

Clinicopathological features of oral lichen planus patients diagnosed in a single Oral Medicine service in Brazil: a descriptive study

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• **Conflicts of interest:** none declared.

ABSTRACT

Objective: the aim of this study was to review all cases diagnosed as oral lichen planus in a 11-year period in a Stomatology service. **Material and Methods:** all cases diagnosed as oral lichen planus were reviewed and epidemiological data were obtained from the patient's records. Demographic and clinical data were described, including gender, age, symptoms, medical history, habits, location and clinical aspect of the lesions. Clinical and histological analysis was performed using van der Waal's criteria (van der Waal, 2009). Cases with incomplete data and without final conclusive diagnosis were excluded. **Results:** sixteen cases composed the final sample through both clinical and histological criteria. Females were more affected (94%) and mean age of the patients was 55 years-old (ranging from 24 to 82 years-old). The most common site of involvement was buccal mucosa. Most lesions (69%) were clinically described as white bilateral symmetric striae with erythematous areas. Most patients (75%) complained about burning symptoms. Medical history revealed 44% of the patients with arterial hypertension, 12% of the patients with diabetes and 25% of the patients with thyroid dysfunction. **Conclusions:** OLP affected mostly adult females and lesions preferentially affected the buccal mucosa, tongue and gingiva/alveolar mucosa. Most patients showed other medical comorbidities, but their association with OLP should be further investigated.

Keywords: Lichen planus; Oral; Mouth; Epidemiology.

Introduction

Oral lichen planus (OLP) is a chronic disease that can affect both mucous membranes and skin. Several hypotheses have been proposed in order to clarify the etiology and pathogenesis of OLP,¹ but the exact mechanisms of activation and perpetuation of the condition is still unclear. In brief, lichen planus (LP) seems to belong to the group of the late hypersensitivity immune reactions mediated by T helper 1 (Th 1) cells, with active participation of CD4+ and CD8+ lymphocytes.² Other immune cells and their products seem also to participate in the pathogenesis of OLP, such as B cells and plasma cells.²

OLP affects 1 to 2% of the adult population and have a predilection for females (female:male ratio of 1.4:1) and patients above 40 years of age.³ OLP affects mostly the buccal mucosa, tongue and gingiva presenting as symmetrical bilateral multiple lesions.^{3,4} There are six clinical variants of OLP: reticular, papular, plaque-like, erosive/atrophic, ulcerative and bullous.⁵ Reticular, papular and erosive forms are the most common; plaque-like and bullous are the most uncommon.⁴ Symptoms as itchiness, burning and a painful sensation are particularly present in the ulcerative and erosive/atrophic types.

Although the clinical features are usually suggestive of OLP, final diagnosis could not be rendered based solely in the clinical features of the disease and a biopsy is essential

for confirmation. OLP is histologically characterized by the accumulation of T cells forming a narrow band in the lamina propria, T cells exocytosis and keratinocyte apoptosis.⁴ In OLP, keratinocytes are the target for the immune reaction and, when active, release chemokynes that attract T cells and other immune cells inducing the beginning and chronicity of the disease.⁶ Continuous keratinocyte damage will induce apoptosis of these cells and formation of colloid bodies (known as Civatte bodies).^{2,7} Even when both clinical and histological features are available, however, many suspected cases of OLP do not meet the accepted criteria for diagnosis.⁸ Most of these cases are described as lichenoid mucositis or lichenoid reactions.

Treatment of OLP is usually based on topical steroids focusing on symptoms reduction and clinical control of the affected areas. Persistent lesions are frequently managed with systemic steroids and other treatment alternatives such as antioxidants, photodynamic therapy and lasertherapy.^{1,9} Some studies have suggested that OLP can be a potentially malignant disorder and the condition has been included in this group according with the World Health Organization.^{2,10} Although OLP is a relatively common disease few published information is based on Brazilian populations. So, the aim of the present study is to report the demographic, clinical and histological features of a series of OLP patients diagnosed in a single Oral Medicine Service in Rio de Janeiro, Brazil.

