Dental Considerations of Albino: A Case Report

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Abstract

Albinism is a congenital hypopigmentary disorder. It occurs due to the dysfunction of the melanin producing cells (melanocytes) resulting in defective production of melanin from tyrosine through a complex pathway of metabolic reactions. This case report summarizes the features encountered in albinism, the different oral findings available in the literature.

Keywords: Albinism; Hypo pigmentation; Melanin disorder

Introduction

Albinism consists of a group of genetically inherited autosomal recessive condition which is typically characterized by a congenital reduction or absence in melanin pigment biosynthesis which gives the natural colour in the skin, iris of the eyes and hair [1]. Albinism affects men and women, and is apparent from birth. Traditionally, albinism has been classified according to clinical phenotype, and the two main categories are oculocutaneous albinism (OCA) types 1, 2 and 3, and ocular albinism [2–4]. All types of albinism have some lack of pigment, but the amount varies from type to type. A person with albinism may have one of the following symptoms:

• Absence of colour in the hair, skin or iris of the eye
• Lighter than normal skin and hair
• Patchy, missing skin colour
• Crossed eyes (strabismus)
• Light sensitivity (photophobia)
• Rapid eye movements (nystagmus)
• Vision problems, or functional blindness
• Oral mucosal ulceration
• Periodontal diseases

A dentist can play a significant role in successfully treating albino patients if he/she has basic knowledge about the symptoms of albinism. This article aims to present characteristic dental features of an albino patient and treatment modifications to manage the same.

Case Report

A 55-year-old woman reported to the department of oral medicine & radiology with the complaint of missing right mandibular posterior teeth (Figure 1). Systemic examination revealed absence of colour in skin, eyes and iris of the eye. Apart from this, the patient presented with photophobia, nystagmus (rapid eye movements) and decreased visual acuity suggesting oculocutaneous type of albinism (Figure 2). On taking history it was found that she is suffering from congenital albinism. Her family history revealed consanguineous marriage of her parents and her younger sibling also have similar problem. On dental examination she suffered from generalized gingival inflammation (gingivitis) with generalized attrition (Figure 3).

Investigations

• Albinism is present at birth, and it is usually diagnosed based on the infant's appearance. The most definitive test in determining the albinism type is family history. Genetic sequence analysis is done to find out the type of albinism occurring in family. In the presented case the family history was consanguineous marriage and another sibling suffering from the same.

• Some physicians believe that a bleeding time should be obtained in all albino persons. Blood examination is done for determining bleeding time to rule out Hermansky-Pudlak syndrome (HPS) or Chediak-Higashi syndrome [5] (CHS; associated with albinism). If HPS [6] is suspected, bleeding time, platelet aggregation and platelet electron microscopy is necessary (they have a greater tendency to have bleeding disorders). If CHS [7] is suspected, a hematologist should evaluate polymorphonuclear leukocyte function. In this case hematological test return normal values.

• Hair bulb assays help to indicate the status of tyrosinase activity (hair bulbs are taken from the scalp). This test was not available in our region.

• An ophthalmologist should perform an electro-retinogram test, which can reveal vision problems related to albinism. A visual evoked potentials test can be very useful when the diagnosis is uncertain [8].

Treatment

There is no treatment or cure for albinism. Albinism does not alter life expectancy or have other serious health effects. Treatment depends on the severity of the disorder. The goal of treatment is to relieve symptoms. In the present case, the patient had existing generalized gingivitis so thorough oral prophylaxis was performed and oral hygiene maintenance instructions were given along with prescribing chlorhexidine mouthwash. Meanwhile a temporary removable partial denture was given to the patient. After improvement of gingival condition patient was advised for fixed prosthesis. Patient was educated regarding the importance of visiting an ophthalmologist, dermatologist and dentist periodically [9,10].

Discussion

It is believed that lack of melanin pigment in periodontal tissues might influence periodontal disease progression in albinos but it was found that albinism does not represent a clinical risk factor in the pathogenesis or exacerbation of periodontal diseases for these individuals [10]. Varied dental features have been reported...
Figure 1: Showing front profile view with photophobia.

Figure 2: Showing nystagmus with absence of colour in eye, iris & skin.

Figure 3: Showing intraoral view.
in albinism patients. Enamel hypoplasia has been reported in
brothers with OCA in both primary and permanent dentition [9–
11]. In another case of OCA the patient had an upper maxillary
lateral incisor showing features of both dens invaginatus (dens in
dente) and dens evaginatus, which is a rare phenomenon [12]. It
was also found that many albino patients presented with excessive
gingival bleeding, epistaxis and prolonged oozing from cuts and
bruises from early childhood [13].

HPS can result in variable bruising, epistaxis, gingival bleeding
[14]. An increased vulnerability to severe periodontitis can be seen
in CHS which manifests as early-onset periodontitis on a severe
localized or generalized basis with premature exfoliation of both
dentitions [15,16]. Also severe gingivitis, ulcers of mu cosa, tongue and hard palate are seen.

Anyone who has suffered excessive exposure to the sun can
develop actinic cheilitis, but fair complexioned people, especially
people affected with albinism, are particularly at risk [17,18]. In
our case we did not encounter any such prominent findings except
for gingivitis.

Conclusion

Albinism patients should be educated to visit the dentist regularly
for oral hygiene maintenance as they are prone for recurrent
 gingivitis. Adequate oral hygiene instructions should be given to
the patients for the maintenance of the restoration. Oral tissue trauma
and bleeding should be avoided. Haemostatic retraction cord
should be placed to prevent bleeding. Patients should be educated
to see a dermatologist regularly to be screened for skin cancer.
Patients should be encouraged to consult ophthalmologist as he
plays an important role in detecting albinism because most forms
of albinism present with ocular features as the primary morbidity.

Conflict of Interest

All the authors declared that they have no conflict of interest to
disclose.

References


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Received Date: July 30, 2018, Accepted Date: August 14, 2018, Published Date: August 24, 2018.

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