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Cinnamon contact stomatitis

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Abstract

Background: Cinnamon contact stomatitis (CCS) is a rare reaction to the use of products containing artificial cinnamon flavor ingredients. Such products are gums, toothpastes and mouthwashes.

Main observations: A 20-year-old female patient presented with white elevated mucosal patches in the right lateral board of her tongue. Based on anamnesis, the intitial diagnosis of allergy to cinnamon gum was established. Clinical differential diagnosis included hairy leukoplakia, leukoplakia and lichenoid reaction. The patient was advised to completely avoid the use of cinnamon flavoured chewing gums. On re-examination later she had a normal tongue appearance.

Conclusion: Clinicians who treat patients with oral conditions should be aware of CCS in order to be able to correctly diagnose and manage this condition.

Introduction

Oral contact allergy to cinnamon flavoured products or cinnamon contact stomatitis (CCS) is a condition firstly described by Drake *et al*.[2,3] The clinical presentation of CCS varies, and includes lichenoid-like erosions, leukoplakia-like patches erythema, gingival exfoliation and leukoedema-like mucosal appearance.[2,3] The patients usually complain of mild pain, pruritus and burning sensation.[2,3]

Case report

A 20-year-old female patient presented with the chief complaint of a "burning tongue". Her medical history was unremarkable, she had a good oral hygiene, she was not a smoker or frequent alcohol drinker and she was on a balanced diet. She also referred a frequent daily use of chewing gums with cinnamon flavour. The extra oral examination revealed neither facial asymmetry nor oedema. Intra oral examination revealed white elevated mucosal patches in the right lateral board of her tongue. Upon questioning she reported frequent using of cinnamon gums and hold the gum on the right side of her mouth. The working diagnosis was CCS and the differential included hairy leukoplakia, leukoplakia and lichenoid reaction. She was advised to completely avoid the use of cinnamon flavoured chewing gums. On re-examination seven days later she had a normal tongue appearance.

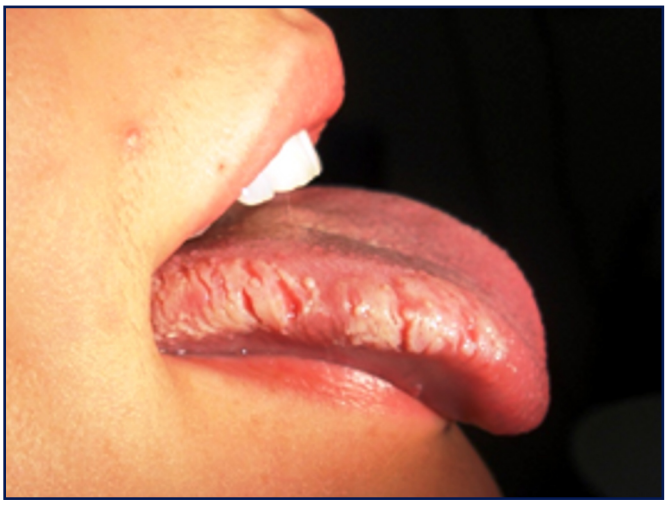

Figure 1

Cinnamon contact dermatitis. Patient's initial presentation.

Figure 2
Patient on re-examination.

Discussion

Contact allergies are common in the skin but rare in the mouth due to the protective role of saliva against the accumulation of allergens, the high concentration of blood vessels in oral epithelium that prevents the long term maintenance of allergens in contact with the mucosa by absorption and removal and the reduced activation of cellular immunity as less antigen presenting cells are found in the oral mucosa in comparison to skin.[4] The most common contact allergy of the oral cavity is lichenoid reaction to amalga.[5] Cinnamon contact stomatitis is believed to represent a form of intraoral contact allergy,[4] a hypersensitivity reaction that requires the sensitisation of the patient (first contact with the causative agent) and formation of an antigen in combination with the mucosal proteins. Upon second contact recognition of the antigen results in an inflammatory reaction mediated by specific delayed hypersensitivity T cells.[6] Patch testing contributes to diagnosis but the results are often inconclusive.[7] The substance that is causative for CCS is cinnamic aldehyde.[8] This substance is found in high concentrations in chewing gums, mouth washes, toohpastes and candy with cinnamon flavour, while commonly used in cooking procedures natural cinnamon spice has only rarely been involved in allergic reactions.[6] The clinical features of CCS are white mucous patches, reticular white lesions, erythema, and erosions. Patients complain of burning or itching sensation especially when they eat acidic or spicy food.[2,3,6] The lesions are usually seen in the buccal mucosa and the lateral borders of the tongue that are the areas of chronic contact with the causative agent.[2,3,6] The differential diagnosis of CCS includes lichenoid reactions, leukoplakia, lupus like oral eruptions, hairy leukoplakia, and leukoedema.[9] The histopathologic findings of CCS are non specific, showing inflammation in lamina propria with lymphocytes and plasma cells, hyperkeratosis and acanthosis, resembling to lichenoid reaction and plasma cell stomatitis.[10]

Conclusion

History of cinnamon flavoured substances usage, clinical examination and resolution of lesions upon discontinuation of usage are sufficient to accurately diagnose CCS. Despite the fact that CCS is a well described clinical entity for more than thirty years, few reports of CCS have been published in the medical literature. Clinicians who treat patients with oral conditions should be aware of CCS in order to be able to correctly diagnose and manage the disease based on clinical examination and history limiting invasive and expensive investigations.

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