

# Eczema coxsackium complicating allergic contact dermatitis during treatment with pimecrolimus 1% cream in an adult

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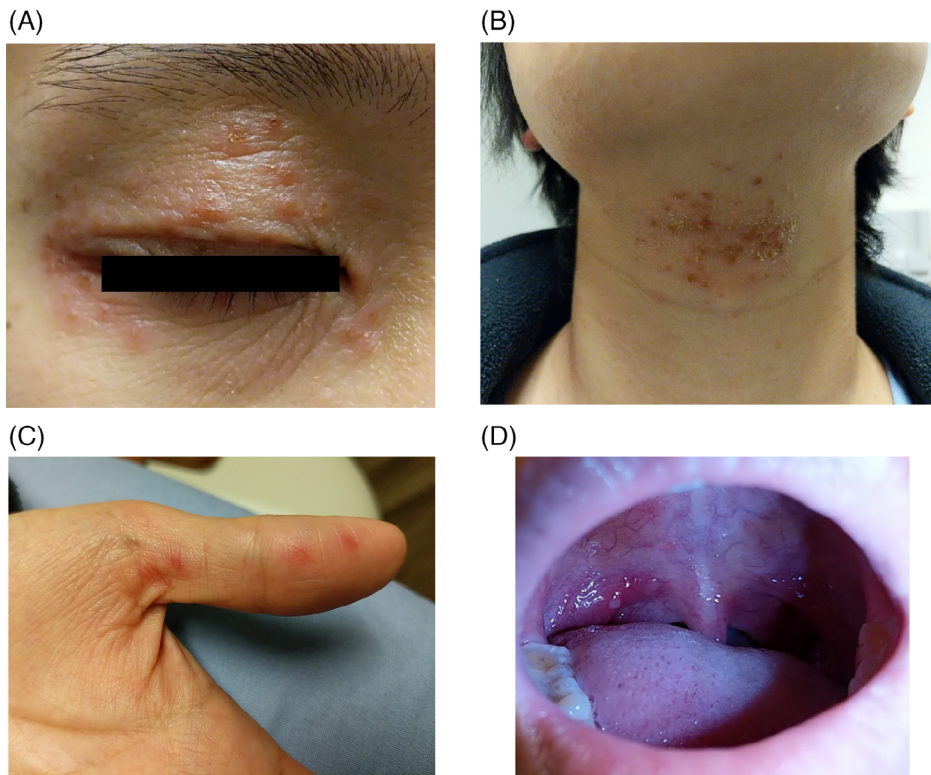
Eczema coxsackium is an atypical cutaneous manifestation of hand, foot, and mouth disease (HFMD) accentuated within pre-existing dermatitis.<sup>1</sup> The author reports the first case of eczema coxsackium as a complication of allergic contact dermatitis (ACD), arising during topical calcineurin inhibitor therapy.

## CASE REPORT

A 37-year-old atopic woman was referred to the contact dermatitis clinic with an 8-month history of eyelid, perioral, and neck dermatitis. On examination, there were lichenified eczematous plaques on the upper

and lower eyelids and anterior neck. She was patch tested with the 2019–2020 North American Contact Dermatitis Group screening series and her own products. These revealed positive reactions to colophonium (++), hydroperoxides of linalool (++), linalool contained in her eyelid cleanser, and decyl glucoside (+, contained in her shampoo), as well as a pain relief spray used on her neck (+) and a sunscreen she applied to her daughter (+), both containing colophonium. She was counseled on avoidance measures and started on pimecrolimus 1% cream twice daily.

One week later, the patient presented with a new, painful rash within the sites of her dermatitis, along with low-grade fevers, odynophagia, and cough. Earlier in the week, her daughter had been diagnosed with HFMD. The patient reported a personal history of



**FIGURE 1** Grouped monomorphic papulovesicles and punched out erosions superimposed on preexisting dermatitis in (A) the periocular area and (B) the neck. (C) Erythematous papulovesicles on the palmar fingers. (D) Erosions on the soft palate

orolabial herpes simplex virus (HSV) infection. Examination demonstrated monomorphic grouped papulovesicles and punched-out erosions with yellow crusting overlying pre-existing dermatitis (Figure 1A, B), as well as few erythematous papulovesicles on the palmar fingers (Figure 1C), and erosions on the soft palate (Figure 1D); the soles were spared. Lesional swabs were obtained for enterovirus, HSV1/2, and varicella zoster virus polymerase chain reaction (PCR), and bacterial culture. Empiric treatment was started with oral valacyclovir and cephalexin; pimecrolimus was discontinued. Ophthalmology found no ocular involvement. Enterovirus PCR was positive, confirming the clinical impression of eczema coxsackium. The patient experienced spontaneous resolution of the new eruption shortly thereafter. Subsequently, tacrolimus 0.1% ointment was initiated without further complications.

