

Sensitization to oleth-3-phosphate and oleth-5 in a hair wax

A. ABDULLAH, S. WALKER, C. Y. TAN AND I. S. FOULDS

The Birmingham Skin Centre, City Hospital NHS Trust, Dudley Road, Birmingham, B18 7QH, UK

Key words: oleth-3-phosphate; oleth-5; hair wax; cosmetics; allergic contact dermatitis. © Munksgaard, 1997.

Accepted for publication 2 July 1997

Case Report

A 30-year-old man with a long-standing history of chronic stable plaque psoriasis, presented with a 1-week history of a pruritic red rash on his hands, scalp and face soon after he was started on cyclosporin. An initial diagnosis of possible allergy to this medication was made and hence this was discontinued. Unfortunately, his rash intermittently worsened over the subsequent weeks and the itch was only partially controlled by oral terfenadine. Examination revealed an urticarial papular rash in the sites mentioned above.

Patch tests with the European standard series, preservatives, balsam and perfumes series were all negative. Further questioning revealed that the patient habitually used a German-made finishing hair wax during the working week, and that his rash was less prominent over the weekends when he temporarily stopped using this hair product. Further patch tests were performed with the hair wax and later with its constituents provided by the German manufacturer at the recommended concentrations. Oleth-3-phosphate and oleth-5 were tested at 1% pet. Positive vesiculobullous reactions were associated with both oleth-3-phosphate and oleth-5 (+++ at 2 and 4 days). The remainder of the tests were negative.

Cyclosporin was therefore recommenced, which effectively controlled his psoriasis. Both oleth-3-phosphate and oleth-5 were patch tested on a further

20 patients attending our contact dermatitis clinic with negative reactions at 2 and 4 days. Avoidance of these allergens has led to prompt resolution of his dermatitis.

Discussion

The hair wax used by our patient contains oleth-3-phosphate and oleth-5, which caused a delayed hypersensitivity reaction. Both chemicals are related to polyethylene glycol ethers of oleyl alcohol that conform generally to the chemical formula $\text{CH}_2(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7(\text{OCH}_2\text{CH}_2)_n\text{OH}$, where n has an average value of 3. They are used in various cosmetic preparations and hair products as opacifiers and as non-ionic surfactants in fragrances (1, 2). Only 1 similar report has been published and this was related to Myser® ointment, which contains a related compound, polyoxyethylene oleylether. Our case is the 1st report of sensitization to polyethylene glycol ethers of oleyl alcohol in a hair product.

References

1. Estrin N F. CFTA cosmetic ingredient dictionary, 3rd edition. The cosmetic, Toiletry and Fragrance Association, Inc.
2. Nishimura O. A case of allergic contact dermatitis to polyoxyethylene oleylether of the Myser® Ointment. *Skin Res* 1993; 225: suppl 16, 265-269.

Patch test reading at day 2 will not suffice

ANIL SONI*

Department of Dermatology, Kasturba Medical College, Manipal, Karnataka, India

Key words: patch testing technique; reading times; false-positive reactions; false-negative reactions. © Munksgaard, 1997.

Patch test reading is recommended at day (D)2, D3 and/or D4 (1). We reviewed the patch tests of 226 patients to determine the number of positive reactions at D3 that were negative at D2, the number positive at D2 that were negative at D3, and the number positive at both readings.

Patients and Methods

Patch tests in all 226 patients were done with the 23 allergens of the European standard series (Chemotechnique Diagnostics-AB, Sweden), augmented by 3 additional allergens, lanolin, cresol and gentamycin (2).

Results

Of the 226 patients tested, 125 (55%) patients gave a total of 212 positive reactions: 116 reactions (55%) were

* Address for correspondence: 1528, Sector 11-D, Chandigarh (U.T.), India.

positive at D2 as well as D3; 68 reactions (32%) were negative at D2 but positive at D3; 28 reactions (13%) were positive at D2 but negative at D3.

Comment

Hence, we recommend that a D3 (or D4) reading should be made of every patch test, since D2 readings may be either false-positive (13%) or false-negative (32%).

Occupational allergic contact dermatitis from homatropine and phenylephrine eyedrops

M. L. MARCOS, M. M. GARCÉS, L. ALONSO, S. JUSTE, P. CARRETERO, J. BLANCO, F. GARCIA, R. PEREZ AND D. HERRERO

Sección de Alergología, Hospital General Yagüe, Av. del Cid Campeador 96, 09005 Burgos, Spain

Key words: occupational; allergic contact dermatitis; homatropine; phenylephrine; mydriatics; eyedrops; medications; nurse; health care workers; hospital workers. © Munksgaard, 1997.

Case Report

A 43-year-old woman had a family history of atopy and a personal history of jewellery dermatitis. She had been working as a nurse in our hospital for several years, in both the ophthalmology and otolaryngology departments. Over the last 3 years, she had developed an itchy erythematous dermatitis on her face, especially the eyelids, related to her occupational duty of applying topical ophthalmic drugs, mainly homatropine and phenylephrine. Lesions improved when she worked in otolaryngology, and almost disappeared on holidays. She always wore protective rubber gloves for her work, and had never used such eyedrops on herself.

First, we patch tested her with the GEIDC standard series, obtaining positive reactions to cobalt (++) and nickel (+++). Patch tests were then carried out with all the topical ophthalmic drugs that she worked with (Table 1). Only homatropine and phenylephrine were positive. Patch tests in 10 controls were negative. Finally,

she was patch tested with a contact lens solution series, including propylene glycol, sorbic acid, papaine, ammoniated mercury and EDTA, with no reactions.

She left her work in ophthalmology and has since remained symptomless.

Comment

Phenylephrine is a sympathomimetic amine widely used in ophthalmology for its vasoconstrictor and mydriatic properties. It is a rare but well-known contact sensitizer among ophthalmic drugs (1–2). Homatropine is a semi-synthetic tertiary amine antimuscarinic. It acts as a cycloplegic but with shorter mydriatic action. To our knowledge, contact sensitization to homatropine has not previously been reported, apart from 1 case report (3) in which a patient with atropine allergy showed a positive patch test to homatropine, though he had never used it.

Contact allergy to ophthalmologic preparations is not rare (4), but has usually been described in patients from application of eyedrops. As far as we know, this is the 1st report of occupational contact sensitization to these drugs.

Table 1. Patch test results

	D2	D4
homatropine 1% aq.	+	+++
phenylephrine 10% aq.	+	++
atropine 1% aq.	–	–
timolol maleate 0.5%	–	–
dexamethasone 10% aq.	–	–
gentamycin 1% aq.	–	–
neomycin 20% pet.	–	–
rifamycin 10% aq.	–	–
ceftazidime 20% aq.	–	–
vancomycin 5% aq.	–	–
diclofenac 2% aq.	–	–
cyclopentolate 1% aq.	–	–
flurbiprofen 2% aq.	–	–

References

- Mathias C G, Maibach H I, Irvine A, Adler W. Allergic contact dermatitis to echothiophate iodide and phenylephrine. *Archives of Ophthalmology* 1979; 97: 286–287.
- Anibarro B, Barranco P, Ojeda J A. Allergic contact blepharoconjunctivitis caused by phenylephrine eyedrops. *Contact Dermatitis* 1991; 25: 323–324.
- Yoshikawa K, Kawahara S. Contact allergy to atropine and other mydriatic agents. *Contact Dermatitis* 1985; 12: 56–57.
- Herbst R A, Maibach H I. Contact dermatitis caused by allergy to ophthalmic drugs and contact lens solutions. *Contact Dermatitis* 1991; 25: 305–312.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.