

COSMETIC MANAGEMENT OF RACIAL INTRA-ORAL PIGMENTATION USING AUTOGENOUS DERMIS GRAFT: AN EXPERIMENTAL STUDY

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Abstract

This study aimed at evaluating the applicability of autogenous dermis graft in treatment of extensive intraoral racial pigmentation. Six adult male mongrel dogs with extensive intraoral pigmentation on the attached and relining mucosa were used. They were divided into two groups; in the first group, excision of a rectangular 2x3 cm pigmented buccal mucosa was performed and the bed was reconstructed using an autogenous dermis graft. While in the second group the pigmented mucosa over the lower anterior region (between the two canines) was excised through supraperiosteal dissection and then replaced by an autogenous dermis graft.

All cases healed well and the grafted areas showed absence of pigmentation and appeared mucosal-like during the follow up period. Thus the problem of the extensive unsightly intraoral pigmentation can be successfully and permanently managed by autogenous dermis grafts.

Introduction

Intraoral racial pigmentation is clinically manifested as multifocal or diffuse melanin pigmentation that varies in prevalence in many different races and ethnic groups, this pigmentation is genetically acquired and is thought to be determined by several genes⁽⁵⁾.

In most fair skinned persons the oral mucosa is not pigmented. However, sometimes the fixed gingiva will be hyperpigmented especially in dark-skinned patients with a brownish through blue to black stain^(5,20).

The Melanin pigmentary system is a functional and structural unit composed of a specialized dendritic shaped pigment producing glands, the melanocytes, associated with a cluster of keratinocytes that are supplied with pigment particles by one single melanocyte. These pigment particles which are called melanosomes are secreted into the keratinocytes⁽¹⁴⁾.

Thus in heavily pigmented areas melanin would not be seen only in the basal cell layer but also in the prickle cells and in phagocytes in the lamina propria⁽⁶⁾. The pattern may be linear, spotted or even figuratum. The fixed gingiva is most often involved with sparing of the marginal gingiva. Physiologic mucosal pigmentation is far more common in blacks and is termed "oral Melanosis"⁽⁵⁾.

There are many pathologic mucosal pigmentations such as: Addison's disease and Peutz-Jeghers syndrome, some drugs may cause hyperpigmentation as quinine derivatives, oral contraceptives and minocyclines, also there are some exogenous hyperpigmentations due to excessive smoking, heavy metal intoxication, amalgam tattoo and other tattoos^(1,5,7).

The patients complaining of ugly looking pigmented gingivae try to limit their mouth opening and sometimes they are unable to smile in a normal way, this unsightly pigmentation causes embarrassment to many sufferers⁽⁴⁾.

Until recently, however, very little attention has been paid to the cosmetic treatment of severe racial pigmentation being benign with no pathologic complications. The few reported cases treating ugly pigmentation of the anterior region, utilized the "secondary epithelialization technique", or used "gingival autografts". These cases are too few for statistical evaluation^(2,4,10,16).

Thorough computer search for management of gingival pigmentation did not show any previous use of autogenous dermis grafts in the last few years. Due to the versatility of the dermal graft and its merits in oral surgery^(9,12,13,15,18), this study was performed to evaluate its application in management of extensive intraoral racial pigmentations.

Materials and Methods

Six adult male mongrel dogs with intraoral pigmentation were used in this study. They were divided into 2 groups:

The first group (lining cheek mucosa) "left side": Three animals with pigmented cheek mucosa were anaesthetized using IV thiopental 30 mg/kg body weight 2.5% sol. A rectangular mucosal defect 2x3 cm was excised (Fig.1). After bleeding control, an autogenous dermal graft "0.56 mm" thickness was sutured to the defect site (Fig.2). A plastic stunt was applied over the grafted site and fixed in place using black silk percutaneous sutures.

To harvest the dermis graft we used the Braithwaite skin graft knife, the cutting depth was adjusted to 0.36 mm, when sufficient length of the