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Drug Induced Oral Mucosal Pigmentation- A Review

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Abstract

Medications may induce a variety of different forms of mucocutaneous pigmentation, including melanosis. This short review discusses about various drugs implicated in oral mucosal pigmentation and also pigmentation caused by heavy metal ingestion.

Keywords: Drugs; Oral pigmentation; Heavy metal

Introduction

Pigmented lesions that are of exogenous origin are usually traumatically deposited directly into the sub mucosal tissues. In some cases, the substances may be may be ingested, absorbed and distributed hematogenously to be precipitated in the connective tissues, particularly in areas subject to chronic inflammation such as gingiva [1]. In other instances these ingested substances can actually stimulate melanin production, thus precipitating color change.

The manifestation of oral pigmentation is quite variable, ranging from a focal macule to broad diffuse tumefactions [2]. The specific hue, duration, location, number, distribution, size and shape of pigmented lesion may also be of diagnostic importance.

Thus an understanding of various drugs and heavy metals that can contribute to oral and perioral pigmentation is essential for proper evaluation, diagnosis and management of the patient.

Drug induced Melanosis

The chief drugs implicated in drug induced melanosis are antimalarials including chlorquine,hydroxychloroquine, quinacrine and others [2,3]. These medications are typically used for the treatment of autoimmune diseases. Other classes of medications that induce melanosis include the phenothiazines such as chlorpromazine, oral contraceptives, cytotoxic medications such as cyclophosphamide and busulfan [4].

Pathophysiology

Possible reasons behind pathologic pigmentation are [5,6]

1. Melanin accumulation.

2. Localized accumulation of drug under layer of skin.

3. Iron accumulation throughout dermis from drug induced inflammatory changes.

4. Some special pigments synthesis due to drug influence.

General Clinical Considerations

Discontinuation of causative agent is the best treatment regarding oral drug induced melanosis. Discontinuity will gradually normalize the hypermelanotic pigmentation. Along with it, general dental prophylactic measures should be followed like proper oral hygiene maintainence and regular dental visits [7,8] (Table 1).

Heavy Metal Pigmentation

Increased levels of heavy metals (e.g., lead, bismuth, mercury, silver, arsenic and gold) in the blood represent a known cause of oral mucosal discolouration.

Causes

1. In adults, the most common cause for such increased levels is occupational exposure to heavy metal vapours.

2. Treatment with drugs containing heavy metals, such as arsenicals for syphilis, was a common cause in the past.

3. In children, possible sources of exposure include lead-contaminated water or paint and mercury or silver-containing drugs.

These ingested pigments tend to extravasate from vessels in foci of increased capillary permeability such as inflamed tissues. Thus, in the oral cavity, the pigmentation is usually found along the free marginal gingiva, where it dramatically outlines the gingival cuff. This metallic line has a gray to black appearance. The importance of oral mucosal pigmentation associated with heavy metals lies primarily in the recognition and treatment of the underlying cause to avoid severe systemic toxic effects. The heavy metals may be associated with systemic symptoms of toxicity, including behavioral changes, neurologic disorders, and intestinal pain. This condition is now rarely seen [9,10].

Conclusion

Drug induced melanin pigmentation may show a varying degree

DRUGS CAUSING ORAL & PERIORAL PIGMENTATION
Amiodarone
Amodioquine
Aziodothymidine
Bleomycin
Chloroquine
Chlorpromazine
Clofazamine
Gold
Hydroxychloroquine
Hydroxyurea
Imipramine
Ketoconazole
Mepacrine

Table 1: Drugs causing oral and perioral pigmentation.

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of presentations. Many pigmented lesions can be clinically diagnosed based on history and clinical features. These pigmentations can be caused by both systemic and topical medications. Complete local and systemic assessment of the patient should be performed prior to diagnosing these entities.

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