Material and Methods

The files of the Oral Medicine Service, Estácio de Sá University, Rio de Janeiro/RJ, Brazil, from 2007 and 2017 were reviewed and all patients diagnosed with OLP, lichenoid reaction and lichenoid mucositis were retrieved. Demographic and clinical data from all cases were obtained from the clinical records and included gender, age, symptoms, medical history, habits, location of the lesions and clinical aspects. HE-stained histological sections from all cases were reviewed according with the criteria proposed by van der Waal (2009).⁴ Only cases that met the clinical and histological features of OLP according with the same reference were included in the final sample. Cases with incomplete data and inconclusive final diagnosis were also excluded from the final sample. This study was approved by the Ethics in Research Committee from the Estácio de Sá University (CAAE: 87376718.0.0000.5284).

Results

After careful analysis of the whole files and strictly applying both the clinical and histological criteria suggested by van der Waal (2009),⁴ 16 cases of OLP were retrieved. Most patients (15, 94%) were females. Age ranged from 24 to 82 years-old, with a mean of 55.7 years-old. Medical history revealed that 44% of the patients reported arterial hypertension, 25% had some thyroid dysfunction (19% hypothyroidism and 6% hyperthyroidism) and 12% reported diabetes. Moreover, 6% of the patients were smokers. Symptoms were reported by 12 patients (75%) and included mostly burning sensation. Buccal mucosa was the most commonly involved site followed by the tongue (Table 1). About 69% of the lesions showed a combined pattern, showing whitish striae (reticular pattern) and erythematous areas (atrophic/erosive pattern) (Figure 1). Histological analysis of the HE-stained sections showed the typical features of OLP in all cases (Figure 2).

Table 1. Demographic and clinical data from the 16 patients diagnosed with oral lichen planus

Case	Gender *	Age	Location **	Symptoms	Comorbidities ***
1	F	82	BM, T, AM, P	No	AH, HypoT
2	M	32	BM	No	-
3	F	58	BM, G	Yes	-
4	F	49	BM, G	No	HypoT
5	F	45	T, G	Yes	-
6	F	61	BM, T, L	No	-
7	F	53	BM	Yes	-
8	F	66	BM, T, AM, G, P	Yes	AH, D
9	F	58	BM, T, L, P	Yes	HypoT
10	F	46	BM, T, AM, G, P	Yes	AH
11	F	60	BM, G	Yes	AH, HyperT
12	F	24	G	Yes	-
13	F	55	BM, T, L, P	Yes	AH, D
14	F	73	BM, T	Yes	AH
15	F	67	BM, T	Yes	-
16	F	63	BM, T, G	Yes	AH

* M – male; F – female; ** BM – buccal mucosa; T – tongue; AM – alveolar mucosa; G – gingiva; P – palate; L – lips; *** - AH – arterial hypertension; HypoT – hypothyroidism; HyperT – hyperthyroidism; D – diabetes.

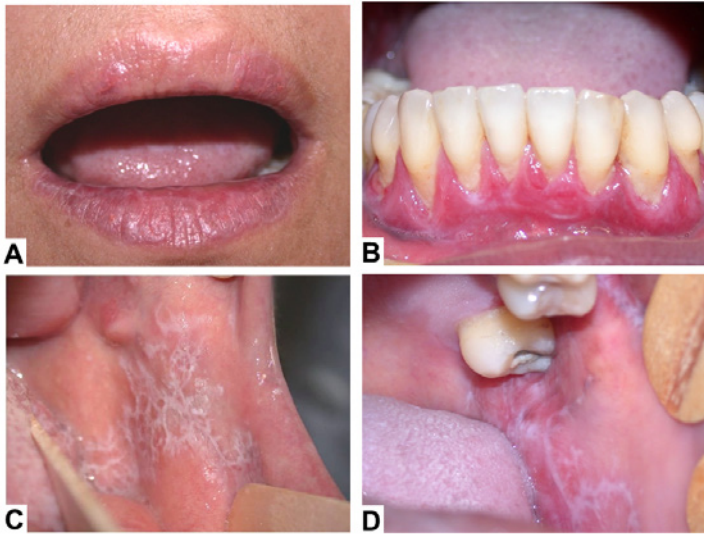


Figure 1. Clinical aspects of oral lichen planus. A. White striae associated with discrete erythematous areas in the lower lip. B. Anterior lower free and attached gingiva showing diffuse erythematous areas and focal whitish striae. C and D. Buccal mucosa showing the characteristic pattern of the reticular form, with white lace-like striae

