ESTHETIC DEPIGMENTATION OF ANTERIOR GINGIVA: A CASE REPORT

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ABSTRACT

Excessive gingival pigmentation is a major esthetic concern for many people. Though, it is not a medical problem, many people complain of dark gums as unesthetic and demand for cosmetic therapy. This problem is aggravated in patients with a "gummy smile" or excessive gingival display while smiling. Esthetic periodontal plastic surgery is especially successful in individuals with compromised esthetics. A case is reported here where gingival depigmentation was done using three different techniques: electrosurgery; scalpel surgery; and surgical abrasion. The clinical results of the three methods have been compared.

KEYWORDS Gingiva, Aesthetic, Depigmentation

INTRODUCTION - In today’s aesthetic conscious world, gingival colour and display rate is an integral part of an individual’s smile. Fair-skinned people with moderate or severe gingival pigmentation frequently request cosmetic treatment of the black gums. Gingival pigmentation is considered as an aesthetic, rather than a medical problem and results from melanin granules, which are produced by melanoblasts.1 Melanin pigmentation of the gingiva is a physiological condition of endogenous origin and is caused by excessive melanin deposition by the melanocytes, located in the basal and the suprabasal cell layers of the epithelium. It generally presents as a diffuse deep purplish discoloration or as irregularly shaped brown and light brown patches.2 Gingival hyperpigmentation is a well documented condition in literature and is frequently observed in some races such as Asians, Africans and Mediterranean populations.3 It is also known to be caused by various other etiologies including genetic factors, tobacco use, prolonged drug use especially antimalarial drugs & tricyclic antidepressants and systemic conditions such as endocrine disturbances, Albright’s syndrome, malignant melanoma, antimalarial therapy, Peutz-jegher’s syndrome, trauma, hemachromatosis, etc.4 Depigmentation of gingiva is a periodontal plastic surgical procedure and has attracted much interest due to its aesthetic nature and numerous procedures have thus been introduced with similar results up to date. The various methods that have been employed for depigmentation are: scalpel,5 cryosurgery,6 electrosurgery,7 lasers,8,9 deepithelialization technique,10 free gingival grafts,11 etc. Although there are many techniques to treat this unaesthetic condition the results of most of the techniques have not been stable for long term.12 This case report compares three different depigmentation techniques for removing melanin pigmentation of gingiva: the scalpel method was used on the upper right anterior region, electrocautery technique on the upper left anterior region and the rotary bur was used on the lower anterior region.

CASE DESCRIPTION

A 25-year-old male who had a chief complaint of unesthetic gingival display in the anterior part of the maxillary and mandibular gingiva visited the Department of Periodontology, Krishnadevaraya college of dental sciences, Bangalore. There was no remarkable medical history, and diffuse melanin hyperpigmentation was found on the labial surface of both the maxillary and mandibular arches.(Fig.1) Patient's gingiva was found to be clinically healthy & free from any visible clinical inflammation. All the
procedures were explained verbally to the patient and written informed consent was taken before the procedure.

**Scalpel method:** The surgical site was anesthetized by local infiltration with 2% lignocaine containing 1:80000 adrenaline. A Bard Parker handle with a No.15 blade were used to remove the entire pigmented epithelium along with a thin layer of connective tissue. (Fig.2&3) **Electrocautery:** A straight wire electrode tip was used to de-epithelialize the labial mucosa. Light, gentle 'paintbrush-like' strokes were used and the electrode is always kept in motion, to prevent a build-up of lateral heat at the tip of the electrode. The electrode tip was cautiously used to avoid injury to the tooth surface or adjacent tissues. (Fig 4 & 5) **Abrasion by rotary round bur:** A contra-angled hand piece and carbide bur were used for abrasion on the other side. Abrasion under water spray over an epithelial layer was performed until whitish connective tissue was exposed. All the melanin remnants of the epithelium were completely removed to prevent the possibility of recurrence. (Fig.6&7) **After surgery,** the denuded connective tissue was covered with a periodontal pack. The patient was instructed to avoid trauma to the treated gingiva and avoid acidic and hot food for one week. Post-surgical antibiotics (Amoxicillin 500mg, thrice daily for five days) and Analgesics (ibuprofen, thrice daily for three days) were prescribed. The patient was advised to use chlorhexidine mouthwash 12 hourly for one week. He was reevaluated 10 days and 6 months after the last surgical session. Evaluation included clinical examination and comparative clinical photographs.

**RESULTS**

No discomfort, teeth sensitivity, pain or bleeding complications were found intra or postoperatively. The patient was satisfied with the significant improvement in color. Tissue deformities, e.g., gingival recession and loss of papilla, were not observed after 6 months because the papillary edges and free gingival margins were left untreated. However, some recurrence can be observed in the mandibular labial segment. (Fig.8)

**DISCUSSION**

Wide variations have been recorded in the gingival colour in normal healthy persons. The degree of vascularization, the thickness of the keratinized layer and the amount of the pigment containing cells determine the colour of the gingiva. As the awareness of gingival aesthetics is on the rise, a larger group of people have been requesting to undergo depigmentation procedures. A variety of procedures have been therefore been explored, with almost the same amount of success. The scalpel method is one of the foremost recommended techniques due to the easy availability of equipments to carry out this procedure. It is not overtly technique sensitive and has shown to heal faster as compared to other techniques. However, the disadvantage of this method is the bleeding and the large area of exposed lamina propria that has to be probably covered by a periodontal pack. The electrosurgical method is more technique sensitive and requires an electrosurgical unit that leads to additional costing. This method cannot be used in poorly shielded cardiac pace makers, the heat generated by injudicious use can cause tissue damage and loss of periodontal support when the electrode is used close to bone and also treatment causes unpleasant odor. But this technique has the advantage of hemorrhage control and the subsequent healing discomfort & scar formation is minimal. Bur abrasion or de-epithelialization using surgical bur has been employed but the depth of de-epithelialization cannot be precisely controlled in this technique. It is an easy technique that requires minimal surgical expertise. This case report has shown all the 3 techniques to provide a remarkable improvement in the aesthetic and cosmetic appearance of the gingiva. Some recurrence of pigmentation has been observed in mandibular labial segment where the carbide bur was used. Insufficient depth of de-epithelialization can be attributed to be, as the cause of this recurrence. Some pigmentation also remained on the marginal gingiva and papilla of the maxillary labial segment because the epithelium of the papillary edges and free gingival margins were not removed perfectly. This was done to avoid the occurrence of recession.

**CONCLUSION**

The depigmentation procedures carried out in this case report have been shown to be successful, cost effective, causing minimal discomfort and the patient was satisfied with the result. It can be thus concluded that gingival depigmentation is a reliable procedure that can be easily and quickly performed and the aesthetic result that is obtained from this procedure has been shown to gratify the patients who are often self conscious of this condition.
REFERENCES


