



Figure 1. Left, scaly pink papules and edema of the superior and posterior helix at initial patch test consult. Right, resolution after allergen avoidance at 3-month follow-up.

products may contain standard contact allergens, photocontact allergens, and coumarins.

REFERENCES

1. Matthews MR, VanderVelde JC, Caruso DM, et al. Lemons in the Arizona sunshine: the effects of furocoumarins leading to phytophotodermatitis and burn-like injuries. *Wounds* 2017;29(12):E118–E124.
2. Wang L, Sterling B, Don P. Berloque dermatitis induced by “Florida water”. *Cutis* 2002;70(1):29–30.
3. Pongpairoj K, Morar N, McFadden JP. ‘Seborrheic dermatitis’ of the head and neck without scalp involvement—remember nail varnish allergy. *Contact Dermatitis* 2016;74(5):306–307.
4. Hamann D, Zirwas M. Successful patch testing of a patient receiving anti-interleukin-17 therapy with secukinumab: a case report. *Contact Dermatitis* 2017;376(6):378–379.

Tocopherol Allergic Dermatitis Masquerading as Lifelong Atopic Dermatitis

Rebecca Chen, BA,* Jodie Raffi, BA,*†
and Jenny E. Murase, MD*‡

PRECÍS

We present a pediatric patient diagnosed with lifelong moderate to severe allergic dermatitis (AD) whose dermatitis in his early teenage years was ultimately attributed solely to allergic contact dermatitis (ACD).

DISCUSSION

A 13-year-old adolescent boy with history of poorly controlled AD since early childhood presented with widespread dermatitis on the face, neck, scalp, and back. Treatment for many years included topical ammonium lactate, “hypoallergenic” emollients recommended by dermatologists, hydrocortisone ointment, and fluocinolone ointment with minimal relief. Topical steroids had been applied to the patient's skin at least on a weekly basis since infancy.

Because of lack of improvement with topical emollients and corticosteroids, the patient was patch tested to the North American Comprehensive 80 series as well as the Sunscreen, Fragrance, and Emulsifier series (Chemotechnique Diagnostics, Vellinge, Sweden). Results included 1+ to cobalt(II) chloride hexahydrate, 1+ to hydroperoxide of limonene, and 2+ to tocopherol. The patient was counseled to avoid tocopherol in his diet and personal care products. Limonene was also avoided in topical products. Tocopherol avoidance resulted in dramatic improvement of his widespread

From the *Department of Dermatology, University of California, San Francisco; †University of California, Irvine School of Medicine; and ‡Department of Dermatology, Palo Alto Foundation Medical Group, Mountain View, CA.

Address reprint requests to Jenny E. Murase, MD, Department of Dermatology, Palo Alto Foundation Medical Group, 701 E El Camino Real (31-104), Mountain View, CA 94040. E-mail: jemurase@gmail.com.

J.E.M. has participated in Advisory Boards for Genzyme/Sanofi, Dermira, and UCB; participated in disease statement management talks for Regeneron and UCB; and provided dermatologic consulting services for Ferndale and UpToDate. The other authors have no funding or conflicts of interest to declare.

DOI: 10.1097/DER.0000000000000543

© 2020 American Contact Dermatitis Society. All Rights Reserved.

previously presumed “atopic dermatitis” 2 to 3 months after initial patch testing and counseling. When he attempted to reintroduce dietary products high in tocopherol, his dermatitis recurred, and removal of the allergen again led to resolution of his rash.

Allergic dermatitis and ACD can be difficult to differentiate based on history and clinical appearance alone and can also occur simultaneously. Failure to recognize the possibility of superimposed ACD and perform the appropriate diagnostic testing contributes to incorrectly labeling the patient as having “treatment-resistant” AD, resulting in unnecessary chronic therapies.¹ Although this patient's AD could have resolved after patch testing, response to allergen avoidance was dramatic and quick, pointing to ACD as the more likely cause of his dermatitis.

Patch testing in atopic dermatitis patients should be considered in individuals with dermatitis that worsens or fails to improve with topical therapy, atypical distribution of dermatitis, therapy-resistant hand eczema in the working population, adult or adolescent onset of atopic dermatitis, or severe dermatitis before initiating systemic immunosuppression.² Despite early findings suggesting reduced prevalence of sensitization in individuals with AD, a recent systematic review found an increased prevalence of contact sensitization in AD patients versus the general population, with other studies showing increased risk of ACD to specific antigens, such as allergens in topical therapy used for AD or allergens in personal care products traditionally considered “hypoallergenic” and routinely recommended for AD patients.²

Vitamin E and its derivatives (tocopherol, tocopherol acetate, and tocopheryl linoleate) are often found in topical cosmetics, sunscreens, and skincare products, as the antioxidant properties are proposed to accelerate wound healing.³ These compounds are found naturally in vegetables, nuts, and seeds and are often added to

fortified breakfast cereals. Despite the widespread use in cosmetics and food products, ACD to tocopherol and its derivatives remains fairly uncommon. Besides one study of 905 patients with ACD to topical tocopherol linoleate, individual case reports in the literature are sporadic, and systemic contact allergy to tocopherol-containing foods is even more rare.^{4,5} Dermatologists should have a low threshold of suspicion for ACD to tocopherol when patients have refractory atopic dermatitis, and this allergen needs to be routinely screened for when patch testing AD patients.

PEARL

It is important to consider ACD in chronic AD patients, especially in individuals with long-standing AD that fails to improve with topical therapy.

REFERENCES

1. Raffi J, Suresh R, Botto N, et al. The impact of dupilumab on patch testing and the prevalence of co-morbid ACD in recalcitrant atopic dermatitis. *J Am Acad Dermatol*.
2. Chen JK, Jacob SE, Nedorost ST, et al. A pragmatic approach to patch testing atopic dermatitis patients: clinical recommendations based on expert consensus opinion. *Dermatitis* 2016;27(4):186–192.
3. Kosari P, Alikhan A, Sockolov M, et al. Vitamin E and allergic contact dermatitis. *Dermatitis* 2010;21(3):148–153.
4. Perrenoud D, Homberger HP, Auderset PC, et al. An epidemic outbreak of papular and follicular contact dermatitis to tocopheryl linoleate in cosmetics. Swiss Contact Dermatitis Research Group. *Dermatology (Basel)* 1994;189(3):225–233.
5. Amado A, Jacob SE. Contact dermatitis caused by foods. *Actas Dermosifiliogr* 2007;98(7):452–458.