

# Oral Leukoplakia with Dysplasia of Traumatic Origin? - Clinical Case

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## Introduction

Leukoplakia is considered the most common potentially malignant lesion of the oral cavity, its etiology is multifactorial and is most prevalent in patients over the age of 40. <sup>1</sup>

Agents such as tobacco, alcohol and HPV infection are strongly associated with the higher prevalence of these lesions, as well as with the development of oral squamous cancer. However, recent studies show that chronic mucosal aggression resulting from the use of dental prostheses, fractured/cutting teeth and poor oral hygiene have an increasing impact on the appearance of these lesions, especially in women. <sup>2</sup>

In recent literature, the association between chronic trauma to the lateral border of the tongue and oral cancer has received particular attention, although the results of studies are somewhat controversial. <sup>3</sup>

This clinical condition is mostly asymptomatic, which is why the dentist should make a differential diagnosis by excluding other white lesions of the oral mucosa.

The anatomopathological study is essential to determine the presence and degree of dysplasia, thus defining the most appropriate therapeutic plan for each patient.

## Description of Clinical Case

64-year-old female patient, never smoker, no alcoholic drinks, no comorbidities related to the condition under study.

Complaint of burning on the left border of the tongue (anterior third) since placing a lingual splint in the region of 42 for rehabilitation of the edentulous space about a year ago.

Single white plaque with irregular but defined edges, smooth texture on the left border of the tongue, 10 mm along its longest axis (Fig. 1). Presence of biofilm, caries lesions, attrition on the anteroinferior teeth and partial edentulism (Fig. 2).

Given the presence of traumatic factors compatible with the lesion, dental polishing and oral hygiene instruction were carried out, and the clinical aspect of the lesion persisted after 4 weeks. The initial clinical diagnosis was homogeneous leukoplakia of the tongue border, which was confirmed by pathological examination. An excisional biopsy was performed since the lesion was small, with no suspicion of malignancy and easy to access, allowing it to be performed with adequate safety margins (Fig. 3,4).

The definitive diagnosis was homogeneous leukoplakia with low-grade dysplasia (Fig. 5).

The patient's oral health status revealed a need for treatment and prosthetic rehabilitation in the mandible. For economic reasons, the rehabilitation option comprised a removable partial denture (Fig. 6). Monitoring was performed every 6/6 months. One year after rehabilitation with a partial skeletal prosthesis, white macules appeared on the border of the tongue, including the region previously biopsied, and the patient reported some discomfort regarding the tongue, namely the lingual connectors and retaining hooks (Fig. 7). The prosthetic rehabilitation was changed to an acrylic partial removable prosthesis (Fig. 8). After 6 months the white spots disappeared and in the last six years it has remained stable and without recurrences (Fig. 9).

## Discussion

After exclusion of various pathologies such as lichen planus, oral candidiasis, leukoedema, among others; the diagnosis of exclusion was homogeneous leukoplakia with low-grade dysplasia.

The symptoms revealed by the patient were compatible with those that may accompany leukoplakia, namely, the burning sensation.

Once the presence of leukoplakia is confirmed, it is recommended that possible risk factors be eliminated, and in the present clinical case, trauma and continuous mechanical irritation of the oral cavity are believed to be at the root of it. It is known that skeletal partial dentures are associated with mucosal irritation and, consequently, with the appearance of changes that may develop into cancer. This traumatic mechanism of the mucosa results in chronic inflammation where chemical mediators such as cytokines -TNF  $\alpha$ , prostaglandins and oxidative stress factors are detected.

In the pathological report, the predominantly lymphoplasmacytic infiltrate is compatible with this inflammatory state, which reiterates the strength of the association between this leukoplakia and its possible traumatic etiological origin (Fig. 5).

When the skeletal prosthesis was replaced with an acrylic prosthesis, then no leukoplakic lesions reappeared (Fig. 9). This may be explained by the fact that the skeletal prosthesis relies on a metal structure and hooks for fixation, and is heavier and more aggressive to the oral mucosa than the acrylic material.

