

Burning mouth syndrome triggered by cinnamal present in a denture fixative cream

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Burning mouth syndrome (BMS) is a chronic pain disorder defined as a burning sensation in the oral mucosa with no identifiable organic disease. It is more common in postmenopausal women, and it can be accompanied by xerostomia and taste alterations.¹ A study of 145 patients with BMS who were patch tested found that 8.3% reacted positively to fragrance mix I, a proportion that was beneath four metal salts and above acrylates.²

1 | CASE REPORT

A 89-year-old non-atopic woman was referred to our Cutaneous Allergy Unit with a history of burning and painful sensation of the tongue and gums that had started 2 years before the visit. She also mentioned that she had experienced xerostomia and that acid foods worsened her symptoms. She did not have any health problems, and was only receiving treatment with daily esomeprazole. She had been treated previously many times with topical nystatin and oral fluconazole, without improvement. She was a total denture wearer, and used two different fixative creams (Kukident Pro Dual Protection and Cor-ega) to keep the denture fixed. The denture was a metal-ceramic prosthesis composed of zinc, titanium, aluminium, strontium and acrylates. On physical examination, no erythema or lichenoid lesions were visible on the oral mucosae, and cheilitis was not present.

Patch testing was performed with the Spanish Contact Dermatitis and Skin Allergy Group (GEIDAC) baseline series, a dental series, zinc 2.5% pet., and titanium 10% pet. (Chemotechnique Diagnostics, Vellinge, Sweden). The patches were removed on day (D) 2, and readings were performed on D2 and D4 according to ICDRG guidelines. On D4, the patient had positive reactions as follows: fragrance mix I ++, neomycin sulfate ++, and gold sodium thiosulfate ++ (Supporting Information Figure S1). One month later, new patch tests were performed, according to the same criteria,

with kanamycin sulfate 10% pet., gentamicin sulfate 20% pet., bacitracin 5% pet., framycetin sulfate 20% pet., tobramycin sulfate 20% pet., and a fragrance series (Chemotechnique Diagnostics). On day 4, the only positive reaction found was to cinnamal 1% pet. (++) (Figure 1). Kukident Pro denture adhesive contained cinnamal, eugenol and limonene as fragrances (Figure 2), but the other fixative product did not. Avoiding this adhesive led to improvement of



FIGURE 1 Positive (++) reaction to cinnamal in the fragrance series on day 4

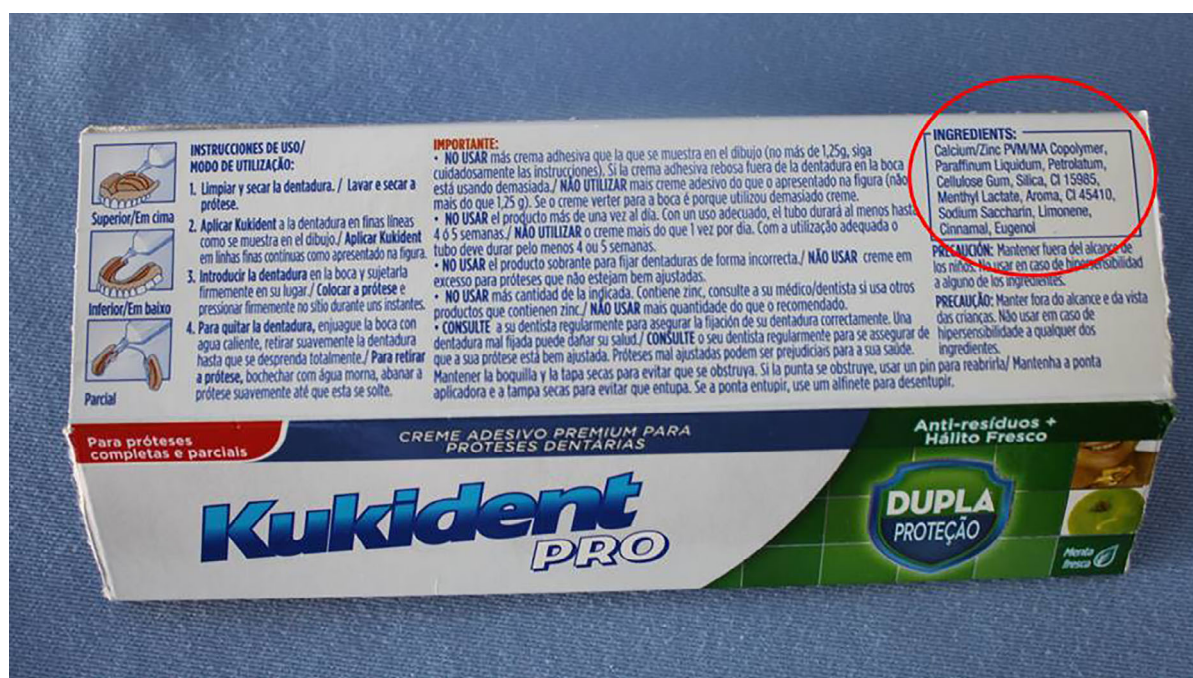


FIGURE 2 The causative product used as fixative cream by the patient. The ingredients are circled red

the symptoms within 1 month. We did not find the neomycin and gold results to be clinically relevant. The final diagnosis was BMS triggered by cinnamal present in a denture fixative cream.

