

A case of contact dermatitis due to dental surface anesthetic

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Key words: case report, contact dermatitis, oral cavity, dental surface

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/cod.13716

anesthetic, benzocaine, patch test

Allergic reactions to various dental materials have been reported¹. However, allergic reactions caused by dental surface anesthetics have not been identified by a Medline (PubMed) search.

Case Report

64-year-old Japanese woman was being treated for the right molar tooth decay. At the second procedure, a burning sensation of the pharynx appeared after returning home. The next morning, she noticed erythema on the right cheek, lip, and right buccal mucosa. She was treated with oral and topical medications (details unknown) in another dermatology clinic, which ameliorated the symptoms. She visited our department for diagnosis.

Because an allergic reaction associated with dental treatment was suspected, we performed a patch test with rubber gloves, nitrile gloves, actual dental materials (alginate impression material and resin temporary cavity dressing), lidocaine, the surface anesthetic Prones-Pasta Aroma, (Nishika, Shimonoseki,

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Japan), and propitocaine. Prones-Pasta Aroma provoked a + reaction according to the International Contact Dermatitis Research Group criteria (Fig. 1a). To identify the causative agent in Prones-Pasta Aroma, further patch testing was conducted using its ingredients diluted in petrolatum, including benzocaine, tetracaine, dibucaine (cinchocaine), homosulfamine, methyl paraben, saccharin sodium hydrate, macrogol (polyethylene glycol) 400, macrogol 4000, propylene glycol, and mint flavor. After 48 hours, + reactions were observed for benzocaine at the concentration of 10%, 5%, 2.5%, and 1%, which continued for a week (Fig. 1b). The site of propylene glycol at 10% concentration turned + at day 3. After one week, in addition to benzocaine and propylene glycol, mint flavor at 10% concentration produced a + reaction (Fig. 1b, c, d). All the other ingredients showed negative reaction even at 50% concentration. Thus, the patient was sensitized to multiple components in Prones-Pasta Aroma. Her dental treatment was safely continued after withdrawal of Prones-Pasta Aroma.

Discussion

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Adverse reactions due to local anesthetics (LA) are well known. However, true allergic reactions are considered to occur in less than 1% of all adverse reactions to LA². Allergy to LA is thought to be a type IV reaction at rates of between 80 and 90%³, meaning that most of them occur as allergic contact dermatitis.³ Since benzocaine is often contained in the over-the-counter drugs, it is necessary to ask a history of allergies to topical drugs when performing surface anesthesia. Our patient has never had contact dermatitis before. However, it is entirely possible that the surface anesthetic may have newly caused sensitization during the dental procedure in our case.

Conflict of interest: none to declare

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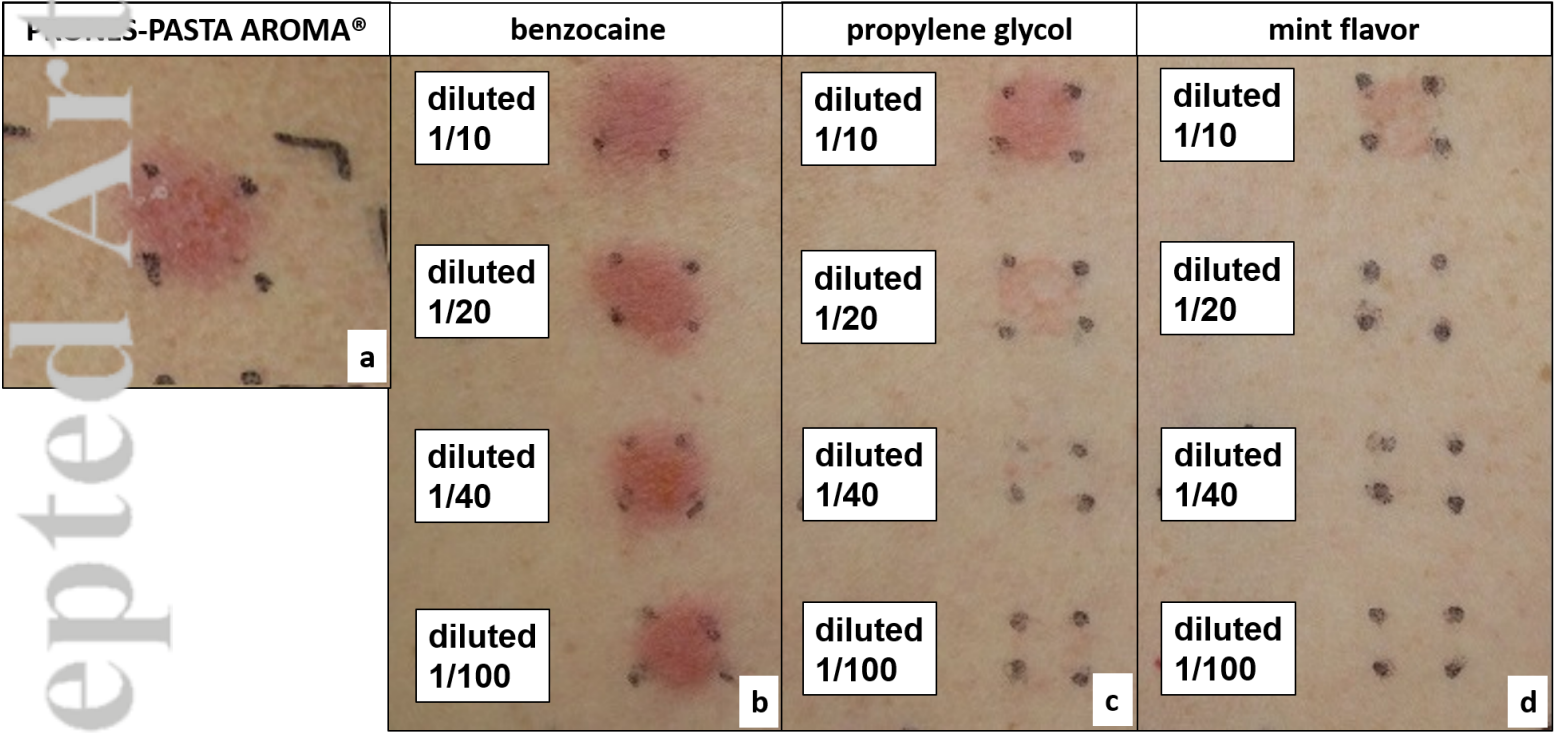
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Figure legends

Figure 1 Patch test results

After one week, sites tested for Prones-Pasta Aroma “as is” (a), benzocaine at 10%, 5%, 2.5%, and 1% concentration in petrolatum (b), propylene glycol at 10% concentration in petrolatum (c), and mint flavor at 10% concentration in

petrolatum (d) showed + reactions according to the International Contact Dermatitis Research Group criteria.



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