

Short Communication

D5 patch test reactions to menthol and peppermint

C. J. FLEMING AND A. FORSYTH

Contact Dermatitis Investigation Unit, Glasgow Royal Infirmary, Glasgow G4 0SF, UK

Key words: patch testing technique; delayed patch test reaction; late patch test reaction; allergic contact dermatitis; mint; menthol; peppermint oil; oral lichenoid reaction. © Munksgaard, 1998.

Case Report

A 34-year-old woman had a 9-year history of oral burning and discomfort, exacerbated by mint-flavoured mouthwashes and foods. On examination, she had a lichenoid eruption on the oral mucosa with no cutaneous signs of lichen planus. Light microscopy of an oral biopsy demonstrated a lichenoid reaction.

The patient was patch tested to the European standard, antimicrobial, dental, toothpaste flavourings (anethole 5% pet., menthol 5% pet. peppermint oil 1% pet.), foodstuffs, and food additives series, and prick tested to a foodstuffs and food additives series. There were no positive patch tests after 20 min, 6 h, or days (D) 2 and 4. The patient reported itch, erythema and swelling at sites of application of menthol and peppermint oil from D5. By D7, she had ++ reactions to menthol and peppermint oil. Prick tests were all negative.

The patient avoided all forms of mint for 3 months and reported great improvement in oral symptoms. She was then re-patch tested to toothpaste flavourings. There were no positive patch tests at D2, but by D5, there were once more ++ reactions to menthol and peppermint oil. The patient volunteered that her oral symptoms had worsened during patch testing.

Discussion

Menthol and peppermint are flavourings in mouthwashes, toothpastes, confectionery and liquors. Peppermint oil contains at least 45% free menthol. Contact sensitivity to these flavourings is rare and may be associated with burning mouth syndrome, recurrent oral ulceration or oral lichenoid reactions. Avoidance of menthol in such patients may be curative (1).

A delayed patch test reaction may indicate active sensitization, and this may occur 6 days (2) to 2 weeks (3) after application of the allergen. In the case reported, the patch test reactions were noticed by the patient from D5 and were consistent with her history of oral discomfort after mint-flavoured mouthwashes. Repeat patch tests demonstrated a positive reaction again on D5, but no earlier reaction on D2, and we therefore consider the patch test reactions to be late elicitation responses, rather than to represent active sensitization.

The optimal time for patch test reading varies with different allergens. Some allergens, such as para-phenylenediamine, neomycin, potassium dichromate and cobalt chloride, may sometimes not produce positive reactions until after D4 (4, 5). In the case reported, no positive patch test reactions were observed before D5, and the diagnosis might have been missed with readings only on D2 and D4. We are not aware of other reports of late patch test reactions to menthol or peppermint, but we recommend that later readings should be considered when testing with these allergens.

References

1. Morton C A, Garioch J, Todd P et al. Contact sensitivity to menthol and peppermint in patients with intra-oral symptoms. *Contact Dermatitis* 1995; 32: 281–284.
2. Hjorth N. Primula dermatitis. *Trans St John's Hosp Dermatol Soc* 1966; 52: 207–219.
3. Adams R M. Patch testing – a recapitulation. *J Am Acad Dermatol* 1981; 5: 629–643.
4. Mitchell J C. Day 7 (D7) patch test reading: valuable or not? *Contact Dermatitis* 1978; 4: 139–141.
5. MacFarlane A W, Curley R K, Graham R M et al. Delayed patch test reactions at days 7 and 9. *Contact Dermatitis* 1989; 20: 127–132.