2 | DISCUSSION

Denture fixative cream is a glue that is placed between the gums and the denture base to facilitate its confrontation. They normally contain a salt of methyl vinyl ether/maleic acid copolymer, cellulose gum, and preservatives, and some of them even have some fragrances (eg, cinnamal, menthol, and peppermint oil) to combat bad breath.

Cinnamal (cinnamaldehyde, CAS no. 104-55-2) is an occasional allergen in the oral cavity; it is found in cinnamon, candies, chewing gums, lip balms, toothpastes, and mouthwashes. It has been blamed for some cases of acute dermatitis, with erosions, oedema, or vesiculobullous lesions, and chronic intraoral contact dermatitis with more lichenoid, keratotic or erosive lesions.³ It is also an important allergen for bakers, as it can cause hand eczema or even airborne lesions.⁴ A case of squamous cell carcinoma of the tongue in a young sensitized patient with no other risk factors has been reported, caused by heavy gum chewing.⁵

To our knowledge, this is the first time that a denture fixative cream has been reported as sensitizer. We believe that direct contact with the mucous membrane and occlusion of these products might have facilitated sensitization to one of its ingredients. Another factor may be that European regulation concerning ingredients that can be used in and must be labelled on these oral products is less developed than for other skin products. Indeed, there is no need to label most of the fragrances that are used in the oral cavity, and there are limitations on only a few substances, such as fluoride and strontium derivatives or methyl eugenol.⁶

In conclusion, although contact stomatitis is less frequent than contact dermatitis, we have to bear it in mind when evaluating a patient with oral symptoms. Oral products are far from being safe for the consumer, and their fragrances and preservatives are some of the most frequent allergens in the oral cavity.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

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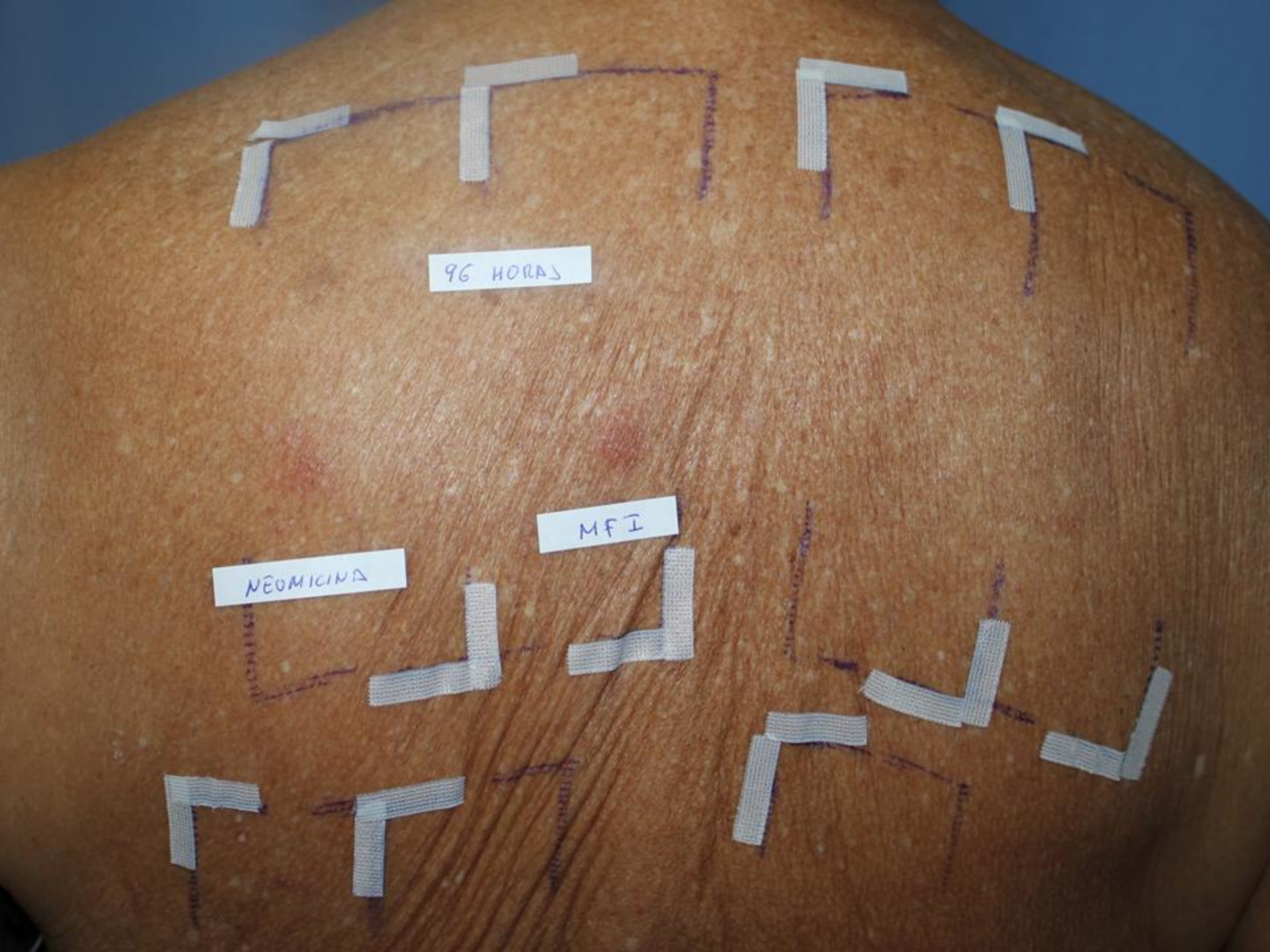
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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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