# CONTROVERSIAL DEFINITION OF LEUKOPLAKIA

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**Abstract:** *The correct and accepted definition of leukoplakia remains controversial, as only the term leukoplakia is not specific the presence of the disease but the clinical term refers to the white patch. The omenclature that gives some indications about pathogenesis can be a very good nomenclature lesions and, to some extent, specific clinical and histopathological features. This article provides information for the study of various leukoplakias and their dangerous stages transformation.*

**Keywords:** *Definition; Leukoplakia; Disease entities; Reclassification; Malignant transformation*

## INTRODUCTION

The normal colour of oral mucosa is pinkish-red but the oral mucosa is not uniformly have this colour, it is dark red in vestibular mucosa and lighter in gingiva. This normal color results from visible light passing through the translucent superficial layers of the covering stratified squamous epithelium, striking the capillary bed and then being reflected again [1].

White patches are also classified according to etiology, where classification is the most common classification used in dentistry.This classification includes hereditary white spots, friction

keratosis, infectious white spots, idiopathic white spots,dermatological white spots and neoplastic white spots [1-3].In contrast to the clinical basis, histo is pathological,the classification of white patches depends on microscopy epithelial dysplasia features can indicate where damage occurs [1,2].

1. Slight dysplastic changes located in the lower third

covering epithelium. ges located in the lower one third of the covering epithelium.

2. Moderate dysplastic changes located in the lower two third of the covering epithelium.

3. Sever dysplastic changes (top-to-bottom dysplastic changes), also called carcinoma in situ.

4. Those lesions that show infiltrating squamous cell carcinoma.

5. Those lesions that show histopathological features of other diseases and conditions.

Definition of leukoplakia

It is in the fact, that a proper and accepted definition of leukoplakia is still contraversal, because the term leukoplakia alone is not a disease entity (it has no definite clinical and histopathological features), which makes the definition for such lesion a difficult task if not impossible. Therefore, it has been suggested that

leukoplakia is an incorrect term since there is so much argument about its use [6] and some clinicians in dental practice avoid using it at all [5].

Based on several studies of leukoplakias and previous definitions of international symposiums, might there is a possibility for me to put a definition for leukoplakia that may meet the requirements of the clinicians for a proper diagnosis. Therefore, Leukoplakia is a white firm patch or plaque used clinically in association with certain keratotic lesions of oral mucosa which have tendency for malignant transformation.

General Clinical Features of Leukoplakia

Oral leukoplakia is more common in males than females particularly between 40-70 years of age, it vary greatly in shape and distribution, the borders may either distinct or indistinct and smoothly countered or ragged, homogenous or rough in appearance [1-3]. Leukoplakia is characteristically asymptomatic, but infrequently the patient may complain from pain, burning sensation and discomfort.

Although, the lesion may be discovered during routine oral examination or in some instances, the patient may seek professional consultation as the lesion enlarges and becomes more obvious or changed in color. The early lesion is usually nonpalpable macule, later, particularly in longstanding or persistent form of leukoplakia the surface may become rough and raised, thus becoming speckled or verrucous type, this clinical difference in appearance of the lesion may represent stages of malignant transformation or may associated with high risk of malignant transformation especially when the lesion is located on the floor of the mouth, lateral surface of the tongue and retro-molar area [6,9].

Tobacco smoking

Tobacco smoking may practiced as cigarette, cigar, pipe smoking, reverse smoking, bidi smoking or as chewing tobacco and snuff dipping, in cigarette smoking, the lesion is mostly diffuse and seen mainly on cheek, lip and tongue where in pipe and cigar smoking the lesion is usually manifested on the lip. Smokeless tobacco may be used as snuff (powdered tobacco) to being inhaled or as snuff-dipping which placed in labial or buccal sulci and tobacco chewing where also placed in the buccal sulcus and kept in the mouth for a long time, therefore, the lesion is usually seen in the buccal sulcus and mucobuccal fold close to the premolars and molars [1-3]. Several studies have demonstrated a dose-response relationship between tobacco usage and oral leukoplakia as well as the decrease in the incidence of oral leukoplakia after tobacco smoking and smokeless tobacco cessation [13,14].

