

## Periodontal Treatment Improves Clinical Manifestations of Gingival Lichen Planus: A Case Report with 11-Years of Follow-up

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### Abstract

Lichen planus is a mucocutaneous lesion, relatively frequent in oral cavity. Clinically, lichen planus can present in typical or atypical forms. The typical forms are generally milder and asymptomatic, whereas the atypical ones cause painful symptoms, which in turn make dental procedures and oral hygiene more difficult, favouring the development of periodontal diseases. The purpose of this article is to present a case of lichen planus that affected the buccal keratinized gingiva bilaterally on mandibular premolars and molars, simultaneously with periodontal disease. Periodontal treatment was performed, by sessions of scaling and root planing and oral hygiene instruction. Remission of the gingival lesions was observed, as well as control of the periodontal disease. The patient has been followed up for 11 years.

**Keywords:** Lichen planus; Periodontal Treatment; Gingiva; Oral Diagnosis; Oral Pathology; Periodontics

### Introduction

Lichen planus is a chronic, immune-mediated, inflammatory mucocutaneous disease that is relatively frequent in the oral cavity. It was initially described in 1869 by the British dermatologist Erasmus Wilson, who named it for its similarity to some species of algae and symbiotic fungi [1-10].

Clinically, lichen planus can present in several forms, typical or atypical. Generally the typical forms are milder and less symptomatic, whereas the atypical forms cause more painful symptoms. Typical forms include reticular, papular and plaque manifestations. Atypical forms include erosive, bullous and atrophic [1-6, 8-11]. However, it is possible to have manifestations of distinct associated types, presenting other clinical features [1, 2]. Normally, there is a greater predilection from the 5<sup>th</sup> decade of life onwards and for females. The most affected regions are the jugal mucosa, gingiva, oral floor, lip and palate [1-4, 6, 9-11].

One of the clinical manifestations of oral lichen planus is desquamative gingivitis. It is characterised by epithelial desquamation, erythema and erosions in the gingival tissue, particularly in the atypical forms of oral lichen planus. The extremely painful gingival

and oral lesions may discourage patients from performing oral hygiene procedures effectively. Subsequently, difficulty in oral hygiene procedures may indirectly develop or worsen the picture of periodontal diseases [9-12].

The purpose of this article is to present a case of lichen planus that affected the buccal keratinised gingiva bilaterally on mandibular premolars and molars, simultaneously with periodontal disease.

### Case Report

A Caucasian male patient, 52-years-old, presented to a private clinic complaining of halitosis.

Clinically it was observed the presence of bacterial plaque and dental calculus, characterizing chronic periodontitis (Figure 1). Concomitantly, white plaque-like or slightly striated lesions were observed bilaterally on the buccal keratinized gingiva of the mandibular premolars and molars (Figures 2 and 3).



**Figure 1:** Initial clinical aspects of chronic periodontitis.



**Figure 2:** White plaque or slightly striated lesions on the buccal keratinized gingiva of the right mandibular premolars and molars.



**Figure 3:** White plaque or slightly striated lesions on the buccal keratinized gingiva of the left mandibular premolars and molars.

Radiographically, dental absences, generalized bone loss due to chronic periodontitis and some teeth with endodontic treatments performed were observed (Figure 4).



**Figure 4:** Initial radiographic aspects of the patient with chronic periodontitis.

Regarding the systemic condition, no alterations or diseases were reported.

It was proposed periodontal treatment and incisional biopsy of the buccal keratinized gingiva in the region of the first mandibular right molar. All the doubts of the patient were clarified, and after agreement and acceptance, the proposed treatment was initiated.

Considering the white lesion as precancerous, incisional biopsy was the first procedure performed. The removed fragment was fixed in 10% formalin and sent to the Laboratory of Surgical Pathology of the School of Dentistry of the University of São Paulo. The histopathological examination revealed a fragment of mucosa covered by stratified pavementous epithelium, with short projections towards the conjunctive tissue, exocytosis and degeneration of the basal layer. The lamina propria, constituted by dense connective tissue, presented chronic inflammatory infiltrate predominantly lymphocytic with justaepithelial localization. The diagnosis was lichen planus.

After 30 days with tissue repair of the biopsy area, a session of oral hygiene instruction was carried out, by the evidencing of bacterial plaque followed by the use of conventional brushes, tufted, interdental and dental floss. In the other appointments, under local anesthesia, scaling and root planing was performed by sextants.

Thirty days after the end of treatment, the patient was evaluated. Gingival retraction was observed, particularly in the regions of greater bone loss, in the face of plaque control and gingival inflammation (Figure 5). Additionally, remission of bilateral lichen planus lesions was observed (Figures 6 and 7).



