Palatal Erythema in Patients Using Listerine Cool Mint PocketPaks Oral Care Strips: Case Reports

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ABSTRACT

The purpose of this report was to present 2 cases of similar erythematous lesions in patients using Listerine Cool Mint PocketPaks Oral Care Strips. The first case, a 44-year-old female presented with an erythematous, well-defined, macular lesion centrally located on the mid-hard palatal gingiva. The second case involved a healthy 7-year-old Hispanic female who presented with a similar lesion and the same clinical presentation. Both presented as solitary lesions involving the height of the palate, with bilateral congruency to the mid-palatal suture line. The lesions were square in shape, with 3 sides being distinctly demarcated. The fourth side feathered anteriorly, gradually disappearing as it approached the anterior third of the palate. On verbal questioning in both cases, no discomfort or irritation was indicated in the medical history or by the patient. Both patients indicated regular use of Listerine Cool Mint PocketPaks Oral Care Strips. Treatment consisted of a: (1) recommendation that the strips be discontinued; and (2) re-evaluation of the lesions at the follow-up appointments to make assessments for any possible changes in lesion color, size, or shape. Following discontinuance of the Oral Care Strips, the lesions disappeared. Follow-up appointments suggest an allergic contact focal erythema caused by prolonged contact with the irritant, in this case due to use of Listerine Cool Mint PocketPaks Oral Care Strips. (J Dent Child 2005;72:52-55)

KEYWORDS: ERYTHEMA, PALATE, ORAL CARE STRIPS

The purpose of this case report was to introduce a new differential diagnosis for erythematous lesions of the palate. Palatal lesions, especially those without symptoms, often go unnoticed and may be puzzling when discovered by practitioners. Recognition of this type of contact allergy may provide relief for the practitioner and patient once identified. Two cases presenting similar erythematous macular lesions, measuring approximately 2.5 cm across on the height of the palate, are presented. Treatment of the lesions consisted of:

1. discontinuation of Listerine Cool Mint PocketPaks Oral Care Strips;
2. a re-evaluation appointment after 7 to 10 days.

At the subsequent re-evaluation appointment, the lesions resolved with no evidence of discoloration apparent at the site. These cases provide practitioners with another diagnostic consideration when evaluating patients with unidentifiable lesions on the hard palate. For better patient care, their presence should be diagnosed and treated to confirm the cause and rule out other hazards.

Oral focal erythema can be defined as a localized zone of redness, often related to a physical agent that has irritated the mucosa of the oral cavity.[1] Varying insults to oral tissue can produce an assortment of focal erythematous findings in the oral cavity. Irritants, including chemical, thermal, physical, or fungal types, are among common etiological factors.[1]

Clinicians often encounter oral erythema, which requires diagnosis. Frequently, these lesions go unnoticed by the patient. Thus, it is often necessary for a practitioner to make a

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definitive diagnosis with little information regarding the lesion's history. Many erythematous oral lesions are diagnosed as idiopathic. Hence, their origin and causes are unknown. The cases presented here provide clinicians with one more differential diagnosis to consider. These findings have been identified in both the pediatric and adult community, suggesting a lack of age dependence. Awareness of this lesion can aid practitioners in identifying palatal lesions and providing proper treatment for patients.

CLINICAL CASE REPORTS

CASE 1

A 44-year-old Caucasian female patient presented to a faculty member of the Arthur A. Dugoni School of Dentistry, University of the Pacific, San Francisco, Calif. The patient's chief complaint was loss of a porcelain fused to metal crown from her maxillary right permanent first molar. Upon clinical inspection of the area of concern, a large rectangular lesion was noted on the mid-hard palatal gingiva. The lesion was asymptomatic to the patient, who was unaware of its presence. The lesion, as seen in Figure 1, appeared symmetrical and was located at the height of the palate. This solitary macular lesion appeared erythematous, and involved an area of the palate approximately 2.5 cm across.

Upon questioning, the patient revealed frequent use of Listerine Cool Mint PocketPaks Oral Care Strips. She related using approximately 10 strips per day over the previous 4 to 5 months. One month after the initial finding, the patient presented for continuation of regular restorative treatment, and it was noted that the lesion was still present. At this time, the patient was advised to discontinue the use of the Listerine Cool Mint PocketPaks Oral Care Strips, the suspected causative agent.

After 3 weeks, the patient presented for re-evaluation. At this subsequent appointment, the patient confirmed that she discontinued the strips over the previous 3 weeks. Upon clinical examination, the erythema was no longer present, as shown in Figure 2. At this time, the patient was asked to resume her normal use of the Listerine Cool Mint PocketPaks Oral Care Strips (challenge test) and was reappointed for further evaluation. At the subsequent appointment, 3 weeks after resuming her normal use of the Listerine Cool Mint PocketPaks Oral Care Strips, the lesion returned. At this time, an exfoliative cytology specimen was obtained to rule out suspicion of *Candida albicans* involvement. The results of the exfoliative cytology report with periodic acid-schiff showed no evidence of candidal infection.

