
**ISSN Print:** 2394-7489
**ISSN Online:** 2394-7497
IJADS 2022; 8(2): 609-612

www.oraljournal.com
Received: 10-03-2022
Accepted: 16-04-2021

**Abdurahman M Elmezwghi**
Assistant Professor, Oral Pathology Department, Faculty of Dentistry, University of Tripoli, Tripoli, Libya

**Abeer H Elsagali**
Associated Professor, Oral and Maxillofacial Surgery Department, Faculty Dentistry, University of Tripoli, Tripoli, Libya

**Salma S MO**
Assistant Professor, Oral and Maxillofacial Surgery Department, Faculty of Dentistry, University of Tripoli, Tripoli, Libya

**Naima M El-kakalli**
Lecturer, Oral Pathology Department, Faculty of Dentistry, University of Tripoli, Tripoli, Libya

**Raja A Abuatwirat**
Lecturer, Oral and maxillofacial Surgery Department, Faculty of Dentistry, University of Tripoli, Tripoli, Libya

**Ashraf M Balha**
Research Assistant, National Center of Diseases Control, Ministry of Health, Tripoli, Libya

**Corresponding Author:**
**Abdurahman M Elmezwghi**
Assistant Professor, Oral Pathology Department, Faculty of Dentistry, University of Tripoli, Tripoli, Libya

# Oral lichen planus plaque variant of the tongue: A review and case report

**Abdurahman M, Elmezwghi, Abeer H Elsagali, Salma S MO, Naima M El-kakalli, Raja A Abuatwirat and Ashraf M Balha**

**DOI:** https://doi.org/10.22271/oral.2022.v8.i2i.1564

**Abstract**
Oral lichen planus (OLP) is a T cell-mediated inflammatory disease of the oral mucosa of obscured etiopathogenesis. The plaque variant of OLP shows whitish homogeneous irregularities similar to leukoplakia. It affects the tongue and oral mucosa with papule lesions or rashes. OLP Plaque variant is more prevalent in tobacco smokers. Diagnosis of OLP is usually achieved by clinical and histological examination. OLP has malignant transformation potential varying between 0.3% and 3%. Although various treatment modalities are available for the condition, topical corticosteroids are widely accepted as the primary choice of OLP therapy.
The objective of this review and presented case highlights epidemiology, etiopathogenesis, histopathology, differential diagnosis, and recent treatment modalities of OLP and its plaque variant.

**Keywords:** Oral lichen planus, plaque variant, hypertrophic type, treatment modalities, differential diagnosis

## Introduction
Lichen planus (LP) is a chronic autoimmune inflammatory-like mucocutaneous disease, that affects both keratinized and non-keratinized squamous epithelium. OLP is thought to be an autoimmune inflammatory mucosal illness caused by T cells. Only 1-2 percent of the population is affected. OLP causes papule lesions or rashes on the tongue and oral mucosa. The term lichen planus comes from the Greek word 'leichen,' which implies licking or something that eats its surroundings. Sir William James Erasmus Wilson first described the condition known as LP in 1869. Thieberg discovered the oral lesion in 1895 [1].
OLP is a mucocutaneous condition that affects a large number of people. It primarily affects women in their forties and fifties, and it exhibits distribution patterns and characteristics. Children were rarely afflicted by LP. OLP is more common in smokers and patients who abuse alcohol. Oral lesions are characterized as reticular, papular, plaque, atrophic, erosive, and bullous in clinical terms. The reticular form, which appears as papules and plaques with interlacing white keratotic lines (Wickham striae) and an erythematous border, is the most prevalent kind. The most afflicted area was the cheek mucosa, followed by the lips, gingiva, and tongue. Multiple, symmetrical, bilateral, and painless lesions are common. The symptoms vary, but roughly two-thirds of patients report a burning feeling and pain in the oral mucosa [2].
It is currently considered a disease of unknown etiology and with a multifactorial pathogenesis. The diagnosis of OLP is usually achieved by clinical and histological examination. Although OLP can regress on its own, many lesions require treatment at some point. Because of their low risk of side effects and excellent patient response rate, topical corticosteroids are considered the first-line treatment for OLP. (between 30 percent and 100 percent of cases). In addition, the annual follow-up to assess for transformation and self-resolution is recommended; these concerns are especially essential in the case of atrophic or erosive OLP and plaque OLP, particularly when the dorsum of the tongue is involved [3].
OLP is defined as an oral possibly malignant condition by the World Health Organization (WHO) (OPMD). Between the diagnosis of LP and the development of cancer, an average of 12 years has been reported. Squamous cell carcinoma (SCC), particularly its hypertrophic and

