

Toothpaste-induced anaphylaxis caused by mint (*Mentha*) allergy

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To our knowledge, the present report is the first description of an IgE-mediated anaphylaxis to mint (*Mentha piperita*) related to the use of toothpaste.

We present a clinical case of a 46-year-old woman, non-atopic and without relevant past medical history, referred to our Immunology outpatient clinic for suspected nonsteroidal anti-inflammatory (NSAIDs) hypersensitivity. The patient had a first episode of anaphylaxis, characterized by generalized urticaria and laryngeal oedema, 30 min after oral intake of metamizol 575 mg (Nolotil®, Boehringer Ingelheim, Ingelheim, Germany), in June 2008. She was treated in the emergency room with i.m. epinephrine and i.v. corticosteroid and H₁ antihistamine, with regression of the symptoms, and was discharged with indication to avoid metamizol and other NSAIDs. She had three more anaphylactic episodes, after 12 h, 3 and 5 days, respectively. The patient reported a relationship between these episodes and the use of toothpaste

We report a rare case of IgE-mediated anaphylaxis after exposure to toothpaste.

(Colgate®, Colgate-Palmolive, New York, NY, USA, and Sensodyne Pro-Esmalte®, GlaxoSmithKline, London, UK).

At the Immunology Department, a challenge test was performed with Sensodyne Pro-Esmalte® toothpaste use, being strongly positive and characterized by immediate (< 5 min) facial urticaria, abdominal colic and bronchospasm, requiring immediate treatment with i.m. epinephrine. The patient performed skin prick tests (SPT) that were positive to all tested toothpastes (including Colgate® and Sensodyne Pro-Esmalte®). Consulting the toothpaste's laboratories for further information about the toothpaste's ingredients, menthol was found to be the common 'flavour' probably related to the reactions. The patient performed SPT with 100% peppermint oil that was strongly positive (48 mm mean diameter wheal) and accompanied by symptoms of rhinitis and conjunctivitis. The same skin test was negative in 10 adult atopic controls. Mint-specific IgE measurements by two different methods (UniCAP®, Phadia and Immulite®2000, Uppsala, Sweden; Siemens Healthcare Diagnostics, Deerfield, IL, USA) were negative. SPT and challenge test with a menthol-free toothpaste (Elmex menthol-free®, Deerfield, IL, USA; GABA International, Therwil, Switzerland) were both negative. Regardless indication for avoidance of metamizol, 4 months after the first reaction, the patient had a new anaphylactic episode, with loss of consciousness, after administration of i.v. metamizol prescribed for severe pain. The patient performed SPT with metamizol i.v. solution, at a concentration of 0.4 g/ml, which was positive (9 mm mean diameter wheal). CAST®, (Bühlmann, Schönenbuch, Switzerland) to metamizol was negative.

Single-blind placebo-controlled oral challenges were performed with etoricoxib, meloxicam, ibuprofen and diclofenac, being all negative.

There are few reports of IgE-mediated allergy to toothpaste, being mint or its cyclic alcohol derivative menthol, the usual responsible. The first immediate reaction was described in 1964 in a woman with recurrent urticaria after exposure to different menthol-containing products that was reproducible in a challenge with a menthol solution (1). In 1990, Spurlock et al. (2) described a patient with asthma triggered by menthol-containing toothpaste. Since then some other cases were published referring to immediate hypersensitivity to mint or menthol, with different clinical presentation including urticaria, rhinitis and asthma (3–5). After performing challenges with menthol-containing toothpaste, Kawane found a significant decrease in FEV₁. The same test was performed in four patients with asthma but no menthol induced symptoms and the result was negative to all. Challenges were negative with menthol-free toothpaste (3).

This is a rare case, with an IgE-mediated anaphylaxis to mint (*Mentha piperita*) and also an IgE-mediated anaphylaxis to metamizol, a pyrazolone drug, often associated with IgE-mediated reactions (6), with tolerance to other NSAIDs. A self-injectable epinephrine device has been prescribed, as well as avoidance of metamizol, daily use of menthol-free toothpaste and strictly avoidance of mint and menthol-containing products. This case emphasizes the importance of being aware about any possible allergen, even those presumably innocent.

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References

1. Papa CM, Shelley WB. Menthol hypersensitivity. *JAMA* 1964;**189**:546–548.
2. Spurlock BW, Dailey TM. Shortness of (fresh) breath-toothpaste-induced broncho spasm. *N Engl J Med* 1990;**323**:1845–1846.
3. Kawane H. Menthol and aspirin induced asthma. *Respir Med* 1996;**90**:247.
4. Andersson M, Hindsén M. Rhinitis because of toothpaste and other menthol-containing products. *Allergy* 2007;**62**:336–337.
5. Marlowe KF. Urticaria and asthma exacerbation after ingestion of menthol-containing lozenges. *Am J Health Syst Pharm* 2003;**60**:1657–1659.
6. Himly M, Jahn-Schmid B, Pittertschatscher K, Bohle B, Grubmayr K, Ferreira F et al. IgE-mediated immediate type-hypersensitivity to the pyrazolone drug propyphenazone. *J Allergy Clin Immunol* 2003;**111**:882–888.