

## Case Report

### Clinically Benign Leukoplakia with Histopathologically Malignant Potential: A Case Report

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#### ABSTRACT:

Oral leukoplakia is a common premalignant lesion in the oral cavity. The etiology of oral leukoplakia is multifactorial, and many causes are idiopathic. The most commonly associated risk factor is the use of tobacco in either smoked or smokeless form. It affects men more frequently who are middle-aged and older. The condition is potentially malignant and has evolved as a clinicopathologic concept over many years. The concepts of cellular atypia and epithelial dysplasia are reflective of the biology of leukoplakia. An overview of a leukoplakia case is provided.

**Key Words:** Leukoplakia, Potentially Malignant Disorder, Dysplasia

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#### INTRODUCTION

Leukoplakia is the most common premalignant, potentially malignant, or precancerous lesion of the oral mucosa. The most recent definition, formulated by the World Health Organization stated it as-"predominantly white plaques of questionable risk, having excluded other known diseases or disorders that carry no increased risk for cancer".<sup>1</sup> It is much more common in tobacco users than in non-tobacco users. Leukoplakia may occur everywhere in the oral cavity and is often asymptomatic. The clinical diagnosis is primarily based on visual inspection and manual palpation. There are no other useful diagnostic aids for the clinical diagnosis. The histopathological findings in leukoplakia range from hyperkeratosis without epithelial dysplasia to various degrees of epithelial dysplasia and even carcinoma in situ. The WHO (2017) maintains a 3-tiered grading system for oral epithelial dysplasia: mild, moderate, and severe dysplasia. Carcinoma in situ is synonymous with severe dysplasia in this grading system. Mild dysplasia is confined to the lower one-third of the epithelium (basal and parabasal layers), exhibiting

cytologic alterations. Moderate dysplasia exhibits disordered maturation from the basal layer extending to the midportion of the spinous layer (middle third). Severe dysplasia/carcinoma in situ reveals abnormal maturation extending from the basal cells to a level above the midpoint of the epithelium (upper third) to the entire thickness of the epithelium.<sup>2</sup>

#### CASE REPORT

A 43-year-old male patient came to the Department of Oral Medicine and Radiology, St. Joseph Dental College, Duggirala, Eluru, with a chief complaint of whitish discoloration in the left cheek region since 1 year. The patient gave no history of pain or discomfort. The patient has had the habit of smoking cigarettes with a frequency of 10 per day since 15 years. Intraoral examination revealed, on inspection, a diffuse greyish white patch involving the left buccal mucosa of size approximately 2x2 cm, extending anteroposteriorly 2 cm from the left corner of the mouth to the left retromolar pad area, superior-inferiorly at the level of occlusion. On palpation, all inspectory findings are confirmed on

palpation. The lesion is non-tender, soft in consistency, smooth in texture, non-scrapable and does not disappear on stretching. The cracked mud appearance is evident. (Fig:1) Intraoral examination revealed, on inspection a diffuse greyish white patch, wart like involving the left buccal mucosa of size approximately 0.5x0.5cm, extending

anterioposteriorly 1 cm from the left corner of mouth to 3 cm from the left retromolar pad area, superior-inferiorly at the level of occlusion. On palpation, all inspeactory findings are confirmed on palpation. The lesion is non-tender, soft in consistency, smooth in texture, non-scrapable and does not disappear on stretching, raised from the adjacent mucosa. (Fig:2)



Figure 1



Figure 2

The clinical diagnosis was given as homogenous leukoplakia involving the left buccal mucosa and proliferative verrucous type of leukoplakia involving the left buccal mucosa. The differential diagnosis was given as Plaque type of lichen planus and Frictional

keratosis. Treatment plan was discussed with the patient. He was advised to have a punch and an excisional biopsy of both lesions respectively. Punch and excisional biopsy were performed under LA, and they were sent to the histopathological laboratory.

