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Attachment Retained Gingival Prosthesis

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Abstract

Prosthodontic rehabilitation of a large anterior ridge defects is often a challenge. Such defects require not just the replacement of the missing teeth, but also closure of the defective area so as to achieve proper speech and esthetics. Periodontium along with its supporting tissues are damaged and destroyed by the various forms of gingival and periodontal diseases which leads to gingival recession, soft tissue defect in the esthetic region.The reconstruction of these areas with prosthesis like gingival veneer can be useful to correct the deformities remaining after the control of periodontal diseases, especially in the maxillary anterior region. The case report discussed here highlights a clinical situation where the gingival prosthesis helped in achieving optimum esthetics and patient satisfaction thus proving to be a feasible and simple treatment modality.

I. INTRODUCTION

Dental esthetics is just not confined to the tooth as such but also to the gingival component. The preservation or reproduction of optimal mucogingival aesthetics can be difficult to achieve from both a surgical and prosthetic perspective. An increasing patient and clinician awareness of the importance of gingival and smile aesthetics has resulted in the development of both surgical and prosthetic techniques aimed at improving or maintaining these aesthetic characteristics. (1)

Periodontal diseases, surgeries, trauma, ridge resorption, and traumatic tooth extraction can result in open interdental spaces, which may lead to loss of alveolar bone or apical migration of the gingival margin resulting in unsightly black triangles and sensitivity of teeth. Such interdental spaces may also result in phonetic problems due to escape of air. Where there is vertical soft tissue loss in edentulous spaces, a variety of surgical techniques have been advocated to increase soft tissue volume before the provision of a definitive bridge. (2) Surgical techniques advocated for recreating gingival architecture around recession or alveolar defects are technique-sensitive and may require a graft from an additional surgical site with consequent additional morbidity. The alternative for such a clinical situation is gingival prosthesis.

A gingival veneer (or gingival veneer prosthesis) is defined as a prosthesis worn in the labial aspect of the dental arch, which aims to restore the mucogingival contour and esthetics in areas where periodontal tissues are deficient. Gingival veneers were first introduced in 1955 by Emslie and were used to mask the unesthetic appearance of gingival recession in a patient who underwent a gingivectomy. In 1970, L'Estrange et al. reported on a number of patients that had worn gingival veneers for over 3 years. Gingival prosthesis (gingival mask or gingival veneer or gingival epithesis) is a removable periodontal prosthesis used to replace lost gingiva due to periodontal surgery, gingival recession or to hide black triangle spaces between teeth (3-6).

Materials used for gingival prosthesis include pink auto cure and heat cured acrylics, porcelains, composite resins, and thermoplastic acrylics as well as silicone based soft materials. It can be fabricated in acrylic resin or silicon by conventional processing procedures.

II. INDICATIONS:

Gingival recession with root exposure and open interdental spaces due to loss of papillae after periodontal disease or post-periodontal treatment therapy.
Provisional coverage prior to definite restorations. Temporary splint.
As a gingival augmentation for implant supported prosthesis.
When there is proclination of teeth along with mild recession.

As an interim measure in cases where final treatment planning is delayed.
Dentoalveolar defect.

Contraindications of Gingival Prosthesis:
Poor or unstable periodontal health.
Poor oral hygiene.
High caries activity.
Known allergy to acrylic.
Heavy smokers.

Different treatment options are available for replacing missing soft and hard tissues, including removable dental prostheses (RDPs), fixed dental prostheses (FDPs), and implant prostheses. The advantages of RDPs are easier oral hygiene, providing lip support in situations with severe alveolar ridge or bone defects, lower costs, reduced treatment time, and easier follow-up. However, patients may not accept these types of prosthesis because of poor esthetics or discomfortwhich may indicate an FDP. The prosthetic treatment of maxillary dentoalveolar defect in patient with FDP is described. The patient defects was caused by an automobile accident. The defected area was restored with tooth supported metal ceramic FDPs with a attachment retained removable gingival prosthesis. Prosthesis was designed to meet the needs of the patients.

III. CLINICAL REPORT

A 45-year-old man was referred to the Department of Prosthodontics, for dental rehabilitation. The patient's history revealed that he previously had fixed dental prosthesis performed which was unesthetic after his accident 5yrs back. The intraoral examination found that the maxillary right and left central and lateral incisors, alveolar bone, and soft tissues were missing in the anterior maxilla. Furthermore, the mandibular right and left central incisors, lateral incisors, and canine teeth were also missing. The patient had an Angle Class I occlusion, and the temporomandibular joints were asymptomatic. The patient history revealed good systemic health. After all treatment otions including removable dental prostheses (RDPs), fixed dental prostheses (FDPs), and implant prostheses, the patient preferred attachment retained removable gingival prosthesis with fixed partial denture for maxilla to create a natural gingival level for the crowns and to maintain hygiene. and a mandibular metal ceramic FDP.

