SURGICAL TREATMENT OF MELANIN-PIGMENTED GINGIVA; AN ESTHETIC APPROACH.

Khalid Almas, MSc, FRACDS, FDSRCS(Ed.-), MSc, DDPH 1
Walid Sadig, BDS,MS 2

1Div. Periodontics, Dept. Preventive Dental Sciences, Dept. Prosthetic Dental Sciences, College of Dentistry, Riyadh, Saudi Arabia

ABSTRACT: The aim of this clinical article is to review the methods of depigmentation of melanin pigmentation of gingiva and explain scalpel surgical technique for depigmentation of gingiva.

INTRODUCTION

Oral melanin pigmentation is well documented in the literature and is considered to have multifaceted etiologies including genetic factors 1-2, tobacco use 3-5, systemic disorders 6 and prolonged administration of certain drugs especially antimalarial agents 7-8 and tricyclic antidepressant.

Melanin pigmentation often occurs in the gingiva as a result of an abnormal deposition of melanin. This type of pigmentation is symmetric and persistent and it does not alter normal architecture. This pigmentation may be seen across all races 10 and at any age 9 and it is without gender predilection. 11 Melanosis of the gingiva is frequently encountered among dark skinned ethnic groups, as well as in medical conditions such as Addison's syndrome, Peutz-jegher's syndrome and von Recklinghausen's disease (neurofibromatosis). 12-13

In dark skinned and black individuals increased melanin production in the skin and oral mucosa has long been known to be result of genetically determined hyperactivity of their skin and mucosal melanocytes. Earlier studies have shown that no significant difference exists in the density of distribution of melanocytes between light-skinned, dark skinned and black individuals. However, whereas melanocytes of dark skinned and black individual's are uniformly highly reactive, and in light skinned individuals, melanocytes are highly variable in reactivity. 14-16

Although melanin pigmentation of the gingiva is completely benign and does not present a medical problem, complaints of 'black gums' are common. Demand for treatment is usually made for esthetic reasons; however, there is not much information in the literature about the depigmentation of gingival. 17 Except elimination of these melanotic areas through surgery 18,19 and laser surgery 11 as well as cryosurgical depigmentation through use of a gas expansion system 8 has been reported. These treatment modalities, however, are not widely accepted or popularly used. The present case report introduces a simple and effective surgical depigmentation technique that does not require sophisticated instruments or apparatus yet yields esthetically acceptable results.

MATERIAL AND METHODS

A twenty-eight years old male, Caucasian, dark skinned Arab with generalized maxillary and mandibular gingival melanin pigmentation was treated with simple surgical procedure. The patient had acceptable oral hygiene level with good plaque control. Topical anesthesia with 4% lidocaine gel minimized discomfort before treatment. Then infiltration of local anesthesia was administered in premaxillary and anterior mandibular areas.
Blade no. 15 with Bard Parker handle was used to scrap the epithelium with underlying pigmented layer carefully. The raw surface was irrigated with saline solution. The surface was cleaned and bleeding stopped. The exposed depigmented surface was cover with Coe-pak periodontal dressing for one week. The patient was prescribed chlorhexidine 0.12% mouthwash for two weeks.

RESULT

No post-operative pain, hemorrhage, infection or scarring occured in any of the sites on first and subsequent visits. Healing was uneventful. Patients acceptance of the procedure was good and results were excellent as perceived by the patient. The follow up period spanned 6 months. There was no repigmentation. The patient is being monitored for longitudinal period for any repigmentation. See the step by step (figs. 1 to 5.)

DISCUSSION

Melanin pigmentation is the result of melanin granules produced by melanoblasts interwined between epithelial cells at the basal layer of the epithelium.21

Previous clinical and experimental reports describe the different depigmentation methods. It is known that the healing period for scalpel wounds is faster than other techniques; however, scalpel surgery causes unpleasant bleeding during and after the operation, and it is necessary to cover the lamina propria with periodontal packs for 7 to 10 days. Electro surgery requires more expertise than scalpel surgery. Prolonged or repeated application of current to tissue induces heat accumulation and undesired tissue destruction. Contact with periosteum or alveolar bone and vital teeth should be avoided.22

Cryosurgery is followed by considerable swelling and it is also accompanied by increased soft tissue destruction. Ishida and Silva23 and Gage & Baust 24 reported that in cryosurgery, all the parts of the freeze-thaw cycle can cause tissue injury and healing is eventful. Depth control is difficult and optimal duration of freezing is not known, but prolonged freezing increases tissue destruction.1

The CO2 laser causes minimal damage to the periosteum and bone under the gingiva being treated and it has the unique characteristic of being able to remove a thin layer of epithelium cleanly. Although healing of laser wounds is slower than healing of scalped wounds, laser wound is a sterile inflammatory reaction.34 Patients frequently report greater postoperative pain after electro surgery than after laser surgery. However, unlike an electrosurgical wound, a laser wound is not a burn; 10.6 um photons are experimentally absorbed as a function of amount of water, not as a result of resistance or conduction, and CO2 laser's air cooling function.

Fig.1 28 years old patient with melanin gingival pigmentation in pre-maxillary area.

Fig.2 28 years old patient with melanin gingival pigmentation in pre-maxillary area.
therapy modalities achieved satisfactory results, but they required sophisticated equipment that is not commonly available in hospitals and clinics in developing countries. Therefore, scalpel surgical technique is highly recommended in consideration of the equipment constrains in developing countries. It is simple, easy to perform, cost effective and above all with minimum discomfort and esthetically acceptable to patient.

REFERENCES


5. Hedin C. A. AndLarssonA. The ultra structure of the gingival epithelium in smoker’s melanosis. J. Periodont Res 1984; 19; 177-81.