

# USE OF GINGIVAL PROSTHESIS MASK FOR A PERIODONTALLY COMPROMISED PATIENT: A CASE REPORT

<sup>1</sup>SHANKAR T GOKHALE, BDS, MDS

<sup>2</sup>VATSALA V, BDS

<sup>3</sup>ROHIT GUPTA, BDS, MDS

<sup>4</sup>IRA GUPTA, BDS, MDS

## ABSTRACT

*Periodontal disease may lead to tooth and tissue loss that can result in esthetic problems. Combined periodontal/prosthetic treatment for patients with advanced disease is well documented. This case report illustrates a method of treatment for an advanced tissue loss in an esthetic area using a removable heat-polymerized polymethylmethacrylate resin gingival prosthesis/mask.*

**Key words:** *Esthetics, Gingival mask, Gingival recession, Gingival prosthesis, Midline Diastema*

## INTRODUCTION

An ultimate aim of periodontist is the achievement of an optimal long-term health of the periodontium along with esthetic result. However, periodontal disease may lead to bone loss and soft tissue loss resulting in enlarged gingival embrasures and increased crown length causing esthetic problems.<sup>1-3</sup> Another problem for the clinician related to gingival recession is hypersensitivity.<sup>3,4</sup> High prevalence values for sensitivity of root surfaces, ranging from 60.3% to 98%<sup>4-7</sup> have been reported as a part of the periodontal disease process.<sup>1,4</sup>

Selecting the best esthetic, prosthetic treatment for teeth with gingival recession in the anterior region may be challenging. In these situations lip line, gingival line and anatomic crown length are important factors for esthetic results.<sup>8</sup> A high smile line can be an obstacle to achieving an esthetic outcome. Some authors suggest alternative, conservative prosthetic treatments for lost papillae including a gingival flange retained by precision attachments, a fixed prosthesis with gingival colored ceramics or a removable gingival prosthesis.<sup>9-12</sup>

Gingival prosthesis can be fabricated in resin, silicone or copolyamide, all of which been shown to be acceptable in terms of color stability.<sup>13</sup> Either a resin or silicone veneer may satisfy requirements for lip support and can improve speech by eliminating the escape of air from the above prosthesis. Gingival prosthesis have been shown to support the lip and resist trapping food.<sup>14</sup> This device also may be effective in solving phonetic problems.<sup>12</sup> This article presents a restorative option for an esthetically compromised patient following periodontal surgical treatment using a removable heat-polymerized polymethylmethacrylate resin gingival prosthesis.

## CASE REPORT

A 22 year old male patient reported to periodontics department with complaint of bleeding gums and mobility of lower anterior teeth since 4-5 months. Clinical examination confirmed presence of generalized bleeding on probing, with soft and edematous gingiva, deep periodontal pockets in relation to 11, 12, 21 and 22. Radiographic examination revealed horizontal bone loss of about 65 to 75% in particular to maxillary anterior teeth (Fig 1). The amount of periodontal

<sup>1</sup> **Correspondence:** Dr Shankar T Gokhale, Professor, Department of Periodontics, Rama Dental College and Research Centre, A/1-8, Lakhampur, Kanpur-208024, Uttar Pradesh State, India, Phone: +915129794200404, E-mail: dr\_shankartg@yahoo.co.in

<sup>2</sup> Postgraduate student, Department of Pedodontics and Preventive Dentistry

<sup>3</sup> Senior Lecturer, Department of Periodontics

<sup>4</sup> Senior Lecturer, Department of Periodontics, Rama Dental College and Hospital

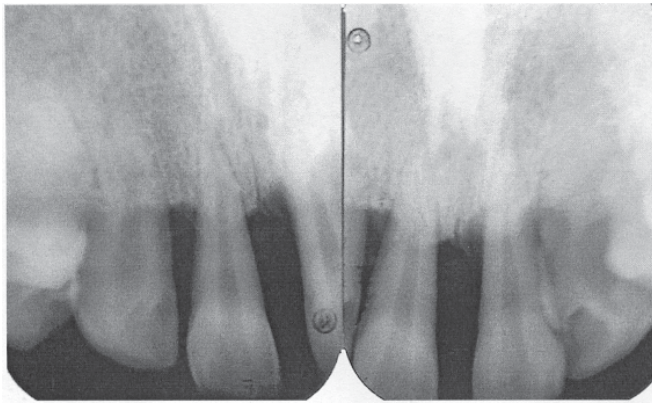


Fig 1: Pre-operative radiograph showing about 65 to 75% bone loss in relation to 11, 12, 21, 22

destruction was very much commensurating with amount of local factors as patient oral hygiene status was found to be very poor.

