

Case Report

Revel the pink - gingival depigmentation : report of two cases

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Abstract: Gingival pigmentation mainly occurs as a result of the functional component: melanin granules, which are in turn produced by melanoblasts. The melanoblastic activity determines the degree of pigmentation. Gingival pigmentation has a multifactorial etiology. In most cases the pigmentation produced is purely physiological however it can also be a precursor of a severe disease. Cryotherapy, bur abrasion, partial thickness flap, scraping, electrosurgery and laser are few of the different treatment modalities reported for depigmentation of gingiva. In the following presented cases, depigmentation was done using scalpel, diode laser and electro-cautery. These treatment modalities found to be simple, effective and yielded good results, along with good patient satisfaction.

Keywords: melanin, laser, depigmentation.

INTRODUCTION

Pigmentation refers to the process of physiologic or pathologic deposition of pigments in the tissue. Pigmentation can occur either intraorally or extraorally. The most common site for pigmentation has been found to be the Intraoral gingival, of which the incisal area shows more incidence of pigmentation than other sites. Several factors determine the colour of gingiva, such as an increase or decrease in blood vessels, thickness of the epithelium, extent of keratinization, and endogenous and exogenous pigmentation. ¹ Primarily five endogenous pigments are responsible for gingival pigmentation, of which Melanin is the commonest endogenous pigment. This does not always associate with any medical problems. melanocytes present in the gingival epithelium produces melanin and the melanoblastic activity determines the degree of gingival pigmentation[2,3].

Fair skinned folks and individuals with gummy smiles have almost always associated pigmented gingiva as an esthetic problem. Therefore depigmentation procedures have become a boon for such patients. Electro surgery, cryosurgery, scalpel, lasers, etc are known techniques adopted for Gingival depigmentation. This being a periodontal plastic

surgery where the gingival hyperpigmentation is removed or reduced [4,5]. The following case report illustrates a comparative evaluation of depigmentation with scalpel, lasers, electrocautery and bur abrasion.

CASE SERIES

On intraoral examination, diffused blackish pigmentation of gingiva was seen which was more prominent in the upper anterior region in both the cases reported in department of Periodontics of Mar Baselios Dental College. The medical history was not much of significance in both the cases. Intra oral examination revealed mild gingivitis with generalized pigmentation.

Depigmentation procedures were planned after obtaining the patient's consent. The patients were given oral hygiene instructions and they underwent oral prophylaxis in phase I of periodontal therapy. Depigmentation procedure was done after the inflammation had resolved. The procedure was carried out from canine to canine region in the maxillary and mandibular anterior region after adequate local anesthesia.

Case 1 Depigmentation using scalpel and diode laser

Case 2 Depigmentation with laser and electrocautery.

Case I

A 25 year old female patient reported to the department with a chief complaint of blackish discoloration of the gums. Technique used was scalpel and laser Depigmentation. Maxillary region was planned for scalpel and mandibular region for laser Depigmentation. For scalpel Depigmentation, a Bard Parker handle with a no.15 blade was used to remove the pigmented layer. Pressure was applied with sterile gauze soaked in local anesthetic agent to control haemorrhage during the procedure. After removing the entire pigmented epithelium, the surgical area was covered with a periodontal pack.

For laser Depigmentation a diode of 940 nm laser was used with short light paint brush strokes in a horizontal direction to remove the epithelial lining [1,2,3,4]. Neither bleeding nor pain was experienced by the patient during the procedure. Following the procedure postoperative instructions were given. An Analgesic was prescribed for the management of pain and amoxicillin 500 mg TID for 5 days. Patient was advised to use 0.2% chlorhexidine mouth rinse twice daily. After 1 week, the surgical area was examined. The healing was uneventful without any postsurgical

complications. The Completion of healing of the surgical site took 3 weeks.

Case II

A 27 year old female patient came with a chief complaint of unesthetic smile due to dark gums. Depigmentation was done by laser and electrocautry [5,6,7,8]. Considering the patient's concern depigmentation with electrocautry was planned on 3rd quadrant and diode laser on 4th quadrant. A diamond electrode was used for the depigmentation of gingiva. It was used in a brushing stroke and the tip was kept always moving to avoid excessive heat buildup and destruction of tissues. A periodontal pack was placed over the wound area. Laser Depigmentation was done with a diode laser. The procedure was done with contact mode in a corono-apical direction.

