



Depigmentation using 3 Different techniques- A Case Report

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KEYWORDS

Depigmentation, Melanoblasts, Electrocautery, scalpel, hyperpigmentation, chemical cauterization, periodontal pack

ABSTRACT:

Introduction: Smile creates feeling of joy and having beautiful smiles increases self-confidence of the person although gingival pigmentation is physiological but having black gums is the common complaint of the people so the Periodontist have to maintain the interrelationship between pink gingiva and white teeth. Different modalities of gingival Depigmentation are available with scalpel, Laser, Bur, Electrocautery. In this article we have discussed gingival depigmentation using scalpel, electro cautery and Bur.

Objectives: To Evaluate & compare results of Depigmentation using three different Techniques.

Methods: Gingival Depigmentation was performed using three different modalities which included scalpel, Gingival abrasion using Bur, Electrocautery in different Quadrants..

Results: Pain was measured using VAS scale which showed negligible pain in all the three modalities the amount of bleeding was more with scalpel and bur compared to electrocautery but with electrocautery patient had discomfort with the burning smell inside mouth. Depigmentation procedure by scalpel technique is simple, easy to perform, non-invasive, and above all, cost effective.

Conclusion: Patient was highly satisfied by the result of depigmentation which was the aim of our treatment. Repigmentation if occurs the same procedure has to be repeated it can be concluded that all the three modalities are highly recommended each technique has its own advantages & Limitations. Patients comfort is more and gingival bleeding is less using electrocautery, whereas using scalpel its easily available, noninvasive and less armamentarium with least cost.

1. Introduction

Attractive smile expresses a feeling of joy, success, affection and courtesy and also reflects self-confidence. A beautiful smile is not only made by color, shape & position of the teeth, but also by the gingival tissues.¹ Melanin, a brown pigment, is the most common natural pigment contributing to endogenous pigmentation of gingiva and the

gingiva is also the most predominant site of pigmentation on the mucosa. Melanin pigmentation is the result of melanin granules produced by melanoblasts intertwined between epithelial cells at the basal layer of gingival epithelium² gingival hyperpigmentation is seen as a genetic trait in some populations irrespective of age and gender; hence it is termed physiologic or



racial gingival pigmentation. The degree of pigmentation is mainly dictated by the melanoblastic activity. Melanosis of 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) though not a medical disorder, patients may complain that their black gums are unaesthetic. Several procedures have been developed for depigmentation of gingiva, for example epithelial abrasion, free gingival graft, gingivectomy, Chemical cauterization,³ acellular dermal matrix allograft, and Cryosurgery⁴, electrosurgery and laser surgery⁵

2. Objectives

To Evaluate & compare the results of Depigmentation using three different Techniques.

Methods

A 32 year female patient reported to the Department of Periodontology, C.S.M.S.S Dental College and Hospital, Aurangabad, with a chief complaint of poor appearance due to dark-brown discoloration of the front gum region since birth. Her medical history was non-contributory. On intraoral examination Diffused melanin hyperpigmentation was found on the labial surface of both the maxillary and mandibular arches; Mild stains and calculus were observed. However it was healthy and completely free of any inflammation. Being a female, patient was concerned about esthetics requested for any cosmetic therapy which would eventually enhance the esthetics on smiling. An informed consent was obtained from patient after explaining the procedure

Clinical gingival melanin pigmentation assessment was made pre- and post-operatively according to Dummett-Gupta Oral Pigmentation Index scoring criteria⁶

Fig: 1, 2, 3, 4 showing baseline photos of patient.

Clinical procedure performed,

Complete oral prophylaxis & Follow-up on the 7th day after oral prophylaxis, in that it was seen that the patient was maintaining the oral hygiene • Blood investigations were performed, in that bleeding time, clotting time and hemoglobin were checked. All the values were in the normal range.

Electrosurgical gingival depigmentation

Electrocautery unit was used to de-epithelize the hyper pigmented areas in the first quadrant Ist & IVth Quadrant Fig: 5 shows Depigmentation using Electrocautery in the first quadrant & Fig: 6 immediate post-op Ist Quadrant

Fig: 7 post-op of IV Quadrant .Ablation of the effected tissues was carried out under standard protective measures using loop electrode of the electrocautery unit. The tip was kept in constant motion, to avoid excessive heat and light brushing strokes were used. Saline-soaked sterile gauze was used to remove the excised tissue fragments. Till the desired amount of pigmented tissue was removed. After completion of the procedure, a periodontal pack was placed at the surgical site. Postoperative instructions were given.

Surgical blade technique

Surgical gingival de-epithelization procedure was performed using the scalpel technique in the lower jaw (IIIrd Quadrant) shown in fig 8 Local anesthetic was administered to the surgical site. Blade no. 15 with BP handle was used to scrape the epithelium along with the underlying pigmented layer. The raw surface was irrigated with saline solution. Bleeding was controlled using pressure pack using sterile gauze. Care was taken to avoid bone exposure. After completion a periodontal pack was placed at the surgical site. Postoperative instructions were given.

Gingival Bur abrasion method using diamond bur with light strokes was used for depigmentation of second quadrant. After completion of the procedure, a periodontal pack was placed at the surgical site. Postoperative instructions were given. Postoperative one week fig: 9, 10, 11,12.



Results

Pain was measured using VAS scale which showed negligible pain in all the three modalities the amount of bleeding was more with scalpel and bur compared to electrocautery but with electrocautery patient had discomfort with the burning smell inside mouth. Depigmentation procedure by scalpel technique is simple, easy to perform, noninvasive, and above all, cost effective.

Discussion

Color of gingiva is maintained due to vascularity, pigment containing cells, thickness and degree of vascularization⁷ Melanin pigmentation is frequently caused by melanin deposition by active melanocytes located mainly in the basal and suprabasal layer of the oral epithelium. Oral pigmentation occurs in all races of man. There are no significant differences in oral pigmentation between males and females Pigmentations can be removed for esthetic reasons. The selection of a technique for depigmentation of the gingiva should be based on clinical experience, patient's affordability, and individual preferences. In our present study we had used 3 different modalities of treatment depigmentation using scalpel, electrocautery, Bur abrasion method. Pain was measured using VAS scale which showed negligible pain in all the three modalities the amount of bleeding was more with scalpel and bur compared to electrocautery but with electrocautery patient had discomfort with the burning smell inside mouth. Depigmentation procedure by scalpel technique is simple, easy to perform, noninvasive, and above all, cost effective. According to Almas and Sadiq (2002) the scalpel wound heals faster than that in other techniques⁸ Cicek (2003) reported that there is no bleeding and there is minimal patient discomfort while using electrocautery, But electrosurgery also has its own limitations in that its repeated and prolonged use induces heat accumulation and undesired tissue destruction⁹the results of all the three treatment methods are very promising initially but recurrence is a problem The mechanism suggested

for the spontaneous repigmentation is that the melanocytes from the normal skin proliferate and migrate into the depigmented areas¹⁰

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Fig:1 Pre-op



Fig: 3 Pre-op Left Profile



Fig: 5 Depigmentation using Electrocautery



Fig: 2 Pre-op Right profile



Fig: 4 Pre-op smile line



Fig: 6 Immediate Post-op Ist Quadrant



Fig:7 Post-op IV Quadrant using electrocautery



Fig: 8 Depigmentation using 15 no blade



Fig: 9 Post-op Straight Profile



Figs: 10 Post-op Right Profile



Fig: 11 Post-op Left Profile



Fig: 12 Post-op Smile line