

Allergic Contact Stomatitis

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Case Report

A 65-year-old woman presented for evaluation of painful mouth lesions 8 days after the repair of a dental bridge. She had been instructed to apply a local anesthetic, Orabase paste with benzocaine 20% (Colgate-Palmolive, New York, NY), to the painful upper and lower gingivae for relief of discomfort immediately following the dental procedure. On the morning of the fifth day of applying Orabase paste, painful blisters developed on the right side of the mouth. A trial of oral prednisone (40 mg per day for 3 days) was initiated by her internist; however, the painful unilateral mouth blisters persisted. When she was referred to one of the authors (S.R.C.), the physical examination revealed blisters and erosions on the right buccal mucosa (Fig 1) and right lingual mucosa (Fig 2). The lesions were tender to palpation. No other signs or symptoms of disease were identified. A suspected diagnosis of contact stomatitis prompted the withdrawal of the topical anesthetic. The pain subsided, and all erosions reepithelialized within 72 hours.

Subsequently, patch testing was carried out with a broad range of chemicals, including chemical allergens of the European Standard series; dental, preservative, medication, fragrance, and miscellaneous allergens (from Chemo-technique Diagnostics, Malmö, Sweden); and commercial Orabase Paste. Patch tests used Finn Chambers (Epitest Ltd Oy, Tuusula, Finland) under occlusion for 48 hours. The patches were removed and evaluated at 48 and 96 hours, according to the following interpretation scheme: negative (–) or doubtful reaction (macular erythema of the contact area), weak (+) reaction (erythema, edema, and possible papules), strong (++) reaction (erythema, edema, papules, and vesicles [$< 50\%$ of contact area]), and extreme (+++) reaction (intense erythema and bullae or ulceration [$> 50\%$ of contact area]). At the reading at 48 hours, there

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DOI 10.2310/6620.2006.05063

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Contact Puzzle features brief case reports that illustrate dramatic and/or unusual examples of contact dermatitis. Submitted manuscripts should be a maximum of six pages printed in 12-point font, double spaced. Format includes Case Report, Diagnosis, Discussion, and References (six or less). A color photograph(s) of the clinical problem is required; color photograph(s) of patch-test results or ancillary test is optional.



Figure 1. Buccal and lingual mucosa with blisters.

was a + reaction to benzocaine 5% in petrolatum (pet) and a ++ reaction to Orabase paste (Figs 3 and 4). At 96 hours, strong reactions to both Orabase paste (+++) and benzocaine 5% pet (++) were evident. Positive reactions were also seen at the sites of nickel sulfate (++) and bacitracin (++) . Allergic contact stomatitis from the benzocaine-containing Orabase paste was considered the cause of the painful oral blisters because the condition resolved when use of the product was discontinued. The dental appliance was never removed.

What Is Your Diagnosis?



Figure 2. Allergic Contact Stomatitis.

Diagnosis

Allergic contact stomatitis from benzocaine in Orabase paste.

Discussion

Despite being a well-recognized sensitizer, benzocaine remains one of the most effective topical anesthetics for painful disorders of the skin and mucous membranes. A common medicament, benzocaine is formulated in numerous over-the-counter oral products for pain relief (Table 1). Allergic contact dermatitis from benzocaine is well described in the literature.^{1,2} Marked inflammation and blisters of the mucosa are characteristic manifestations. Positive patch-test reactions attributed to benzocaine in North America from 1994 to 2000 range from 1.7 to 2.6%.³

We describe a case of allergic contact stomatitis from benzocaine in Orabase paste. Our patient presented with unilateral mucosal pain associated with blisters that appeared 5 days after she started using a commercial anesthetic paste containing benzocaine. Withdrawal of the



Figure 3. Benzocaine patch test showing a positive (+) result at 48 hours.



Figure 4. Patch test with Orabase paste, showing a positive (++) result at 48 hours.

