



FLANGE PROSTHESIS ALONG WITH TOOTH REPLACEMENT

Dental Science

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ABSTRACT

Now a day, dentistry has become a speciality with extreme importance to esthetics. A positive psychological effect in improving a patient's smile often contribute to an improved self-image and enhanced self-esteem. Periodontal disease may lead to tooth and tissue loss that can result in esthetic problems. Combined Periodontal/Prosthodontic treatment for patients with advanced disease is well documented. And gingiva plays a very essential role in dental esthetics. In some cases, there is loss of gingival coverage of the teeth in esthetic regions, with gingival recession and loss of interdental papilla. The surgical treatment in such situations is costly, requires prolonged healing time and the results are often unpredictable; this makes it an unpopular choice. Gingival mask can be one such alternative treatment when surgical intervention is not opted by the patients.

KEYWORDS

Aesthetics, Gingival Recession, Gingival Veneer.

INTRODUCTION:

A gratifying smile is an assembly of various components. Marginal gingival and interdental papilla, having high esthetic value, are muller over as the chief components of a smile. Overall harmony of different components of gingival with tooth leads to the perception of a good smile. Most of the procedures of dentistry are directed towards restoring or enhancing the smile of an individual. With the growing emphasis on esthetics and the patients vying for a perfect smile, the dentists have steered their attention towards prosthetic replacement options. The challenge however lies to create a proportional prosthetic replacement that phonetically seals the patient's interdental areas yet maintaining the patient's oral hygiene. Surgical procedures are invasive, irreversible, technique sensitive and expensive, with results that are often unpredictable. Gingival prosthesis has historically been used to replace lost tissue when other methods (e.g., surgery or regenerative procedures) were considered unpredictable or impossible. Objectives: In today's life, the dimensions of different parts of the masticatory mucosa, especially gingival thickness, has become a subject of considerable interest in periodontics both from the epidemiologic and therapeutic point of view.

- Gingival recession in the anterior teeth,
- Systemic diseases,
- Extensive restorations,
- Those who were allergic to lignocaine,
- Use of any medication possibly affecting the periodontal tissues such as Cyclosporine A, Calcium channel blockers and Phenytoin etc.

Classification:

- Removable or Fixed.
- Flexible and Non-flexible.

A dvantages: I. Removable Gingival Mask: -

- Better oral hygiene.
- Better aesthetics, replaces larger portion of missing gingiva.
- Prosthesis can be adjusted as tissue changes.

II. Fixed Gingival Mask: -

- Less chances of staining.
- More durable.

III. Flexible Gingival Mask: -

- Better comfort.
- Better retention and natural feel.
- Can be used for full arch.

IV. Non-Flexible Gingival Mask: -

- Can be used for longer durations.
- Better colour stability.
- Easier to fabricate.

Disadvantages: I. Removable Gingival Mask: -

- Stains easily.
- Less Durable.

II. Fixed Gingival Mask: -

- Hygiene more difficult.
- Less pleasing, Ridge-lapping avoided for hygiene maintenance.
- Difficult to modify prosthesis with tissue changes.

III. Flexible Gingival Mask: -

- Staining and Plaque accumulation.
- Poor colour stability.
- Short term / Temporary usage.
- Silicone High caries activity and allergy concerns.
- Relatively difficult to fabricate.

IV. Non-Flexible Gingival Mask: -

- Increased chances of fracture.
- Increase chance of damage to gingiva.
- Cannot be used for long span (Beyond Canines). Indications: a. Gingival recession with root exposure and open interdental spaces due to loss of papillae.
- Poor phonetics – Hissing and Bubbling.
- Provisional coverage prior to definite restoration.
- Excessive melanin pigmentation of gingiva.
- Old filling causing gingival discolouration.
- Exposed metal around crowns.
- Exposed metal from implants.
- Exposed margins on veneers.
- Loss of tissue due to accident or injury. Contraindications: a. Poor or unstable periodontal health.

- b. Poor Oral Hygiene.
- c. High caries activity.
- d. Known allergy to silicone
- e. Heavy Smokers.
- f. Excessive consumption of beverages – tea, coffee, wine. (Discolouration)
- g. Poor patient compliance.

