



## SURGICAL APPROACH TO GINGIVAL HYPERPIGMENTATION: A CASE REPORT

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**ABSTRACT** For many people, excessive gingival pigmentation is a serious cosmetic problem. Although having dark gums is not medically problematic, many people find it unsightly and complain about it. The condition known as physiologic or racial gingival pigmentation, which affects all races differently, is more correctly called gingival hyperpigmentation and is thought to be a hereditary feature in populations. The method of therapy used to eliminate melanin hyperpigmentation for aesthetic purposes is gingival depigmentation. Scalpel surgery, gingivectomy with free gingival autografting, electrosurgery, cryosurgery, chemical agents like 90% phenol and 95% alcohol, abrasion with diamond bur, diode laser, and Co2 laser are just a few of the procedures that have been used.

**KEYWORDS** : Scalpel Surgery, Depigmentation, Gingiva, Melanin, And Aesthetics.

### INTRODUCTION

An important component of a grin is the health and look of the gingiva. <sup>[1]</sup> Gingiva's colour varies from person to person and is assumed to be related to cutaneous pigmentation. <sup>[2]</sup> Gingival pigmentation not only affects aesthetics but also has a negative psychological effect. Clinical manifestations of physiological pigmentation of the oral mucosa include multifocal or diffuse melanin pigmentation with varying amounts in various ethnic groups (Cicek, 2003) <sup>[3]</sup> Although gingival melanin hyperpigmentation rarely causes medical issues, some patients may find their dark gums unattractive. Patients who exhibit a "gummy smile" or excessive gingival display when smiling have this problem worsened. In a periodontal plastic surgery operation called gingival depigmentation, the gingival hyperpigmentation is eliminated or diminished using a variety of methods. <sup>[4]</sup> The most exclusive justification for depigmentation treatment is a person's desire for better aesthetics. Various methods as gingivectomy (Bergamaschi et al,1993), gingivectomy with free gingival autografting (Tamizi&Taheri,1996), acellular dermal matrix allografts (Pontes et al, 2006), electrosurgery (Gnanaesekhar & Al-Duwairi, 1998), cryosurgery (Yeh, 1998), abrasion with diamond bur (Bishop,1994), and various types of lasers (Stabholz et al, 2003) have been used for cosmetic therapy of gingival melanin depigmentation. The current case report outlines a straightforward surgical scalpel depigmentation approach that does not require complicated equipment but nonetheless produces cosmetically acceptable outcomes that satisfy patients.

### Case Report

A 21-year-old female patient with a primary complaint of blackish discoloration of the upper and lower front gingival regions (Fig. 1a and 1b)



**Fig1(a).** Preoperative View

**Fig1(b).** Social Smile

that she felt was aesthetically unappealing presented to the outpatient department of Periodontology. Intraoral examination showed pigmented gingiva in both the upper and lower arches, from the right first canine to the left first canine. The patient requested for an aesthetic procedure that may improve the appearance of her blackish-discoloured gums. Systemically healthy and not a smoker, the discoloration was not accompanied by further symptoms like

paraesthesia, ulceration, or discharge. Accordingly, the scalpel depigmentation procedure was planned. The pigmented layer was removed using a Bard Parker handle and a No. 11 (Fig. 2a)



**Fig2 (a)** Depigmentation With Scalpel

blade following the application of a local anaesthetic solution. During the procedure, haemorrhage was controlled by applying pressure with sterile gauze. A small layer of connective tissue was also eliminated along with the complete pigmented epithelium (Fig. 2b).



**Fig2(b)** Depigmentation Done

The surgical site was irrigated with saline and the exposed surface was covered with a periodontal dressing i.e. Coe-Pak (Fig. 3).



**Fig3.** Placement OfCoe-pak

Along with antibiotics (Amoxicillin 500 mg, three times daily for five

days) and anti-inflammatory analgesics (Ibuprofen and Paracetamol twice daily for three days), post-surgical instructions were also given. The patient was instructed to use mouthwash containing 0.2% chlorhexidine gluconate 12 hours per day for a week. At one week (Fig. 4) and 1 month (Fig. 5a and 5b), follow-up was conducted.



Fig 4. 7 Days Follow Up



Fig5(a). 1 Month Follow Up

Fig5(b). Social Smile After

## DISCUSSION

The gingiva's colour is a result of four factors: vascular supply, epithelium thickness, epithelium keratinization, and the existence of cells that carry pigment. Melanin pigmentation is typically brought on by active melanocytes, which are mostly found in the basal layer of the oral epithelium and deposit melanin. Although, Dummet suggested that the degree of pigmentation is partially influenced by mechanical, chemical, and physical stimulation, physiological pigmentation is likely genetically predetermined. The foremost indication for depigmentation therapy is the demand by a person for improved esthetics. For aesthetic therapy of gingival melanin depigmentation, a number of techniques have been tried, including lasers, electrosurgery, cryosurgery, gingivectomy with free gingival autografting, acellular dermal matrix allografts, and electrosurgery. The approach should be chosen based on clinical experience, the patient's capacity to pay, and the clinician's personal preferences.<sup>[3][4]</sup>

Scalpel surgery calls for less experience than electrosurgery. It is best to avoid coming into contact with the periosteum, alveolar bone, and healthy teeth (Ozbayrak et al., 2000).<sup>[5]</sup> Following cryosurgery, there is a significant amount of swelling as well as more soft tissue destruction. Although depth control is challenging and the ideal freezing time is unknown, prolonged freezing increases tissue deterioration (Almas & Sadiq, 2002).<sup>[6]</sup> Laser depigmentation produces positive effects, but it calls for pricey, sophisticated equipment that takes up a lot of room.<sup>[7]</sup> The pigmented regions can potentially be removed via a free gingival graft. However, it necessitates the use of a donor site and an additional surgical site (Mokeem, 2006). However, these methods of treatment are not generally acknowledged or employed.<sup>[8]</sup>

Given the equipment restrictions that may not always be present in clinics, the use of a scalpel during surgery is strongly advised (Almas & Sadiq, 2002). Scalpel wounds are known to heal more quickly than those caused by other methods. Scalpel surgery, however, can result in uncomfortable bleeding both during and after the procedure, thus periodontal dressing must be applied to the exposed lamina propria for 7 to 10 days (Almas & Sadiq, 2002).<sup>[9]</sup> Few studies have previously reported gingival repigmentation following surgery. Repigmentation is defined as being spontaneous, and the movement and activity of melanocytic cells from the neighbourhood (Mokeem, 2006). Regimentation's exact cause is unknown, however the "migration theory" postulates that active melanocytes from nearby pigmented tissues move to treated regions to bring about regimentation.<sup>[10]</sup> Following surgery, pigment recurrence has been shown to happen between 24 days and 8 years later. After 1 month, there were no spots of repigmentation in the current patient (Figure 5a and 5b). Follow-up on the case is being done to see if the melanin pigmentation has returned.

## CONCLUSION

In this day and age of smile-consciousness, there is a growing need for

aesthetic dental treatment. Gingival melanin darkening is a common aesthetic concern. The surgical depigmentation strategy described in this case report for the treatment of gingival melanin pigmentation was found to be simple, inexpensive, and clinically effective, with an aesthetically acceptable outcome.

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