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Original Research Paper

Dentistry

GINGIVAL DEPIGMENTATION WITH TWO DIFFERENT TECHNIQUES: A COMPARATIVE CASE REPORT

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ABSTRACT "Beauty is in the mind of the beholder, each mind perceives a different beauty" famously said by writer "Margeret Wolfe Hungerford." A beautiful smile is a gateway to the world. (Manjula WS et al 2015) The harmony of the smile is determined not only by the shape, position and color of the teeth, but also by the color of the gingival tissues. (Kaushik N et al 2013) Gingival health and appearance are considered to be as the vitals of a charming smile. Gingival pigmentation which is usually called as "Black Gums" may cause complaints regarding aesthetic problems.

Objective: The present case report describes two different techniques for depigmentation and to compare the clinical outcomes of electrosurgery and conventional technique and also to determine which method is ease to perform and acceptable to patients

Methodology: Two patients with aesthetic concern related to black gums were selected and treated by surgical scraping and electrosurgery. Patients were recalled post-operatively to evaluate healing and recurrence of pigmentation. Each patient was asked to complete the Visual Analogue Scale (VAS) index cards 2 and 24 hours postoperatively.

Conclusion: The methods used here produced desired results and above all, the patients were satisfied with the outcome. Increased pain level and clinically delayed healing was associated with scalpel surgery as compared to electrosurgery.

KEYWORDS : Depigmentation, Electrosurgery, Conventional, Aesthetics.

INTRODUCTION

The color of the gingiva plays an essential role in overall esthetics and appearance of an individual. The normal color of gingival tissues is pale pink, but part of the population has a gingival melanin pigmentation caused by excessive melanin deposition by the melanocytes, mainly located in the basal and suprabasal cell layers of the epithelium. (Dummett et al 1980).

Physiological pigmentation of the mucosa is clinically manifested as multifocal or diffuse melanin pigmentation. The reason behind the melanin includes, Physiologic oral pigmentation, Pathologic oral pigmentation, Exogenous, Coloring agent in food, Tobacco, Metallic pigmentation, Endogenous includes: Addison□s disease, Peutz Jeghers Syndrome, Albright Syndrome (Deepthi K et al 2016)

The successful elimination of aesthetically problematic gingival pigmentation by using various methods has been reported in clinical practice. Gingival pigmentation can be removed for esthetic reasons, and various therapeutic methods are used, including cauterization by using chemical agents, bur abrasion, scalpel surgery, cryosurgery, electrosurgery, gingival grafts, and laser techniques. (Dummett CO 1960)

One of the first and still popular technique to be employed is the surgical removal of undesirable pigmentation using scalpels. The procedure essentially involves surgical removal of gingival epithelium along with the layer of underlying connective tissue and allowing the denuded connective tissue to heal by secondary intention. The new epithelium that forms is devoid of melanin pigmentation. (Roshna T& Nandakumar K 2005) Newer advancements for the treatment of gingival depigmentation i.e. Electrosurgery has been commonly used and is even preferred over other technique by many technicians.

The present case report aimed to evaluate the effect of the two procedures on the basis of post-operative pain, healing and recurrence of pigmentation.

Case Report

2 patients with a chief complaint of black discoloration of gums had reported to Department of Periodontics, Subharti Dental College and Hospital, Meerut, Uttar Pradesh. These patients had esthetic concern related to black gums. The procedure was explained to the patients 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 in the maxillary anterior region from premolar to premolar (Lignocaine with adrenaline in the ratio 1:100000 by weight. Electrocautery (Loop electrode, Power of electrode was set at 2 W). A loop electrode was used in a light brushing strokes for de-epithelizing the gingiva. Care was taken to remove any remnants of pigmented areas that were left out.

On the other patient, blade (No. 15 BP blade which is placed parallel to gingival surface). Care was taken to include the epithelium at the tip of the interdental papilla and at the mucogingival junction on the other end. Pressure was applied with sterile gauze soaked in local anaesthetic agent to control haemorrhage during the procedure. After removing the entire pigmented epithelium and a thin layer of connective tissue with the blade, 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-operative analgesics and antibiotics were prescribed. Oral hygiene instructions were given and the patient was advised to use 0.12% chlorhexidine mouthwash for immediate post-operative 2-week period to aid plaque control. Pack was removed after 1 week and the area was debrided. The patients were reviewed at the end of 1 week and 3 months.

Case 1- Age 28 yr, female: Depigmentation was done on maxillary arch in the anterior region, with the help of scalpel.

