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Enhancing smile esthetics with gingival depigmentation: A case report

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Abstract

High smile lines and gingival pigmentation in the front region may raise aesthetic issues. A female patient in her 20s who was otherwise healthy and did not smoke was brought to the department with the main complaint of having brown gums in the front. Scalpel method gingival depigmentation was planned, and a patient-based assessment of aesthetic satisfaction was made utilizing a visual analog scale. The patient reported a visual analogue score of 10 one month following surgery. According to this study, the scalpel approach is easy to use and efficient for obtaining acceptable esthetics.

Keywords: Depigmentation, esthetics, VAS, smile

Introduction

The gingiva is the area of the oral mucosa that surrounds the tooth neck and covers the alveolar process of the jaw. The gingiva is typically referred to as being "coral pink" in hue. Vascular supply, the thickness and keratinization of the epithelium, and the existence of pigmented cells are the determinants of gingiva colour.

Melanin, bilirubin, and iron can be the culprits behind endogenous oral pigmentation^[1]. The brown pigment melanin is not generated from haemoglobin. Addison disease, Peutz-Jegher syndrome, and Bright syndrome are diseases that enhance the synthesis of melanin. Tobacco, coal and metal dust, colouring ingredients in food, and lozenges are examples of exogenous influences that modify the colour of gingiva^[2]. According to Dummett, oral pigmentation is distributed as follows: tongue (15%), mucous membranes (22%), hard palate (61%), and gingiva (60%)^[3]. Gingival pigmentation has three dimensions: Aetiology, distribution, and severity. Various indices of gingival pigmentation are as follows.

1. According to Dummett *et al.*'s Oral Pigmentation Index, there is no clinical pigmentation (pink gingiva).

- Moderate clinical pigmentation (moderately light brown tone)
- Clinical pigmentation that is moderate (medium brown or a mix of pink and brown)
- Severe clinical pigmentation (Bluish black or deep brown in hue)

2. Takashi *et al.*'s Melanin Pigmentation Index^[5].

Score 0: Absence of pigment

Score 1: Papillary gingiva with solitary pigmentation unit(s) but no expansion between adjacent solitary units.

Score 2: The development of a continuous ribbon that extends from nearby isolated units.

3. Index of gingival pigmentation^[6]:

Score 0: Pigmentation is not present.

Spots with brown to black pigments receive a score of 1.

Score 2: Patchy brown to black pigmentation that is not diffuse.

Score 3: Minor, connected, and diffuse brown-to-black pigmentation

The present case report describes a simple and effective surgical depigmentation technique that yield aesthetically acceptable results.

Case description

A 21-year-old female patient who is systemically healthy and does not smoke arrived at the clinic complaining of dark gums around her upper and lower front teeth. According to the Dument oral pigmentation index, the clinical examination revealed moderate clinical pigmentation (Medium brown or a mixed pink and brown tone) (Figure 1). According to Liebart and Deruelle's classification of smile lines, the patient has a smile line that is class 2-high. Scalpel method gingival depigmentation procedures were planned for both arches. The patient was informed of the entire treatment, and a written agreement was acquired. Scaling and root planning were done thoroughly. To rule out any potential surgical contraindications, blood tests were run. The entire pigmented epithelium and a small layer of connective tissue were removed while under local anaesthesia.

Using surgical blade #15, the entire pigmented epithelium and a thin layer of connective tissue were excised while the patient was under local anaesthesia. Hemorrhage was controlled during the surgery by exerting pressure with sterile gauze. Both arches had their remaining pigmented layer scraped off (figures 2 and 3). Periodontal dressing (Coe-pack) was then applied to the surgical region. Instructions for recovery were provided. Tab brufen 400 mg s-o-s was prescribed for the patient. After 10 days, the patient was summoned back (figure 4). Recovery from surgery went smoothly.

Result

Patient-based evaluation in terms of aesthetics was assessed using a visual analogue scale (VAS 0-10 score). The patient reported VAS score of 10, after one month.

Discussion

The appearance of gingival pigmentation is frequently a cause for concern, particularly in patients with a high smile line (gummy smile). The following techniques have all been tried for gingival depigmentation: gingivectomy and free gingival graft⁸, gingivectomy^[9], electrosurgery^[10], cryosurgery^[11], abrasion with diamond bur^[12], and various types of lasers^[13]. To get rid of the pigmented spots, a free gingival graft can be used. It does, however, result in a tyre-patch appearance and needs an additional surgical site (donor site)^[14]. Scalpel surgery requires less training than electrosurgery. Long-term application of electricity to tissue results in heat buildup and unintended tissue damage. Avoid coming into contact with the periosteum, alveolar bone, and healthy teeth^[15]. Depth control in cryosurgery is challenging, as prolonged freezing causes tissue death that is followed by significant Edema^[16]. Laser depigmentation produces positive effects, but it is expensive, space-consuming, and requires expensive equipment. The choice of a technique for gingival depigmentation should take into account professional experience, patient affordability, and personal preferences.

Because no specialist equipment is needed, the scalpel surgical technique is strongly advised. Scalpel wounds heal more quickly than those from other methods.



Fig 1: Preoperative image showing gingival pigmentation



Fig 2: Intraoperative image showing maxillary depigmentation using scalpel technique



Fig 3: Immediate postoperative image of mandibular gingiva showing no remnants of pigmented layer



Fig 4: Postoperative image showing successful healing

Conclusion

The patient was pleased with the patient's appearance following the successful depigmentation operation. Thus, we draw the conclusion that depigmenting hyperpigmented gingiva with scalpel surgery is straightforward, simple to execute, economical, and most importantly, less painful and aesthetically pleasing to the patient.

Conflict of Interest

Not available

Financial Support

Not available

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