



Figure 2. Ingredients in Kat Von D Everlasting Liquid Lipstick as listed on the product packaging.

Lake⁴ and allergic contact dermatitis from caprylic/capric triglyceride,⁵ which were not able to be tested.

Although it is possible that both patients reacted to an untested ingredient, the exuberance of the reactions to this lipstick was unexpected and reinforced the importance of testing personal products. Physicians should be aware of the potential for strong reactions to Kat Von D Everlasting Liquid Lipsticks and its association with contact cheilitis.

PEARL

Kat Von D Everlasting Liquid Lipsticks may cause strong contact reactions and ACC. These cases also highlight the importance of testing to personal products.

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Airborne Contact Dermatitis Caused by Essential Oils in a Child

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PRECÍS

We present a case of airborne contact dermatitis in a 7-year-old child caused by essential oils released through a fragrance diffuser.

DISCUSSION

A 7-year-old white boy presented to the pediatric dermatology clinic for evaluation of an exacerbation of atopic dermatitis. He had been

experiencing atopic dermatitis since infancy and had been treated with many topical immunomodulators and systemic cyclosporine with minimal improvement. His examination was notable for a generalized eczematous dermatitis with accentuation of the upper eyelids, neck, and extensor extremities. Because of the distribution of the eruption and his recalcitrant disease, a concomitant allergic contact dermatitis was suspected. After his acute flare was controlled with aggressive topical therapy, patch testing was performed using the North American 80 Comprehensive Series (Chemotechnique Diagnostics, Sweden). He was found to have a 3+ reaction to hydroperoxides of linalool. Results were discussed with the family. They denied applying any products with fragrance directly on the skin, but they reported the presence of essential oil diffusers throughout their home for many years. Discontinuation of the diffusers was recommended, and the family reported complete resolution within 3 weeks of removing of essential oil diffusers.

Airborne contact dermatitis (ABCD) is a type IV hypersensitivity reaction triggered by exposure to aerosolized particles. An important risk factor for the development of ABCD is a personal history of atopy. A high index of suspicion for concomitant contact dermatitis is important when evaluating children with resistant atopic dermatitis. Involvement of the periorbital skin, postauricular folds, neck, extensor forearms, and dorsal hands can be a helpful clue to the presence of ABCD. Perfumes and fragrances are known to be common culprits.¹ Because of the increasing popularity of essential oil diffusers, we report a case of diffuser-induced ABCD.

Nearly 80 essential oils have been implicated in the development of allergic contact dermatitis.² A retrospective study by the North American Contact Dermatitis Group and the central European Information Network of the Departments of Dermatology demonstrated that approximately 19% of patients had positive reactions to at least one fragrance mix or essential oil.³ The essential oils tested included Indian sandalwood, ylang-ylang, jasmine, peppermint, tea tree, and lavender. The findings of this study suggested that patch

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testing for fragrance mixes alone may fail to identify an allergy to an essential oil.

Essential oils have become increasingly popular because of their use in fragrances, cosmetics, and homeopathic remedies.⁴ Linalool, a fragrance found in 88% of essential oils, is only weakly allergenic.^{2,5} Upon exposure to air, it is oxidized to hydroperoxide, and a potent allergen is created.⁵ Moreover, substances are more likely to cause ABCD when they are volatile or when they are heated, because a sufficient amount of gas can then accumulate to cause dermatitis.¹ Thus, many fragrance diffusers create a perfect storm for ABCD: heating linalool-containing essential oils and allowing the allergen to widely disperse. Whereas most cases of allergic contact dermatitis to essential oils are a result of the application of pure oil,² this case highlights the importance of inquiring about the use of diffusers in the environment to elucidate a unique potential exposure mechanism when such allergens are identified through patch testing.

ZEBRA

Essential oils released through fragrance diffusers may be the culprit in causing allergic contact dermatitis.

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Pediatric Cases Involving Chemical Burns to Garlic Used to Treat Warts

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PRECÍS

Contact dermatitis and chemical burns have been described from crushed or cut garlic under an occlusive dressing. These 2 cases broaden understanding of the condition.

DISCUSSION

Patient 1 was a 2-year-old girl whose parents, the night before presentation, wrapped a wreath of whole garlic cloves around her abdomen, a traditional remedy for abdominal discomfort from their home country. It was left in place for approximately 9 hours, and it is unknown whether the patient slept prone. Examination showed a partial thickness abdominal burn (Fig. 1A) with small additional wounds over the bilateral iliac crests underlying the wreath. The wound was debrided (Fig. 1B) and a foam dressing applied, and she was diagnosed with gastroenteritis. At clinic follow-up 8 days later, there was near-complete resolution.

Patient 2 was a 12-year-old boy whose mother, the night before presentation, applied garlic paste to the site under an occlusive dressing to treat a plantar wart (*Verruca vulgaris*). It was left in place for approximately 8 hours. Examination showed a partial thickness burn (Fig. 2A). The wound was debrided (Fig. 2B) and treated with bacitracin ointment. On phone follow-up 24 days later, the burn was healing well but the wart remained.

Both patients presented to an emergency department with no medical history or known allergies. There was no trauma, thermal injury, or other potential chemical exposure.

Garlic (*Allium sativum*) has antimicrobial properties that have long been used medicinally, and it continues to be used by naturopathic doctors and as a traditional remedy in some cultures. Topical garlic has been associated with both contact dermatitis and chemical burn. The first report in 1987 described partial thickness burns in a 17-month-old after garlic-petroleum jelly plaster application.¹ Garlic burns have subsequently been infrequently reported, with all cases from cut or crushed garlic, and nearly all with an occlusive dressing.

Two small studies have found that garlic has benefit in treating warts, although one lacked a control group and the other was nonrandomized.^{2,3} A 2013 report described a 23-year-old with a partial thickness burn after treating a cheek wart with crushed garlic under an occlusive dressing.⁴

Garlic's acantholytic effect has been attributed to allyl disulfide, although allylmercaptan and allylmethylsulfide are also implicated in vitro.⁵ Cutting or crushing garlic triggers an enzymatic reaction that results in formation of diallyl disulfide, which becomes oxidized to allicin. Burn necrosis may be related to allicin interacting with thiol groups of numerous cellular enzymes.

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