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Anethole is an uncommon allergen but an important one to consider in cases of suspected ACD associated with toothpastes.

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The Latest Occult “Hypoallergenic” Allergen: Ethylhexylglycerin

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PRECIS

Herein, we report a case of allergic contact dermatitis to ethylhexylglycerin.

DISCUSSION

A healthy 34-year-old woman with a history of childhood eczema and severe hand dermatitis (Fig. 1) presented for repeat patch testing.



Figure 1. Photographs of this patient's hands taken in November 2015, after a 30-mg prednisone taper for 3 weeks.

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The authors have no funding or conflicts of interest to declare.

Presented in poster format at the 27th Annual Meeting of the American Contact Dermatitis Society in Washington, DC, March 3, 2016.

This material is based on work, supported in part, by the Minneapolis Veterans Affairs Medical Center. The contents of this publication do not represent the views of the Department of Veterans Affairs or the US Government.

DOI: 10.1097/DER.0000000000000249

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Previous testing in 2010 revealed multiple clinically relevant reactions including topical antibiotics and preservatives (Table 1). The patient initially cleared with allergen avoidance. However, after the birth of her son in 2011, she was exposed to many new baby personal care products including baby shampoos, cleansers, wipes, and moisturizers. During the next several years, her dermatitis flared with additional affected body sites including the face, neck, trunk, elbows, and legs.

Repeat patch testing in November 2015 included the North American Contact Dermatitis Group (NACDG) screening series, corticosteroids, cosmetics, preservatives, vehicle, perfumes/flavors, plants/woods, rubber, textiles, and 24 personal items; results are listed in Table 1. The most notable reactions included a strong

TABLE 1. Positive Patch Test Reactions

Allergen	2010	2015
Preservatives		
EHG, 5% pet	NT	++
Benzalkonium chloride, 0.1% aq	+	++
Formaldehyde, 2% aq	++	NT
Grotan BK, 1% pet	+	++
Antibiotics		
Bacitracin, 30% pet	+++	NT
Neomycin, 20% pet	+++	NT
Corticosteroids		
Amcinonide, 0.1% pet	NT	++
Budesonide, 0.1% pet	Neg	++
Surfactants		
Cocamidopropyl betaine, 1% aq	Neg	++
Decyl glucoside, 5% pet	+	+
Personal products		
Baby lotion*	NT	+
Baby wash and shampoo, tested semiopen†	NT	++
Personal shampoo, tested semiopen‡	NT	+
Generic first aid antibiotic ointment§	++	NT
Generic antibiotic ointment§	+++	NT
Facial cleanser, tested semiopen‡	NT	++
Other allergens		
Shellac, 20% alc	Neg	+
Ethyleneurea melamine formaldehyde mix, 5% pet	+	Neg
Limonene, 2% pet	Neg	+

*Contained EHG.

†Contained cocamidopropyl betaine.

‡Contained decyl glucoside.

§Contained bacitracin and neomycin.

+ indicates mild (erythema and infiltration, possible papules); ++, strong (edematous or vesicular); +++, extreme (spreading, bullous, ulcerative); alc, alcohol; aq, aqueous; Neg, negative; NT, not tested; pet, petrolatum.

positive to purified ethylhexylglycerin (EHG) and a baby lotion containing this ingredient (Fig. 2). Importantly, EHG was not tested in 2010. These positives fit well with the pattern of her rash.

Ethylhexylglycerin (CAS 70445-33-9) is an alkyl glyceryl ether synthetic chemical that is known for its emollient, emulsifying, and antimicrobial properties.^{1,2} The chemical is manufactured and sold under the trade name Sensiva SC 50 by Schülke and Mayr GmbH (Norderstedt, Germany). It is also marketed in several cosmetic products in which EHG is present to enhance the effects of other preservatives (eg, Euxyl PE9010, Euxyl K-701 and K-702). Ethylhexylglycerin is commonly found in baby products or cosmetics marketed as “hypoallergenic” or “formaldehyde free.” Twenty-three products in the Contact Allergen Management Program (CAMP) contain EHG (personal communication, CAMP administrator, February 2016). As other preservatives decline in popularity, EHG may be used as an alternative to parabens and formaldehyde.³

There have been sporadic case reports of allergic contact dermatitis to EHG since 2002; however, most cases have originated in Europe.^{4,5} The NACDG added this allergen to their screening series in 2013. There were 6 positives (0.12%) in the 4895 patients



Figure 2. Photos of day 5 patch test results depicting a strong (2+) reaction to EHG and a mild (1+) reaction to a baby lotion containing EHG.

patch tested by the NACDG from 2013 to 2014 (e-mail communication, February 2016). We present this case to raise awareness of potential reactions to this relatively newly identified and increasingly used allergen in North American products.

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When testing for allergic contact dermatitis, it is important to consider EHG, a new and rare, but highly relevant allergen, because it is increasingly used in North American products.

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