

## CASE REPORT



# Management of gingival hyperpigmentation by the surgical abrasion: A case report

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### Abstract

Health and appearance of gingiva are important parts of a smile. The spread of pigmentation depends on melanoblastic activity. The gingival color plays a role in esthetics. Different treatment modalities have been reported for depigmentation of gingiva such as bur abrasion, partial thickness flap, cryotherapy, electrosurgery and laser. In this case, depigmentation was done with bur abrasion, which is simple, effective and yields good results, along with good patient satisfaction.

**Keywords:** Depigmentation, gingiva, melanin

### Introduction

Hyperpigmentation of the gingiva is caused due to melanin deposition by melanocytes located in the basal layer of the epithelium.<sup>[1,2]</sup> Pigmentation of gingiva can be caused by many local factors and systemic.<sup>[3]</sup> Systemic conditions such as endocrine disturbances, Albright's syndrome, malignant melanoma, Peutz-Jeghers syndrome, trauma, chronic pulmonary disease, and racial pigmentation are known causes of oral melanin pigmentation.<sup>[4]</sup>

Clinical melanin pigmentation of gingiva does not present as a problem, although complaints of black gums may cause esthetic issues and embarrassment, particularly if the pigmentation is visible during speech and smiling.<sup>[5,6]</sup> Gingival depigmentation is a surgical procedure, which leads to removal of gingival hyperpigmentation utilizing different techniques. The first and most important indication for gingival depigmentation is the patient's complaint for esthetics. Different techniques present with similar results and the choice of technique must be based on experience and the patient's preferences.

Demand for esthetic treatment of gingival pigmentation is widespread and various methods including gingivectomy,<sup>[7]</sup> gingivectomy with free gingival grafting,<sup>[8]</sup> electrosurgery,<sup>[9]</sup> cryosurgery,<sup>[10,11]</sup> chemical agents such as 90% phenol and 95% alcohol,<sup>[12]</sup> abrasion with diamond bur,<sup>[13]</sup> Nd: Yag laser,<sup>[14]</sup> semiconductor diode laser<sup>[15]</sup> and CO<sub>2</sub> laser<sup>[16]</sup> have been used for this purpose. Removal of gingival melanin pigmentation should be performed cautiously and the adjacent teeth should

be protected, since inappropriate application may cause gingival recession, damage to underlying periosteum and bone, delayed wound healing, as well as loss of enamel.<sup>[6]</sup>

In this case, depigmentation was done with bur abrasion, which is simple, effective and yields good results, along with good patient satisfaction.

### Case Report

A 28-year-old male patient visited the Department of Periodontics with the chief complaint of "black" colored gums [Figure 1]. Oral examination revealed pigmented gingiva from right first premolar to left first premolar in the maxilla and right canine to left canine in the mandible. The patient came for esthetic improvement, which could make his "black" colored gums look better.

### Surgical procedure

De-epithelialization of the effected gingival was performed involving removal of the epithelium of the pigmented areas with a high-speed hand piece and diamond bur with copious water irrigation. A large size diamond bur was used for the procedure. Care was taken to use feather-light brushing strokes to remove the pigmented areas without holding the bur in one place. All the remnants of pigmented areas of the epithelium were completely removed to avoid relapse [Figures 2 and 3]. Post-surgical medications prescribed included antibiotics



**Figure 1:** Pre-operative gingival condition



**Figure 2:** Maxillary gingiva during surgical procedure



**Figure 3:** Mandibular gingiva during surgical procedure

(amoxicillin 500 mg, thrice-daily for 5 days) and analgesics (ibuprofen with paracetamol, thrice-daily for 3 days). The patient was advised to use 0.2% chlorhexidine mouthwash 12-h for 1 week. Recall after 1 week the healing was uneventful. Continuation of 0.2% chlorhexidine mouthwash for another 2 weeks was advised.

After 1 month, re-epithelialization was complete and healing was acceptable. After 6 months, the gingiva appeared healthy and no further repigmentation as shown in Figures 4 and 5].



**Figure 4:** One month post-operative



**Figure 5:** Six months post-operative

## Discussion

Different factors determined the color of gingival tissue. Degree of vascularization, thickness of keratinized layer and the amount of the pigmented cells determine the color of the gingiva. The gingival pigmentation is seen in all races and age groups, and there is no gender predilection.<sup>[17]</sup> Elimination of these melanolic areas through surgery and laser surgery, as well as by cryosurgical depigmentation through the use of a gas expansion system, has been reported.<sup>[7,14]</sup> These treatment modalities, however, are not widely accepted or popularly used. The results of the present case were excellent and at 6 months follow-up, there were no evidences of repigmentation of the gingiva.

Post-surgical repigmentation of gingiva has been previously reported.<sup>[18]</sup> Repigmentation is described as spontaneous and has been attributed to the activity and migration of melanocytic cells from surrounding areas. Perlmutter and Tal<sup>[19]</sup> have also reported gingival repigmentation that occurred 7 years after removal of gingival tissues in one patient.

## Conclusion

Different treatment modalities have been reported for gingival depigmentation. We found the surgical depigmentation by bur

abrasion to be relatively simple, easy to perform as well as cost-effective. Above all, it causes less discomfort and is esthetically acceptable to the patients.

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