**Investigations:** Investigations were Blood report, Toluidine blue staining (Fig:3), Biopsy (Fig:4,5,6)



Figure 3



Figure 4

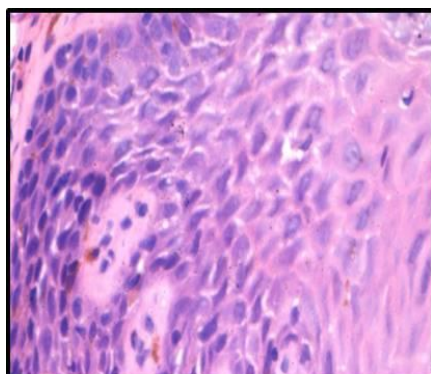


Figure 5

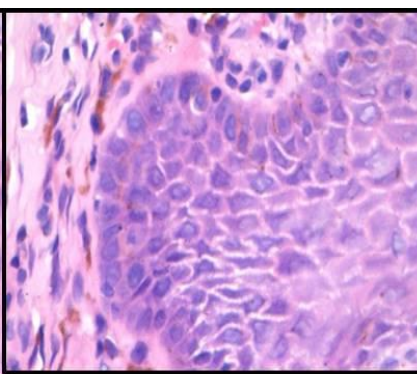


Figure 6

A complete hemogram was performed, and all the values were in the normal range. Toluidine blue staining used as routine staining was positive in this area, which was then excised for biopsy. A Punch biopsy and an excisional biopsy were performed in the left buccal mucosa region, and the excised tissue was sent for histopathological analysis. On histological examination of the sample (punch biopsy), the histological features include dysplastic epithelium showing loss of basal cell polarity, basilar hyperplasia, cellular and nuclear pleomorphism extending till middle of epithelium. The connective tissue is fibro cellular associated with fibroblasts and endothelial lined capillaries filled with RBCs. Mild chronic inflammatory infiltrate predominantly of lymphocytes and plasma cells is seen. These features are suggestive of Moderate epithelial dysplasia. On histological examination of the sample (excisional biopsy), the histological features include dysplastic epithelium showing loss of basal cell polarity, basilar hyperplasia, cellular and nuclear pleomorphism extending till middle of epithelium. The connective tissue is fibro cellular associated with fibroblasts and endothelial lined capillaries filled with RBCs. Deeper part of connective tissue shows normal adipose tissue and extravasated RBCs. Moderate chronic inflammatory infiltrate predominantly of lymphocytes and plasma cells is seen. These features are suggestive of moderate epithelial dysplasia. Based on the clinical and histological features, the final diagnosis is given as Homogenous leukoplakia with moderate epithelial dysplasia involving left buccal mucosa.

## DISCUSSION

Oral leukoplakia may display a benign clinical appearance, making it difficult for the clinician to sometimes differentiate it from common reactive or inflammatory disorders of the oral mucosa. Leukoplakias are usually diagnosed after the fourth decade of life. They are more common in males and are six times more common among smokers than among non-smokers. Common sites of involvement in Western populations include the lateral margin of the tongue and the floor of mouth. However, among Asian populations, the buccal mucosa and the lower buccal grooves are commonly affected because of the placement of betel quid at these locations. Gingival leukoplakia (affecting gums) is uncommon but has been reported to affect predominantly the Japanese population.<sup>1</sup> Two main clinical types of leukoplakia are encountered in clinical practice: homogeneous and nonhomogeneous leukoplakia. The distinction is based on surface color and morphologic (thickness and texture) characteristics. Homogeneous leukoplakias are uniformly flat and thin, have a smooth surface, and may exhibit shallow cracks. Nonhomogeneous varieties comprise three clinical types and are usually symptomatic:

1. Speckled—mixed, white, and red in colour (also termed erythroleukoplakia), but retaining predominantly white coloration
2. Nodular—small polypoid outgrowths, rounded, red, or white excrescences
3. Verrucous or exophytic—wrinkled or corrugated surface appearance.<sup>1</sup>

The grade of dysplasia as reported by a pathologist, in spite of controversies regarding interpretation, remains our best aid for assessment of the risk for malignant transformation of OPMDs. Early diagnosis, referral to a specialist, and appropriate intervention may reduce the rate of progression of these conditions to invasive cancer.<sup>3</sup> In our case, a biopsy was done to confirm the extent of dysplasia, and medication was advised. The most researched therapy for oral leukoplakia includes retinoids.<sup>3</sup>

## CONCLUSION

Leukoplakia has the potential to manifest in any region within the oral cavity, mostly situated on the floor of the mouth, the soft palate, and the ventral surface of the tongue (sublingual keratosis), while when found in other regions, it may be classified as having a lower risk of malignancy. Clinical assessment relies predominantly on tactile examination and visual observation. As a general guideline, each instance of leukoplakia should undergo a biopsy, regardless of symptom presence, clinical subtype, size, or location within the oral cavity, to understand extent of epithelial dysplasia.<sup>4</sup>

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