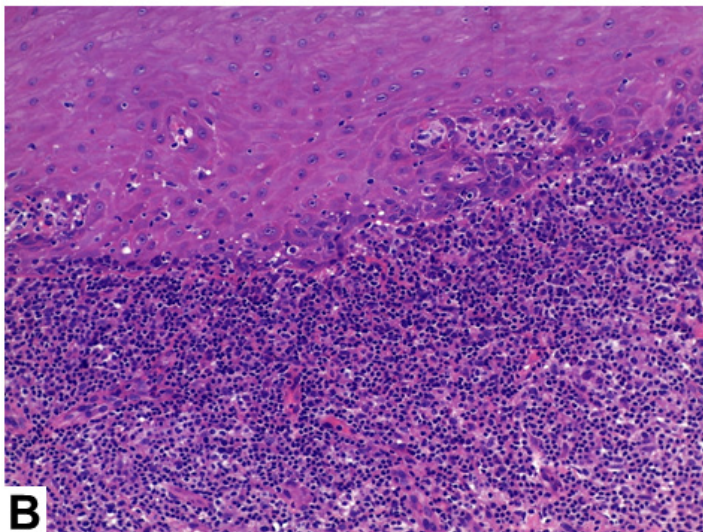
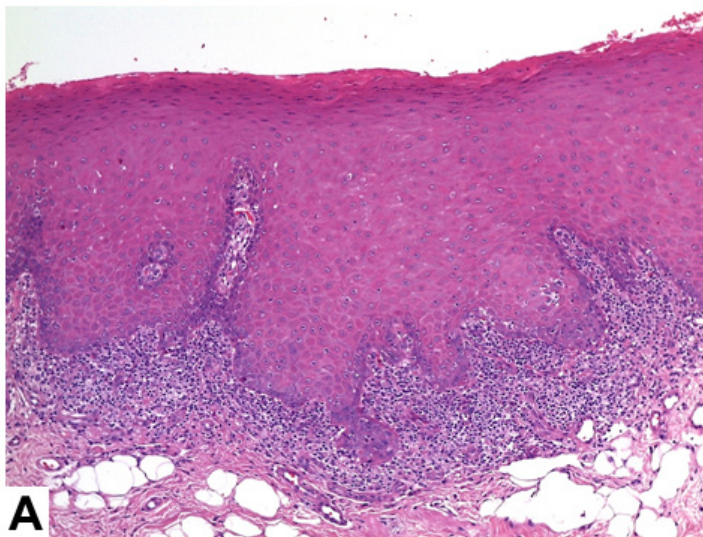


Figure 2. Histological aspects of oral lichen planus. A. Acanthotic and parakeratinized stratified squamous epithelium associated with a sub-epithelial inflammatory infiltrate in a band-like pattern (HE, 100x). B. Detail of the inflammatory infiltrate composed mostly by lymphocytes producing degeneration of the basal layer (HE, 200x)

Discussion

OLP is still considered an enigmatic disease. Although there are several papers published in the literature with large samples of OLP patients, data from the Brazilian population is scarce. In the present study, we included a small sample of Brazilian OLP patients and the demographic and clinical features were similar to the published literature.^{9,11-14} The reduced number of patients included in the final sample from the present study was probably due to the strict criteria applied for selection of the cases. We have included only cases that totally met all the criteria suggested by van der Waal (2009).⁴ There are no universally accepted criteria for diagnosis of OLP but we agree that both clinical and histological parameters should be evaluated. Pakfetrat *et al.* (2009)¹² showed a prevalence of OLP of 18.2% (much higher than the expected prevalence of 1-2%), for example, possibly due to the use of non-specific criteria for selecting the sample. Van der Meij & Van der Waal (2003)¹⁵ have demonstrated that there is a lack of clinicopathological correlation in OLP diagnosis and suggested modifications to improve this issue. Some studies have shown this lack of specific criteria and could have included patients affected by other lesions, such as lichenoid reactions and leukoplakia, both differential diagnosis of OLP, in the final sample.^{9,12,14}