**Figure 5:** Final clinical aspects after periodontal treatment.



**Figure 6:** Remission of lichen planus lesions on the right side.



**Figure 7:** Remission of lichen planus lesions on the left side.

The patient has been followed up for 11 years with no signs of recurrence of the lesions and under strict periodontal control, being evaluated every six months.

## Discussion

Clinically, lichen planus may present in typical or atypical forms. The typical forms are generally asymptomatic and may present with complete remission, requiring no treatment. They are represented by the reticular, papular and plaque forms. The reticular form presents Wickham's streaks, with small whitish papules at the periphery of the lesion, also defining the papular form. They frequently affect the jugal mucosa, but may also occur on the gingiva, tongue, palate and lips. The plaque form is clinically similar to leukoplakia. It may have slightly elevated and irregular borders. Plaque form lichen planus most commonly affects the jugal mucosa and the dorsum of the tongue [3-6,10,11]. The typical forms may be associated, as observed in the present report. Clinically, reticular and papular forms were observed on the buccal keratinized gingiva of mandibular premolars and molars.

The atypical forms present greater painful symptoms, with burning and severe pain, and are generally permanent, suffering exacerbations due to systemic or local interferences. They are classified as atrophic, bullous and erosive or ulcerative [3-6, 10]. The atrophic form is characterized by red patches with very fine white streaks, generally affecting the inserted gingiva. In the bullous form, blisters or vesicles preceding ulceration are observed. This is the rarest form, as the thin membrane ruptures easily. Subsequent to the eruption of the blisters, after rupture, the ulcerated surface is extremely painful and uncomfortable. It occurs most frequently in the posterior regions of the jugal mucosa, adjacent to the mandibular molars. The erosive or ulcerative form presents the clinical transition, in a few days [4, 5, 10, 11].

The etiopathogenesis of lichen planus is still unknown. The lesion is immune-mediated at the cellular level, with interaction between lymphocytes and epithelial cells. Several factors have been related in the initiation or development of the disease, such as stress and anxiety, due to drug iatrogeny or systemic diseases [4, 5, 8, 10].

Sometimes the diagnosis is difficult, as it presents a broad differential diagnosis. It should be based on clinical and histopathological characteristics. The histopathological examination presents typical characteristics, although not always specific, and is not elucidative [3-6, 8]. Other lesions such as lichenoid reactions and lupus erythematosus present similar histopathological characteristics [5, 6]. Thus, the use of serological examinations and direct and indirect immunofluorescence to determine the marking of antibodies involved in the immunopathological pattern of the disease may help to elucidate the final diagnosis [5]. Complementarily, history and symptomatology of the lesions may help in elucidating the diagnosis. Symptomatology leads to the diagnosis of atypical forms. However, the typical forms are rarely symptomatic and diagnosis is less frequent [5, 6].

Because of its clinical features and location, the differential diagnosis is broad, and includes Fordyce's granules; lichenoid reactions; white spongy nevus; leukoedema; pseudomembranous candidiasis; hyperkeratosis; geographic tongue; erythroplakia; leukoplakia; cheilitis; aphthous ulceration; herpes; desquamative gingivitis; benign mucosal pemphigoid; psoriasis; lupus erythematosus; pemphigus; erythema multiforme; Behcet's syndrome; syphilis; and epidermoid carcinoma [5].

Treatment is based on symptomatology. Generally, the typical forms do not require treatment. For the atypical forms, pharmacological therapy includes local (preferably) and systemic corticoids; retinoids; azathioprine; cyclosporine; dapsone; pimecrolimus; phenytoin; methotrexate; griseofulvin; hydroxychloroquine [4-7, 9, 10]. In the present case, periodontal treatment and plaque control favoured the complete remission of the lesions, due to the anti-inflammatory purpose. Some authors have reported that plaque control resulted in a statistically significant reduction in periodontal parameters, such as improvement in clinical characteristics, painful symptomatology and severity of lesions of desquamative gingivitis due to oral lichen planus [9-12]. The use of xenon laser (308 nm) has also been reported as a surgical option [5, 6].

Lichen planus is also clinically important because of its possible malignancy, particularly the erosive form, which ranges from 2 to 4% [3, 4, 6, 8]. In this perspective, clinical follow-up should be routinely and rigorously performed, as we have been doing.

## Conclusion

Lichen planus is a relatively frequent mucocutaneous lesion in the oral cavity. Under several clinical aspects, it may, due to the painful symptomatology presented, hinder or prevent oral hygiene, favouring the onset and development of periodontal diseases. On the other hand, periodontal treatment may, besides controlling the evolution of periodontal disease, favour the total remission of lichen planus lesions. It is also important to emphasize the long-term clinical follow-up of oral lichen planus and periodontal diseases.

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