

# Gingival Depigmentation : A Case Report

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## Abstract

**G**ingival hyperpigmentation is mostly caused by the physiologic deposition of melanin by melanocytes. In gummy smile patients melanin causes an aesthetic problem and may cause physiologic disturbances. Methods to remove gingival hyperpigmentation vary. Here we report a case of hyperpigmentation in which the method of treatment was a combination technique (scalpel & bur).

## Introduction

The color of the gingiva is determined by several factors, namely number and size of the blood vessels, epithelial thickness, quantity of keratinization and pigments within the gingival epithelium. Melanin, a brown pigment, is the most common natural pigment contributing to endogenous pigmentation of the gingiva<sup>1</sup>. Oral melanin pigmentation is considered to be multifactorial, physiological/pathological. Gingival depigmentation is a periodontal plastic surgical procedure. The first and foremost indication for depigmentation is patient demand for improved esthetics. Elimination of these melanotic areas can be done by scraping, free gingival autografting, cryosurgery, electrosurgery, abrasion with diamond bur and various types of lasers. The selection of technique should be based on clinical experience and individual preferences<sup>2</sup>. Clinical melanin pigmentation is completely benign and does not present a medical problem, although complaints of dark gums may pose an esthetic concern, particularly if visible during speech and smiling. Demand for cosmetic therapy is made, especially by fair skinned people with moderate or severe gingival pigmentation, mostly in patients with a high smile line (gummy smile)<sup>1</sup>. There is only limited information in the literature on depigmentation using surgical techniques. The procedure essentially involves surgical removal of gingival epithelium along with a layer of the underlying connective tissue and allowing the denuded connective tissue to heal by secondary intention. The new epithelium that forms is devoid of melanin pigmentation<sup>3</sup>.

## Case Report

A healthy 22-year-old male patient reported to the Department of Periodontology, RKDF Dental College & Research Centre, Bhopal with the chief complaint of "brownish gums" which was esthetically unacceptable to the patient. There was no conclusive family history. Intraoral examination revealed diffuse brown to black

gingival pigmentation involving maxillary as well as mandibular arch [Fig. 1]. A complete medical, family history and blood investigations were carried out to rule out any contraindication for surgery. Scalpel surgery with bur abrasion was planned to perform depigmentation. The entire procedure was explained to the patient and written consent was obtained. Local anesthesia (Lignocaine with adrenalin in the ratio 1:100000) was infiltrated in the maxillary and mandibular anterior region from premolar to premolar region. Bard Parker handle with No.15 blade was used to remove the pigmented layer. Pressure was applied with sterile gauze soaked in local anesthetic agent to control the hemorrhage during the procedure. After removing the entire pigmented epithelium along with a thin layer of connective tissue was done to get the physiological contour of the gingiva [Fig. 2]. The exposed surface was irrigated with saline continuously. While using the bur minimal pressure was applied with feather light brushing strokes and without holding bur in one place. Care was taken to see that all remnants of the pigmented layer was removed. Periodontal pack (Coe-pak) [Figure 3] was placed on the de-pigmented surgical site for a period of 1 week. Post surgical instructions were given to the patient. The patient was medicated appropriately. He was advised for Betadine mouthwash for 1 week (twice daily). The patient was reviewed at the end of 1 week. The healing process was proceeding normally and did not report any discomfort [Fig. 4]. The patient was asked to continue the mouthwash for another 2 weeks. At the end of 1 month re-epithelisation was complete and healing was found to be satisfactory [Figure 5]. No post-operative surgical complication was seen or reported by the patient.

## Discussion

Gingival hyperpigmentation is a major concern for patients and many a times forces the patient to seek cosmetic treatment<sup>4</sup>. To treat depigmentation and to enhance esthetics, numerous techniques have been employed from time to time. These include Scalpel technique, Gingival abrasion technique using diamond bur and Combination of the scalpel and bur<sup>1</sup>. In our case we used the combination technique. The healing process was faster than other techniques and is highly recommended. A study by Oswaldo *et al*, 1993 showed that gingival surgical procedures performed solely for cosmetic reasons, offer no permanent results. Spontaneous

repigmentation has been shown to occur and the mechanism suggested is that the melanocytes from the normal skin proliferate and migrate into the depigmented areas<sup>5</sup>. The 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 techniques. Scalpel surgery causes unpleasant bleeding during and after the operation. It is also necessary to cover the exposed lamina propria with periodontal dressing for 7-10 days. Pigment recurrence has been documented to occur following the surgical procedure, within 24 days to 8-year long period. A study by Perlmutter *et al*. (1986) showed that gingival surgical procedures performed solely for cosmetic reasons offer no permanent results. Repigmentation refers to the clinical reappearance of melanin pigment following a period of clinical depigmentation. The mechanism suggested for the spontaneous repigmentation is that the melanocytes from the normal skin proliferate and migrate into the depigmented areas<sup>6</sup>.

## Conclusion

The depigmentation procedure with combination technique (scalpel & bur) offers reliable, simple, easy to perform, cost-effective treatment and above it, it causes less discomfort to the patient. As far as the healing was concerned it was excellent with this technique.

## References

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## Legends

- Fig. 1: Pre-operative photograph showing diffuse brown pigmentation  
Fig. 2: Combination technique using bur.  
Fig. 3: Periodontal dressing (Coe-Pak) placed at the surgical site  
Fig. 4: Post surgical evaluation after 1 week  
Fig. 5: Evaluation after 1 month.

