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Late-onset and long-term systemic dyshidrotic eczema after intravenous immunoglobulin treatment for Kawasaki disease

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DESCRIPTION

Here, we report the case of a 7-month-old boy who was admitted to our hospital with a 4-day history of fever, conjunctival injection, erythema on the trunk and extremities, lip redness and oedema of the hands and feet. Laboratory findings on admission were as follows: leucocyte count, 11.6×109/L (63.2% neutrophils and 28.7% lymphocytes) and C reactive protein, 4.3 mg/dL. Urine, stool, blood and throat swab cultures were negative. Viral and bacterial serological analyses for cytomegalovirus, Epstein virus, hepatitis virus, adenovirus and *Streptococcus pyogenes* were negative. On the fifth day of illness, he received a diagnosis of Kawasaki disease. He became afebrile 24 hours after administration of intravenous gammaglobulin (IVIG) (2 g/kg) and aspirin. Two days after administration of IVIG, he suffered from fever and demonstrated lip redness and erythema of the hands. On the 10th day of illness, he again became afebrile 24 hours after administration of IVIG (2 g/kg). On the 18th day of illness, we observed peeling skin on the fingertips, hands and feet. All markers of inflammation measured on the 20th day of illness were normal. On the 24th day of illness (14 days after the final IVIG treatment), vesicles were observed on his hands, feet and fingers (figure 1). These spread to the extremities, trunk and face. Histological analysis of a biopsy specimen from the upper arm taken on the 41st day of illness demonstrated spongiosis, with intraepidermal vesicle formation and a dermal inflammatory infiltrate comprising mainly lymphocytes and histiocytes (figure 2). Considering the clinical features, we made a diagnosis of pompholyx as a late-onset side effect of IVIG. The lesion regressed gradually with topical application of corticosteroids. All skin lesions disappeared by the 105th day of illness.

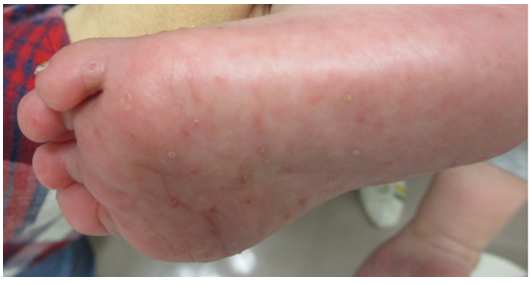

Figure 1 Photograph showing vesicles, scaly skin and erythema on the soles of both feet.

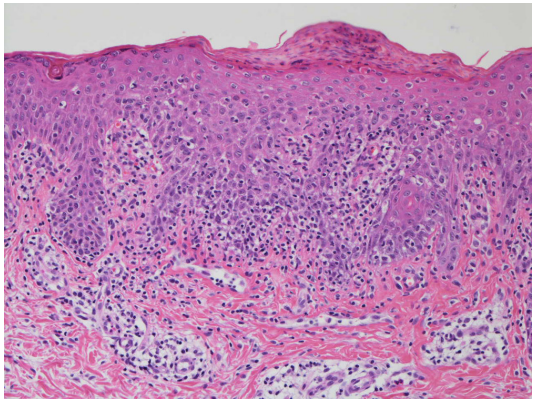

Figure 2 Photograph showing spongiosis, intraepidermal vesicle formation and inflammatory infiltrates were found on histological analysis (H&E, original magnification ×20).

No coronary artery involvement was detected by echocardiography 24 months later.

IVIG is used widely to treat immune diseases. Cutaneous adverse effects are rare, particularly in children, with an estimated general occurrence rate of 0.4%–6%.[1 2] Adverse effects include urticarial rash, erythema multiforme and eczematous reactions, particularly pompholyx.[1 2] In general, eczematous eruption is limited to the palms and soles; however, in severe cases, it can be widespread, extending to the trunk and extremities.[3] Often, this eruption begins within 8 days of IVIG administration. Most patients respond

Patient's perspective

- We are worried regarding the cause of Kawasaki disease and the mechanism of dyshidrotic eczema.
- We are very happy that all physicians are learning from my son's case.

Learning points

- Physicians should be aware that generalised dyshidrotic eczema may be a side effect of intravenous gammaglobulin therapy.
- Dyshidrotic eczema in the course of Kawasaki disease could be generalised as late onset and long term.

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well to topical corticosteroids, and so the eruptions tend to resolve within 3 weeks.[4 5] The pathophysiology of IVIG-induced dyshidrotic eczema is unclear.[3] Studies suggest that the diseases treated with IVIG may play a role, that hypersensitivity reactions to a substance contained within IVIG preparations (stabilisers, animal proteins or unidentified molecules) may play a role, or that deposed overloaded immunoglobulin intraepidermal and B-cell activation under certain circumstances.[2 6 7] Further studies are needed if we are to better understand how IVIG causes pompholyx, identify whether predisposing factors exist and get a more accurate picture of the real incidence of this condition. In conclusion, physicians should be aware that generalised dyshidrotic eczema may be a late-onset and long-term side effect of IVIG therapy.

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