



Case Report

Case report: A magnificent transformation of gums!

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ABSTRACT

Gingival melanin pigmentation is a common finding among dark complexion individuals which occurs due to excessive production of melanin pigment. The procedure of Gingival Depigmentation is a periodontal plastic surgical procedure which is the removal or reduction of hyperpigmentation by various techniques. This article shows a case of Gingival Depigmentation in a 26 years old, male patient.

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1. Introduction

The factors which determine the colour of the gingiva are: Blood supply, thickness of the epithelium, degree of keratinization and pigments. Melanin, is a brown-coloured pigment which is produced by melanoblasts between epithelial cells in the stratum spinosum and stratum basale layers of gingival epithelium.¹

Hyperactivity of the melanocytes is the main factor for the blackish discolouration of gingiva, which is an absolutely normal condition. Considering esthetics, the only disadvantage is for people with gummy smiles because it displays the blackish colour of gingiva when they smile. Depigmentation is a procedure of removing or reducing gingival hyperpigmentation. The various ways of depigmentation are through scalpel, lasers, cryosurgery, bur abrasion and electrocautery.²

There are various classifications for Gingival Pigmentation:

1.1. Dummatt-gupta oral pigmentation index (DOPI)³

1. SCORE 0 indicates no pigmentation on gingiva i.e. (Gingiva is pink).

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2. SCORE 1 indicates mild pigmentation on the gingiva i.e. (Gingiva is light brown).
3. SCORE 2 indicates moderate pigmentation on the gingiva i.e. (Gingiva is medium to mixed brown).
4. SCORE 3 indicates heavy pigmentation on the gingiva i.e. (Gingiva is Deep brown or blue-blackish).

1.2. Takashi melanin pigmentation index⁴

1. Score 0: No Pigmentation
2. Score 1: Papillary gingiva with solitary pigmentation units.
3. Score 2: Continuous ribbon of the isolated units.

1.3. Index of gingival pigmentation

1. Score 0: No Pigmentation is present.
2. Score 1: Spots with brown to black pigments.
3. Score 2: Brown to blackish patchy pigmentation.
4. Score 3: Diffused brown to blackish pigmentation.

Peeran et al.,(2014)⁵ proposed a new classification for gingival pigmentation and pigmented lesions index with class I to X and scores from 1 to 10.

2. Case Presentation

A 26-year-old male patient reported to the outpatient Department of Periodontology, SDKS Dental College and Hospital, Hingna, Nagpur with the chief complaint of blackish gums.(Figure 1).

A written informed consent was obtained from the patient after explaining the complete surgical procedure. Next, investigations like blood tests were carried out and a complete case history was taken. Local anaesthesia was administered (Lignocaine with adrenaline in the ratio of 1:100000 by weight). Scraping of the entire pigmented layer was done by surgical blade no.15 blade(Figures 2 and 3) and periodontal dressing (Coe-pak) was given. (Figure 4). Antibiotics were prescribed for 5 days and the patient was asked to revisit after 1 week. After 1 week of follow-up, no clinical findings of repigmentation were noted (Figure 5).



Figure 3: Scrapped tissue



Figure 1: Pre-operative gingival hyperpigmentation



Figure 4: Periodontol dressing



Figure 2: Depigmentation by scalpel



Figure 5: One week follow-up

3. Discussion

Depigmentation is a treatment of choice only where the patients desire esthetics.⁶ The factors for assessing the treatment plan and selection of technique include the Patient's skin tone, lip line, and Gingival display.⁷ Precaution must be employed to avoid trauma to soft tissues and teeth and bone exposure must be avoided.

There have been many studies that used various techniques for gingival depigmentation. Sheel et al., reported local applications of ascorbic acid yielded satisfactory aesthetic results after 9 months of follow-up.⁸ Lingala et al., compared three techniques for gingival depigmentation i.e. by Surgical Scalpel, Laser and Cryosurgery and concluded that all three techniques effectively removed gingival hyperpigmentation.⁹ Vishal et al., carried out a study in which a comparative evaluation of gingival depigmentation by diode laser and cryosurgery using tetrafluoroethane was done over an 18-month follow-up period. They concluded that the depigmentation done by both techniques was almost equal.¹⁰ Tetrafluoroethane is a coolant in air conditioners, refrigerating systems and electronic circuits. It is safe to use and has been confirmed by many human and animal studies.¹¹

Lasers, such as diode laser, carbon dioxide (CO₂) laser, neodymium-doped yttrium aluminum garnet (Nd:YAG) laser, argon laser and erbium-doped YAG (Er:YAG) laser have been used for depigmentation. The diode laser has achieved great demand among all lasers as it targets the soft tissues and has affinity for melanin pigment.¹²

Gingival biotype, Gummy smile, Cost and Patient's preference are few factors which determine the selection of depigmentation technique.¹³ Repigmentation is the clinical appearance of melanin pigment following clinical depigmentation and is a serious concern occurring mainly because of the incomplete removal of the layers of melanin for which a secondary procedure might be needed.¹⁴ Repigmentation occurs due to many reasons. It is predicted that it may result from the migration of adjacent melanocytes in the operated site and other factors like smoking, exposure to sun, skin genetics and improper technique.¹⁵

Repigmentation is more common in the thin gingival biotype. So all these factors must be considered to achieve patient satisfaction.

4. Conclusion

The depigmentation process is completely of aesthetic concern and is carried out only if the patient wants it. In this case, the patient was delighted with the procedure and the follow-up showed no repigmentation.

5. Source of Funding

None.


6. Conflict of Interest


None.


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