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Management of Oral Mucosal Lesion Associated with the Use of Herbal Toothpaste - A Case Report

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Abstract

Oral lichenoid reactions (OLRs) have been considered as variants of oral lichen planus. OLRs represent a type IV hypersensitivity reaction and mostly affect the oral mucosa when comes in direct contact with drugs or dental materials. OLRs can cause functional difficulty and significant discomfort in the patients, and hence, oral physicians should be aware of such reactions, its etiology, site of occurrence, diagnosis, and management. Here, we report a case of OLR of the right and left buccal mucosa associated with the use of a tooth paste in a 10yearoldfemale child. Healing of the lesion was noted following the disuse of the toothpaste.

Keywords: ***Oral lichenoid reaction; Tooth paste; Type IV hypersensitivity reaction***

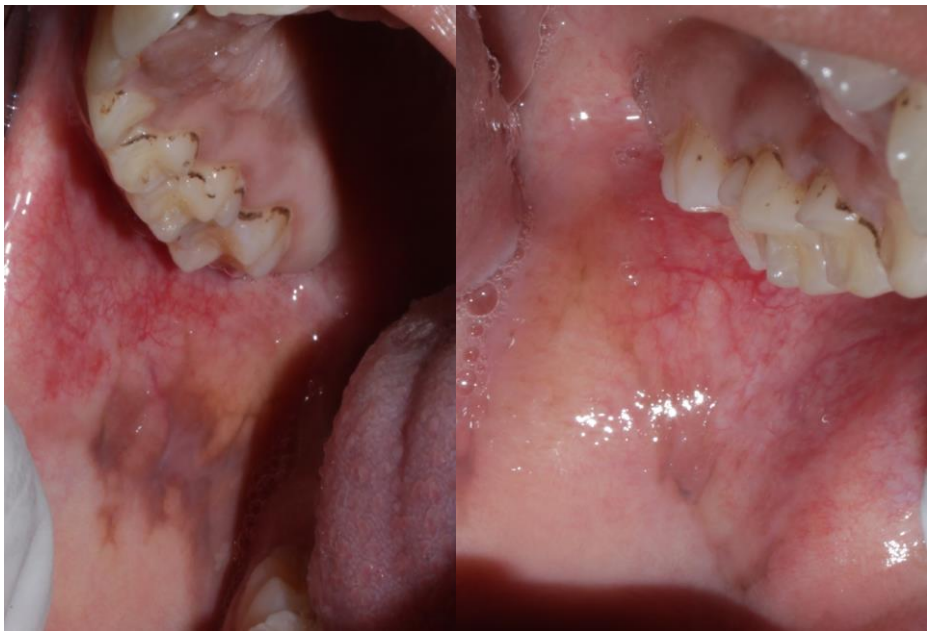
1. Introduction

Oral lichenoid reactions (OLRs) are clinical and histological contemporaries of the classic OLP that has been widely reported in literature. In contrast to the idiopathic nature of OLP, OLRs are often associated with an identifiable inciting factor [1]. The diagnosis of pediatric OLR may be challenging due to its nonspecific clinical findings and rarity in the pediatric population, besides the difficulty of communicating to the patient during the anamnesis [2].

The term “lichenoid tissue reaction” was first coined by Pinkus, in 1973, for the histological pattern showing the damage to the keratinocytes, now referred to as apoptosis, an infiltrate of the inflammatory cells in the connective tissue which may extend into the epithelium [3,4]. The oral lichenoid reaction (OLR) is clinically and histologically indistinguishable from that of the oral lichen planus (OLP). However, it is seen that most of the OLRs disappear when the causative substance (drug/restorative material) is eliminated [5].

2. Case Report

A 10-year-old female patient presented with a chief complaint of a poorly localized burning sensation within her oral cavity for one year. The history of presenting illness revealed an exacerbation of the presenting symptoms i.e. burning sensation and diffuse discoloration on affected areas upon consumption of hot and spicy food and beverages. This was followed by the patient seeking medical advice for the same and was asked to apply a corticosteroid oral paste (Kenacort Oral Paste (0.1% w/w) on the affected areas for a month, however the patient reported that there were no improvement in the presenting symptoms. Further history taking revealed the use of an herbal toothpaste (Anchor Gate toothpaste) for over a year and a detailed intraoral examination revealed the presence of a blackish discoloration and erythematous patches on the right and left buccal mucosa. The lesions were non-scrappable and non-tender on palpation.



