

Have a Glimpse into Gingival Depigmentation: Comparative Study on Techniques Electrocautery versus Scalpel

¹Dr. Divya Kadali, Senior Lecturer, Department of Periodontics, KIMS Dental College, Amalapuram.

²Dr. Bhagyasree Vegunta, MDS, Department of Periodontics, Vijayawada.

³Dr. Shivakumar , MDS , Principal, HOD of Department of Periodontics, KIMS Dental College, Amalapuram.

⁴Dr. Punnapu Vijaya Swetha, Internship, KIMS dental College, Amalapuram.

⁵Dr. Akhila Kasi ,⁴th BDS , KIMS Dental College, Amalapuram.

Corresponding Author: Dr. Divya Kadali, Senior Lecturer, Department of Periodontics, KIMS Dental College, Amalapuram.

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Introduction

When gingival depigmentation or hyperpigmentation comes into mind the patient comes to doctor because of aesthetics concern which is the major indication in the people who has high lip line /smile line .A smile is friend maker. Your smile will give you a positive countenance that will make people feel comfortable around you. Aesthetics is appreciation of beauty. Gingival colour and condition are the essential components of an attractive smile. Black gummy smile which leads pshyocological problems in the people which gave a perio -esthetics treatment modalities to concentrates on this major indication on melanin pigmentation .[1,3,5.]

Keywords: Depigmentation, Electrocautery, Perio Esthetic Surgery, Scalpel.

Introduction

Gingival melanin pigmentation occurs in most of the people [2]. Melanin, a brown pigment, is the most common natural pigment contributing to endogenous pigmentation of gingiva and many etiological factors are varied which include smokers , drugs, heavy metals, genetics, endocrine disturbances, syndromes as Albright's syndrome, Peutz Jegher's syndrome, e.t.c [3,4,5,11]

The perio esthetics which reduces the melanin pigmentation before this the case selection is foremost important in understanding the treatment severity and to plan and executive for better prognosis [6]

Selection Criteria

He cases were selected based on Dummett–Gupta Oral Pigmentation Index (DOPI): (Dummett 1971)[2]

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

The smile line classification (Liebart and Deruelle 2004)[7]

Class 1: Very high smile line – more than 2 mm of the marginal gingiva visible.

Class 2: High smile line – between 0 and 2 mm of the marginal gingiva visible.

Class 3: Average smile line – only gingival embrasures visible.

Class 4: Low smile line – gingival embrasures and cemento-enamel junction not visible.

The case we are presenting includes the heavy clinical pigmentation [deep brown or bluish black]

Case Report

A young male patient aged 25 years visited the Department of oral medicine and radiology with the chief complaint of blackish gummy smile which leads to psychological effect in the patient feeling uncomfortable while smiling. The DOPI score was 3 and revealed high smile line [figure 1] [2]. Understanding the patient inconvenience, perio esthetics surgery is planned [i.e. depigmentation procedure was planned using electrocautery and scalpel]



Figure 1: picture showing melanin pigmentation figure 1 Treatment plan includes depigmentation surgery is planned to treat the patient in two different techniques. we have done depigmentation for upper quadrant done by using scalpel where as for lower quadrant using electrocautery.

Treatment Done

The upper quadrant of the jaw the depigmentation procedure with scalpel is planned accordingly. After administration of local anesthetic, a BardParker handle with a No. 15 blade was used to remove the pigmented layer [Figures figure 2:picture showing removing of pigmented using scalpel, figure 3:picture showing removed tissue,figure 3: picture showing removal of all

pigmented part in upper quadrant and figure 4:picture showing placement of



Figure: 2



Figure: 3



Figure: 4



Figure: 5

Post-surgical instructions were given to the patient along with antibiotics (Amoxicillin 500 mg, three times daily for 5 days) and anti-inflammatory analgesics (Ibuprofen and Paracetamol three times daily for 3 days). The patient was advised to 0.2% chlorhexidine gluconate mouth wash 12th hourly for 1 week. The patient was recalled at the end of 1 week. [Figure 6: healing after one week]



Figure: 6

The healing process was proceeding normally and it was quite uneventful on the surgical area. In lower quadrant the loop electrode was used for depigmentation of gingiva. It is done using light pulling strokes which reduces heat production more and have less effect on tissue done in the lower quadrant of the jaw .and followed by placement of periodontal pack .[figure 7 :picture showing using of electrocautery , figure 8 :picture showing placing periodontal pack]



Figure : 7



Figure: 8

Patient is asked to continue the chlorhexidine mouth wash for another week. At the end of 3 month, re-epithelization was complete and healing was found to be satisfactory [figure 9]. The patient had no complaints of post-operative pain or sensitivity. The gingiva appeared healthy and no repigmentation was observed at the end of 6months [figure 10].



Figure : 9



Figure : 10

Discussion

Gingival hyper pigmentation in my patient which leads to psychological problem .we started for the improvement in understanding patient intention. Gingival pigmentation which starts after 3h of birth.[8]

Scalpel

The most versatile and firstly used, techniques to be employed are the surgical removal of undesirable pigmentation using scalpels. The procedure essentially 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.[3,4,5]. Although this procedure includes bleeding after the treatment .It's heals after 7 to 10 days faster.This can be said as a gifted method more easily performed and which can also be completed in minimum time and simple to do.[3,4,5,12,13.]

Electrocautery

The highly efficient electrosurgery is preferred than scalpel seen in the present case report could be explained based on Oringer's (1975)[9] "exploding cell theory." According to the theory, it is affirmed that the electrical energy leads to molecular disintegration of melanin cells present in basal and suprabasal cell layers of operated and surrounding sites. Thus, electrosurgery has a high influence in retarding migration of melanin cells from the locally situated cells, which were detected clinically to be removed. Cicek (2003)[10] reported that there is no bleeding and there is minimal patient discomfort while using electrocautery. But electrosurgery also has its own limitations in that its repeated and prolonged use induces heat accumulation and undesired tissue destruction.[9]

Conclusion

Perio –esthetics surgery which we have taken an comparative study between scalpel and electrocautery both pros and cons [12,13]. Here by we conclude that scalpel which has pain during treatment but healing is good its more versatile technique and electrocautery which does not show any change in the post operatively and more likely or desirable effect on the gingiva but it has its own limitations. Hence the treatment option varies accordingly the case selection.[3,4,5,12, 13]

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