CASE 2

A 7-year, 1-month-old Hispanic female presented to the pediatric dentistry clinic at the Arthur A. Dugoni School of Dentistry, University of the Pacific, for a routine scheduled examination with no chief complaints. The patient's health history indicated no contraindications to dental treatment. Her previous intraoral examination was 13 months prior, with no significant findings at that time. No evidence of systemic disease existed, and development of the patient's dentition appeared age appropriate. Evaluation revealed no unusual habits, and all current soft and hard tissues presented within normal limits, with the exception of the described lesion. As seen in Figure 3, the lesion was situated in the center of the patient's palatal vault. The presentation of the lesion was remarkably symmetrical, with well-defined borders. The lesion measured approximately 2.5×2.5 cm and was square in shape. The most anterior border appeared feathered and had a subtle gradation toward the anterior third of the palate, where it disappeared. The overall clinical appearance of this lesion was nearly identical to that of Case 1.

Following the patient's initial visit when the lesion was discovered, consultations were made by faculty from the Department of Oral Pathology, Arthur A. Dugoni School of Dentistry, University of the Pacific. Similar occurrences in another patient (Case 1) suggested a physical-chemical irritation, matching the characteristics of Listerine Cool Mint PocketPaks Oral Care Strips. At the follow-up appointment 3 weeks later, the patient presented to the clinic without any symptoms related to the lesion or sensations felt in that area. As shown in

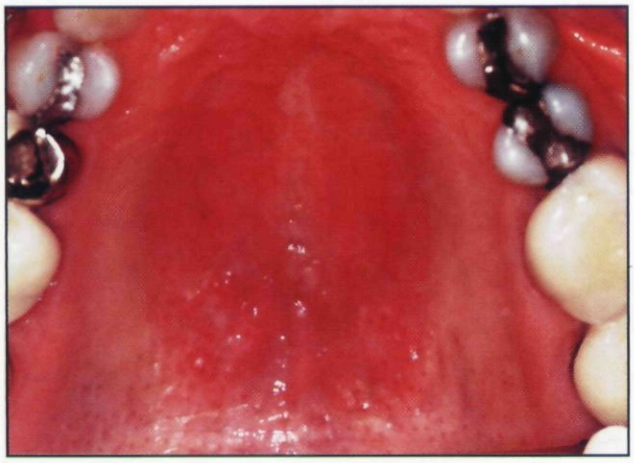

Figure 1. Case 1: A 44-year-old patient with an initial presentation of palatal lesion.

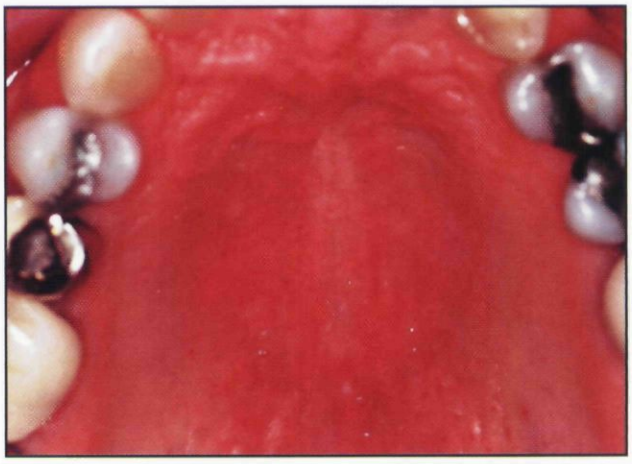

Figure 2. Case 1: A 44-year-old patient, resolution of lesion 3 weeks after initial presentation, and discontinued use of Listerine Cool Mint PocketPaks Oral Care Strips.

Figure 4, the lesion was no longer present and all evidence of its occurrence had disappeared. Discussion with the patient revealed Listerine Cool Mint PocketPaks Oral Care Strips were among her list of favorite "candy," though she had not eaten one for at least the last 7 days. The patient was released on a PRN status, and she and her parents were informed that the erythematous lesion previously present in the patient's palate had resolved and was likely due to the use of the Listerine Cool Mint PocketPaks Oral Care Strips. No biopsy was indicated for this patient. Her palatal gingiva, however, will be re-evaluated at subsequent examination visits.

DISCUSSION

Possible differential diagnoses for erythematous lesions of the palate include: (1) chemical or physical allergy/irritation; (2) yeast infection (*Candida albicans*); (3) sexual abuse; and (4) foreign object trauma. With this information and evidence gathered from removing and reapplying the Listerine Cool Mint PocketPaks Oral Care Strips, there is support for these strips to be the causative agent. The tendency for these oral aids to adhere to the palate after application suggested that prolonged exposure to these oral aids, along with their various chemical compositions, was a likely suspect.

This is a unique presentation of an oral soft tissue lesion. There were no histopathological findings, since a biopsy was not determined to be necessary due to reversal of the clinical finding. Exfoliative cytology in the first case revealed negative findings for *Candida albicans*. The well-defined borders, presentation, and correlation with the patient's use of the Listerine Cool Mint PocketPaks Oral Care Strips strongly suggest the use of these aids as causative agents for these lesions. The challenge test, in which the patient was instructed to resume her typical use of the Oral Care Strips, was recommended. A positive result of the challenge test supported this finding, and exfoliative cytology confirmed the absence of candidal infection. The lesion's feathered anterior border also is consistent with the use of this agent. During the swallowing reflex, the associated anterior tongue thrust will carry the Oral Care Strips forward, smearing it anteriorly along the palate, resulting in the feathered appearance.

