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Techniques Of Gingival Depigmentation: A Case Series

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Abstract:
Gingival hyper-pigmentation is an aesthetic complication for numerous subjects with a gummy smile. The present series represents the use of different techniques for gingival de-pigmentation. Three cases reported identical principal complaint of unesthetic brown to black coloured gingiva. Depigmentation was accomplished with no bleeding problems or postoperative discomfort. Following up the cases after the procedure, the gingiva seemed in good contour, pink colour, and firm consistency. No recurrence has been seen in next 3-6 months.

Keywords: *Hyperpigmentation, Depigmentation, LASER, Aesthetics*

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I. Introduction:

A smile expresses a feeling of success, happiness and self-confidence. The beauty of the smile depends not only on shape, position or colour of the tooth but also on the gingival tissues. Gingiva is thus an essential component for an attractive appearance.

Gingival pigmentation is the discoloration by a pigment relating to the gingival tissues (1). Over the past decade our acquaintance regarding the etiopathogenesis regarding gingival pigmentation (GP) has amplified immensely. Multifocal or diffuse melanin pigmentation with variable amount in different ethnic groups is a clinical manifestation of hyperpigmentation of gingiva. (Cicek, 2003). (2) Many patients may consider the presence of the black gum or melanin as highly unesthetic. The common indication of the gingival de-pigmentation is the demand of the patient with high aesthetic sense.

The severity of the gingival pigmentation was recorded using Dummett- Gupta Oral Pigmentation Index (DOPI) (3). In this index composite numerical values were assigned to the total melanin pigmentation established on clinical inspection of several oral tissues. Due to clarity and simplicity of the proposed index, this classification has been used in our study.

The criteria are as follows:
0 = Pink tissue (no clinical pigmentation)
1 = Mild, light brown tissue (mild clinical pigmentation)
2 = Medium brown or mixed pink or brown tissue (moderate clinical pigmentation)
3 = Deep brown or blue/black tissue (heavy clinical pigmentation)

Different approaches have been used for the treatment of gingival depigmentation like gingivectomy, gingivectomy with free gingival autografting, acellular dermal matrix allografts, electrosurgery, cryosurgery, abrasion with diamond bur, and lasers. (5)
The cases were selected based on Dummett–Gupta Oral Pigmentation Index (DOPI): (Dummett 1971)

The present case series explains different modalities for the treatment of gingival depigmentation. All these techniques have produced good results with patient satisfaction.

