

Diode Laser: An Ideal Option for Treatment of Gingival Hyperpigmentation

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ABSTRACT

Gingival hyperpigmentation are major concerns for a large number of patients visiting the dentist. Melanin hyperpigmentation usually does not present a medical problem, but patients usually complain of dark gums as unesthetic. Pigmentation of gingiva is commonly caused by deposition of melanin in the basal layer of oral epithelium. Gingival melanin pigmentation may be seen across all the races and at any age without gender predilection. This case report describes the application of semi conductor diode laser procedure for gingival depigmentation.

Keywords: Depigmentation, Laser, Melanin, Hyperpigmentation.

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INTRODUCTION

Melanin pigmentation of the gingiva occur in all races.¹ Melanin, a brown pigment, is the most common cause of endogenous pigmentation of gingiva and is the most predominant pigmentation of mucosa.² Gingival hyperpigmentation is seen as a genetic trait in some populations and is more appropriately termed physiologic or racial gingival pigmentation. Although pigmentation of the gingival is completely a benign condition, is an esthetic problem in many individuals. Gingival depigmentation is a periodontal plastic surgical procedure whereby the gingival hyperpigmentation is removed or reduced by various techniques. The first and foremost indication for depigmentation is patient demand for improved esthetics. Various depigmentation techniques have been illustrated in Table 1. This article illustrates managing gingival pigmentation with diode laser therapy.

CASE REPORT

A 25-year-old female patient visited the department of Periodontics, Rural Dental College of Pravara Institute of Medical Sciences, Loni, Ahmednagar, Maharashtra, India, with the chief complaint of 'blackish gum' (Fig. 1). The medical history was noncontributory. Intraoral examination revealed generalized blackish pigmentation of the gingiva; however it was healthy and completely free of any inflammation. Considering the patient's concern, a laser depigmentation procedure was planned.

CLINICAL PROCEDURE

A semiconductor diode surgical laser unit (Biolase Technology) with wavelength of 800 to 980 nm was selected for the procedure. No local anesthesia was given to the patient; only topical lignocaine spray was used. Melanin pigmented gingiva were ablated by diode laser with a flexible, hollow-fiber delivery system with a noncontact under standard protective measures (Fig. 2). The procedure was performed on all pigmented areas. Neither bleeding nor pain was experienced by the patient during the procedure. Remnants of the ablated tissue were removed using sterile gauze damped with saline. This procedure was repeated until the desired depth of tissue removal was achieved. Analgesics and chlorhexidine 0.2% mouthwash were prescribed.

RESULTS

No postoperative pain, hemorrhage, infection or scarring occurred in first and subsequent visits. Patient was reviewed

Table 1: Various depigmentation techniques

- | | |
|---|--|
| A. Based on deletion of pigmentation | |
| • Surgical | |
| – Scalpel surgical technique | |
| – Cryosurgery | |
| – Electrosurgery | |
| – Lasers | |
| • Chemical | |
| – Using caustic chemicals | |
| B. Based on covering of pigmentation | |
| – Acellular dermal matrix allograft | |
| – Free gingival grafts | |



Fig. 1: Melanin pigmentation (Preoperative)



Fig. 2: Diode laser performing depigmentation



Fig. 3: Postoperative (1 month follow-up)

on the third day, when progressive healing of the surgical site was seen. At 1 week review appointment, complete healing of the wound was seen. Healing was uneventful. Gingiva appeared pink and firm with normal appearance after 1 month follow-up (Fig. 3). Patient's acceptance of the procedure was good and results were excellent as perceived by the patient.

DISCUSSION

Excessive gingival display and gingival hyperpigmentation are major concerns for a large number of patients. Although several techniques are currently in use, however there are many advantages of Laser technique over the surgical procedures. The various advantages include dry and blood less surgery, instant sterilization of surgical site, reduced bacteremia, reduced mechanical trauma, minimal postoperative swelling, less healing time, minimal postoperative pain and no need for periodontal dressing.³ Selection of a technique should be based on clinical experience of the operator and individual preferences.

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