Although, several studies have shown a significant increase in keratinized cells of the tongue and hard palate mucosa in tobacco smokers individuals who clinically have healthy oral mucosa. This preclinical alterations or changes have been reported on the results from smear and cytological examination of oral mucosa in male and female smokers and nonsmokers [5,6]. However, several previous and recent studies of tobacco and leukoplakia in different parts of the world concluded that there is strong evidence and strong relationship between tobacco usage of all types and the

development of oral leukoplakia. Gayford and Haskell [3] concluded that if the term leukoplakia is to be used there must be clear distinction as to its meaning. The indiscriminate use of this term as synonymous for a white patch in the mouth, an area of keratosis, a premalignant lesion or a histological entity can lead only to confusion, a far better nomenclature would be one which gives some indication of the nature of the lesion and its aetiology.

Candida Species

Most candida species are dimorphic fungi which can grow either as a hyphae (long filaments) or as yeast (grow by budding), therfore it is presumed that candida has a direct aetiological relationship with a lesion if hyphae are present in smear or histopathological section of the lesion. The pathogenic mechanism of candida species infection is not fully understood, but candida species secreted a variety of enzymes such as proteinase, lipases and a number of toxins that enable hyphae to invade epithelium. Candidal leukoplakia is also referred to as a Chronic hyperplastic candidosis. Candidal leukoplakia presents clinically as a keratotic rough dense white plaque of irregular thickness and density that can not be wiped away. In some lesions, erythematous areas may be seen within the white plaque giving a speckled appearance. Buccal mucosa near to the commissure of the lips is the most common site frequently affected in which the shape of the lesion may appears as triangular tapering posteriorly and may be associated with angular chelitis. Other parts of oral mucosa are less frequently involved. Although in many cases it is indistinguishable clinically from other types of leukoplakias [1-3].

Tendency for malignant transformation of oral leukoplakia

Epidemiological studies have shown that leukoplakias are the most premalignant lesions of oral mucosa and the incidence of malignant transformation is variable, but leukoplakias presented on the ventral surface of the tongue, floor of the mouth and the lingual aspects of lower alveolar mucosa are high-risk sites. It is estimated that, malignant transformation ranges between 0.3 % to 18 % in different parts of the world in which about 14% of malignant transformation may occur over a period of 20 years while 4% over a period of 10 years and 50% of cases in erythroplakia are carcinoma in-situ or invasive squamous cell carcinoma on initial biopsy. In the fact, those types of leukoplakias are not a disease entities but a clinical description which represent the histopathological changes toward malignant transformation. Changes in clinical appearance of leukoplakia has been first described by Norman et al. [9], who concluded that early lesion of leukoplakia is a nonpalpable macule then the surface may become rough and raised, thus becoming a speckled or verrucous type of leukoplakia.

Classification of leukoplakias as a separated disease entities

1. Tobacco-associated leukoplakia
2. Candidal leukoplakia (chronic hyperplastic candidiasis)
3. Hairy leukoplakia

4. Syphilitic leukoplakia

5. Sanguinaria-associated leukoplakia

However, other white patches such as white sponge naevus, oral manifestation of genodermatoses, leukoedema, frictional keratosis, other types of candidosis, lichen planus, nicotinic stomatitis, oral submucous fibrosis and neoplastic lesions, fordyces granules, oral keratosis of renal failure, psoriasis, verrciform xanthoma and skin grafts are well documented and classified under hereditary, traumatic, infective, dematological, neoplastic and miscellaneous disorders of oral mucosa

Conclusion It is concluded in this paper that, it might be more appropriate to bring a new definition for the term leukoplakia and to reclassify leucoplakias as a separated disease entities in association to their pathogenesis and to discuss the histological stages toward malignant transformation rather than to describe or to invent several types of leukoplakias, as this may will bring further confusion which can affect the diagnosis and treatment of the lesion.

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