II. Case Series

The gingival depigmentation procedure has been carried out using SCALPEL

Fig 1 : Pre-operative photographs

Fig 2: Armamentarium

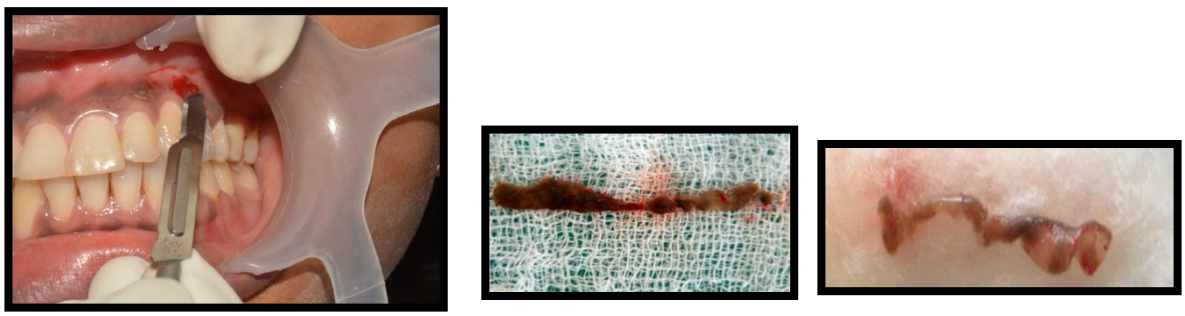

Fig 3: Surgical Procedure using SCALPEL

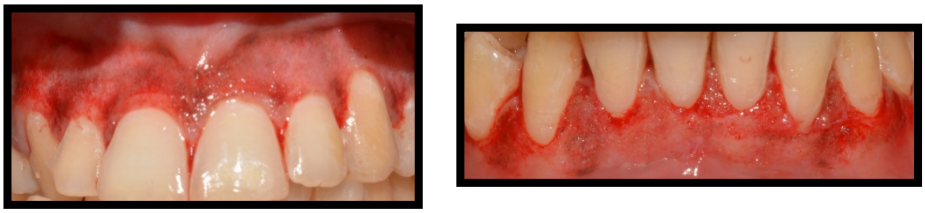

Fig 4: Immediate Post-operative

Fig 5: Pre-operative & Post 6-months Follow up

Depigmentation By LASER

Fig 6: Pre-operative Photograph

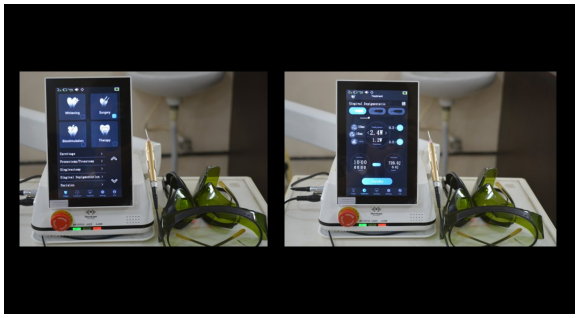

Fig 7: Armanmentarium

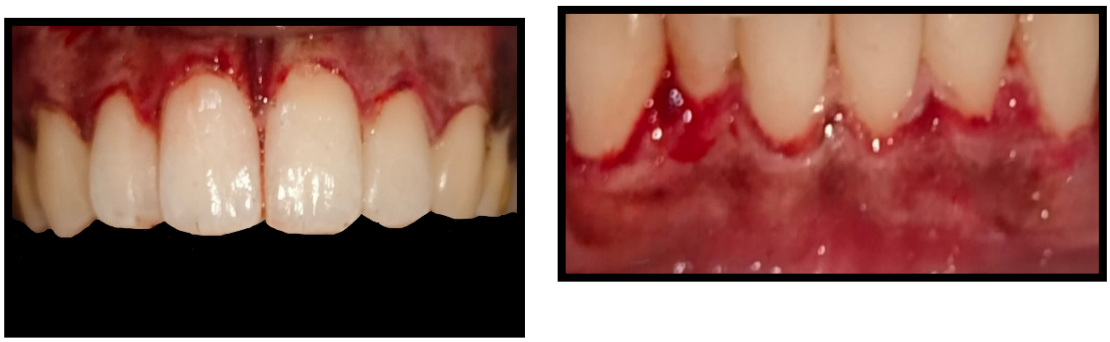

Fig 8: Immediate Post-Operative

Fig 9: Pre-operative & 6 months follow-up

Depigmentation by electrocautery

Fig 10: Pre-operative photograph

Fig 11: Armamentarium

Fig 12: Immediate Post-operative

Fig 13: Pre-operative & Post 6 months follow-up

III. Conclusion:

The pursuit of pink aesthetics in periodontology highlights the growing recognition that periodontal therapy extends far beyond achieving health alone—it must also meet the patient's esthetic expectations. Gingival hyperpigmentation often creates significant psychological and social discomfort, particularly for individuals with high smile lines or cosmetic awareness. The presence of dark, pigmented gingiva undermines the harmony of the smile. Addressing this challenge through gingival depigmentation has therefore become an integral component of periodontal practice.

The present case series illustrates that a variety of techniques—ranging from conventional scalpel surgery to the use of electrocautery, lasers that are capable of producing favourable outcomes. Each modality has its advantages, limitations, and patient-specific indications, yet all share the common objective of restoring gingiva to a uniform, coral-pink appearance. Clinical follow-up across cases demonstrated that not only were the procedures effective in eliminating melanin pigmentation, but they also yielded predictable healing, minimal postoperative discomfort, and high levels of patient satisfaction.

While scalpel surgery remains a widely practiced, cost-effective method, advancements such as diode lasers and electrosurgery offer the advantages of reduced bleeding, improved visibility, and faster healing.

Another noteworthy aspect is the psychological impact of successful depigmentation. Restoring a patient's confidence in their smile can significantly enhance quality of life, underscoring the holistic role of dentistry in addressing both health and self-esteem. Pink esthetics, therefore, is not a superficial goal but rather a key determinant of overall treatment success in periodontal therapy. It bridges the gap between functional rehabilitation and the patient's emotional well-being.

