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# Surgical Gingival Depigmentation: A Case Report

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## Abstract

'Aesthetics' is the science of beauty, that particular detail of an animate or inanimate object that makes it appealing to the eye. It is an inseparable part of today's dental treatment. Gingival melanin pigmentation occurs in all races while the degree may vary from person to person. Although clinical melanin pigmentation does not present a medical problem, demand for cosmetic therapy is commonly made by people with moderate gingival melanin pigmentation. A case is reported here in which a simple and effective Scalpel de-epithelisation was performed without the use of any sophisticated instruments or apparatus. Scalpel de-epithelisation is easy and technique friendly, giving excellent result and patient satisfaction. The scalpel technique still serves as a gold standard for depigmentation.

## INTRODUCTION

Aesthetic or cosmetic dentistry strives to merge function and beauty with the values and individual needs of every patient. It involves a certain attitude, as well as artistic ability and technical competence.

Over a number of years, a vast evolution has occurred in the field of periodontics. The Periodontal perspective of aesthetic Dentistry has gained wide acceptance over a period of time. These advances now allow the practitioner to achieve a periodontal environment that complements and enhances the creation of optimal dental aesthetics.

The normal colour of gingiva is pink. Gingival hyperpigmentation is mostly caused by the physiologic deposition of pigment melanin by melanocytes. Melanin hyperpigmentation is an overproduction of melanin, beyond the normal expected degree in the oral mucosa, induced by various causes. The gingiva is the most frequently pigmented areas in the oral cavity. The pigmentation is induced by endogenous or exogenous origin. It is interesting to note that the colour imparted by such exogenous or endogenous materials is a function of not only the amount of pigment, but also the depth at which pigments have been deposited in the tissues. Steigmann<sup>1</sup> reported a direct relationship between the degree of pigmentation seen in the skin and that found in the oral mucosa. If the patient has a skin colour, which is dark and matches the gingival shade, then this procedure is avoidable. However, in cases where there is an un-aesthetic dark (black) gingival display

especially in people with fair skin and high lip lines, depigmentation procedure should be suggested in the treatment plan. Melanin pigmentation of the gingiva occurs in all races<sup>2</sup>. Melanin pigmentation is the result of melanin granules produced by melanoblasts intertwined between epithelial cells at the basal layer of gingival epithelium<sup>3</sup>. 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<sup>4</sup>. The degree of pigmentation varies from one individual to another which is mainly dictated by the melanoblastic activity<sup>5</sup>. Earlier studies have shown that no significant difference exists in the density of distribution of melanocytes between light skinned, dark skinned and black individuals. However, melanocytes of dark skinned and black individuals are uniformly highly reactive than in light skinned individuals<sup>6</sup>. Clinically melanin pigmentation of the gingiva does not present any medical problems it can be an aesthetic concern for the patient.

Gingival depigmentation is a periodontal plastic surgical procedure whereby the gingival hyperpigmentation is removed or reduced by various techniques. The first and foremost indication for depigmentation is patient demand for improved aesthetic and is recommended after periodontal health is restored. An adequate thickness of periodontal tissue is a pre-requisite. One of the first and still popular techniques to be employed is the surgical removal of undesirable pigmentation using scalpel. Various depigmentation techniques have been employed with similar

results. Selection of technique should be based on clinical experiences and individual preferences. One of the first and still popular techniques to be employed is the surgical removal of undesirable pigmentation using scalpels<sup>7</sup>. The procedure essentially involves surgical removal of gingival oral 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. The present case report, describes a simple and effective surgical depigmentation by scalpel surgical technique<sup>8</sup>. It is known that the healing period for scalpel wounds is faster than other techniques and does not require sophisticated instruments or apparatus, yet yields aesthetically acceptable results along with patient's satisfaction.

### CASE REPORT

A 22-yr old female patient reported to the Department of Periodontology of Maharana Pratap College of Dentistry & Research centre, Gwalior, India with a request for aesthetic treatment of black gums (Fig.1). This case was selected as the patient was physically healthy with no history of systemic disease. On oral examination patient presented with a greater degree of gingival pigmentation compared to her skin colour and was very conscious about aesthetics. Her plaque index<sup>9</sup> came out to be 1. Based on that, a decision was made to do phase I therapy which included scaling and root planning followed by gingival depigmentation by "Surgical scrapping" in surgical phase. The entire procedure was explained to the patient and written consent was obtained. A complete medical, family history and blood investigations were carried out to rule out any contraindication for surgery. Local anaesthesia was infiltrated from 16 to 26 region (Lignocaine with adrenaline in the ratio 1:100000 by weight). A Bard Parker handle with a number 15 scalpel blade (Fig.5) was used for scrapping the gingiva and the removal of the epithelium was done till the level of mucogingival junction leaving the connective tissue intact (Fig.2). Pressure was applied with sterile gauze soaked in local anaesthetic agent to control haemorrhage during the procedure. After removing the entire pigmented epithelium along with a thin layer of connective tissue with the scalpel to get the physiological contour of the gingiva, the exposed surface was irrigated with saline. Care was taken to see that all remnants of the pigment layer were removed. A periodontal dressing (Coe – Pak) was placed on the surgical wound area for patient comfort and to protect it for 1 week<sup>10</sup> (Fig.3). Postoperative instruction were given which included oral hygiene measures like brushing technique and use of

0.12% chlorhexidine gluconate mouthwash to aid in plaque control. The patient was kept on post-surgical antibiotics (Amoxicillin 500mg, thrice daily for five days), Analgesics (ibuprofen with paracetamol thrice daily for three days). The patient was reviewed at the end of 1 week. The healing process was proceeding normally and patient did not report any discomfort. The patient was asked to continue the chlorhexidine mouthwash for another week. At the end of 1 month, re-epithelialization was complete and healing was found to be satisfactory (Fig.4). Patient had no complaints of postoperative pain or sensitivity. The patient was recalled at intervals of 1 month each to check for any recurrence of pigmentation, which was absent even at the 6 month visit. The case was followed up further for 6 months. However, certain localized areas of Gingival depigmentation is an aesthetic- periodontal procedure opening up ever increasing treatment options designed to ensure more accurate aesthetic outcome thereby enhancing repigmentation were seen and the gingiva appeared healthy.

**Figure 1**

Figure 1



**Figure 2**

Figure 2



**Figure 3**

Figure 3



**Figure 4**

Figure 4



**Figure 5**

Figure 5



### **CONCLUSION**

The choice of the technique should be dependent on individual preference, clinical expertise and patient affordability. Thus, we conclude that depigmentation of hyperpigmented gingiva by scalpel surgery is simple, easy to perform, cost effective and above all it causes less discomfort and is aesthetically acceptable to the patient.

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