

# Oral Lichen Planus with Mild Epithelial Dysplasia: A Case Report and Literature Review

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## ABSTRACT

Oral lichen planus (OLP) is a chronic or recurrent inflammatory autoimmune disease with T-lymphocyte infiltration that destroys the basal stratum, which causes white striae, erosions, ulcers, and breaks in epithelial continuity. There is a sex predilection with a female/male ratio of approximately 2:1, and the age of onset is generally between the fourth and sixth decades of life. About 5% of OLP patients will develop cutaneous lesions. Stress, drugs, dental fillings, genetic factors, immunity, and hypersensitivity reactions can contribute to its pathogenesis. This paper presents the case of a 34-year-old male reported to OPD with complaints of burning sensation, pain, and irritation in gums and cheek for the past 6 months. The ubiquitous and polymorphic clinical presentation of the lesion mandates a proper history taking and microscopic examination of the lesioned tissue. As a result, after the clinical and pathological assessment, the diagnosis of oral lichen planus with mild dysplasia was established, and a therapy plan was conducted. On observation, a favorable regression of lesion was noticed after the administration of corticosteroids and immunomodulatory agents.

**Keywords:** Burning sensation, Case report, Epithelial dysplasia, Oral lichen planus.

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## INTRODUCTION

Oral lichen planus (OLP) is a chronic inflammatory autoimmune disease that tends to recur. It commonly affects the oral mucosa, gingiva, and tongue. It is usually characterized by white papules that enlarge and merge into a reticular pattern, termed Wickham's striae, which is commonly present in a bilateral and symmetrical distribution. The female: male ratio approximates to be 2:1, occurring between the fourth and sixth decades of life.<sup>1</sup> Patients older than 50 years are at 2.23 times the risk of OLP. The exact cause of the disease is not yet known. Stress, dental fillings, immunity, drugs, genetic factors, and hypersensitivity reactions can contribute to its pathogenesis.<sup>2</sup> Commonly six clinical presentations are noticed in OLP namely reticular, papular, bullous, plaque-like, atrophic, and erosive. Clinical presentation could include more than two forms. It could be either an erosive or nonerosive form or both. Studies reveal in areas of inflammation, there is increased oxidative stress, which results in the release of free radicals exhibiting genotoxic effects and further releasing cytokine mediators and growth factors in the site of inflammation that endorse cell survival, further promoting mutations and leading to neoplastic transformation.<sup>3</sup>

## CASE DESCRIPTION

A 34-year-old male reported to the OPD, Indira Gandhi Institute of Dental Sciences, Sri Balaji Vidyapeeth, Puducherry, with a chief complaint of burning sensation, pain, and irritation in gums and cheek for the past 6 months, which aggravates having hot and spicy food. Medical history was unremarkable. The patient gave a history of smoking for the past 10 years and stopped before 4 months. The patient's vital signs were within normal limits. On local examination, a single lymph node was palpable, tender, and soft in consistency on the right submandibular region of a size

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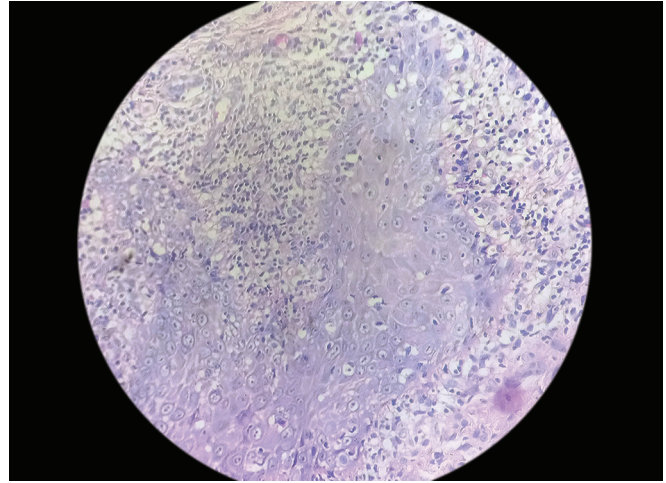
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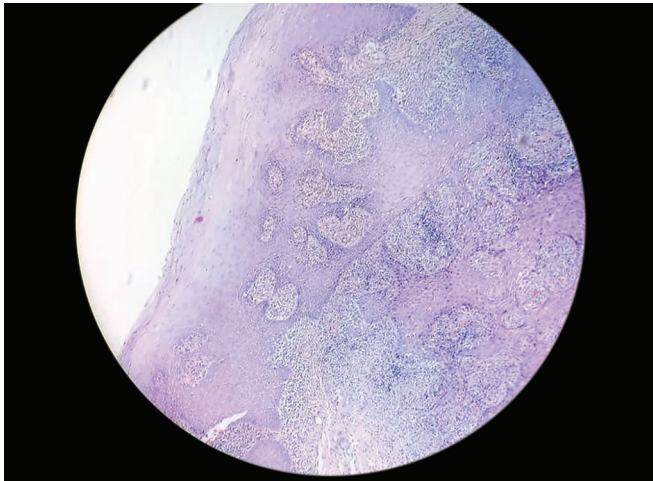
approximating 0.5 cm in diameter. Examination of the oral cavity revealed a diffuse white lesion surrounded by gray pigmentation on the right buccal mucosa of size 3 × 3 cm with ill-defined borders, extending antero-posteriorly from 3 mm labial corner of the mouth to the retromolar region, superiorly from the maxillary occlusal plane, and inferiorly till the mandibular buccal vestibule, presenting as a white interlacing streak similar to a web-like area, typically resembling a Wickham stria (Fig. 1). Similar lesions were present in the left buccal vestibule and right- and left-attached gingiva of both maxillary and mandibular arches characteristic of lichen planus. The patient did not have similar lesions in other parts of the body.