Our study reinforces the predilection of OLP for adult females with their mean age in the fifth to sixth decades of life.^{11-13,16,17} On the other hand, Munde *et al.* (2013)¹⁸ founded a higher male prevalence and mean age of the patients in the fourth decade of life in their OLP patients, suggesting that some local populational features can modulate expression of OLP. OLP is exceeding rare in children.^{11,17}

Many patients in the present sample presented medical comorbidities apart from OLP, such as arterial hypertension, thyroid dysfunction and diabetes, and few patients were smokers. Bagán-Sebastian *et al.* (1992)⁹ reported that diabetes and chronic liver disease were present in, respectively, 13.9% and 22.7% of the patients of their sample in a study in partnership with a Hepatology service. The association between OLP and diabetes has been previously studied, but a possible association still needs to be established.^{11,19,20} Shen *et al.* (2012)¹⁷ also observed that arterial hypertension was a common comorbidity in OLP patients (10%), followed by arthritis (1.7%), diabetes (1.4%) and hyperthyroidism (0.8%), lower values than the ones found in the present sample. Bermejo-Fenoll *et al.* (2010)¹³ reported 23.1% of the OLP patients included in their study showing arterial hypertension and 15.8% showing rheumatologic diseases. In the same study

the authors reported that anxiety/depression was present in 17.6% patients, but in contrast, these disorders were not reported by any patient from the present series. Few patients were smokers in the present sample and none reported alcohol consumption, similarly to other studies.¹⁴ Although it has been accepted that tobacco and alcohol consumption are not etiological factors for OLP, as the condition has been considered a potentially malignant disorder by some authors, exposure to these substances may be important to selected cases. Curiously, Bermejo-Fenoll *et al.* (2010)¹³ reported 5 cases of squamous cell carcinoma developing in the sample of OLP patients (0.9%), none of them associated with alcohol intake or tobacco use. Shen *et al.* (2012)¹⁷ reported 5 cases of squamous cell carcinoma developing in OLP, all of them affecting females with no previous alcohol intake or tobacco use. Pakfetrat *et al.* (2009)¹² reported 3 OLP patients that developed malignancies without association with alcohol and tobacco use, but these authors considered the presence of dysplasia in the OLP lesions, a criterion that is not accepted by most studies. In our sample no patient has developed an oral malignancy after the diagnosis of OLP or in a previous OLP affected area.

Buccal mucosa, tongue, lips and gingiva/alveolar mucosa are the most commonly affected locations in OLP, and most

patients present with bilateral involvement.^{9,11-14,17} The most common clinical pattern is the reticular form, followed by the atrophic/erosive lesions.^{9,12} In contrast, Bermejo-Fenoll *et al.* (2010)¹³ showed that 359 out of their 550 were affected by the erosive form. Most patients report some mild symptoms associated with OLP, mostly burning sensation, and this is more common in erosive and ulcerated lesions.¹¹

None of the present patients presented concomitant involvement of the skin or other mucosal sites by LP. Bermejo-Fenoll *et al.* (2010)¹³ reported that 2.5% of the patients from their sample presented with skin, scalp or other mucous membrane (genital, nasal and esophagus) involvement and Ingafou *et al.* (2006)²¹ reported that 13% of their patients showed skin involvement by LP.

Conclusion

The OLP patients included in the present sample were mostly adult females and lesions preferentially affected the buccal mucosa, tongue and gingiva/alveolar mucosa. Most patients showed other medical comorbidities, but their association with OLP should be further investigated. Sample selection based on strict clinical and histological criteria is essential for comparison of the clinicopathological profile of OLP in different populations.

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Mini Curriculum and Author's Contribution

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