

## Pigmented Lesions of the Oral Cavity: A Review

Dr. Nisha Kumari<sup>1\*</sup>, Dr. Nitin Agarwal<sup>2</sup>, Dr. Payal Tripathi<sup>3</sup>, Dr. Vasu Siddhartha Saxena<sup>3</sup>, Dr. Sudhir Shukla<sup>4</sup>, Dr. Savista Naaz<sup>1</sup>

<sup>1</sup>PG Student, Department of OMDR, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, U.P, India

<sup>2</sup>Prof & Head, Department of OMDR, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, U.P, India

<sup>3</sup>Professor, Department of OMDR, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, U.P, India

<sup>4</sup>Associate Professor, Department of OMDR, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, U.P, India

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\*Corresponding author: Dr. Nisha Kumari

PG Student, Department of OMDR, Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow, U.P, India

### Abstract

The term “pigmentation of oral mucosa” is applied to a wide range of lesions or conditions featuring a change of color of oral tissues. Common causes of mucosal coloration including petechiae, purpura, ecchymoses, hematomas, vascular tumors and exogenous substances are not true pigmented lesions. In contrast, melanin which is synthesized by melanocytes, is a true pigment and usually imparts a brown, blue or black appearance of the mucosa. Oral pigmentation affects about 3% of the total population and most likely in those with dark skin, more prevalent in females than males during the 3<sup>rd</sup> or 4<sup>th</sup> decade of life. In this review, we are describing the oral manifestation and dental considerations associated with common pigmented disorders which will allow the practitioner to have a holistic approach in diagnosis and management of these patients.

**Keywords:** Pigmentation, petechiae, purpura, hematomas, melanin, melanocytes.

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## INTRODUCTION

Oral mucosa is never uniformly colored, and several degree of chromatic variegation is seen in pathologic and physiologic conditions [1]. Oral pigmentation affects about 3% of the total population and most likely in those with dark skin, more prevalent in females than males during the 3<sup>rd</sup> or 4<sup>th</sup> decade of life. The physiologic color of the oral mucosa thus ranges from whitish pink to red purple in light skinned people whereas an evenly black colored gingiva, buccal mucosa and lips are characteristic of dark skinned people. Any alteration in color, location, duration, distribution and appearance of mucosa can be of huge significance since they frequently represent diagnostic evidence of either local or systemic disease but at the same time it could create a diagnostic dilemma for the oral clinician for example light brown to black pigmentation is considered normal for negros but is viewed with suspicion in Caucasians [2, 3]. The term “pigmentation of oral mucosa” is applied to a wide range of lesions or conditions featuring a change of color of oral tissues. Common causes of mucosal coloration including petechiae, purpura, ecchymoses, hematomas, vascular tumors and exogenous substances are not true pigmented lesions. In contrast, melanin

which is synthesized by melanocytes, is a true pigment and usually imparts a brown, blue or black appearance of the mucosa.

### CLASSIFICATION OF PIGMENTED LESIONS AFFECTING THE ORAL CAVITY: ENDOGENOUS PIGMENTATION:

#### ▼ Focal Melanocytic Pigmentation

1. Freckle/Ephelis
2. Oral/Labial Melanotic Macule
3. Oral Melanoacanthoma
4. Melanocytic Nevus
5. Malignant Melanoma

#### ▼ Multifocal/Diffuse Pigmentation

1. Physiologic Pigmentation
2. Drug-Induced Melanosis
3. Smoker's Melanosis
4. Postinflammatory (Inflammatory) Hyperpigmentation
5. Melasma (Chloasma)

▼ **Melanosis Associated with systemic or Genetic Disease**

1. Hypoadrenocorticism (Adrenal Insufficiency, Addison's Disease)
2. Cushing's Syndrome/Cushing's Disease
3. Hyperthyroidism (Graves' Disease)
4. Primary Biliary Cirrhosis
5. Vitamin B12 (Cobalamin) Deficiency
6. Peutz-Jeghers Syndrome
7. Café au Lait Pigmentation
8. HIV/AIDS-Associated Melanosis