ulcerative subtypes, is a known risk LP. The hypertrophic form of LP, also known as lichen planus verrucous or lichen planus hypertrophic, is marked by thickened papules and plaques and has an unknown prevalence in adults. Hypertrophic LP (HLP) has the most dramatic clinical appearance and is the least well-known in the literature, which may explain why provisional diagnoses are so difficult to make. The onset is usually gradual but uncommonly can be sudden and generalized too [4].

**Epidemiology and characteristics**

OLP tends to be more chronic in nature than the cutaneous disease. Previous studies indicated that roughly 1% of the general population has OLP. The condition occurs at all ages, peaking at the age of 40 It is more prevalent in women than in men, with a male to female ratio of 1:1.8. The plaque type of OLP shows whitish homogeneous irregularities similar to leukoplakia. These lesions are commonly seen in the gum, tongue ,inside the cheek, and in the inner tissues of lips. This Plaque variant is more prevalent in tobacco smokers ]5].

HLP is the second most prevalent lichen planus cutaneous form. Approximately 15% of OLP patients acquire cutaneous lesions, while approximately 20% of OLP patients get genital lesions at the same time. Patients with cutaneous LP are thought to have OLP lesions up to 60% of the time. According to published research, the oral lesion is the only clinical symptom of LP in 30 percent to 70 percent of individuals. The mucosal membrane analog of cutaneous HLP is the OLP plaque type. Patients with both oral and cutaneous lichen planus are more likely to develop oral cancer as a result of OLP. Despite the fact that OLP has a malignancy rate of roughly 1.3 percent, neoplastic transformation is extremely rare. OLP has been reported to carry a risk of malignant transformation to oral squamous cell carcinoma, thus it is defined as a premalignant condition. Associated conditions with LP such as diabetes, hypertension, thyroid disease, and cardiovascular disease have been reported [6].

**Etiopathogenesis**

OLP's etiology and pathophysiology are not well understood. The etiology of the various kinds of LP has been attributed to a variety of triggering causes, including medications and viral infections. Numerous studies have suggested that immunological pathways, particularly cellular immunity, are important in the development of OLP. The oral epithelium's basal cells undergo apoptosis as a result of auto-cytotoxic CD8+ T cells. CD8+ T-cells invading the mucosal epithelia of OLP patients are linked to disease remission, according to reports. Several antigen-specific and nonspecific inflammatory pathways have been postulated to explain the etiology. Two of the unique approaches include antigen presentation by basement layer keratinocytes and cytotoxic T lymphocytes. In OLP lesions, however, mast cell degranulation and matrix metalloproteinase activation were non-specific processes. One mutation on chromosome 3p14-3q13 has been found as a likely cause of OLP in a Chinese family with five affected members, according to recent reports [7].

**Histopathology**

In 1906, Dubreuil described the histopathology of OLP; in 1972, Shklar reported the classic histologic features. The three classic histological features of oral lichen planus were included: liquefaction degeneration of the basal layer, overlying keratinization, and a dense, band-like lymphocytic infiltrate within the connective tissue. For a definitive diagnosis of OLP, the classical histopathological characteristics must be identified. There was no significant difference between the hypertrophic and classic types. A biopsy is recommended when the disease does not present with its usual symptoms or when dysplasia or cancer must be ruled out.

**Diagnosis**

The diagnosis of OLP is based on a combination of its characteristic clinical findings, history, and histopathology. The early detection and diagnosis of these lesions are important for cancer prevention and disease management.

Recently, many studies were evaluated the serum cortisol levels in patients with LP, with higher values than in normal subjects

The most recent advanced study reported that salivary levels of vitamin D were significantly lower in OLP patients.