1a **1b**

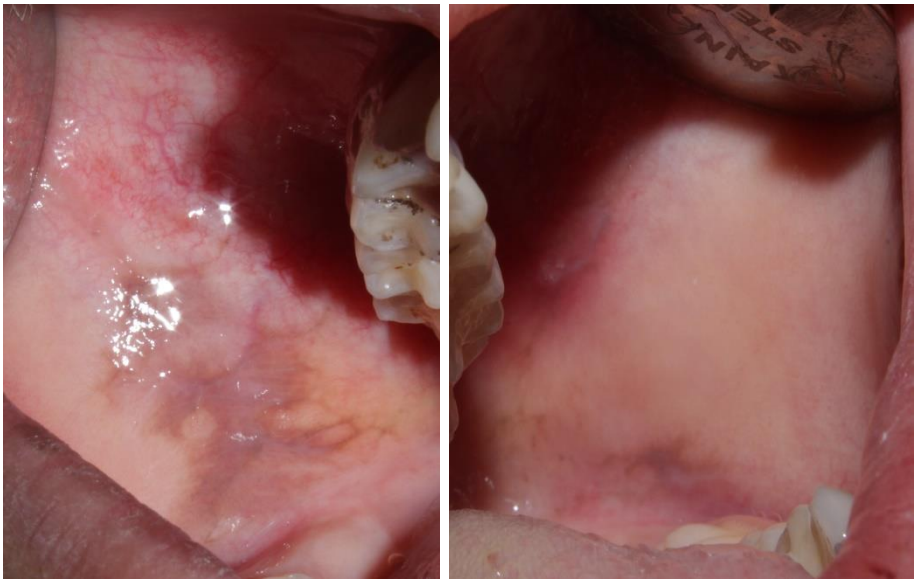
FIG. 1a & 1b. **(Lesions on the right and left buccal mucosa respectively).**

A provisional diagnosis of lichenoid reaction on the right and left buccal mucosa. Incisional biopsy was done on the right buccal mucosa. Histopathological examination of the specimen showed a stratified squamous surface epithelium exhibiting basal cell degeneration and a diffused subepithelial chronic inflammatory cell infiltrate comprised of lymphocytes and plasma cells. Based on the clinical and histopathological features, the lesion was diagnosed as oral lichenoid mucositis (FIG. 2). The patient was asked to discontinue the use of tooth paste used and was advised to add more vegetables and probiotics to the diet.

The patient was recalled after 1week for evaluation and reported with a decrease in the erythematous blackish discoloration and alleviation of the burning sensation.

FIG. 2. **Histopathological specimen showing oral lichenoid mucositis with basal cell degeneration, perivascular inflammation, subepithelial chronic inflammatory cell infiltrate.**

Further, the patient was advised to undergo a blood investigation for evaluation of IgE antibody levels. At a 6-month follow-up oral symptomatology did not relapse, erythematous patches were no longer seen and blackish discoloration had faded (FIG. 3).



3a **3b**

FIG. 3a & 3b. **Right buccal mucosa and left buccal mucosa after 6-month follow up.**

3. Discussion

OLRs can be considered as a variation of OLP. They can be presented as a disease, or it can be an exacerbation of an existing OLP [6]. Drugs such as nonsteroidal anti-inflammatory drugs, beta-blockers, oral hypoglycemics, dapsone, penicillamine, sulfonylureas, and phenothiazines have been associated with lichenoid reactions [7]. Apart from these drugs, OLRs have also been associated with dental materials such as amalgam, dental acrylics, and composite [8].

OLRs can be classified into four types according to Vander Waal (2009), which are as follows:

1. Amalgam restoration and topographically associated lesions,
2. Drug-related lichenoid lesions,
3. Lichenoid lesions in chronic graft versus host disease,
4. Lesions that have a lichen planus like aspect but that lack one or more characteristic clinical aspects[9].

The typical clinical presentation of both OLP and OLR can be papules or plaques, reticular white patches, and plaques with or without ulcerations and erosions [9]. OLP is a widespread condition which involves various anatomical sites within the oral cavity (or elsewhere including skin and genitalia) and is distinct from OLRs [10]. The clinical diagnosis is often complicated because of the similar appearance of the oral lesions which can occur as a result of drug-related lichenoid reactions or as graft versus host disease, systemic lupus erythematosus and discoid lupus erythematosus. Diagnosis in such cases is facilitated by a detailed history, clinical findings, and immune histological findings.

OLRs are caused by hypersensitivity to any drug or dental material or its constituents typically have anatomically a clear relationship to the offending agent, because of this reason these lesions are generally unilateral and not symmetrical. They are most commonly seen on the tongue and buccal mucosae where the covering lining mucosa comes in contact with the causative agent. In general, the sites such as palate, gingivae, or floor of mouth are further away from restorations or any dental material or drugs, so they are rarely affected. The patients having OLRs almost never have associated cutaneous symptoms. These clinical features help to distinguish OLR from OLP and also from the other conditions. The lesions are generally asymptomatic or occasionally, the patients may complain of tenderness, soreness, discomfort, or itching, especially with hot or spicy food. In this case report, the patient had burning sensation while having spicy food and the discontinuation of the offending tooth paste lead to the resolving of the lesion. There is controversy regarding the malignant potential of lichenoid reactions, and it is generally assumed to be quite rare. However, the patients should be regularly monitored until the lesion resolves completely.

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