Abstract
Implant therapy has become a common practice and esthetic demands have tremendously increased, especially in the replacement of anterior teeth in patients with a high lip line. This report presents a gingival veneer as a viable treatment modality to mask peri-implant marginal gingival defects. An impression of the upper arch was made and the gingival veneer was waxed, and clinical confirmation was obtained, followed by laboratory processing, finishing, and polishing. After installing, it adapted to the proximal niches and exhibited good stability. A gingival veneer can be a feasible alternative with excellent esthetic results, when indicated and correctly executed to mask possible defects in the peri-implant marginal gingiva associated with a malpositioned single dental implant.

Keywords: Biocompatible materials, bone, dental implants, dental prosthesis, maxilla, soft tissue

Introduction
A satisfactory esthetic outcome in oral rehabilitation employing dental implants poses a clinical challenge. Peri-implant soft-tissue recession is a major esthetic complication, especially in the anterior maxilla.[1,2] Multiple factors can affect the facial marginal mucosal level around a single-tooth implant, including peri-implant gingival biotype, bone crest level, implant fixture angle, and distance from the contact point to the bone crest, contact point to the platform, and contact point to the implant bone.[3]

Gingival defects may be treated with surgical or prosthetic approaches. In many instances, even when the surgical procedures are essentially successful, they may not completely resolve the esthetic dilemma. With successful surgical treatment, the result mimics the original tissue contours. Such treatments include minor procedures to rebuild papillae and grafting procedures that may involve not only soft-tissue manipulation but also bone augmentation to support the soft tissue. It is possible to create esthetically pleasing and anatomically correct tissue contours when small volumes of tissue are being reconstructed, but this method is unpredictable when a large volume of tissue is missing.[4]

Numerous techniques have been proposed for the esthetic and functional recovery of the gingival tissue, such as guided bone regeneration, onlay block grafts, distraction osteogenesis, and titanium mesh.[5] Currently, there are no completely predictable options to recreate interproximal periodontal tissues in the peri-implant region. In such situations, a gingival prosthesis can be an additional resource to mask gingival defects.

Implant removal and subsequent vertical ridge reconstruction for implant replacement represents an option to restore tissue contours and to correct implant position, providing an esthetically successful treatment.[6] The surgical costs, healing time, discomfort, and unpredictability make this choice unpopular.[4]

Therefore, more conservative alternatives have been investigated. The artificial gingival restorations can correct maxillofacial defects, compensate for inadequate maxillomandibular relationships, and promote an air seal during speech.[6] A gingival veneer (also called removable artificial gingiva or gingival mask) consists of a prosthesis made of thermoactivated acrylic resin in a color similar to the gum tissue. It is placed on the labial surface of the teeth. The veneer’s function is to restore the mucogingival contour and esthetics in areas where periodontal tissues are deficient.[7]
Gingival veneers were first introduced by Emslie\textsuperscript{[8]} and were used to mask the unesthetic appearance of gingival recession in a patient who underwent gingivectomy.

A gingival veneer is a conservative, simple, and inexpensive treatment. It is indicated in cases of gingival unevenness in the contour of the concave labial arc, poor esthetics characterized by interdental “black triangles,” exposed root surfaces and/or crown margins, food packing in interproximal spaces, lack of saliva control, impaired speech, and root-dentin sensitivity. The use of these veneers is contraindicated in situations in which patients present poor oral hygiene, limited manual dexterity, high caries activity/risk, incomplete periodontal therapy, and allergy to fabrication materials.\textsuperscript{[9]}

The aim of this article is to report the use of a gingival veneer in a case of peri-implant gingival recession associated with a malpositioned single dental implant.

**Case Report**

A 37-year-old female patient sought dental care due to dissatisfaction with the esthetics of the maxillary anterior teeth. During the anamnesis (interview), information about systemic conditions and the history of dental treatments was collected. On oral physical examination, the soft tissues, muscles, teeth, periodontal and occlusal relationships, and oral hygiene were examined. At the end of the clinical examination, asymmetries were observed in the shape and contour of the maxillary central incisor and irregularities in the gingival regular concave arch of the left maxillary central and lateral incisors [Figure 1].