References:

[1]. Itoiz ME, Carranza FA: The Gingiva. Carranza's Clinical Periodontology. WB Saunders, Philadelphia, PA; 2002. 16-35.

[2]. Dummett CO: Pertinent Considerations In Oral Pigmentations. Br Dent J. 1985, 158:9-12. 10.1038/Sj.Bdj.4805526

[3]. .Gupta G, Kumar A, Khatri M, Puri K, Jain D, Bansal M, Et Al. Comparison Of Two Different Depigmentation Techniques For Treatment Of Hyperpigmented Gingiva. J Indian Soc Periodontol. 2014;18:705–9. Doi: 10.4103/0972-124X.147404. [DOI] [PMC Free Article] [Pubmed] [Google Scholar]

[4]. Nagati RR, Ragul M, Al-Qahtani NA, Ravi KS, Tikare S, Pasupuleti MK. Clinical Effectiveness Of Gingival Depigmentation Using Conventional Surgical Scrapping And Diode Laser Technique:A Quasi Experimental Study. Global J Health Sci. 2017;9:296–303. [Google Scholar]

[5]. Murthy MB, Kaur J, Das R. Treatment Of Gingival Hyperpigmentation With Rotary Abrasive, Scalpel, And Laser Techniques:A Case Series. J Indian Soc Periodontol. 2012;16:614–9. Doi: 10.4103/0972-124X.106933. [DOI] [PMC Free Article] [Pubmed] [Google Scholar]

[6]. Thangavelu A, Elavarasu S, Jayapalan P. Pink Esthetics In Periodontics-Gingival Depigmentation:A Case Series. J Pharm Bioallied Sci. 2012;4:S186–90. Doi: 10.4103/0975-7406.100267. [DOI] [PMC Free Article] [Pubmed] [Google Scholar]

[7]. Sedeh SA, Badihi S, Esfahaniyan V. Comparison Of Recurrent Rate Of Gingival Pigmentation After Treatment By Liquid Nitrogen And Cryoprob In 18 Months Follows-Up. Dent Res J (Isfahan) 2014;11:592–8. [PMC Free Article] [Pubmed] [Google Scholar]

[8]. Roshna T, Nandakumar K. Anterior Esthetic Gingival Depigmentation And Crown Lengthening:Report Of A Case. J Contemp Dent Pract. 2005;6:139–47. [Pubmed] [Google Scholar]

[9]. Axell T, Hedin CA. Epidemiologic Study On Excessive Oral Melanin Pigmentation With Special Reference To The Influence Of Tobacco Habits. Scand J Dent Res 1982; 90:434-42.

[10]. Sanjeevini H, Pushpa Pudakalkatti, Soumya B.G And Aarati Nayak. Gingival Depigmentation: 2 Case Reports. World Journal Of Medical Pharmaceutical And Biological Sciences 2012; 2(1):01-04.

[11]. Hegde R, Padhye A, Sumanth S, Jain AS, Thukral N. Comparison Of Surgical Stripping, Er: YAG Laser And CO Laser Techniques For Gingival 2 Depigmentation: A Clinical & Histological Study. J Periodontol 2012 [Internet]. Available From: Www.Ncbi.Nlm.Nih.Gov/Pubmed/23003920.

[12]. Rahul Kathariya, A. R. Pradeep. Split Mouth De-Epithelization Techniques For Gingival Depigmentation: A Case Series And Review Of Literature. J Indian Soc Periodontol. 2011; 15(2): 161–168.

[13]. Perlmutter S, Tal H. Repigmentation Of The Gingiva Following Surgical Injury. J Periodontol 1986; 57:48-50.

[14]. Kanakamedala AK, Geetha A, Ramakrishnan T, Emadi P. Management Of Gingival Hyperpigmentation By The Surgical Scalpel Technique: Report Of Three Cases. J Clinical And Diagnostic Research2010; 4(2):2341-46.

[15]. Shah R, Modi M. Pink Is In, Black Is Out: Gingival Depigmentation: A Case Report. Dent Today 2010; 5(3):23-24