Material Used:

The procedural details of two cases of patients with loss of maxillary anterior interdental papillae have been highlighted for fabrication of gingival mask using two materials- heat cured and auto polymerizing acrylic resin.

Materials used for Gingival Prosthesis:

- 1. Pink auto polymerizing resin
- 2. Heat cured acrylics
- 3. Porcelains
- 4. Composite resins
- 5. Thermoplastic acrylics
- 6. Silicone based soft materials

Prosthodontic Management / Clinical consideration:

Measuring gingival thickness at chair side is an important consideration while doing mucogingival surgical procedures. This transgingival probing method gives an idea of gingival or palatal mucosal thickness of the recipient and the donor side, so that the clinician has the judgement for harvesting the graft from donor site. Advantages of this method are as follows-

- 1. Easy availability of instruments, as every dental surgeon has endodontic reamers and stainless-steel scale in their clinics.
- 2. Not expensive as ultrasonic device and computerized tomography used in various studies.
- 3. Easy sterilization by glass bead sterilizer or autoclave for endodontic reamer and stainless-steel scale.
- 4. Patients may have less pain because of sharpness and less thickness of endodontic reamer as compared to UNC probe used in previous studies.

Case Report:

A 37 years old female patient (fig. no. 1) reported to the department of Prosthodontics and Crown & Bridge, Buddha Institute of Dental Sciences and Hospital, Patna, with the complaint of missing tooth and receding gums, sensitivity and food lodgement in maxillary anterior region. The patient expressed dissatisfaction with esthetics of her existing dentition.



Fig. No. 1

On examination, the gingival recession was classified under Miller's Class IV. The patient also had a missing 12 (under FDI system of classification of dentition) and was classified under Kennedy's classification III (fig. no. 2).



Fig. No. 2

The treatment plan was to rehabilitate by removable denture for the maxillary right lateral incisor and the gingival prosthesis (Gingival Mask/Veneer) for the maxillary anterior segment.

The patient was referred to the department of Periodontics to advise Phase-I therapy, which included oral hygiene instructions, scaling, root planning by ultrasonic and hand instruments. She was instructed to use a desensitizing tooth paste and a modified Stillman's brushing technique and to avoid techniques that could damage the marginal tissues.

Clinical Procedure:

In the department of Prosthodontics, an initial impression was made w.r.t. U/L arch using alginate. The cast was poured using dental stone (Type III) and a study model was prepared. After analysis of the study model, mouth preparation of the patient was done. Then the final impression of the patient was made using alginate. The cast was poured using dental stone (Type III).

Laboratory Procedure:

After bite registration, articulation was done using modified dog-bite articulator. The lateral incisor was placed accordingly. Then gingival carving / "Festooning" was done for aesthetic purpose (fig. no. 3).



Fig. No. 3

Next step consisted of flasking, which was done by mounting the maxillary cast to the lower compartment of the "Versity Flask". Now undercut was removed from the maxillary anterior region of the cast to prevent interference of the cast after dewaxing to facilitate the easy removal of the flask (fig. no. 4). Separating media (Vaseline) was applied generously and left to dry. Flasking was done under 100N vertical force by using hydraulic clamp.



Fig. No. 4

Now the dewaxing was done properly (fig. no. 5). Next, packing (Veined Heat Cure Acrylic) and curing was done by applying Separating media (Could Mould Seal). Then de-flasking was done (fig. no. 6). Finishing and polishing of the prosthesis was completed (fig. no. 7).



Fig. No. 5



Fig. No. 6



Fig. No. 7

Finally, the Gingival Mask / Veneer was adjusted accordingly and then inserted into the patient's mouth (fig. no. 8, fig. no. 9).



Fig. No. 8



Fig. No. 9

Aftercare:

It is a very important step after the fabrication of Gingival prosthesis (Gingival Mask/Veneer) and all the instructions have to be reinforced to the patients.

