

VIGNETTE IN CONTACT DERMATOLOGY

Cheilitis caused by contact allergy to anethole in spearmint flavoured toothpaste

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SUMMARY

A 63-year-old woman presented with a 6-year history of persistent cheilitis. Minimal improvement was achieved with therapeutic measures. Patch testing was positive to anethole, a flavouring used in her toothpaste. Her cheilitis resolved after cessation of the flavoured toothpaste. This case demonstrates the importance of considering contact allergy to toothpaste flavours in patients with cheilitis.

Key words: allergic contact dermatitis, toothpaste allergy.

INTRODUCTION

Cheilitis is a common clinical problem. In a large series of 75 patients with recalcitrant cheilitis referred to a contact dermatitis clinic, the most common diagnosis was irritant contact dermatitis, most frequently caused by liplicking.¹ Allergic contact dermatitis was diagnosed in a quarter of the patients, with the commonest allergens being lip medicaments, lipsticks, sunscreens and toothpastes. Atopic dermatitis, often overlooked as a cause, was the next most common, while in almost 10% of cases a cause could not be elicited. Exclusion of exogenous causes should be considered in difficult cases.² We report a case of cheilitis caused by contact allergy to anethole, a flavouring agent used in toothpaste.

CASE REPORT

A 63-year-old woman presented with a 6-year history of cheilitis. She described persistent itch, pain and blistering of her lips. There was no personal or family history of atopy.

She did not use any lipsticks, but had used several different lip balms. She had used for many years a toothpaste brand 'Trileaf Spearmint' manufactured in China, the packaging of which did not contain a comprehensive list of ingredients.

She had previously used 1% hydrocortisone ointment which resulted in only temporary improvement of her symptoms. There was no response to the subsequent use of pimecrolimus ointment. Patch testing using TRUE test[®] had been negative.

On examination, she had erythema and scaling of the upper and lower lips. There was no evidence of lymphadenopathy or infection. A provisional diagnosis was made of possible allergic contact dermatitis to her lip balm, toothpaste or topical corticosteroids. She was patch tested to the European standard series, toothpaste flavours series, corticosteroid series and her own samples including lip balms, moisturizer and cosmetic products. She was not, however, patch tested to her toothpaste as she did not bring this until after the last patch test reading. Patches were applied for 2 days and read at days 3 and 7.

A positive reaction was noted to anethole (2% in petrolatum; Trolab Hermal, Reinbek, Germany) which is in our toothpaste flavours series. All the other patch tests were negative. She was instructed to replace her flavoured toothpaste with an unflavoured hypoallergenic toothpaste. This resulted in resolution of her cheilitis at 2 months follow up.

DISCUSSION

Anethole is a naturally occurring substance, being the main component of anise, star anise and fennel oils. Aniseed is used in sweet foods, while the herb fennel is found in savoury foods. There have been no reports of cheilitis caused by consumption of such foodstuffs containing anethole. In cosmetic products, anethole is found particularly in lipsticks and soaps. Anethole is also used as a flavouring in toothpastes and liquid medicines.³ As flavours are not individually listed in toothpaste ingredients, it is difficult to ascertain if anethole is present in a particular product.

Anethole is an uncommon cause of allergic contact dermatitis. It has been described in two cooks working with anise oil in a cake factory.⁴ There has been one previous report of contact allergy from anethole in toothpaste.⁵ In this case of cheilitis, associated with loss of taste, there was

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a positive patch test to anethole but no reaction to the patient's toothpaste. After replacement with a non-flavoured toothpaste, the patient noted a marked improvement in her symptoms.

While allergy to toothpaste ingredients is rare, it can result in cheilitis, perioral eczema or stomatitis. Toothpaste flavours, which are fragrance mixtures commonly containing oils of peppermint and spearmint, carvone and anethole, represent the most common toothpaste allergens.⁶ Other allergens in toothpaste flavours include menthol and dipentene. While they usually cause a delayed-type-hypersensitivity reaction, contact urticaria has also been reported to these flavours.⁷ Allergy to toothpaste is uncommonly reported, however, this may be due to the difficulty in making a diagnosis.⁸ It is important to note that TRUE test[®] is inadequate testing for cheilitis, where if the cheilitis is due to allergic contact dermatitis, the allergens tend to be more obscure. Patch testing performed with toothpastes themselves is of limited value because of false positives from irritant reactions. We suggest that consideration of a diagnosis of toothpaste allergy should be made in any case of cheilitis or perioral dermatitis where there is no clear cause.

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