No pain and bleeding was observed during the procedure. Following the procedure postoperative instructions were given. An Analgesic was prescribed for the management of pain.

Depigmentation Using Scalpel and Diode Laser



Fig-1 (Pre Operative)



Fig-2 (Depigmentation with Scalpel)



Fig-3 (Depigmentation with Laser)



Fig-4 (Post Operative)

Depigmentation with Laser and Electrocautry



Fig-5 (Pre Operative)



Fig-6(Depigmentation with Laser)

Depigmentation with Electrocautry



Fig-7 (Pre Operative)



Fig-8(Post Operative)

DISCUSSION

Gingival pigmentation depends upon the vascular supply to the gingiva, keratinization, exogenous and endogenous pigments etc. A wide variation in the pigmentation is seen among individuals depending upon these criteria. The difference in the oral pigmentation in males and females have been shown to be insignificant based on the studies conducted[6]. In an era where everyone is conscious about their smile, gingival pigmentation has become an esthetic problem especially for those patients with a gummy smile. Depigmentation has thus gained immense attention today in the field of aesthetic dentistry. For Depigmentation several treatment techniques have been ushered. In the discussed case series we have compared three techniques of gingival pigmentation; scalpel, electrocautry and lasers, of which healing period for the scalpel wounds was found to be faster than the other techniques. However, scalpel surgery caused unpleasant bleeding during and following the surgery and it was necessary to cover the lamina propria with periodontal packs for 7 to 10 days. Easy handling, sterilization effects, homeostasis, short treatment line, and excellent coagulation (small vessels and lymphatics) are known advantages of electrocautry and laser. Also, the elimination of a periodontal dressing is achieved by the use of a laser. However, on comparison to electrocautry, laser surgery has some disadvantages like requirement of sophisticated equipment makes the treatment very expensive. Laser surgery is often accompanied by a

delayed type of inflammatory reaction with mild post-operative discomfort lasting up to 1–2 weeks.

CONCLUSION

The depigmentation procedure was successful and the patients were satisfied with the results. Among the mentioned techniques, we found the scalpel technique to be relatively simple and easy to perform as also cost-effective. Though the initial result of the depigmentation surgery

was profoundly encouraging, repigmentation is a common problem. Reports suggest that chances of repigmentation after scalpel technique are 21.4%, and that of laser therapy are 22.8%.^{7,8} It can be concluded that the procedure adopted should be simple, cost effective and less painful with minimal tissue loss and that it should be comfortable both to the operator as well as the patient.

REFERENCES

1. Tal H, Oegiesser D, Tal M; Gingival depigmentation by erbium: YAG laser: Clinical observations and patient responses. J Periodontol, 2003; 74:1660-1667
2. Dummett CO, Barends G; Oromucosal pigmentation: An updated review. J periodontal, 1971; 42: 726-36.
3. Steigmann S; The relation between physiologic pigmentation of the skin and the oral mucosa in Yemenite Jews. Oral Surg, 1965; 19:32-38.

4. Gnanaesekhar JD, Al-Duwairi YS. Electrosurgery in dentistry. Quintessence Int (Berlin), 98;29(10):649-54.
5. Stabholz A, Zeltser R, Sela M, Peretz B, Moshonov J, Ziskind D, Stabholz A; The use of lasers in dentistry: Principles of operation and clinical applications. Compendium of Continuing Education in Dentistry, 2003; 24(12):935-48.
6. Gondak RO, da Silva-Jorge R, Jorge J, Lopes MA, Vargas PA; Oral pigmented lesions: Clinicopathologic features and review of the literature. Med Oral Patol Oral Cir Buca l, 2012.
7. Hegde R, Padhye A, Sumanth S, Jain AS, Thukral N; Comparison of Surgical Stripping, Er: YAG Laser and CO Laser Techniques for Gingival Depigmentation: A Clinical & Histological Study. J Periodontol, 2013; 84(6):738-748
8. Sharath K.S, Rahul Shah, Biju Thomas; Gingival Depigmentation: Case Series for Four Different Techniques. NUJHS 2013; 3(4): 132-136