The patient was given certain instructions:

1. Prosthesis should be removed after food intake and should be thoroughly cleaned
2. Should not be worn during night time
3. Should be kept in denture cleaning solution whenever not in use
4. Should never be left outside the moistened environment as it may cause distortion
5. Brushing the prosthesis helps to prevent the appliance from becoming permanently stained. Best to use a brush that is designed for cleaning dentures.
6. Soft bristled toothbrush should be used and hard bristled toothbrush should be avoided which can damage the prosthesis.

DISCUSSION:

Gingival recession and overexposure of tooth structure can be very disturbing to some patients as they hamper the aesthetic value of the patient's face by a great extent. 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. This may lead to decreased confidence and psychological stress to the patient. Thus, the gingival prosthesis is very well tested and comparatively easy mode for restoring the smile for the patient.

It is important to let the patient know about the removable nature of gingival prosthesis beforehand as this prosthesis will need to be removed and taken care of as that of a complete denture. Patients are advised to use this prosthesis during day time only and wash it regularly with water and moist cloth to avoid candida infection. It is wisely said as a PARTY GUM PROSTHESIS.

Single or multiple missing teeth along with enhancing gingival display. Clasps can be incorporated with it to provide additional retention. Gingival prosthesis can be slightly pigmented to suit for dark skinned individuals. Gingival zenith and gingival height should be maintained very precisely for maximum aesthetic effect.

The synonyms of gingival veneer are flange prosthesis, gingival mask, gingival veneer prosthesis, gingival replacement unit and artificial gingiva. Advances in the field have also enabled fabrication of gingival masks as a chair side procedure using visible light cured acrylic material directly in the mouth. Another alternative is the use of a flexible gingival mask 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 colour, flexibility and also dimensional changes are observed. Plaque control and cleanliness are of prime importance.

CONCLUSION:

The acrylic resin gingival veneer is an easily constructed, inexpensive, and functional outcome in these special situations while permitting cleansibility of the prosthesis and supporting tissues. Thus, in the present case acrylic gingival veneer has been used successfully and a 1-year follow-up has not produced any problems indicating that such prostheses can be made use of effectively whenever indicated.

REFERENCE:

1. Blaggana V, Blaggana A. Artificial gingival masks: A bridge from unaesthetic to aesthetic. *Indian Journal of Dental Sciences*.2013;5(5):060-062.
2. Patil S, Prabhu V, Danane N. R. Gingival Veneer: Mask the unaesthetic. *Journal of Indian Society of Periodontology* 2011;15(3):284-287.
3. Shetty M. S, Khed J. N, Suhaim K. S. Removable Gingival Mask-A Non-Invasive Cosmetic Alternative. *GUIDENT*.2016;Jan:26-27.
4. Maniyar M, Kukreja E, Sukre S, Gaikwad R. Restoring the smile with gingival prosthesis: A case report. *Clinical Dentistry, Mumbai*.2015;Sept:15-19.
5. Ankli V, Ivson F, Limeira R, Yamauti M, Caçado T, Sá M. Gingival Veneer Used as Prosthetic Solution for Esthetic-Compromised Malpositioned Dental Implant. *Contemporary Clinical Dentistry (Wolters Kluwer-Medknow)*.2018;9:123-127.
6. Desai R B, Dange S.P, Vaidya S.P, Gingival epithesis case report. *Clinical Dentistry, Mumbai*.2012;Sept:46-51.
7. Pradeep A.R, Thorat M.K, Assessment of Gingival Thickness in Smokers and Non-Smokers by Transgingival Probing. *International journal of Clinical Dentistry*.2010;3(3):183-190.
8. Tomar B.S, Chandu G.S, Singh S, Gautam M. Panacea to lost gingival tissue architecture and spacing: Silicone gingival prosthesis. *The Journal of Indian Prosthodontic Society*.2016;16:400-404.
9. Greene PR. The flexible gingival mask: an esthetic solution in periodontal practice. *Brit Dent Jour*. 1998; 11(184): 536-40.
10. Ellis S.G.S, Sharma P and Harris I.R. Case report: Aesthetic management of localized periodontal defect with a gingival veneer prosthesis. *Eur J Prosthodont Rest Dent*. 2000; 8(1): 23-26.