

CONTACT POINTS

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Vulval allergic contact dermatitis due to peppermint oil in herbal tea

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Menthol, a cyclic terpene alcohol, is used in drugs, cosmetics, and confectioneries. Sensitization to peppermint oil via mentholated cigarettes, flavoured toothpaste, fragrances and 'local action transcutaneous patches' has been reported (1–3). Allergic contact dermatitis due to peppermint oil and its principal constituent menthol is rare (1).

We believe this to be the first report of an allergic contact dermatitis of the vulva to peppermint oil with sensitization and exposure of the allergen by drinking herbal tea.

Case Report

A 43-year-old woman suffered for 6 years from an increasingly itchy vulva. She came to our department for a second opinion, being diagnosed elsewhere with lichen sclerosus of the vulva. Treatment with strong topical steroids only partly suppressed her symptoms. Clinical examination showed erythema of the entire vulva with slight hypo- and hyperpigmentation of the labia minora and the perianal region. Architectural changes, atrophy, hyperkeratosis or sclerosis were not present. No other sites, including the lips and oral mucosa, were affected.

The patient had a history of atopic eczema and a possible sensitization to nickel. Her general health was good and she took no medications. She did not use any topical products at the

anogenital site, except for liquid paraffin in petroleum and clobetasol propionate 0.05% cream (Dermovate®).

Histopathological examination of a biopsy from a hypopigmented spot at the perianal region showed non-specific, reactive epidermal changes without spongiosis, a severely fibrosed papillary dermis and a mixed perivascular infiltrate; there were no features of lichen sclerosus. Therefore, the diagnosis of lichen sclerosus was revised, she was diagnosed with chronic anogenital eczema instead, possibly related to her atopic constitution.

To exclude an allergic contact dermatitis patch tests were performed in the usual way on the upper part of the back with Van der Bend square chambers® on Fixomull stretch® (Beiersdorf). The patient was tested to the European baseline series (TRUE test®) and 25 other routine materials in pet. Test results were read after 2, 3, and 7 days according to the recommendations of the International Contact Dermatitis Research Group. A reaction was found to fragrance mix II at D2 (?+) and D3 (+). Therefore, she was further tested with a series of fragrances, flavours, and spices, as well as her own products (2 feminine hygiene pads and samples of the infusions of 2 sorts of tea, 'Sterrenmix & mint' tea and 'Breakfast' tea, she used to drink). Positive reactions were observed to hydroxyisohexyl-3-cyclohexene carboxaldehyde (Lyrall®) 5% in pet. at D2 (+) and at D3 (?+) and peppermint oil 2% in pet. at D2 (+) and at D3 (?+). Prick tests were performed with aero-allergens and a brew of the two teas; test reading after 15 min showed only a mild positive reaction to *Artemisia vulgaris*.

The reaction to fragrance did not seem to be clinically relevant; whereas the reaction to peppermint oil might be relevant as further questioning showed that she drank vast amounts of herbal tea every day for the last 6 years. In order to prove the clinical relevance of the peppermint oil sensitization, the patient was asked to drink no peppermint tea ('Sterrenmix &

mint') and to avoid other products containing peppermint for 12 weeks. By avoiding products containing peppermint, the patient's symptoms improved dramatically, thereby reducing her use of topical steroids. Subsequent re-exposure to the same peppermint tea led to severe pruritus 2 days later. The itch ceased again when she stopped drinking tea once more.

Discussion

Peppermint tea is a widely consumed, single, ingredient, herbal tea. Peppermint tea is brewed from the plant leaves. The phenolic constituents of the leaves include rosmarinic acid and several flavonoids, primarily eriocitrin, luteolin, and hesperidin. The main volatile components of the essential oil are menthol and menthone. It is best known for its flavouring and fragrance properties. Peppermint leaves (fresh and dried) and the essential oil extracts from the leaves, are used in many food, cosmetic, and pharmaceutical products (4).

Contact allergy to menthol is rare, even though it is a widely used ingredient of products that are in direct contact with the oral mucosa and the lip region, however, a few cases have been reported (2, 3, 5). A clinically relevant contact hypersensitivity to menthol and peppermint oil has been reported in patients with perioral dermatitis, cheilitis, contact urticaria, burning mouth syndrome, oral lichenoid reactions, and oral ulcerations (5).

Peppermint oil is rapidly absorbed after oral administration; it is eliminated in bile. The major biliary metabolite is menthol glucuronide, which undergoes enterohepatic circulation. In rats, menthol is excreted in the faeces and urine in approximately equal proportions (3, 6, 7).

Both irritants and allergens may play a role in the pathogenesis of vulval dermatitis. However, a clinically relevant allergy, leading to an allergic contact dermatitis of the vulva is a rare observation. In such cases, ingredients

of topically applied products like fragrances, preservatives, anaesthetics, antibiotics, corticosteroids, dyes or nickel are usually responsible for the allergic reaction (8). This is, to our knowledge, the first report of an allergen excreted in either the urine and/or the faeces leading to an allergic contact dermatitis of the anogenital region.

Our patient did not have any clinical signs of a contact dermatitis of the lips or oral mucosa, which might be expected in a patient with a contact sensitization to peppermint oil. We can think of 3 possible explanations why she did not have oral symptoms: (i) the time of oral/lip exposure is too short; (ii) the allergen is metabolized and only present in the faeces or urine; or (iii) the patient might have a systemic contact dermatitis leading to symptoms only at the genital site. The possibility of a systemic contact dermatitis cannot be ruled out. However, in a systemic contact dermatitis we would usually expect additional clinical symptoms.

We stress that it is important to take a detailed history in patients with vulval dermatitis in order to discover potential triggers. The possibility of an allergic contact dermatitis should be kept in mind and this may not only due to topical products, but also oral products, which may cause sensitization and disease after excretion via the urine and/or the faeces.

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