## DISCUSSION

Hand, foot, and mouth disease is a self-limiting febrile illness caused by multiple enterovirus serotypes that classically presents with erosive stomatitis and a palmoplantar vesicular eruption. Eczema coxsackium, an eczema herpeticum-like eruption associated with coxsackievirus A6 infection, is an atypical cutaneous manifestation of HFMD featuring the sudden appearance of vesicles and erosions within pre-existing dermatitis.<sup>1,2</sup> Eczema coxsackium is reported primarily in children and rarely affects adults.<sup>3</sup> While not as well studied as eczema herpeticum, eczema coxsackium presumably shares similar aetiological factors, including skin barrier dysfunction and immune dysregulation.<sup>4</sup> The diagnosis of HFMD can be confirmed by enterovirus

PCR testing of skin, oropharynx, rectum, stool, or serum.<sup>1</sup> In contrast to the potentially severe sequelae of eczema herpeticum, eczema coxsackium has a benign clinical course with spontaneous resolution and no serious systemic complications.<sup>1,3</sup>

Although the primary mediator for the development of eczema coxsackium in this patient was most likely to be barrier compromise due to ACD, and underlying atopic diathesis, local immunosuppression or other effects of topical pimecrolimus cannot be excluded. A systematic review found a non-significant increase in skin infections, primarily viral, with the use of topical calcineurin inhibitors compared to vehicle controls.<sup>5</sup> Additionally, there are multiple anecdotal reports of eczema herpeticum and other viral infections arising during topical calcineurin inhibitor treatment, including at least one case involving ACD.<sup>6</sup> Notably, in randomized clinical trials there were comparable rates of skin infection between topical calcineurin inhibitors and topical corticosteroids.<sup>7</sup>

There appear to be no previous reports of eczema coxsackium arising in the setting of ACD or directly attributable to use of a topical calcineurin inhibitor. In patients of all ages, it is important to consider eczema coxsackium in the differential diagnosis of acute-onset vesicles and erosions within ACD, as well as the possible impact of topical immunomodulation on such presentations.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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## REFERENCES

1. Mathes EF, Oza V, Frieden IJ, et al. "Eczema coxsackium" and unusual cutaneous findings in an enterovirus outbreak. *Pediatrics*. 2013;132(1): e149-e157.
2. Feder HM Jr, Bennett N, Modlin JF. Atypical hand, foot, and mouth disease: a vesiculobullous eruption caused by Coxsackie virus A6. *Lancet Infect Dis*. 2014;14(1):83-86.
3. Harris PNA, Wang AD, Yin M, Lee CK, Archuleta S. Atypical hand, foot, and mouth disease: eczema coxsackium can also occur in adults. *Lancet Infect Dis*. 2014;14(11):1043.
4. Damour A, Garcia M, Seneschal J, et al. Eczema Herpeticum: clinical and pathophysiological aspects. *Clin Rev Allergy Immunol*. 2019. <https://doi.org/10.1007/s12016-019-08768-3>.
5. Callen J, Chamlin S, Eichenfield LF, et al. A systematic review of the safety of topical therapies for atopic dermatitis. *Br J Dermatol*. 2007;156(2):203-221.
6. Paradisi A, Capizzi R, Guerriero G, Rotoli M, Bussoletti C, Amerio PL. Kaposi's varicelliform eruption complicating allergic contact dermatitis. *J Am Acad Dermatol*. 2006;54(4):732-733.
7. Broeders JA, Ahmed Ali U, Fischer G. Systematic review and meta-analysis of randomized clinical trials (RCTs) comparing topical calcineurin inhibitors with topical corticosteroids for atopic dermatitis: a 15-year experience. *J Am Acad Dermatol*. 2016;75(2):410-419.e413.

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