K17 is a sensitive immunohistochemical marker for Civatte bodies and is useful for differential diagnosis of OLP from other oral mucosal lesions.

**Differential diagnosis**

The OLP makes a differential diagnosis mainly with lichenoid reactions to drugs or dental materials, leukoplakia, lupus erythematosus, and graft versus host disease in bone marrow transplant patients.

To achieve early diagnosis and prevent malignant transformation, OLP patients should be constantly watched for the development of OSCC. In routine practice, the presence of epithelial dysplasia has emerged as the most powerful biomarker for determining cancer risk in oral potentially malignant disorders. The absence of parakeratosis in lichen planus distinguishes it from close differentials such as lichen planus-like keratosis or lichenoid drug eruptions. HLP and squamous cell carcinoma (SCC) share many clinical and histopathologic features, making differentiation difficult. HLP, on the other hand, tends to persist and has a proclivity for malignant transformation in young patients.

**Management and prognosis**

The condition can be treated using a variety of methods. Topical corticosteroids are now universally acknowledged as the first-line treatment for OLP. Extensive and refractory lesions involving extraoral locations should be treated with systemic therapy. Carbon dioxide laser and cryosurgery, in addition to traditional surgical treatment, have been advised for LP. The severity of the lesion and its early response to treatment have a significant impact on the duration of treatment and prognosis. In addition to supporting stress disorder therapy in cooperation with a psychologist or psychiatrist to raise the percentage of patients who recover.

Among side effects: Candidiasis, thinning of the oral mucosa, and discomfort on an application can be encountered. Furthermore, discontinuation of systemic treatment often leads to a recurrence of both mucosal and cutaneous lesions. The newer treatment modalities have been considered to be beneficial with a lesser amount of side effects than corticosteroids like amlexanox (AX), aloe vera gel, green tea, curcumin, propolis, and lycopene. Oral Curcumin could be used for preventing the recurrence of OLP lesions after the treatment and initial control.

Injectable platelet-rich fibrin has recently been proposed as an

alternate therapy for patients who do not respond to topical corticosteroids. Because LP has malignant potential, patients should be motivated and monitored for a long time

It is also advised to keep away from smoking, alcohol, spicy foods, and drinks, as well as any irritants or exacerbating factors in the oral cavity, such as issues with occlusion and poor oral hygiene.

**Case report**

A 43 years-old Libyan female patient who visited Dar Alfardous dental clinic, Tripoli- Libya with complained of a whitish tongue with moderate pain of burning sensation type aggravated by consuming hot, salty, and spicy foods for more than 4 years with difficulty during eating and swallowing. The patient was complaining of intermittent mild itchy skin in the abdomen, hands, and legs concomitant with the appearance of oral symptoms.

Her medical history was unremarkable. The patient's vital signs were at normal limits.

Intraoral examination revealed a white multifocal small circular irregular plaque confined to the entire dorsum surface of the tongue. Slight erythematous and focal depapillated areas were seen in Fig.1.

On palpation, the lesion felt as slightly raised and rough in texture. The lesion was non-tender and non-scrapable.

The labial mucosa, buccal mucosa, the floor of the mouth, and the hard and soft palate all appeared normal on clinical examination.

Extraoral examination revealed skin lesions, appearing as small irregular red to brown macules located in the legs, flexor, and the abdomen surfaces at the same site of itching regions with no lymphadenopathy.

Based on the patient's history and clinical findings, only a provisional diagnosis of lichen planus lesion was considered. Routine hematological investigations showed no significant findings.

Incisional biopsy was performed from the tongue Fig.2 and tissue specimens of 5 $\mu$m thick were prepared and subjected to routine hematoxylin and eosin staining for histopathological examination.

The result of histopathological examination with H&E stain revealed hyper parakeratinized stratified squamous epithelium, acanthosis, and focal areas of the epithelium also showed degeneration of basal cells with liberated melanin pigments. A marked subepithelial inflammatory cells infiltrate was evident. Fig.3. According to the patient's history, clinical examination, and histopathological result, the final diagnosis of plaque variant oral lichen planus was given. No epithelial dysplasia was detected .