While it is unlikely that this is a case of allergy contact dermatitis, literature shows a history of menthol,[2,3] thymol,[4,5] and propylene glycol[6] as plausible causative agents. These ingredients are found in the Listerine Cool Mint PocketPaks Oral Care Strips, as are pullulan, flavors, aspartame, potassium acesulfame, copper gluconate, polysorbate 80, carrageenan, glyceryl oleate, eucalyptol, methyl salicylate, locust bean gum, xanthan gum, and FD&C green No 3. Other flavor additives and enhancing agents like cinnamon have also been common suspects in localized tissue incidents.[7,8] In addition to erythema incidents, there have been reports of contact urticaria after use of cinnamic aldehyde mouthwash products as described by Mathias et al.[9] Another report by Lim et al indicated that perioral edema was caused by a contact allergy to proflavine found in a mouthwash.[10]

It is suspected that these reactions occur from multiple exposure and frequent use of these strips. The uniformity and well-demarcated borders distinguish this lesion from other red-pigmented lesions of the hard palate. In fact, the distinct borders make its clinical appearance a clear indicator for diagnoses in the absence of other potentially traumatic habits. While it is uncertain what systemic implications exist for the use of these strips, it is clear that some patients have tissue intolerance to these irritants. A type III hypersensitivity is implicated, which may take approximately 48 hours for observable signs to develop. Repeated exposure may sensitize patients, thereby inducing reaction more readily and rapidly.

It is important that clinicians are aware of this form of oral focal erythema, which can be readily recognized due to the emergence of these oral aids and many similar to it. With an increase of these aids in the marketplace, a higher number of reported cases may be expected. Variations of this product, now commonly available, may be expected to elicit similar tissue responses with analogous signs. Findings such as these should be identified, diagnosed, and treated accordingly. Recurrence is likely, as shown in Case 1, and treatment remains

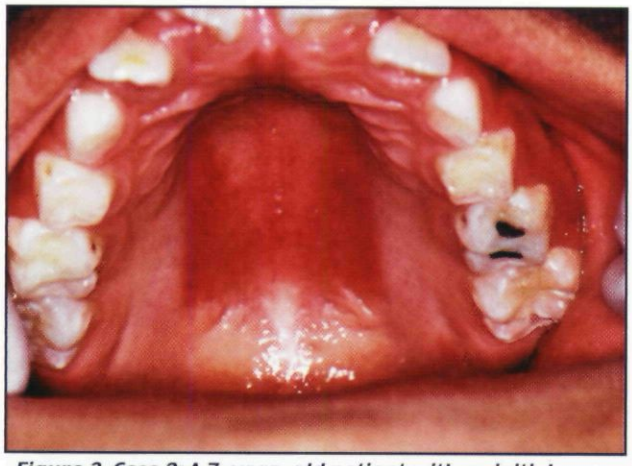

Figure 3. Case 2: A 7-year-old patient with an initial presentation of a palatal lesion.

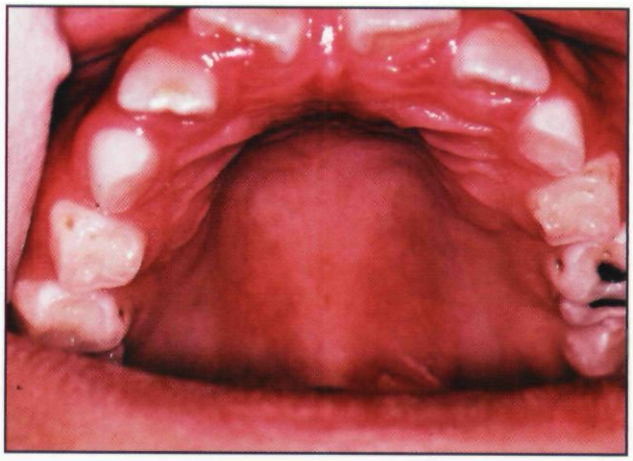

Figure 4. Case 2: A 7-year-old patient with resolution of a lesion 3 weeks after initial presentation, and discontinuation of use of Listerine Cool Mint PocketPaks Oral Care Strips.

the same. The patient should be followed for these occurrences and advised accordingly. Considerations should be made for all patients with abnormal mucosal findings. Additionally, a thorough history should be taken of the product described in this report and other products with similar purposes (eg, mouthwash) as described by Gagari and Kabani.[8]

CONCLUSIONS

For patients presenting with asymptomatic, square-shaped, erythematous, macular lesions on the mid-hard palatal gingival, who report use of Listerine Cool Mint PocketPaks Oral Care Strips, a differential diagnosis of sensitivity to this product should be considered. In the absence of other graver symptomology, discontinuation of use of the strips and a re-examination in 7 to 10 days can help confirm patient sensitivity to this product.

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