**Fig. 1:** White keratotic reticulated lesion with hyperpigmentation evident at the periphery of the lesion in the right buccal mucosa



**Fig. 3:** H&E-stained section exhibits area of basal cell degeneration with inflammatory infiltrates at the subepithelial layer



**Fig. 2:** H&E-stained section exhibits stratified squamous epithelium which is hyperparakeratinized and proliferative in nature. The basal and parabasal layer exhibits hyperchromatic cells with bands of mixed inflammatory infiltrates in the subepithelial layer

## HISTOPATHOLOGY

Incisional (punch) biopsy of the lesion at the periphery was done under local anesthesia. About 10% neutral buffered formalin was used for fixing the tissue. Processing was carried out under the standard paraffin-embedding technique. The specimen was stained using hematoxylin-eosin (HE) and subjected to further histopathologic evaluation.

The biopsy on microscopic examination revealed stratified squamous epithelium that was hyperparakeratinized and proliferative in nature (Fig. 2). The basal and parabasal layers exhibited hyperchromatic cells with few areas of basal cell degeneration and mild perturbation in the basement membrane integrity (Fig. 3). The spinous layer exhibited acanthosis and spongiosis. Inflammatory infiltrate consisting of lymphocytes, macrophages, neutrophils, and eosinophils in a band was identified in the subepithelial layer. Associated with it, plenty of capillaries were noticed in connective tissue. The diagnosis of reticular lichen planus with mild epithelial dysplasia was rendered.

## DISCUSSION

The Greek word “lichen”, was termed for lichen meaning moss-like, and the term “planus”, meaning flat.<sup>4</sup> Of the six clinical forms, the most common form of oral lichen planus is a reticular pattern that is present as a characteristic by a lattice or web-like appearance termed as Wickham striae.<sup>5</sup> Global pooled prevalence of lichen planus was estimated at around 1.01% (95% CI = 0.74–1.32). The maximum occurrence appears in South America (1.74%) and in India (0.49%), which could be due to tobacco consumption masking the detection of OLP.<sup>6</sup>

The oral lichen planus does not arise from a specific etiology. The abnormal cell-mediated immune response of both T4 helper cells and T8 cytotoxic cells infiltrates the basal epithelial cells as they are recognized as a foreign body because of the changes in the antigenicity on the surface of their cells. The recent classification included OLP under oral potentially malignant disorder (OPMD) with a malignant transformation rate accounting for about 1.40% and a yearly transformation rate of 0.20%.<sup>3</sup>

Differential diagnosis for lichen planus includes oral lichenoid contact lesions (OLCL) present because of allergic contact stomatitis (delayed immune-mediated hypersensitivity), oral lichenoid drug reactions (OLDR) induced from certain medications such as ACE inhibitors, oral hypoglycemic agents, and NSAID. Oral lichenoid lesions of graft-versus-host disease (OLL-GVHD) arise due to allogeneic hematopoietic stem transplant recipients. Malignant transformation tends to be increased with OLL-GVHD than with OLP, hence in recent classification, it has been included in potentially malignant disorders. Chronic ulcerative stomatitis, lichen planus pemphigoids, and discoid lupus erythematosus (DLE) usually present unilaterally in a reticular or plaque-like pattern. The final diagnosis of OLP depends on the clinical finding, history, and histopathological examination.<sup>7</sup>

Symptomatic OLP treatment is challenging. Treatment includes corticosteroids that could include topical, systemic, or intralesional. It includes cyclosporine, dapsone, retinoids, griseofulvin, and hydroxychloroquine. PUVA therapy, photodynamic therapy, and LASER therapy are other pharmacological modalities.<sup>8</sup> By removing the provoking or precipitating factors (chemical trauma from acidic, mechanical trauma from dental procedures, and spicy or strongly flavored foods and beverages) leads to symptomatic improvement.

Usage of a mouth rinse containing chlorhexidine gluconate exacerbates the condition by eliminating bacterial plaque.<sup>9</sup>

## CONCLUSION

With a proper treatment regimen, reticular OLP does not progress to a more serious disease. Though the other variants of lichen planus tend to malignant transformation, the practitioner should emphasize the diagnosis of OLP, which will provide a precise and timely diagnosis to render a suitable treatment plan.

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