Table 1. Commercially Available Oral Topical Medicaments Containing Benzocaine

3 in 1 Toothache Relief (C.S. Dent, Erlanger, KY)
Adult Oral Pain Relief, Topical Gel, 20% (Sheffield Laboratories, New London, CT)
Anbesol Oral Gel/Liquid (Whitehall-Robbins Healthcare, Madison, NJ)
Babee Teething Lotion (Pfeiffer, Wilkes Barre, PA)
Baby Gumz (Lee Pharmaceuticals, South El Monte, CA)
Baby Orajel (Del Pharmaceuticals, Uniondale, NY)
Benzodent (Procter & Gamble, Cincinnati, OH)
Dentapaine Buccal Gel (Reese Pharmaceutical)
Dentemp's Oral Pain Relief Topical Swab (Majestic Drug, South Fallsburg, NY)
Dent's Extra Strength Toothache (C.S. Dent)
Double-Action Toothache Kit (C.S. Dent)
Hurricane (Beutlich, Waukegan, IL)
Little Teethers Oral Pain Relief Gel (Prestige Brands, Irvington, NY)
Numzident (Block Drugs, Jersey City, NJ)
Orabase, paste and gel (Colgate-Palmolive, New York, NY)
Orafix Medicated (GlaxoSmithKline Consumer, Research Triangle Park, NC)
Orajel (Del Pharmaceuticals)
Orasept (Pharmakon Labs, Tampa, FL)
Orasol (Clay-Park Labs, Bronx, NY)
Oratect (MGI Pharma, Bloomington, MN)
Otrathol Oral Liquid (multiingredient) (GlaxoSmithKline Consumer)
Red Cross Canker Sore Medication (Mentholatum, Scoresby, Victoria, Australia)
Sensogard Gel/Solution (Block Drugs)
Tanac Lipstick/Liquid (Del Pharmaceuticals)
Teething Gel For Babies (Sheffield Laboratories)
Toothache Topical Liquid (Clay-Park Labs, Bronx, NY)
Toothache Gel (Roberts Pharmaceutical, Eaton, NJ)
Zilactin-B Oral Gel (Zila Pharmaceuticals, Phoenix, AZ)

product resulted in prompt resolution of disease symptoms and signs. Patch testing revealed strong allergic reactions at the sites of both benzocaine 5% pet and commercial Orabase paste, which contained benzocaine 20% in a plasticized hydrocarbon gel with cellulose gum, pectin, xanthan gum, and unspecified flavorings and preservatives. Testing with the components of Orabase paste (other than benzocaine) was not performed.

Notwithstanding the relatively low overall frequency of benzocaine allergy^{3,4} and the rare occurrence of oral sensitivity to the agent, our case illustrates the importance of maintaining a high index of suspicion for allergic contact dermatitis and allergic contact stomatitis whenever benzocaine-containing products are used to treat mucosal or cutaneous pain.

To our knowledge, there has been only one previously reported case of oral contact allergy to benzocaine.⁵ In that instance, a 39-year-old man developed blisters and edema of the oral mucosa after the application of a benzocaine gel.

Here we report, for the first time, a case of allergic contact stomatitis from Orabase paste with benzocaine 20%.

References

1. Roos TC, Merk HF. Allergic contact dermatitis from benzocaine ointment during treatment of herpes zoster. *Contact Dermatitis* 2001;44:104.
2. Placucci F, Lorenzi S, La Placa M, Vincenzi C. Sensitization to benzocaine on a condom. *Contact Dermatitis* 1996;34:293.
3. Pratt MD, Belsito DV, DeLeo VA, et al. North American Contact Dermatitis Group patch-test results, 2001-2002 study period [published erratum appears in *Dermatitis* 2005;16:106]. *Dermatitis* 2004;15:176-83.
4. Sidhu SK, Shaw S, Wilkinson JD. A 10-year retrospective study on benzocaine allergy in the United Kingdom. *Am J Contact Dermat* 1999;10:57-61.
5. Ryan ME, Davis BM, Marks JG Jr. Contact urticaria and allergic contact dermatitis to benzocaine gel. *J Am Acad Dermatol* 1980; 2:221-3.