicella-zoster infection.^{2,4} Despite being a self-limiting disease, EC's clinical significance lies in its potential misidentification as eczema herpeticum or bullous impetigo, leading to unnecessarily administration of acyclovir and antibiotics.^{1,3,4}

In such instances, performing enterovirus PCR on skin lesions helps confirming the diagnosis, thereby preventing/minimizing unnecessary antimicrobial therapy.^{1,4} In our case, enterovirus PCR on the lesions swab confirmed the diagnosis.. Clinical suspicion of EC arose due to the patient's coryzal symptoms and the detection of enterovirus RNA in his respiratory secretions.

References

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