

# Oral leukoplakia (Homogenous leukoplakia)– A Case Report

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**Abstract :** Leukoplakia is thickened, white patches inside the mouth that are mostly non-cancerous premalignant lesions. The occurrence rises with age, with middle-aged and older men experiencing it most commonly. Oral leukoplakia affects fewer than 1% of men under the age of 30. Although there are many potential causes for oral leukoplakia, smoking is the most frequent one. There are two basic categories for it: homogeneous and nonhomogenous forms. Although there may be surface abnormalities, homogenous leukoplakia typically has a homogeneous white area with a flat appearance and feel. Non-homogeneous leukoplakia has an unsteady look and an uneven, flat, nodular, or exophytic surface texture.

**Keywords:** Oral leukoplakia, Homogenous, Hetrogenous

## Introduction

The most frequent potentially cancerous condition of the oral mucosa is oral leukoplakia (OL). [ 1 ]

It is a white spot in the mouth that cannot be removed, cannot be mistaken for any other condition, and has no known physical or chemical causes except from tobacco. [ 2 ]

Van der Waal revised his definition in 2012 and it now reads as follows: "A predominantly white lesion or plaque of questionable behaviour having excluded, clinically and histopathologically, any other definable white disease or disorder." This definition seems more appropriate because it also takes into account histological evidence. Although the WHO hasn't evaluated this one yet, doctors are likely to adopt it. [ 3 ]

Homogeneous OL, which presents as a flat white lesion, and non-homogeneous OL, which comprises speckled, nodular, and verrucous leukoplakia, are the two main kinds of OL [4].

The homogeneous leukoplakia is a narrow, uniform white patch that may or may not change with healthy mucosa.

The lesion has a primarily white surface and is of the speckled variety.

The surface of verrucous leukoplakia may appear raised, proliferative, or corrugated.

Small polypoid outgrowths and spherical, primarily white excrescences are features of the nodular form. [4]

In general, there are two subtypes of oral leukoplakia: homogeneous and non-homogeneous. [3]

- Homogenous: A thin, generally white, uniformly coloured area that may have a uniformly smooth, ridged, or wrinkled surface. [3] The likelihood of developing cancer is rather low. [4]

- Non-homogenous: An irregularly shaped area that is predominantly white or white and red and may be flat, nodular (having protrusions), or verrucous (elevated). Additional sub-categories may be created, such as ulcerated and nodular (speckled), and they can aid in determining how likely it is that a patch will become cancer. [4] A malignant change is highly likely.

## 2. Case Report



A 35-year-old male patient came to School Of Dental Sciences, Sharda University , with chief complaint of a white patch on his left cheek since 2 years. There was no similar family history and no history of trauma or surgery. The patients medical and dental histories were non-contributory. Patient reported habit of smoking tobacco, 1 pack of bidi (15 bidis) per day from past 7 years. On clinical examination, solitary white patch with a wrinkled surface and irregular margins was visible on the left and right buccal mucosa . It was not tender on palpation. The lesion was non scrapable and was having crack mud appearance, the surrounding mucosa appeared to be normal. biopsy was advised. A provisional diagnosis was given.

Differential diagnosis: Leukoedema, White sponge nevus, Hereditary benign intraepithelial dyskeratosis, Frictional (Traumatic) Keratosis, Candidiasis, Lichen planus, Habitual cheek or lip biting-White lesions of the oral tissues.

### 3. Discussion

The most common precancerous lesion of the oral cavity is oral leukoplakia (OL). Leukoplakia, a white spot in the mouth that can later turn into oral cancer, differs from other causes of white patches like thrush or lichen planus. [5]

Oral leukoplakia is thought to have a multifactorial origin. [6] The most significant contributing factors cited include smoking, drinking excessively, long-lasting mechanical injuries, Candida albicans infection, and variations in local trauma or galvanic potentials. Systemic conditions like hormonal imbalances, gastric reflux, decreased saliva output, or iron deficiency anaemia can all be associated with oral leukoplakia. Additionally, it is said that the development and transformation of oral leukoplakia into a cancerous lesion is substantially influenced by the EBV, HPV (16 and 18 kinds), HSV, and HIV viruses. [7]

