Gingival Veneer: An Alternative to a Relapsed Periodontal Treatment!

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ABSTRACT

Periodontal plastic surgeries performed for the recession coverage in millers class III and IV recession cases usually give less expected esthetic results or might lead to recurrence. The periodontal attachment loss and bone loss often creates open interdental spaces, elongated clinical crowns and altered phonetics thus compromising the esthetics as well as function culminating in lowering the social confidence of the patient. Gingival prosthesis made from acrylics, composite resins, silicones or porcelain-based materials can be used as an alternative for such cases. This case report describes the fabrication of an esthetic, soft and flexible silicone based gingival veneer in a relapsed periodontal plastic surgical case. Thus providing an economical, functional and esthetically acceptable solution.

Keywords: Esthetics, Gingival recession, Gingival veneer, Periodontal prosthesis.

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INTRODUCTION

Gingival recession is the most common clinical manifestation of many periodontal diseases, as it has a relatively high incidence rate. Gingival recession can cause loss of interdental papilla and lead to open embrasures, which project in the form of black triangles. The black triangles that appear as a result of gingival recession will distort an amiable smile. The condition can be corrected or managed by two approaches.

The first option is mucogingival surgery or periodontal plastic surgery. The second option, gingival replacement with artificial substitutes, is more helpful in managing severe gingival recession situations. The synonyms of gingival veneer are flange prosthesis, gingival mask, gingival veneer prosthesis, gingival replacement unit and artificial gingiva. Gingival veneer prosthesis is considered when other methods are unpredictable or impossible. Prosthetically, these appliances might be of either removable or fixed variety capable of replacing large volumes of tissue. Fabrication materials may vary from pink auto-cure and heat-cured acrylics, porcelains, composite resins and thermoplastic acrylics, silicone based soft materials to flexible nylon based thermoplastic material.

The removable gingival mask is indicated as follows:

• To cover—exposed crown margins, exposed implant components and root surfaces and reduce the length of the clinical crown.
• To block out the black triangles between teeth in which gingival recession has occurred
• In relapsed treatment outcome of periodontal plastic surgeries
• To fill in the space between the crown and the soft tissue
• To prevent air flow through or beneath maxillary fixed restorations or through the spaces between the teeth and thus improving phonetics
• To provide increased lip and cheek support for those patients who require it
• It is also beneficial for patients with high lip lines and a gummy smile who have been treated with osseo-integrated dental implants
• To hide the dark lines around old crowns that are often seen with patients who have experienced gingival recession
• It also aids the prosthodontist to design implant supported prosthesis with optimal configurations permitting easy access for oral hygiene maintenance.
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The gingival veneer is contraindicated in patients with poor plaque control, unstable periodontal health, high caries activity, smoking and known allergy to acrylic or silicone.

The gingival veneer is retained mechanically, with tiny extensions of the mask material slightly projecting between the roots of the natural teeth or the implants just coronal to the gingival margin. Part of the retention also comes from the natural capillary action created by the saliva and lastly part of the retention is dependent on the pressure of the lips against the gingival prosthesis.

This case report presents a restorative non-surgical approach for an esthetically compromised patient following periodontal plastic surgery, fiber splinting, diastema closure by composite resin and using a removable self-cure silicon based resin gingival prosthesis. It describes the use of a silicon based gingival veneer to hide the deformities in mandibular anteriors.

CASE REPORT

A 42 years old male patient who was referred to the outpatient department of periodontology and implantology, complaint of spacing between the lower front teeth along with slight mobility which was unesthetic according to him while speaking (Fig. 1). He wanted to save his mobile tooth. Radiographic examination revealed two third of bone loss wrt 31 and more than half of bone loss wrt 41 (Fig. 2). Patient gave history of having undergone periodontal plastic surgery 2 years back for the treatment of recession wrt 31 and 41 region, which had relapsed due to poor oral hygiene maintenance and high technique sensitiveness of such procedures leading to further recession in that area with SC Miller’s grade II mobility wrt 31.11 Now patient wanted some conventional esthetic non-surgical treatment for the same. So, the decision was made to fabricate a removable prosthesis to close the space between the teeth and make that area self cleansing for the patient.