The search for dysplasia in the histopathological study is fundamental to evaluate the malignant potential of the lesion and to promote an early diagnosis, which will strongly influence the prognosis, the treatment plan and also the orientation of these patients.

At the time of diagnosis of leukoplakic lesions, about 30% already present dysplasia, thus increasing the risk of malignant transformation and consequent appearance of oral squamous cell carcinoma. The rate of malignant transformation of leukoplakia varies depending on the type of leukoplakia diagnosed and degree of dysplasia. <sup>4</sup>

In this clinical case the dysplasia is considered mild given the slight architectural and histological changes. However, the p16 protein associated with the degree of malignant transformation was tested immunohistochemically and its expression was negative, as expected.

There is no evidence about the most appropriate treatment to prevent the malignant transformation of leukoplakia. Still, it is known that the non-surgical treatments currently available do not seem to have robust efficacy, since they cannot eliminate, in most cases, the recurrence of the lesion. Thus, conventional surgical excision remains the treatment of choice. <sup>5</sup>



Figure 1: White plaque on the left border of the tongue (anterior third) (2015)



Figure 2: Initial Clinical Case (2015)



Figure 3: Excisional Biopsy of the lesion



Figure 4: 1 month after Biopsy - Cicatrization

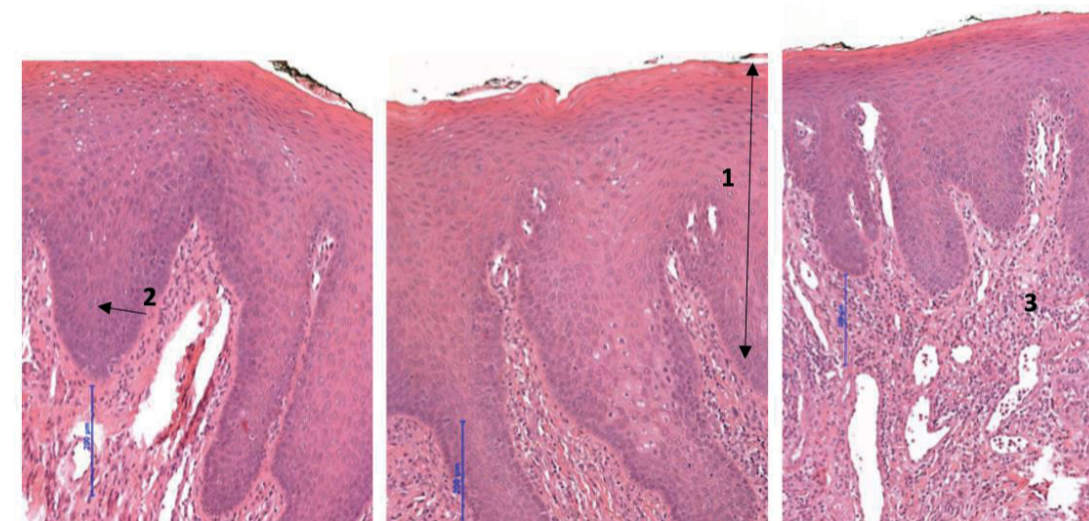


Figure 5 : Epithelial hyperplasia (1) with mild dysplasia (duplication of the basal layer (2), inflammatory infiltrate at the interface of the epithelium and stroma (3)) (HE Staining, x20)



Figure 6: Rehabilitation with Skeletal Prosthesis (2016)



Figure 7: Recurrence of white macules on the left border of the tongue (2016)



Figure 8: Rehabilitation with Acrylic Prosthesis (2016)



Figure 9: Last Control Consultation (2022)

## Conclusions

Leukoplakia of traumatic origin, although not the least common one, deserves special attention from the dentist due to the installation of a continuous inflammatory process that can quickly evolve to oral squamous cancer and, particularly in this case, to a possible tongue cancer.

The treatment for oral leukoplakia depends largely on its classification and, therefore, there should be a strict follow-up as well as continuous monitoring in order to prevent the reappearance of lesions.

In summary, it is imperative to organize a multidisciplinary team with skills in open communication in order to optimize the re-education of the patient to adequate oral hygiene measures, as well as to implement preventive plans for the most diverse oral pathological conditions.

