



## Gingival Veneers – An Alternative Treatment Option A - Review

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### ABSTRACT

Esthetics is a significant aspect of dentistry and the color of gingiva, especially in the anterior region, plays an important role in overall esthetics. One of the most distressing aspects of periodontitis is the unesthetic appearance of maxillary and mandibular anteriors. The elongation of the crowns due to root exposure and increased interdental spacing with the formation of black triangle in the interproximal areas, results in unesthetic appearance. These black triangles were rated as the third most disliked esthetic problem below caries and crown margins. Surgical procedures for gingival recession coverage do not have acceptable results in cases of severe gingival recession. With modern advances in all phases of dentistry, it has provided an opportunity for the patients to maintain their natural esthetics. So nonsurgical methods like Gingival veneers should be considered as a treatment modality in such cases, where these new materials provide good esthetics. These acrylic gingival prosthesis is a noninvasive, economical restorative procedure to artificially replace the lost gingival tissue. These prostheses can be used to cover the exposed surfaces, to prevent food impaction between the teeth, and to improve the esthetics and speech of the patient. It may be included in complete treatment of a patient or in transitional phases with fixed or removable partial dentures. It may be used in combination with a fixed partial denture to mask severe alveolar bone loss or similar situations with fixed implant prosthesis.

**KEYWORDS :** Gingival Veneers, Gingival Mask, Gingival Prosthesis, Artificial Gingiva

### I. INTRODUCTION

Face is considered as the most imposing part adding to the grace of body. The eyes, oral region and the complexion significantly contribute to its charishma. The most important part of an ideal smile is the presence of healthy gingiva.

Healthy gingival tissues affect the esthetics, probably much more than teeth, a factor which is most often neglected in esthetic treatment planning. An esthetically pleasant smile is framed with both white and pink components including marginal gingiva and interdental papilla.<sup>1</sup> Periodontal attachment loss in the maxillary anterior area can often lead to esthetic and functional problems including elongated crowns, visible interdental embrasures unsightly black triangles, sensitivity of teeth and altered linguoalveolar labiodentals consonant sounds production. Black triangles that appear as a result of gingival recession were rated as the 3<sup>rd</sup> most disliked esthetic problem below caries and crown margins. These can be corrected or managed by two approaches, namely mucogingival plastic surgery or by gingival prosthetic substitutes. Mucogingival surgery or gingival plastic surgeries, are suitable for Miller's Class I and Class II type of gingival recessions. In severe gingival recession conditions, as in Class III and Class IV recessions, mucogingival surgeries may give unpredictable esthetic outcome or might even result in recurrence. Gingival prosthesis has been proved as a good alternative to replace lost tissue. Also, gingival prosthesis is more acceptable as some patient might not be prepared to undergo surgical treatment.<sup>1</sup>

The various synonyms for Gingival prosthesis include Flange prosthesis, Gingival mask, Gingival veneer prosthesis, Gingival replacement unit and Artificial gingiva.

Also known as gingival mask, gingival epithesis or the artificial gums, were first introduced in 1955 by Emslie to mask the unesthetic appearance of gingival recession in a patient who underwent a gingivectomy.<sup>2</sup> The term "artificial resin gum mask" was used by Schweitzer (1960) to describe the fabrication of a gingival coloured rigid acrylic prosthetic device, which is to be worn by the patient to mask defects caused by periodontal



disease and therapy. Veneers were accepted very well by patients because of the improved esthetics.

Gingival veneer is 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.<sup>3</sup>

Gingival veneers can be classified into two types namely, non flexible gingival veneers which uses heat cured acrylic resins to fabricate the gingival mask and flexible gingival silicone mask which uses silicone based soft materials for the fabrication.<sup>4</sup>

#### Indications<sup>5</sup>

- Cover exposed crown margins and implant components
- Gingival recession with root exposure
- Provisional coverage before definitive restorations (temporary splint)
- Reduce the length of crown
- Block the Black triangles
- Fill space between crown & soft tissue
- Improve phonetics
- Increased lip & cheek support
- Beneficial for gummy smile
- Hide dark lines under old crowns
- Aids prosthodontist to design implant supported prosthesis

Tarnow described the presence of a black triangle to be related to the distance and suggested that a distance of 5mm or less should exist between the contact point and the crestal bone for a black triangle to be avoided.

#### Contraindications<sup>5</sup>

- Poor plaque control
- Unstable periodontal health
- High caries activity
- Smoking
- Allergic to acrylic /crown

Various materials that can be used for fabrication of gingival veneers include porcelains, pink autocure, heat cured acrylic resins, composite resins, thermoplastic acrylics, silicone based soft materials and visible light cured acrylic materials. Among all these materials, acrylic resin is widely available and relatively cheap as it allows for adequate polishing of final prosthesis and its shade can be matched to adjacent gingival tissues. A good case selection, with adequate oral hygiene being a key factor in the success of the gingival veneer.

As stated by Chittaranjan et al, 2009 Valplast plastic has a chameleon effect, as it is strong, that it

can be made very thin and also picks up the characteristics of the underlying tissue. As per Trupti Rajendra et al, 2014 Valplast blends well with the natural appearance of gingiva, masking gingival prosthesis virtually invisible. Greene et al, 2014 stated that Cosmesil M511 silicon material gives a lifelike finish.<sup>6</sup>

How does Gingival mask stay?