PRE-OPERATIVE VIEW

INCISION GIVEN

IMMEDIATE POST-OPERATIVE

THREE MONTH POST-OPERATIVE VIEW

Case 2- Age 20 yrs, Female: Depigmentation was done on maxillary arch in the anterior region, with the help of Electrosurgery.

PRE-OPERATIVE VIEW

ELECTROSUERGY TIP

IMMEDIATE POST-OPERATIVE VIEW

THREE MONTH POST-OPERATIVE VIEW

Clinical parameters recorded

Gingival pigmentation: Pre-operative and post-operative observations about the gingival pigmentation were made according to Dummett-Gupta Oral Pigmentation Index. (Dummett CO & Gupta OP 1964)

- 0 - No clinical pigmentation (pink gingiva)
- 1 - Mild clinical pigmentation (mild light brown color)
- 2 - Moderate clinical pigmentation (medium brown or mixed pink and brown color)
- 3 - Heavy clinical pigmentation (deep brown or bluish black color).

Score in each tooth was taken including one full interdental papilla

Visual Analogue Scale:

Was used to quantify pain levels and patient's discomfort. The VAS consisted of a horizontal line of 10 cm (100 mm) with two end-points representing 'no pain' and 'worst pain imaginable'. Patients are asked to rate their pain by placing a mark on the line corresponding to their current level of pain. The distance along the line from the 'no pain' marker is then measured with a ruler giving a pain score out of 10.

- 0: No pain
- 0.1-3: Slight pain
- 3.1-6: Moderate pain
- 6.1-10: Severe pain.

Each patient was given the instructions to complete the VAS index cards two and 24 hours after the procedure. (Malkoc S et al 2004)

RESULTS

The result suggest that pain was less when electrosurgery was used as compared to scalpel. Patient acceptance was better when electrosurgery was used as compared to excision.

DISCUSSION

Smile is an important focal point of people's attention and a key feature of the overall esthetic appearance of a person. The eyes of a person, in a face-to-face situation, initially observe the eyes and, immediately afterwards, the mouth and the smile of the other person. Accordingly, facial esthetics and a beautiful smile have become major reasons for many patients to request for esthetics types of dental treatment. (Zucchelli G et al 2018)

Oral melanin pigmentation is a common finding and an emerging concern for many patients these days. However, according to Çiçek and Ertaş[4] the degree of pigmentation is also related to mechanical, chemical, and physical stimulation.

This pigmentation causes blackening of gums which appears unpleasing during smiling thus most patients seek its removal due to esthetic concerns. Various treatment modalities have been used for this purpose including scalpel, electrosurgery, cryosurgery, abrasion using bur, and laser.

Demand for cosmetic therapy of gingival melanin pigmentation is common and the selection of a technique for depigmentation of the gingiva should be based on clinical experience, patient's affordability and individual preferences. Scalpel surgical technique is highly recommended in consideration of the equipment constraints that may not be frequently available in clinics. However, scalpel surgery causes unpleasant bleeding during surgery, pain and discomfort after surgery.

In the present case report, an attempt was made to remove gingival pigmentation surgically and was noted that scalpel surgery causes unpleasant bleeding which was in accordance with the study done by Sharma et al. (Sharma H et al 2018)

Superior efficacy of electrosurgery as compared to scalpel

has been explained on the basis of Oringer's (1975) 'exploding cell theory'. According to this theory, it is predicted that the electrical energy leads to molecular disintegration of melanin cells present in basal and suprabasal layers of the operated and the surrounding sites. (Stark MM et al 1977)

Electrosurgery is the use of high frequency electrical energy in the radio transmission frequency band, which is applied directly to tissue to induce histological effects. As the current passes, the impedance to the passage of current though the tissue generates heat, which boils the tissue water, creating steam, resulting in either cutting or coagulation of tissue. (Gupta ND et al 2015)

Dental esthetic needs of patients are increasing with a greater demand on pleasing look. This demand gets fulfilled not only by having healthy set of dentition but also esthetically improved gingival component.

CONCLUSION:

Gingival pigmentation though not a major complication, yet it greatly affects the facial appearance. This study indicates that there was no significant difference between the two techniques in terms of gingival health. However, From the present case report we can conclude that depigmentation procedure was successful in both the techniques. Depigm entation of hyperpigmented gingiva using Electrosurgery was having less bleeding, patient felt less pain when compared to conventional technique, and it is quicker to perform and above it all healing was uneventful.

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