For the improvement of dental esthetics, the patient was in the final stage of orthodontic treatment. The left maxillary central incisor had a temporary crown over a malpositioned implant [Figure 2]. A panoramic radiograph was requested for the analysis of the tooth and bone condition [Figure 3].

To fix the gingival gap and malpositioning of the implant, was proposed following treatments: increasing the clinical crown on the left maxillary lateral incisor, removal of the implant of the left maxillary central incisor with further bone grafting and insertion of a new implant, or the preservation of the tooth implant with the fabrication of a gingival veneer. For the improvement of dental esthetics, the placement of a crown on the maxillary central incisor and a resin laminate veneer on the right maxillary lateral incisor was accepted by the patient, with written informed consent.

Orthodontic treatment was finalized. First, the upper orthodontic brace was removed, and a new provisional crown on the left maxillary central incisor implant was made. Subsequently, the clinical crown of the right maxillary lateral incisor was increased to stabilize the periodontal tissues [Figure 4]. Then, lithium disilicate crowns were made (IPS e. max Press\textsuperscript{\textregistered}, Ivoclar Vivadent, Liechtenstein, Austria) for the left and right maxillary central incisors, and a composite resin laminate veneer (Filtek\textsuperscript{\textregistered} Z350 XT, 3M ESPE, Landsberg, Germany), shade A1, was made for the maxillary lateral incisor to restore form, function, and esthetics [Figure 5].

For the gingival veneer, alginate impressions (Jeltrate\textsuperscript{\textregistered}, Dentsply, São Paulo, Brazil) were initially taken to obtain diagnostic casts with type IV dental stone (Herostone\textsuperscript{\textsuperscript{®}}, Coltene, Rio de Janeiro, Brazil). In the model, a relief was made with a \#7 wax blade (Wilson\textsuperscript{®}, Polidental, São Paulo, Brazil) from the middle thirds of the left maxillary central and lateral and the right maxillary central incisors until reaching the buccal vestibule. A custom tray was made in acrylic resin, shade 62 (Patter Resin\textsuperscript{®} LS, GC America, Alsip, United States). It included the incisal and middle thirds of the buccal surface, the incisor region, and incisal third of the palatal surface of the anterior teeth. Using the custom tray, a polyether impression of the upper anterior was taken (Impregum medium\textsuperscript{®} .3M-ESPE, Landsberg, Germany) and casted in type IV dental stone (Herostone\textsuperscript{®}, Coltene, Rio de Janeiro, Brazil) to make the working model.

In this clinical stage, the gingival color was chosen following the Tomaz Gomes System color scale (STG\textsuperscript{®}, Vipi, São Paulo, Brazil) [Figure 6]. In the working model, the gingivae were waxed and confirmed in situ. After clinical tests, we proceeded to laboratory processing through standard inclusion in wax to obtain the gingival prosthesis in polymerized acrylic resin shade 2 (VIPI Cril Plus\textsuperscript{®}, VIPI, São Paulo, Brazil). The prosthesis was properly finished and polished. Internally, its extensions filled the proximal niches, which favored retention and prevented the escape of air. Finally, we proceeded to the installation of the gingival veneer subject to adjustment in the proximal niches and analyzed the stability of the prosthesis through lip movements [Figures 7 and 8].

During the control phase, the patient was satisfied with the esthetics. It was observed that the gingival veneer was not compressing the periodontal tissues and did not require adjustments. Directions to maintain the stability of the prosthesis and oral hygiene were provided.

