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Review

Diagnosis of oral pigmentations and malignant transformations



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ARTICLE INFO

Keywords:
Pigmentation
Melanin
Oral
Diagnosis

ABSTRACT

Background: Oral pigmentation is a common finding in the mouth. Pigmentation can be either normal or abnormal discoloration of oral mucous membrane. The purpose of this review mainly focuses on the main oral pigmented lesions, in order to help the clinicians establish a better approach towards the patients with pigmented oral lesions and to provide thorough knowledge regarding such lesions for patient reassurance, early definitive diagnosis and prompt treatment.

Methods: Relevant data concerning oral pigmented lesions, clinical features and the possibility of malignant transformation of such lesions were reviewed thoroughly from pubmed literature published in English. Pigmented lesions affecting the skin were not included in our review.

Results: Few pigmented lesions have been identified and their tendency to become malignant has been reported in the literature. The oral lesions showing malignant transformation reported were mostly case series. Unfortunately, due to lack of long-term studies, follow ups and randomized controlled studies in this respect it was difficult to draw a statistical analysis. This information is quite crucial for general dental practitioners to improve their understanding regarding oral lesions and to differentiate between normal and diseased conditions, so that they can master the skill of differential diagnosis, definitive diagnosis and prompt treatment.

Conclusion: Oral pigmentation may present as focal, multifocal or diffused macular or tumefactive lesions. They may greatly vary in color as blue, purple, brown, gray or black depending on the quantity and site of melanin in the tissues [1]. Etiology of pigmentation can be multi factorial. Mostly pigmentation is physiologic but at times it can be a precursor of severe diseases.

Lesions may be caused by localized harmless accumulations of melanin, hemosiderin or exogenous metals or they may be a sign of underlying systemic or genetic disease. A few lesions may be associated with life-threatening medical conditions that require immediate intervention. The differential diagnosis for any pigmented lesion is extensive, as it includes examples of endogenous and exogenous pigmentations. Although biopsy is a helpful and necessary aid in

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the diagnosis of focally pigmented lesions, with diffuse pigmentation lesions require a thorough dental and medical history and laboratory investigations.

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Contents

Introduction	40
Pigmented lesions of the oral mucosa	40
Classification of oral pigmentations	41
Ephelides	41
Melanotic macules	41
Heavy metal pigmentation	41
Kaposi's sarcoma	42
Post-inflammatory pigmentation	42
Chemically induced melanosis	42
Smoker's melanosis	42
Amalgam tattoo and other foreign-body	42
Pigmentation	42
Drug-induced pigmentation	43
Disease-associated melanosis	43
Peutz-Jeghers syndrome	43
Addison's disease	43
Melanocytic nevi	43
Oral melanoacanthoma	44
Oral melanoma	44
Focal pigmentation	44
Hemangioma and vascular malformation	44
Varix and thrombus	44
Hematoma and other hemorrhagic lesions	45
Discussion	45
Conclusion	45
References	45

Introduction

Pigmented lesions of the oral mucosa

Oral mucosa is not uniformly colored. The color varies in different physiological and pathological conditions [1–6]. Physiological pigmentation is frequent in Asians, Africans and Mediterranean people [3]. The color change of the oral mucosa could be due to accumulation of one or more pigments in tissues. Pigments associated with mucosal discoloration could be classified as endogenous (e.g. melanin and blood-related pigments) and exogenous (e.g. metals and drug-related pigments). Melanin-associated lesions are most common pigmentations. They may present as benign melanocytic nevi or extremely aggressive neoplasm as mucosal melanoma [1–7]. Benign melanin-associated pigmentations of the oral mucosa includes racial pigmentations, melanotic macules, oral melanocytic, naevi (OMNs), melanoacanthoma, post-inflammatory pigmentations and so-called smoker's melanosis [1–6]. Several systemic diseases such as Peutz-Jeghers, Laugier-Hunziker syndromes as well as the Addison's disease are also characterized by the

presence of benign melanin-associated lesions of the oral and perioral tissues. Non-melanin associated pigmentations may be caused by blood-related entities (bilirubin and biliverdin, iron-containing ferritin and hemosiderin) and metal pigments (e.g. silver, gold, lead and mercury) [1–6]. Among these, the most frequent is amalgam pigmentation (amalgam tattoo). Several drugs have been reported to induce mucosal discoloration through direct deposition on oral surfaces, local accumulation after systemic absorption, stimulation of melanin-related pathways and bacterial metabolism [1–6].

It is important to have a thorough checkup of all the systems of the body and to study the previous medical and surgical history to determine the presence of any atypical, unstable or malignant skin lesions. Similarly a positive family history of oral pigmentation or hereditary systemic diseases is crucial in the overall evaluation of the patient. For clinical assessment good lighting and a mouth mirror or magnifying glass should be used. Examination of the mouth should begin with the evaluation of pigmentation of facial skin, especially the perioral region, followed by labial vermilion border and mucosal surfaces, the mucogingival junction as well as the attached gingiva.

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