▼ **Idiopathic Pigmentation**

1. Laugier-Hunziker Pigmentation

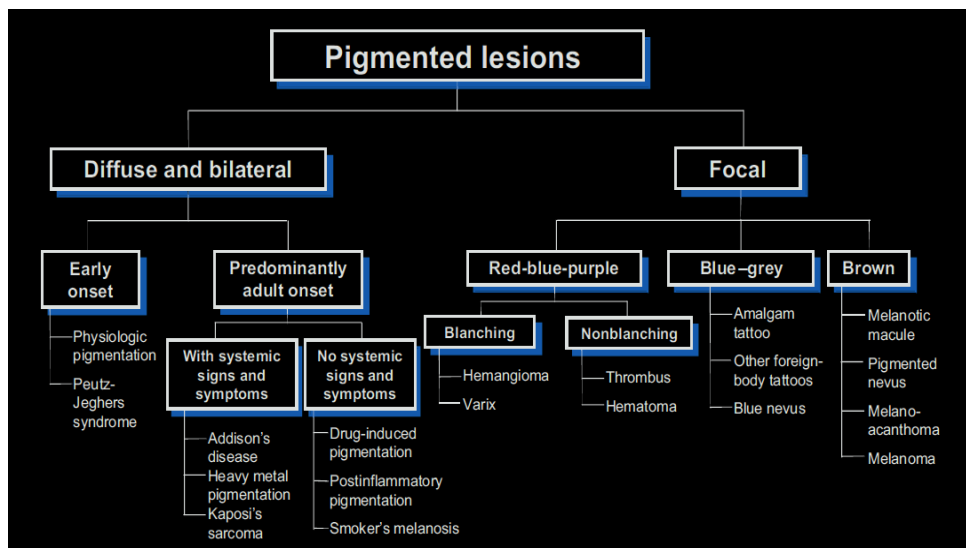
▼ **Hemoglobin and Iron-Associated Pigmentation**

1. Ecchymosis/Purpura/Petechia
2. Hemochromatosis

▼ **Exogenous Pigmentation**

1. Amalgam Tattoo
2. Graphite Tattoos
3. Ornamental Tattoos
4. Drug Induced Pigmentation
5. Heavy-Metal Pigmentation
6. Hairy Tongue

(Courtesy: Burket 10<sup>th</sup> Edition)



Common pigmentation disorders affecting the oral cavity has been discussed below:

**1. FRECKLE:**

Ephelis are sun-induced freckles, which are most common in fairskinned individuals,. The cutaneous freckle, or ephelis, is a commonly occurring, asymptomatic, small (1–3 mm), well-circumscribed, tan- or brown-colored macule that is often seen on the sun-exposed regions of the facial and perioral skin.

**2. ORAL MELANOTIC MACULE:**

Melanotic macules are discrete, macular areas of hyperpigmentation often occurring on the lips. . They are dark brown to tan in color and can be up to 1 cm in diameter. They appear similar to ephelides but are not associated with sun exposure.



**Hyperpigmented macule present on the lower lip**

**3. ORAL NEVI**

The nevi are benign proliferations of nevus cells in either epithelium or connective tissue. Nevi may also be classified as congenital or acquired.

Oral nevi most commonly occur on the hard palate, with almost 40% presenting in that location. The second most common location is the buccal mucosa.



**Well-circumscribed brown to black, smooth raised hyperpigmentation**

#### 4. MALIGNANT MELANOMA

A melanoma is a tumor produced by the malignant transformation of melanocytes. Melanomas may develop in or near a previously existing precursor lesion or in healthy-appearing skin. A malignant melanoma developing in healthy skin is said to arise de

novo, without evidence of a precursor lesion. Solar irradiation induces many of these melanomas. Melanoma also may occur in unexposed areas of the skin, including the palms, soles, and perineum



**Widespread involvement of lower gingiva**

#### 5. PHYSIOLOGIC PIGMENTATION

The attached gingiva is the most common intraoral site of such pigmentation, where it appears as a bilateral, well-demarcated, ribbon-like,

dark brown band that usually spares the marginal gingiva.



**Normal pigmentation of oral mucosa**

#### 6. SMOKER'S MELANOSIS

Diffuse melanosis of the anterior facial maxillary and mandibular gingivae, buccal mucosa, lateral tongue, palate, and floor of the mouth is occasionally seen among cigarette smokers.

The pigmented areas are brown, flat, and irregular; some are even geographic or map-like in configuration.

#### CONCLUSION

The identification of pigmented tissue within the oral cavity may present a diagnostic dilemma for the clinician because the manifestation of mucosal pigment

is variable and can range from focal to diffuse macular coloration or from a small nodular growth to a large mass which may require a systematic approach with resource to appropriate investigations in certain circumstances. The diagnostic procedure of pigmented lesions of the oral cavity and perioral tissues is quite challenging. Pathologic melanin production within the oral mucosa may be associated with an array of etiologies. The most concerning of these are malignant melanoma and various systemic disorders, including adrenal insufficiency and Cushing disease. Importantly, the oral manifestations of these potentially life-threatening disorders can mimic an array of idiopathic, reactive and benign neoplastic lesions. Thus, dentist

could be the first one to diagnose the systemic disease patient is suffering from but is not aware of it. General dental practitioners can benefit from this as it delineates the factors that will help them to differentially diagnose pigmented lesions of the oral cavity and also improve their understanding of how to differentiate between normal and diseased conditions, so that they can master the skill of early definitive diagnosis and prompt treatment.

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