The treatment plan encompassed initial scaling and root planing followed by coronoplasty with respect to 41. On subsequent visit study model was prepared using irreversible hydrocolloid impression material (Tropicalgin, Zhermack, Rovigo, Italy) and was poured in dental stone. Teeth were then splinted from distal of left mandibular canine to distal of right mandibular canine (Figs 3 and 4). Splinting was done lingually using fiber splint (Interlig Fiber Splint, Angelus) (Fig. 5). Once teeth were splinted, mesial aspect of 31 and 41 were etched, bonded and built-up was done using composite to close the diastema to some extent (Fig. 6).

After periodontal and restorative part, prosthetic elastomeric impression was made of mandibular arch (Fig. 7). The impression was poured in type IV die stone. On final master cast, modeling wax was added to exact shape of the final prosthesis followed by flashing and dewaxing of the wax up (Fig. 8). Soft liner material (Silagum, comfort soft relining, DMG, made in Germany) was used with different melanin pigment materials to match patients adjacent gingival color, for packing followed by bench curing (Fig. 9). After recovery of gingival prosthesis from the flask (Fig. 10), intraoral try-in was performed, it was then finally trimmed and polished, and was delivered to the patient (Fig. 11). The prosthesis was extremely thin and had enough flexibility to get engaged in the undercuts. The patient found the prosthesis very comfortable and esthetic while speaking.

The patient was instructed for use of prosthesis as well as maintenance of his oral hygiene. He was asked to soak it in water every night and when not in use. He was advised to avoid brushing the appliance as this may remove the polish and roughen the surface over time. The patient was quite happy with the pleasing esthetics without any further surgical intervention or discomfort. Patient was kept on periodic maintenance phase (Fig. 12).
and no appreciable dimensional changes were noticed in the prosthesis during this period of 6 months.

DISCUSSION
In this current case scenario, the treatment plan was decided upon as the fabrication of a removable prosthesis excluding the other treatment options of fabricating a fixed prosthesis or the employment of a surgical therapy. In contrast to a fixed prosthesis, a removable gingival prosthesis possessed numerous advantages with an ability to create an ideal tissue contour and esthetics and finally, facilitating thorough cleaning and maintenance of oral hygiene. Finally, the tissue portion of the fixed
prosthesis cannot be adjusted whenever required and hence, the ability to retrofit is retarded compared to a removable gingival prosthesis. While weighing the pros and cons of utilizing a surgical treatment option over the removable gingival prosthesis, for this exacting case scenario, the removable gingival prosthesis had a definite set of superior advantages compared to the extensive surgical treatment options. The limitations of the surgical approach include the concurrent surgical costs, postoperative discomfort and healing time and the unpredictability of the surgical outcome. Also, the morbidity associated with the second surgical donor site and accompanying possible intraoperative and postoperative complications are avoided.12

Removable gingival prosthesis can be made using different materials and methods of fabrication and should possess adequate retention to avoid displacement during mastication, speech and soft tissue movements. A resin or silicone veneer may satisfy requirements for lip support and can improve speech by eliminating the escape of air from the above placed prosthesis.13 The acrylic gingival veneer has the drawbacks of being hard, rigid and difficulty in fitting accurately around multiple teeth while they have the advantage of being color stable and last longer. This procedure is a relatively easy, inexpensive, and practical way to allow an esthetic replacement of the gingiva that also permits hygiene procedures for the underlying prosthesis. Patients with poor oral hygiene or dexterity are not candidates for this type of prosthesis. Another alternative is the use of a flexible gingival veneer made of silicone. This is both comfortable and accurately fitting. The main drawback is that it requires reconstruction once every year, as the prosthesis loses its physical properties like color, flexibility and also dimensional changes are observed. Plaque control and cleanliness are of prime importance. Smoking and frequent drinking of tea or coffee are discouraged.7 Ideal tissue contours are waxed, processed and then shade-matched to the surrounding tissues to provide an esthetically pleasing and functional restoration.8 The procedure is simple, noninvasive, economical and less time consuming for both the patient and clinician.
CONCLUSION

Dental esthetics is not only based on the “white component” of the restoration but also on the “pink component”. In patients with periodontal attachment and bone loss, gingival deformities are often seen that lead to esthetic and phonetic problems. Flexible soft liner gingival veneers are a feasible option in such cases. With the improved esthetics, patients can smile and talk again without the fear of “black triangle”.

REFERENCES