Regarding the treatment of the presented case, topical application of 0.1% triamcinolone acetonide cream and a single daily morning dose of 60 mg of prednisone was prescribed for 10 days which showed a reduction in symptoms and intensity of the lesion. The patient was instructed to avoid spicy and hot foods as well as other irritants. Furthermore, the patient was advised to be under regular long-term follow-up.

**Discussion**

LP is a mucocutaneous autoimmune disease that affects the mouth, skin, vaginal mucosa, scalp, and nails. Women in their fourth and fifth decades of life are particularly susceptible. LP is a mucocutaneous autoimmune disease that affects the mouth, skin, vaginal mucosa, scalp, and nails. Women in their fourth and fifth decades of life are particularly susceptible. Our patient was 43 years old, which is the age group that is most frequently impacted by OLP. This conclusion was in line with Mutafchieva (2018) [8], who said that the disease is most prevalent in women over the age of 40, as well as with Changchang Li, (2020) [9] who reported that a higher prevalence of OLP was found among people 40 years and older while in disagreement with Arora (2014) [10] who reported that the largest number of patients was in 31–50-year age group. Nonetheless, the ages of patients at the time of diagnosis vary widely over the globe. Women are estimated to be ten times as likely than men to be afflicted. The patient in this presented case was female which was consistent with Hamour (2020) [11] who stated that there was a female predilection with a female to male ratio of 2:1 and also consistent with Iqbal (2020) [12] who stated that OLP occurs in both sexes with a female to male ratio of 1.4:1 while, inconsistent with Chitturi (2015) [13] who reported that an equal distribution between males and females was observed. in addition to being incompatible with Munde (2013) [14] Who conducted a study on 128 OLP patients and reported that significantly more often in men compared to women with an M: F ratio of 1.61:1. OLP plaque-type mainly involves the dorsum of the tongue and the mucosa of the cheek. In our case the lesion was confined to the entire dorsum surface of the tongue, this finding was in agreement with Surendran (2019) [15] and also consistent with Persic (2008) [16] who stated that plaque-like lesions most frequently on the dorsum of the tongue and gingiva. While inconsistent with Rashid (2020) (17) who found that in most patients, LP lesions were identified in the buccal mucosa in the majority of patients, followed by the dorsum of the tongue. The patient's history, typical oral lesions, and skin or nail involvement are commonly used to make a clinical diagnosis of OLP. The usual clinical presentation of our patient, which included the placement of the lesion on the dorsum of the tongue as whitish homogenous irregular circular plaques in addition to the presence of skin lesions, was similar to the majority of previously reported studies and surveys [18].

OLP's clinical symptoms range from a burning sensation to severe discomfort that might interfere with an individual's regular speech and mastication skills. Clinical signs such as moderate glossodynia with a burning feeling, trouble eating, and dysphagia were present in our patient, as they had been in earlier research [18].

A biopsy and histopathological analysis are used to confirm the diagnosis of OLP. The classic histopathological features of overlying hyperkeratinization, a dense layer of lymphocytic infiltrate within the lamina propria, and degeneration of the basal cell layer with liberating melanin pigments was seen in our case, and the majority of other literature data supports these common findings. The biopsy is required for more atypical presentations. It is also done to exclude lesions with dysplastic or malignant changes. In our presented case no dysplastic changes were detected. OLP must be differentiated from lichenoid lesions, leukoplakias, and diseases such as lupus erythematosus and overlap syndromes. According to the history and clinical examination of our presented case, the differential diagnosis can include lichenoid reaction (LR) (but the patient did not give any long-term drug history previously nor go through any dental procedure for the last many years. Clinically, LR has a tendency to be localized and asymmetrically distributed. Furthermore, a biopsy is suggestive of diffuse lymphocytic infiltrates rather than a subepithelial band which has been seen in our histopathological result,). Leukoplakia, (but rolled out based

on the presence of classical histopathological features and absence of epithelial dysplasia). Lupus erythematosus (LE), (but excluded based on the site and clinical appearance, in plaque OLP the most common site is the tongue while in LE the lower lip is the most common site. In addition, the clinical appearance of LE is alternate red, white and red zones provide a characteristic appearance, while in our presented case the lesion appeared as multiple whitish homogeneous irregularities. Furthermore. Clinically, lesions of LE tend to be less symmetrically distributed and biopsy shows a characteristic perivascular infiltrate).