**Discussion**

Implant therapy has become a common practice to replace lost or irreversibly damaged teeth. In addition, esthetic demands have tremendously increased, especially in the replacement of anterior teeth in patients with a high lip line.\textsuperscript{[10]}

Moreover, the gray color of titanium may be an obstacle, even after successful osseointegration. The dark color could become visible due to peri-implant soft-tissue recession.\textsuperscript{[11-13]} In natural teeth, minimal recession of 1–2 mm does not always result in unsatisfactory esthetics. However, even a minimal amount of titanium exposure can jeopardize the overall treatment success. Most systematic
reviews on mucogingival therapy have not presented information concerning the treatment of peri-implant soft-tissue dehiscences.\cite{14-17}

In cases of malpositioned implants with visible esthetic defects, implant removal followed by bone grafting and the placement of new implants is the most preferred alternative. Even when the height of the ridge is recovered, it is still very difficult to reestablish the optimal papilla form.\cite{18} Nonetheless, patients may present local and/or systemic limitations or may not be willing to undergo new surgical procedures. Procedures could involve undesirable features, such as high cost, discomfort, prolonged time to healing, and unpredictable prognosis.\cite{18,19}

A fixed prosthesis using ceramic veneer gives the patient significant comfort and peace of mind, as well as self-confidence (because the prosthesis is always present). However, its application may be limited to certain clinical situations where oral hygiene is manageable, the desired esthetic result is achievable or esthetics is not critical, and a fixed prosthesis is already planned for the immediate area. With a removable prosthesis, a larger volume of tissue can
be replaced, but proper cleaning is still feasible. It is easier to create an ideal contour with removable prosthetic materials, and missing tissue can be replaced without disturbing the other dental units. Prosthetic replacement, with acrylics, composite resins, porcelains, and silicones, is a more predictable approach to replacing lost tissue architecture.\[4\]

The advantages of gingival veneer are that it can be easily cleaned, creates an ideal contour with removable prosthetic materials, and does not disturb the other dental units. This prosthesis is easy to fabricate, place, and clean and produces adequate esthetic results. Its use as a noninvasive treatment option in cases of gingival recession has been reported in several articles.\[9,20‑23\]

The use of gingival veneers as an esthetic treatment has been associated with cases of dental rehabilitations with overdentures on dental implants.\[24‑26\]

When using gingival veneers, it is important to observe continuity between the artificial and the natural gingivae, minimizing the visibility of the interface and reinstating the gingival architecture and papilla form.\[4\] The gingival veneer is border molded during fabrication and fits passively over the labial hard and soft dental tissues.\[9\] The gingival veneer’s stability is ensured by the pressure exerted by the labial musculature and by its close adaptation to the proximal niches, which favors prosthesis retention and prevents air escape.\[27\] Although such a prosthesis is considered auxiliary and is somewhat fragile, it can be made easily, with minimal additional effort and costs, to provide these patients with a greater sense of psychological satisfaction.\[4\]

Case selection is important, as patients require good oral hygiene, a low caries rate, and proper prosthetic maintenance.\[28\] Biofilm accumulation due to inadequate prosthetic hygiene may contribute to microorganism colonization of the intaglio surfaces of prostheses, encouraging opportunistic oral infections. Thus, careful daily removal of biofilm from the oral cavity and surfaces of removable prostheses is important to minimize the risk of infection, contribute to good oral and overall systemic health, and maintain esthetic and odor-free dentures.\[29,30\]

For maintenance, the prosthesis must be submerged in water or chemical solution at night to rest the gingival tissues.\[31\] Therefore, the use of gingival veneers is a quick, simple, and inexpensive option for restoring lost gingival tissues. It eliminates the need for periodontal mucogingival surgery, which may not be a feasible option for some patients.\[32\] This may offer a good interim solution for patients who may wish to have time to consider their options for more advanced and complex treatment. Some patients may choose to wear the veneer as a long-term solution when the burden/risk of further advanced treatment may outweigh the benefits.\[9\]

**Conclusions**

The gingival veneer can be a feasible alternative with excellent esthetic results when indicated and correctly executed to mask possible defects in the peri-implant marginal gingiva associated with a malpositioned single dental implant.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

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