The prevalence of leukoplakia rises with age, with middle-aged and older males being the most commonly affected [8]. However, lesions in the floor of mouth, lateral tongue, and lower lip are most likely to display dysplastic or malignant development. The most prevalent sites are the buccal mucosa, alveolar mucosa, and lower lip. [9]

Broadly speaking, there are two subtypes of oral leukoplakia: homogeneous and non-homogeneous. [10]

The differentiation between these two types is solely clinical, based on characteristics of the surface colour and morphological (thickness), and it does have some impact on the prognosis or outcome. [11]

Homogeneous plaques have a smooth, wrinkled, or corrugated surface with a constant texture throughout, are primarily white, uniform flat, thin in appearance, and contain shallow surface keratin cracks. [12]

The possibility of cancerous transformation is minimal. [11]

Non-homogeneous plaques varieties include [11]:

- speckled: a mixture of erythro leukoplakia, which is primarily white, and red;
- Nodular: spherical red or white excrescences, little polypoid outgrowths;
- verrucous: having a surface that is wrinkled or corrugated.
- proliferative verrucous leukoplakia (PVL). Proliferative verrucous oral leukoplakia is a subtype of verrucous leukoplakia

Lesions that are not homogenous have a higher chance of developing into cancer. [11]

Staging system for Oral Leukoplakia (OLEP) [18]

L ( Size of leukoplakia)	Size of
L1	Size of leukoplakia which is less than or equal to 2 cm
L2	Size of leukoplakia which lies between 2 to 4 cm
L3	Size of leukoplakia which is more than or equal to 4 cm
Lx	Not specified
P ( Pathology)	
P0	No epithelial dysplasia
P1	Mild to moderate and moderate to possibly severe epithelial dysplasia
P2	Severe epithelial dysplasia.
Px	Epithelial dysplasia not specified in pathology report .
OLEP Staging System	
Stage 1	L1P0

Stage 2	L2P0
Stage 3	L3P0
Stage 4	LEP1

General rules of the OLEP staging system.

1. If there is doubt concerning the correct L or P category to which a particular case should be allotted, then the lower (i.e less advanced ) category should be chosen. This will also be reflected in the state grouping.
2. In case of multiple biopsies of single leukoplakia or biopsies taken from multiple leukoplakias the highest pathological score of the various biopsies should be used.
3. For reporting purposes the oral subsite according to the ICD-DA should be mentioned.[19]

#### Diagnosis

Leukoplakia's white patches do not produce symptoms, thus they are frequently discovered for the first time by medical professionals during a regular inspection.

Leukoplakia is not immediately diagnosed; instead, other potential reasons of the white patches are looked into. These might include oral friction (induced by things like dentures), frequent cheek biting, a fungus infection, or lichen planus.

After two to four weeks, if no cause has been identified and the white patches have not disappeared, a biopsy (tissue sample) is obtained and sent to the lab for analysis.[13]

The white patch may be confirmed as leukoplakia, which indicates that it has the potential to develop into cancer, if the biopsy results in a diagnosis that is still unclear.

#### Management

The primary goal of treating oral leukoplakia is to identify and stop the development of a malignant transformation.

#### Medical management:

- Give up using alcohol and smoke. [14]
- Include fruits and vegetables in your diet.
- Oral retinoids, which are vitamin A-based medications used to treat psoriasis and acne, may help reduce lesions, but relapses and adverse effects are frequent. [15]
- Oral (by mouth) Beta-carotene and vitamin A tablets can help fade the white patches, but once the person stops using them, they will return. [15]

#### Surgical management:

- Performing surgery to remove lesions. The chances of the lesions returning are still 10% to 20%, and the likelihood of getting cancer in the treated areas is 3% to 12%.
- Laser removal of lesions [16]
- Photodynamic treatment (use of light-activated cancer drugs).
- Cryotherapy (use of freezing to remove lesions). [16]
- The usage of electricity (use of an electrically heated needle or other instrument to remove lesions). [16]

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