The first line of OLP treatment is topical corticosteroids. However, additional therapy can be given according to the underlying factors. Our patient responded very well to the medication, the tongue lesion was regressed and other symptoms were significantly relieved after the prescription of potent topical and systemic oral corticosteroids.

## Conclusion

T-lymphocytes are primarily responsible for LP, which is a chronic inflammatory and immune-mediated disease. The mucosal membrane equivalent of cutaneous HLP is the OLP plaque variety. It affects women more than males and is most common in the middle-aged population. Buccal mucosa, tongue dorsum, and gingiva are all typically impacted. According to the World Health Organization, LP is a disease that has the potential to be fatal. The etiopathogenesis, malignant transformation, and diagnostic criteria utilized for OLP are all currently under debate. To confirm a definitive diagnosis, a biopsy and histological evaluation are required. The major therapeutic option for OLP is corticosteroids, either topical or systemic. For an effective treatment outcome, including the elimination of all mucosal-related lesions, reduction of symptoms, and decrease of costs, regular clinical monitoring of lesions and annual long-term follow-up should be performed the risk of malignant transformation.

## References


1. Bajgaia PG and Wangmo P. Lichen Planus of the tongue. International Journal of Research Publication and Reviews. 2021;2(2):53-55.
2. Sood A, *et al*. Rise, and exacerbation of oral lichen planus in the background of SARS-CoV-2 infection. Medical Hypotheses. 2021;156:2-5.
3. Dutra T, *et al*. Therapeutic alternative for oral lichen planus treatment in an unusual location: case report. Arch Health Invest. 2021;10(5):734 739.
4. Joshi A, Rathi SK, Manchanda Y. Childhood lichen planus. Indian J. Paediatr Dermatol. 2021;22:306-15.
5. Surendran SA, *et al*., Oral Lichen Planus: Theory and Management. Am. J. PharmTech Res. 2019;9(01):56-70.
6. Tatawati AS, Doshi BR, Manjunathswamy BS. A cross-sectional observational study of clinicodermatoscopic features in cutaneous lichen planus in Indian skin. Pigment Int J. 2021;8:100-8.
7. Krupaa RJ, *et al*. Oral lichen planus: An overview. J Pharm Bioall Sci. 2015;7:S158-61.
8. Mutafchieva MZ, *et al*. Oral Lichen Planus - Known and Unknown: a Review. Folia Med (Plovdiv). 2018;60(4):528-535.
9. Changchang Li, *et al*. Global Prevalence and Incidence Estimates of Oral Lichen Planus. JAMA Dermatol. 2020;156(2):172-181.
10. Arora SK, *et al*. Lichen planus: A clinical and immuno-histological analysis. Indian J Dermatol. 2014;59:257-261.
11. Hamour A, *et al*. Oral lichen planus. CMAJ. 2020;192(31):e892.
12. Iqbal MA, *et al*. Oral lichen planus and its recent management: A review. UpDCJ. 2020;10 (2):29-34.
13. Chitturi TR, *et al*. A clinical study on oral lichen planus with special emphasis on hyperpigmentation. Pharm Bioallied Sci, 2015, 2495-498.
14. Munde AD, *et al*. Demographic and clinical profile of oral lichen planus: A retrospective study. Contemp Clin Dent. 2013;4:181-5.
15. Surendran SA, *et al*., Oral Lichen Planus: Theory and Management. Am. J. PharmTech Res. 2019; 9(01):56-70.
16. Persic S, *et al*, Oral lesions in the patients with lichen planus. Acta Clin Croat J. 2008;47:91-96.
17. Rashid N, Riyaz N, Geetha M. Clinico-histoplathological study of oral lichen planus. J Skin Sex Transm Dis. 2020;2(1):52-5.
18. Neha A, Sumit B. Oral Lichen Planus- A mucopigmentory Disorder. Biomed J Sci & Tech. 2018;4(5):4234- 4242.