

Allergic contact stomatitis to cinnamon in chewing gum mistaken as facial angioedema

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Key words: allergic contact stomatitis; cinnamon; contact allergy; patch test.

Allergic contact stomatitis is a rare disorder and its clinical manifestation can greatly vary. It can manifest as erosive stomatitis (1), lichenoid mucositis (2, 3), and as erythema multiforme-like lesion (4). On the other hand, immediate type symptoms of the oral mucosa include contact urticaria, angioedema (5–8), and oral allergy syndrome; however, all the three manifestations may be accompanied by swelling.

A 39-year-old female patient who was referred with the diagnosis of angioedema for further investigation of its causes is described. She reported recurrent swelling of the cheeks with intermittent pain and burning sensations every 1–2 weeks for more than 6 months. Urticaria was never present. The swelling often began in the evenings and spontaneously resolved over night. Systemic antihistaminic therapy did not change the duration or evolution. For the last 6 years, she had suffered from allergic rhinoconjunctivitis and asthma. She did not take any regular medication; she was on Berotec® N (Fenoterol, Boehringer Ingelheim, Basel, Switzerland) and Seretide® (Fluticasone propionate and Salmeterol, GlaxoSmithKline, Münchenbuchsee, Switzerland) on

demand. At the first consultation, her integument and oral mucosa were normal, and there was no swelling on her face.

Skin prick tests were performed with an atopy screen and food series (ALK Abello, Hørsholm, Denmark and Allergopharma, Reinbek, Germany). Positive tests were observed to camomile and celery only. Prick-to-prick tests with seven different toothpastes she had used were all negative. Total serum IgE was 179 kU/l; SX-1 1.49 kU/l; specific IgE analyses were negative to camomile, celery, and cinnamon; and complement screening was normal.

The patient was advised to return as soon as possible if the symptoms reappeared. She was seen 1 week later with a discrete swelling of both the cheeks. Bilaterally on the buccal mucosa, white plaques with a verrucous surface and a surrounding erythema, but soft on palpation, were present (Figs 1 and 2), suggesting a delayed type contact stomatitis. Patch tests were performed with the German standard, a fragrance and dental series as well as with her toothpastes. A positive reaction to fragrance-mix was present at days 2 and 3, the test of its single components revealed a positive test to cinnamic alcohol and cinnamic aldehyde.

Informed about these findings, she remembered having usually intensively

chewed several cinnamon flavored chewing gums some hours before the start of the symptoms.

Cinnamic aldehyde was not present in her tooth pastes. After omission of the chewing gums, there was no recurrence.

Allergic contact stomatitis is much less frequent than allergic contact dermatitis, and it may mimic angioedema or contact urticaria due to the accompanying swelling (5–8). In the morphological differential diagnosis candidosis, lichen planus, oral lichenoid keratosis, and white sponge nevus have to be considered, although the history and evolution would be different. Signs of contact stomatitis occur typically after a much shorter time span, e.g. a few hours after contact allergen exposure, than that of allergic contact dermatitis, which reaches typically a maximum at 2–3 days. Dental restorations, medications, oral hygiene products, and foods should be considered as elicitors of allergic contact stomatitis.

Cinnamon is one of the oldest spices, and its component cinnamic aldehyde is used in many products for flavor because of its distinct taste, e.g. in toothpastes (6, 9, 10), mouthwashes (5), foods, mints (1), and chewing gums. Previous reports of erosions, lichen planus, and erythema multiforme-like lesions to cinnamon-flavored chewing



Figure 1. Right buccal mucosa with a soft white plaque with a verrucous surface and a surrounding erythema.



Figure 2. Left buccal mucosa with a soft white plaque with a verrucous surface and a surrounding erythema.

gum have been published (2, 3, 10, 11), also immediate type symptoms including anaphylaxis have been reported (5–8). Our patient showed lesions almost identical to those of the patient reported by Tremblay (12).

Positive patch test reactions to fragrance-mix are often due to cinnamic aldehyde and cinnamic alcohol. The sensitization rate of the former is about 2% in patch tested patients. Cross-reactivity with balsam of Peru, benzaldehyde, benzyl alcohol, geraniol, and cinnamon alcohol may be present (6). In patients with delayed swellings and mucosal lesions after food or sweets consumption, allergic contact stomatitis to fragrances should be considered.

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Accepted for publication 12 June 2009
Allergy 2009
© 2009 John Wiley & Sons A/S
DOI: 10.1111/j.1398-9995.2009.02152.x

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