

Lip and Perioral Dermatitis Caused by Propyl Gallate

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Précis

A case of lip and perioral dermatitis caused by propyl gallate in a patient's lip balm and favorite foods cleared upon the patient's stopping the use of the lip balm and eliminating the culprit foods from her diet.

Discussion

A 30-year-old Caucasian female was referred for evaluation of an itchy and painful rash of her lips. She had used Crabtree & Evelyn Aloe Vera Lip Balm (Crabtree & Evelyn Ltd, Woodstock, CT) for many years, and topical steroid treatment had failed. Physical examination revealed erythema and scaling of her lips. Allergic contact cheilitis was suspected, and patch testing was performed with a modified North American Contact Dermatitis Group (NACDG) standard, preservative, fragrance, bakery, hair, and sunscreen series. The 72-hour reading showed + reactions to octyl gallate, cobalt chloride, bacitracin, fragrance mixes I and II; ++ reactions to propyl gallate; and +++ reactions to nickel sulfate, all according to the NACDG grading system.

Propyl gallate was listed among the ingredients of the patient's lip balm. Propyl gallate also may be added to certain foods such as margarine and peanut butter, which she enjoyed frequently. Although we did not patch-test with her lip balm directly or check the ingredients of the brand of peanut butter she enjoyed, we empirically recommended she stop using her propyl gallate-containing lip balm and stop the daily ingestion of peanut and peanut butter. She refused to make any other dietary changes or changes in her other cosmetics.

The patient reported that simply stopping the use of her lip balm and avoiding foods likely to contain propyl gallate had resolved her lip dermatitis after 2 months.

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PEARLS provide insight into understanding disease pathogenesis or improving treatment. ZEBRAS inform about previously unrecognized conditions or atypical variants of known disorders.

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In a recent study analyzing NACDG patch-test results of patients with only lip involvement who presented for patch testing, 38.3% of patients were diagnosed with allergic contact cheilitis.¹ Gallates were not among the top lip allergens, according to the NACDG¹; however, these chemicals are not included in the NACDG standard series. Octyl gallate and propyl gallate are phenolic antioxidants used in the cosmetics and food industry.² The prevalence of allergic contact dermatitis caused by propyl gallate or other gallic acids was previously thought to be relatively low, but a recent study showed it to have increased during the last decade.³

According to Food and Drug Administration labeling regulations, all food additives are supposed to be listed on food labels. However, because propyl gallate and octyl gallate can be labeled as "E310" and "E311," respectively, consumers may not recognize them among the ingredients listed on a label.

We felt the patient's reactions to nickel and cobalt likely represented past sensitization as she had a history of jewelry

dermatitis. We did not recommend dietary modifications such as low-nickel or low-balsam diets (she also had reactions to fragrance mixes I and II) as first-line treatments because these diets are quite difficult to follow.^{4,5}

Pearl

When appropriate, patch testing should be performed with an extended series including octyl gallate and propyl gallate. Our case stresses the importance of taking a detailed history and specifically inquiring about food and cosmetic use, especially when allergic contact cheilitis is suspected.

References

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