https://doi.org/10.48047/AFJBS.7.4.2025.799-803

African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

Research Paper Open Access

EVALUATION OF GINGIVAL DEPIGMENTATION USING CONVENTIONAL SCALPEL TECHNIQUE: A CASE REPORT

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Volume: 7, Issue 4, Apr 2025

Received: 15 Feb 2025

Accepted: 05 Mar 2025

Published: 05 Apr 2025

doi:10.48047/AFJBS.7.4.2025.799-803

Abstract

Objective: Aesthetics is one of the main concerns for patients performing dental and oral care. One problem that is often experienced by patients is gingiva hyperpigmentation. Gingival hyperpigmentation is seen as diffuse purplish discoloration or irregular brown and light brown or black patches, striae or strands. This is due to the result of melanin granules being produced by melanoblasts. Melanin, a non-hemoglobin brown pigment, is the most common endogenous pigment and is produced by melanocytes present in the basal and suprabasal cell layers of the epithelium. Gingiva hyperpigmentation is commonly found in the anterior and labial region both in males and females. Surgical procedure that can be done to reduce melanin deposit is gingival depigmentation using various tools such as scalpel, bur, laser, and electrosurgery. The purpose of this study is to evaluate gingival depigmentation using conventional scalpel technique.
Method: A 25 years old male came to Hasanuddin Dental Hospital and complained regarding his discoloration on upper and lower anterior gingiva region. The patient was systematically healthy, a non-smoker, and did not take any medications. Gingival depigmentation was performed on upper and lower anterior gingiva region using conventional scalpel technique. Pigmented areas were scraped using #15 scalpel while patient was under local anesthesia. Periodontal pack was applied around the surgical area covering surgical wound tissue.
Result: Postoperative control was carried out one week and one month after surgery. The healing process is proceeding normally and the patient does not complain of any discomfort. The gingiva looked healthy and there was no repigmentation.
Conclusion: Gingival depigmentation using conventional scalpel technique is a simple, economical, and clinically effective procedure for gingiva hyperpigmentation.

Introduction

Aesthetics is one of the main concerns for patients performing dental and oral care. Creating a beautiful smile can provide a new perspective on one's self-esteem which greatly affects one's self-confidence and the development of social interactions. When it comes to a smile, the normal color and shape of the gums is considered as one part of a beautiful smile related to self-confidence and can also increase happiness in life.[1] In order to achieve this, besides teeth, gingiva also have an important role. The gingiva is a mucous membrane that is firmly attached to the periosteum of maxilla and mandible. Healthy gingiva has a clinical appearance with a pink color, has a spongy consistency, is resilient and firmly adheres to the underlying bone and the surface texture looks stippling in the attached gingiva.[2] Many factors can affect the color of a person's gingiva including the number and size of blood vessels, thickness of the epithelium, degree of keratinization and amount of pigment.[3]

Gingival hyperpigmentation can be defined as a darker gingival color beyond what is normally expected. Pigmentation is contributed by products of the physiological process such as melanin, melanoid, carotene, oxyhemoglobin, reduced hemoglobin, bili-rubin and iron and/or pathological diseases, and conditions. Melanin pigmentation results from melanin granules which are produced by melanoblasts. Furthermore, environmental risk factors such as tobacco smoking contribute to the gingival hyperpigmentation in both active and passive forms.[4] Gingival hyperpigmentation can be removed or reduced by using different techniques of gingival depigmentation. The first and foremost indication for depigmentation is patient demand for improved esthetics. Various depigmentation techniques have been employed, with similar results. Selection of a technique should be based on clinical experience and the individual's preferences.[5]

Case Report

A 25 years old male patient reported to Department of Periodontology, Hasanuddin Dental Hospital, with a chief complaint regarding his discoloration on upper and lower anterior gingiva region (Figure 1) which he felt as aesthetically unappealing. The patient requested for any kind of aesthetic treatment which could make his discoloured gums look better. The patient was systematically healthy, a non-smoker, and did not take any medications.

Figure 1

The entire procedure was explained to the patient and written consent was obtained. The first phase of periodontal treatment includes Dental Health Education (DHE), supra and subgingival scaling, and polishing. A conventional scalpel surgery was planned to perform the depigmentation. Around the extra and intra-oral surgery areas were disinfected using povidone iodine then local anesthesia was infiltrated with Pehacain in the maxillary anterior region from premolar to premolar. Scalpel no #15 were used to remove the pigmented layer with scraping technique (Figure 2 and 3). Removal of the keratinized epithelial tissue is carried out from the mucogingival junction up to the margin of the interdental papilla. Be careful not to take the tissue too deep but as wide as possible until all pigmentation is removed.

Figure 2

Figure 3

The exposed surface was irrigated with saline then the surgical area was covered with a periodontal pack to secure the surgical area from any trauma and friction (Figure 4 and 5). Post-surgical instructions were given along with antibiotics (Amoxicillin 500 mg, three times daily for 5 days) and anti-inflammatory analgesics (Mefenamic acid three times daily for 3 days). The patient was advised to use 0.2% chlorhexidine gluconate mouth wash 12 hourly for 1 week. The patients were reviewed at the end of 1 week, then 1 month

respectively. The healing was uneventful without any post operative pain or sensitivity. The gingiva appeared healthy and no repigmentation (Figure 6).

Figure 4

Figure 5

Figure 6

Discussion

There are wide variations in gingival color in healthy persons. Degree of vascularization, the thickness of the keratinized layer and the amount of the pigment containing cells will determine the color of the gingiva.[6] A full medical and dental history, extraoral and intraoral examinations, and laboratory tests, if necessary, are needed to determine whether melanin pigmentation is physiological or pathological. Hyperpigmentation is usually clinically visible through a regular border and is small, symmetrical, and similar in color, also appearing flat or slightly elevated. On the other

hand, pathological hyperpigmentation, irregular outlines, color variation, and surface ulceration might be a malignant symptom. The examination should include the onset and duration of pigmented lesions, number, distribution, size, shape, color, and the onset of hyperpigmentation, the onset of systemic signs and symptoms (e.g., malaise, fatigue, weight loss), the use of prescription and nonprescription drugs, and the smoking habit.[1]

The use of the scalpel technique for the depigmentation is the most economical as compared to other techniques, which require a more advanced armamentarium. The depigmentation technique using a scalpel provides many advantages including safe, easy to use, non-invasive and does not require a lot of money. It is known that the healing period for scalpel wounds is faster than other techniques. However, scalpel surgery may cause unpleasant bleeding during after the surgical procedure and the possibility of infection is greater, and it is necessary to cover the exposed surgical area with periodontal dressing for 7 to 10 days.[7]

Conclusion

In this age of smile-consciousness, there is a growing demand for aesthetic dental treatment. Gingival melanin hyperpigmentation is a commonly encountered aesthetic problem. The surgical depigmentation procedure described in this case report was found to be simple, economical and clinically effective treatment modality for the management of gingival melanin pigmentation.

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