Procedure:
Diagnostic impressions were made using alginate(Tropicalgin) followed by diagnostic mock up. The maxillary and mandibular teeth were prepared supra-gingivally to maximize esthetics and maintain soft tissue health. An impression was then made with vinyl polysiloxane (Aquasil)(Figure 1).

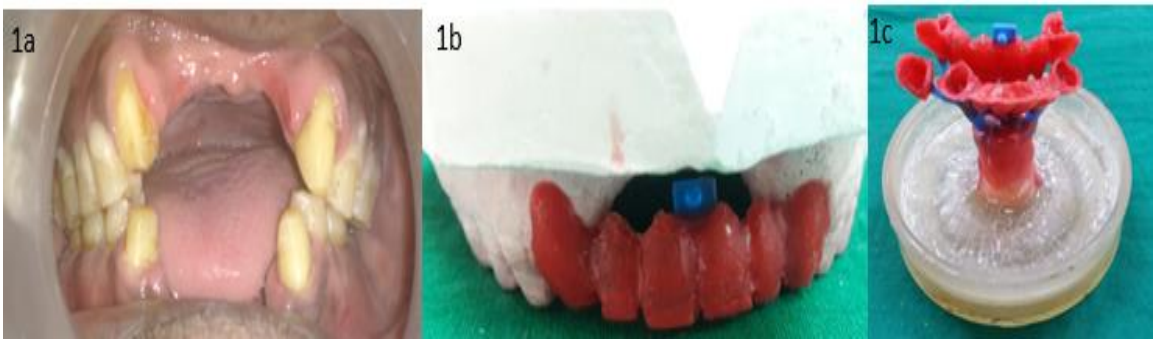

**Figure 1a: Pre-operative Intraoral View 1b: Wax Pattern With Male Component,
1c: Spruing Of Waxpattern For Casting**

Provisional restorations were made with autopolymerizing acrylic resin(DPI). The patient was instructed to report any difficulties with phonetics after wearing the provisional restoration. For the removable gingival part of the maxillary restoration, a resilient attachment (1.7 mm VKS-SG&SV universal male; Bredent) was fixed onto the wax pattern of the framework. After casting, metal framework evaluation, and porcelain fusing procedures, the maxillary and mandibular FDP was cemented with Glass inomer cement. Another impression was made with a vinyl polysiloxane (aquasil) using a custom buccal tray made with FDP to register the gingival margin interfaces and the interproximal dental spaces.

Fig 2: 2a. Fabrication of custom tray and border moulding, 2b: Sectional impression , 2c: Wax pattern for gingival prosthesis

A custom tray was fabricated using self cure acrylic resin (DPI) bucally and border moulding was done to register the borders accurately.Then sectional impression was made, this impression registered the concavities previously placed in the FPD. The gingival prosthesis was then waxed and processed with a heat-polymerized PMMA acrylic resin (DPI)(Figure 2) .The gingival prosthesis was stained with a acrylic resin staining kit(Staining Kit,MP SAI) following the manufacturer's protocol. The gingival prosthesis was carefully adjusted with acrylic resin burs. The female component (1.7 mm VKS-SG&SV universal female; Bredent) was picked up in the gingival prosthesis (Figure 3).

Fig 3: 3a. Attachment Of Matrix For Pickup,3b. Fdp With Removable Gingival Prosthesis

The patient was then taught to remove and reseat the removable gingival part to maintain oral hygiene and to use dental floss designed for FDPs and interproximal brushes. The patient readily adapted to the prosthesis and was satisfied. Thepatient was recalled after a period of 4 months,No complications were observed.

IV. SUMMARY:

Periodontal diseases can lead to significant damage, resulting in gingival recession and soft tissue defects. In such cases, prosthetic solutions like gingival veneers can be beneficial for restoring esthetics. The case report discussed how a gingival prosthesis effectively addressed these challenges, leading to optimal aesthetics and patient satisfaction. FPD with a removable gingival prosthesis may be an alternative Prosthetic procedure to treat advanced tissue loss, achieving esthetic results,and patient satisfaction.

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