



REFORMATION OF PINK ESTHETICS– A PERIODONTAL APPROACH: A CASE REPORT

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ABSTRACT

Periodontal tissues form the foundation for proper esthetics, function, and comfort of the dentition. The concept of crown lengthening was first introduced by D.W. Cohen (1962) a procedure that often employs some combination of tissue reduction or removal, osseous surgery, and / or orthodontics for tooth exposure. The rationale for crown lengthening procedures has progressively become more aesthetic-driven due to the increasing popularity of smile enhancement therapy. Gingival hyperpigmentation is also a major esthetic concern for many people in India. Melanin pigmentation is known to be caused by melanin granules within the gingival epithelium. Though it is not a medical pathology but for many people it can be of esthetic concern.

The present case report, describes a simple and effective surgical aesthetic crown lengthening with help of gingivoplasty and gingival depigmentation technique that does not require sophisticated instruments or apparatus yet yields esthetically acceptable results along with patient's satisfaction.

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INTRODUCTION

The individual's ability to exhibit a pleasing smile directly depends upon the quality of the dental and gingival structure and elements that it contains, their conformity to the rules of structural beauty, the relations existing between the teeth and lips during smile and its harmonious integration in the facial composition. The common causes of short clinical crown include caries, erosion, tooth malformation, fracture, attrition, excessive tooth reduction, eruption disharmony, exostosis, altered passive eruption and genetic variation. Altered passive eruption (APE) can be defined as a variant of habitual periodontal morphology, characterized at upper central incisor level by gingival overlapping on the anatomical crown equivalent to > 19% of its height. From the clinical perspective, APE is associated to increased gingival band width and gingival exposure on smiling¹⁶. The ultimate goal of crown lengthening is to provide a tooth crown dimension adequate for a stable dentogingival complex and for the placement of a restorative margin, so as to achieve the best marginal seal and an aesthetically pleasing final restoration¹³. Physiological pigmentation of the oral mucosa is clinically manifested as multifocal or diffuse melanin pigmentation with variable amount in different ethnic groups (Cicek, 2003). Melanin hyperpigmentation of gingiva usually does not present as a medical problem, but many patients may consider their black gums to be unaesthetic. This problem is aggravated

in patients with a “gummy smile” or excessive gingival display while smiling. Gingival depigmentation is a periodontal plastic surgical procedure whereby the gingival hyperpigmentation is removed or reduced by various techniques⁹. Today's growing esthetic concerns among the patients require the removal of unsightly pigmented gingival areas to create an esthetically-pleasant-smile.

This article discusses Aesthetic Crown Lengthening Procedure and Gingival Depigmentation as a two way procedures in which the dentist can address both functional and esthetic demands.

Case Report

A 21 year old boy reported to the Department of Periodontology with the chief complaint of “black” pigmentation of gums. Intra-oral examination revealed that he had deeply pigmented gingiva of upper jaw extending from right canine to left canine with short clinical crown. The patient desired treatment for the same. The patient had a fair complexion and was majorly concerned about the depigmented gingiva in the upper and lower front tooth region. A complete medical and family history was recorded and blood investigations were carried out to rule out any contraindications for surgery. The entire procedure was explained to the patient and informed written consent was obtained. Extraoral examination revealed no significant

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findings. The patient's face was symmetric and had a straight profile. Periodontal examination revealed good oral hygiene with minimal plaque and calculus deposits. A scalpel technique for aesthetic crown lengthening procedure with gingivoplasty and depigmentation was performed on maxillary gingiva with the help of scalpel.

Clinical examination revealed average probing depth of 5mm with no mobility and adequate amount of keratinized attached gingiva with depigmented gingiva.

Procedure 1 Aesthetic Crown Lengthening Procedure with Gingivoplasty

The initial inverse bevel incision was performed so as to achieve the ideal contour on the anterior teeth. This incision is carried out in a parabolic manner, with the most apical point or gingival zenith for the central incisors and canines located just distal to the tooth axis and the gingival zenith for the lateral incisors coinciding with the tooth axis. The marginal gingival height for the maxillary central incisors is at approximately the same level as the height for the canines, whereas the marginal gingival height for the lateral incisor is slightly lower when the teeth are in an Angle's class I relationship. Care was taken to ensure that the incisions blended with the gingival contour of the posterior teeth.

Procedure 2 Depigmentation with Scalpel technique

Depigmentation was performed under adequate local anesthesia in maxillary anterior and mandibular anterior region from right canine to left canine. A Bard Parker handle with a No.15 blade was used to remove the pigmented layer. Pressure was applied with sterile gauze to arrest bleeding during the procedure. Entire pigmented epithelium along with a thin layer of connective tissue was removed, and the exposed surface was irrigated with saline. Care was taken to see that all remnants of the pigment layer were removed. The surgical area was covered with a periodontal dressing. Post-surgical antibiotics and analgesics were prescribed. The patient was advised to use chlorhexidine mouthwash 12 hourly for two week. The patient was reviewed at the end of 1 week. The healing was uneventful and patient did not report any discomfort. At the end of 1 month, re-epithelialization was complete and healing was found to be satisfactory. Patient had no complaints of postoperative pain or sensitivity.

DISCUSSION

In regions of the mouth where esthetics are important, wound-healing after crown-lengthening surgery must be allowed to proceed to completion if optimal results are to be achieved. Any disruption of the wound-healing process can lead to undesirable consequences. After crown-lengthening surgery, the periodontium continues to remodel and mature. The esthetic crown lengthening requires gingivectomy procedures to expose the needed additional tooth structure; therefore, a minimum of 2 to 5 mm of keratinized tissue is necessary to ensure the gingival health^{1,2}. Altered passive eruption results from failure of complete tooth eruption, conditioned by two types of mechanisms: (1) Compromised free space or tooth eruption, proving insufficient for the crowns of the antagonist teeth to fully erupt to occlusion. Such space restrictions could be possible by the type of facial growth pattern involved and which would ultimately regulate the vertical space relationship between the two basal maxillary and mandibular bones.(b) The

second mechanism involves the dimensional characteristics of the periodontal tissues surrounding the tooth. Accordingly, a disproportionate dimension of these tissues with respect to tooth size or eruption capacity would complicate both passage of the tooth during the active eruption phase and tissue withdrawal during the passive phase of eruption¹⁶.

The surgical removal of undesirable pigmentation using scalpel is one of the first, and popular techniques to be employed. The procedure 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^{5,8,12}. The area healed completely in 10 days with normal appearance of gingiva. The use of scalpel technique for depigmentation is the most economical as compared to other techniques, which require more advanced armamentarium. Though the initial result of the depigmentation surgery is good but regimentation can be commonly seen.



Fig 1 Before surgery



Fig 2 After Surgery

CONCLUSION

People with high smile lines often demand for esthetics and require removal of excessively pigmented gingival areas. The above procedure achieved results which seemed to provide both functional, esthetic demands and satisfaction of the patient. So aesthetic crown lengthening procedure with depigmentation enhances the esthetics of the patient and provide excellent results for the patient.

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