

CONTACT POINT

Very late sensitization to parabens induced by repeated applications of an anaesthetic therapeutic plaster to non-damaged skin

Haudrey Assier  | Pierre Wolkenstein | Olivier Chosidow

Department of Dermatology, AP-HP, Hôpital Henri-Mondor, Créteil, France

Correspondence

Haudrey Assier, Department of Dermatology, Hôpital Henri-Mondor, 51 avenue du Maréchal de Lattre de Tassigny, 94010 Créteil Cedex, France.
Email: haudrey.assier@hmn.aphp.fr

KEYWORDS: allergic contact dermatitis, case report, paraben paradox, parabens, topical drug, weak sensitizer

Parabens are weak sensitizers, and patients are often sensitized through the application of topical drugs to compromised skin. We observed acute contact dermatitis caused by parabens induced by prolonged repeated applications of an anaesthetic plaster to non-damaged skin of a patient who, nonetheless, continued to tolerate certain cosmetics containing parabens.

CASE REPORT

A 50-year-old woman, with thoracic post-herpetic neuralgia resistant to oral analgesic treatment for 1 month, was effectively treated by daily application of a lidocaine-medicated plaster (Versatis; Grünenthal Group, Aachen, Germany), which is approved for the treatment of post-therapeutic neuralgia on non-damaged skin. After 4 months of daily treatment, an erythematous pruritic area appeared that exactly corresponded to the site of application of the plaster. Despite withdrawal of Versatis, the eruption spread to the abdomen and limbs within 3 days. Patch tests were performed with Versatis “as is”, its main components (lidocaine, propylene glycol, methylparaben and propylparaben), and the European baseline series, provided by Chemotechnique Diagnostics (Vellinge, Sweden). Positive reactions were seen on day 4; ++ reactions to Versatis, the 4 parabens of paraben mix, and nickel sulfate. The manufacturer indicated that, after 8 years of commercialization, this was the first case reported to them of contact dermatitis attributed to parabens contained in their product. The patient still tolerated certain cosmetics (make-up, shower gel, and facial creams) containing parabens.

DISCUSSION

Parabens are classified as weak sensitizers because of negative results in predictive human and animal assays.¹ They are included in the European baseline series, but their frequency of positivity has generally been <1% in recent studies.^{2,3} Although they are widely present in cosmetics, allergic contact dermatitis is almost exclusively attributable to exposure to topical medications, especially when used on damaged skin, as in stasis ulcers.^{1,4,5} In our patient, sensitization occurred after long-term repeated occlusive daily reapplications to non-damaged skin. This mode of use is indeed similar to the repeated insult test that Marzulli and Maibach used to classify allergens.⁶ Here, 4 months were required to induce contact allergy and dermatitis, supporting the weak sensitization potential of parabens. Some patients do not tolerate parabens when they are used on damaged skin, but can tolerate them on non-damaged skin: the so-called “paraben paradox”.⁷ Our patient, after sensitization to the plaster, was still able to use certain cosmetics containing parabens.

In conclusion, this case is consistent with the weak sensitization potential of parabens when applied to non-damaged skin, is an example of the “paraben paradox”, and reminds us of the risk of sensitization after prolonged and occlusive application, even for weak allergens.

Conflict of interest

The authors declare no potential conflict of interests.

ORCID

Haudrey Assier  <http://orcid.org/0000-0003-0465-1241>

REFERENCES

1. Soni MG, Carabin IG, Burdock GA. Safety assessment of esters of p-hydroxybenzoic acid (parabens). *Food Chem Toxicol.* 2005;43: 985-1015.
2. Schoeffler A, Waton J, Lata arche C, et al. Changes in the European baseline series from 1981 to 2011 in a French dermatology-allergology centre. *Ann Dermatol Venereol.* 2013;140:499-509.
3. Uter W, Aberer W, Armario-Hita JC, et al. Current patch test results with the European baseline series and extensions to it from the 'European Surveillance System on Contact Allergy' network, 2007-2008. *Contact Dermatitis.* 2012;67:9-19.
4. Wolf R, Wolf D, Tüzün B, Tüzün Y. Contact dermatitis to cosmetics. *Clin Dermatol.* 2001;19:502-515.
5. Erfurt-Berge C, Geier J, Mahler V. The current spectrum of contact sensitization in patients with chronic leg ulcers or stasis dermatitis—new data from the Information Network of Departments of Dermatology (IVDK). *Contact Dermatitis.* 2017;77: 151-158.
6. Marzulli FN, Maibach HI. Anti-microbials: experimental contact sensitization in man. *J Soc Cosmet Chem.* 1973;24:399-421.
7. Fisher AA. Esoteric contact dermatitis. Part I: the paraben paradox. *Cutis.* 1996;57:65-66.

How to cite this article: Assier H, Wolkenstein P, Chosidow O. Very late sensitization to parabens induced by repeated applications of an anaesthetic therapeutic plaster to non-damaged skin. *Contact Dermatitis.* 2018;1-2. <https://doi.org/10.1111/cod.13029>