

Anterior Esthetic Gingival Depigmentation - Case Report

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Abstract

Clinical melanin pigmentation is neither measured as a medical problem nor a disease, it is one of the major concerns when seen from an esthetic point of view for many people. This case presents a split arch de-epithelization procedure. Laser treatment is usually adequate to eradicate the pigmented gingiva. Easily operated including haemostasis, sterilization effects and good coagulation (small vessels and lymphatics), less laborious are its known benefits. The area which has been treated should be left exposed in the mouth. Few myofibroblasts present in the base of the wound cause

minimal contraction and scarring, with little restriction in movement of the soft tissues.

Keywords: Melanin, Gingival depigmentation, Diode laser

Introduction

Gingival pigmentation is a major esthetic concern for many people. Though, it is not considered a medical problem, nowadays many people complain of dark gums as unesthetic. Depigmentation of gingiva can be carried out in such patients with excellent outcomes. A case is reported here in which a simple and effective depigmentation was performed by using diode laser.

The most common aetiology of endogenous pigmentation of gingiva is melanin [a brown pigment] and is considered as the most predominant pigmentation of mucosa.^{1, 2} In some populations, gingival hyperpigmentation is seen as a genetic trait and is more appropriately labelled as physiologic or racial gingival pigmentation.^{3,4} Gingival depigmentation is considered as periodontal plastic surgical procedure whereas the gingival hyperpigmentation is removed or reduced by numerous procedures.

The essential indication for depigmentation is patient demand for enhanced esthetics. Easily operated including haemostasis, sterilization effects and good coagulation (small vessels and lymphatics), less laborious are its known benefits. Laser depigmentation has been broadly used recently and is even preferred over conventional technique by several clinicians. The recognized advantages of lasers in periodontal surgery include less bleeding⁶ followed by rapid healing and reduced postoperative pain.

Different Methods of Depigmentation⁵

Scalpel surgical technique.

Cryosurgery

Electrosurgery

Lasers: Neodymium; Aluminum - Yttrium Garnet (Nd-YAG) lasers. Erbium-YAG lasers.

Carbon-di-oxide CO2 laser

Chemical methods of depigmentation like liquid nitrogen
Methods aimed at masking the pigmented gingiva with grafts from less pigmented area free gingival graft, acellular dermal matrix allograft.

Case report

A 23-year-old male patient visited to the department of Periodontology, Desh Bhagat Dental College & Hospital, with the chief complaint of 'black' coloured

gums. His intraoral examination revealed that he had deeply pigmented gingiva from right canine region to left canine region. The patient requested for any kind of esthetic treatment which could make his black" coloured gums look better. Patient had no past medical history and had good oral hygiene.

Patient was explained about the treatment options available and the possibility of repigmentation after certain period of time. Phase I therapy was carried out during the initial visit.

A split arch approach using diode laser was planned [right to left central incisors to canine in mandibular arch] were being treated. Mental nerve block was being administered and the area was anaesthetized by using 2% lignocaine with 1:80000 adrenaline. Twenty minutes after patient confirmed lack of sensation in that area. At the mandibular left and right anterior region from central incisor to canine diode laser with "Gingivectomy" mode was being used for depigmentation. Exposure parameters were set according to the recommended guidelines, followed by careful removal of epithelium containing melanin layer. There was absolutely no bleeding during the procedure. The treated area should be left exposed in the mouth. Few myofibroblasts present in the base of the wound cause minimal contraction and scarring, with little restriction in movement of the soft tissues. The discomfort during the procedure was tolerable by the patient. Post-surgical antibiotics and Analgesics were prescribed. The patient was advised to use chlorhexidine mouthwash 12 hourly for one week.

The area healed well after two weeks. Complete visual depigmentation was observed at a 3 months follow up. Pigmentation was absent from the newly formed

epithelium and upon final healing, the gingiva appeared pale pink, which was comforting for the patient.



Figure 1: pre- operative



Figure 2: post- operative at 3 months of follow up

Discussion

Oral pigmentation can be easily seen in all races. there is no difference between male and female oral pigmentation. Atsawasuwan et al (2000) reported the use of Nd: YAG laser for gingival depigmentation in four cases.

They found no recurrence of melanin pigmentation during the follow up period of 11 to 13 months and he concluded that Nd: YAG laser also can be used for gingival depigmentation, procedure.⁷

Khakar et al. ^{8,9} found that pain was less in patients treated with laser compared to patients treated with surgery and electrosurgery, probably due to the ability of the laser to seal blood vessels and nerve endings.

El Shenawy et al. studied cosmetic therapy in 15 patients for hyperpigmented gingiva. They used 980 nm diode laser followed by VAS and digital imaging method as means of assessment. Results concluded that there was no bleeding and swelling. mild pain has been observed which significantly decreased after 1 week, 1 month as well as 3 months compared to pain during treatment and immediately after treatment¹⁰.

Conclusion

Gingival depigmentation is most frequently a patient demanded esthetic periodontal treatment. The new epithelium that forms is of without melanin pigmentation.

The diode laser is a minimally invasive treatment option for the elimination of unesthetic gingival melanin pigmentation. the patient didn't postoperative pain or discomfort. The results were excellent at 3-month follow-up period. There was no evidence of repigmentation of the gingiva resulting in improved esthetics.

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