A gingival mask “stays in” by the same method as a contact lens. Moisture and the contact of the lip keep the mask in place, just like the eyelid and tear fluid that keep the contact in place.

Different procedures in fabricating Gingival prosthesis are:

In case of generalized recession where in gingival condition is not suitable for treatment with surgical root coverage procedures and esthetics is of concern, maxillary alginate impression can be made and cast prepared using die stone. A wax pattern is prepared involving the undercuts and thus, the interdental open gingival embrasures can be accurately reproduced. The gingival veneer is fabricated from heat curing acrylic resin and finally the gingival veneer is adapted after insertion. Adequate retention will be accomplished due to engagement of the veneer into the interdental open gingival embrasures.<sup>7</sup>

In case of lost gingival architecture, preliminary impression can be made with irreversible hydrocolloid impression material which can then be poured in type 3 dental stone. Over the preliminary cast, modeling wax spacer is placed from upper right 1<sup>st</sup> premolar to upper left 1<sup>st</sup> premolar in such a way that it extends from the depth of the vestibule apically, onto the incisal surfaces. Three relief stops will be given one anteriorly on the incisal edge of central incisor, and two on both the occlusal surfaces of the first premolars acting as vertical stops during placement of the special tray. A labial special tray is then fabricated using an autopolymerizing clear acrylic resin, covering the wax spacer with a handle extending from the center of the tray, and the tray is checked in the patient's mouth for proper placement and removal. To prevent impression material from flowing out of palatal aspect of the embrasures, silicone putty barrier is formed on the palatal aspects of the teeth to be treated. Wax spacer is then removed before final impression making, and the tray is perforated. Impression is made by double mix single impression technique using addition silicone impression material. After



marking the extension of prosthesis on the cast, 1 mm thickness of modeling wax is adapted on the cast, and the wax pattern of the desired shape and size is properly carved and finished. Finished waxed up can be tried in the patient's mouth. Flasking and dewaxing is done such that it is embedded in plaster and reverse will be formed in dental stone. Silicone is mixed and shade matching done to mimic the patient's adjacent tissues to make it more esthetically pleasing, and then the mixed material is packed into the flask and allowed to set. After curing gingival prosthesis is retrieved from the flask and inserted into patient's mouth.<sup>6</sup>

#### DIFFERENCE BETWEEN ACRYLIC GINGIVAL MASK AND SILICONE GINGIVAL MASK<sup>1</sup>

##### NON- FLEXIBLE GINGIVAL MASK

1. Colour stable
2. Lasts longer
3. Hard & Rigid
4. Difficulty in fitting accurately in multiple teeth
5. Residual monomer content
6. Leads to staining

##### ADVANTAGES OF GINGIVAL MASK<sup>8</sup>

1. Low cost
2. Aesthetically improve the smile, phonetics & prevention of food impaction
3. Appliance is soft & flexible
4. Easily snaps to the place
5. Fabrication is easy

##### DISADVANTAGES OF GINGIVAL MASK<sup>8</sup>

1. Temporary fix
2. Loss of durability
3. Remove the mask before brushing, flossing and before eating

##### INSTRUCTIONS TO BE FOLLOWED<sup>9</sup>

1. Clean the veneer everyday
2. Clean it everytime after having food
3. Store in water during night to prevent warpage of prosthesis
4. Soaking in Chlorinated denture cleansing solution will deteriorate the prosthesis and bleach the pink gum tissue colors

## II. DISCUSSION

Gingival defects may be treated with surgical or prosthetic approaches but the disadvantages include need for bone augmentation, surgical costs, healing time, discomfort & unpredictability when large volume of tissue is missing. Prosthetic replacement with acrylics, composite resins, porcelains and silicones, is a more predictable approach to replace lost tissue

How retention is achieved?

Part of the retention is mechanical, with tiny extensions of the mask material slightly projecting between the roots of the natural teeth or the implants just above the gum line. The pressure from the lip also contributes to the retention of the prosthesis. 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.<sup>1</sup>

##### FLEXIBLE GINGIVAL MASK

1. Tendency to discolor
2. Better esthetics
3. Increased compatibility
4. Inherent porosity

architecture. As stated by Taylor, 1991, Gingival prosthesis may satisfy requirements for lip support and can improve speech by eliminating the escape of air from above the prosthesis. Different materials are used for the fabrication of gingival prosthesis. Brazilay & Irene, 2003, suggested different methods of using pink materials to create gingival prosthesis.<sup>10</sup> Lai et al. in 2003 studied the in-vitro color stability, stain resistance, and water sorption of four removable gingival flange materials and concluded that gingival flange made of silicone or copolyamide materials may be more prone to staining with coffee and tea than traditional denture base acrylic resins.

## III. CONCLUSION

Gingival recession caused due to periodontal disease frequently disturbs patient's esthetics. Dental esthetics is based not only on the "white component" of the restoration, but also on the "pink component." A clear understanding of color and form that is required is essential to fabricate prosthesis and its acceptance by the patient. Gingival veneer is a good treatment option for patients with generalized/multiple recessions to achieve good esthetics. Prosthetic option of a gingival veneer helps in mimicking natural appearance of the gingiva in a predictable way, which is cost-effective to the patient.

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