A comprehensive treatment plan was developed that included oral hygiene instructions, scaling and root planning and periodontal flap surgery to eliminate periodontal pockets.

The primary focus of the periodontal treatment was to intercept periodontal disease and eliminate infection. To start with oral hygiene instructions were given followed by thorough scaling and root planning procedures. After 4 weeks the response of the tissues to the above initial therapy was satisfactory and enabled us to proceed with next phase of surgical procedure. Papilla preservation flap surgical technique was carried out in relation to maxillary anterior teeth in order to minimize anticipated post-surgical recession.

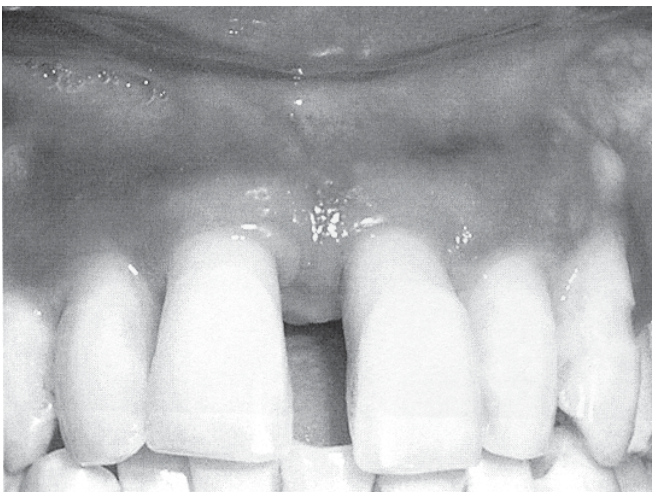


Fig 2: Increased crown length owing to existing severe periodontal destruction and shrinkage of tissues following flap surgical procedure

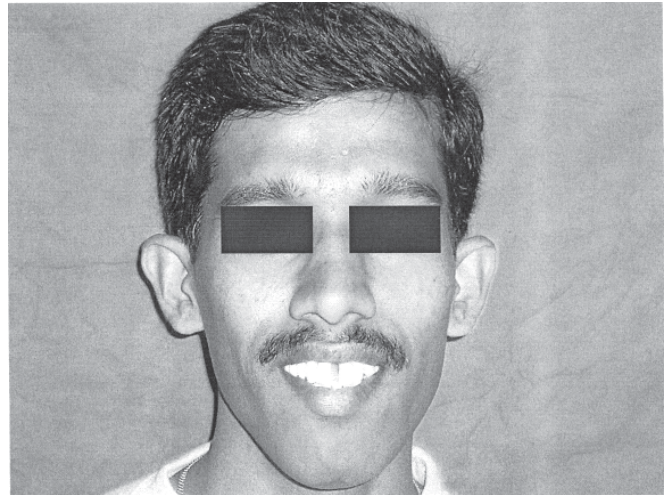


Fig 3: Severe tissue shrinkage causing esthetic problem following flap surgical procedure

As the pattern of bone destruction was horizontal, the bone grafting procedure was not possible during surgical treatment. After one month of maintenance phase period, the patient reported back with complaint of increased crown length, hypersensitivity and esthetic problem (Fig 2 & 3). The above complaint was anticipated owing to severe existing periodontal destruction and shrinkage of tissues following successful surgical procedure.

On recall visit, the patient's oral hygiene maintenance and healing of tissues was found to be satisfactory showing absence of bleeding on probing and reduction in probing pocket depth. Periodontal plastic surgical procedures like root coverage was not considered owing to severe periodontal destruction in maxillary anterior region. So, an alternative treatment was planned in terms of fabricating removable heat-polymerized polymethylmethacrylate acrylic resin (Lang

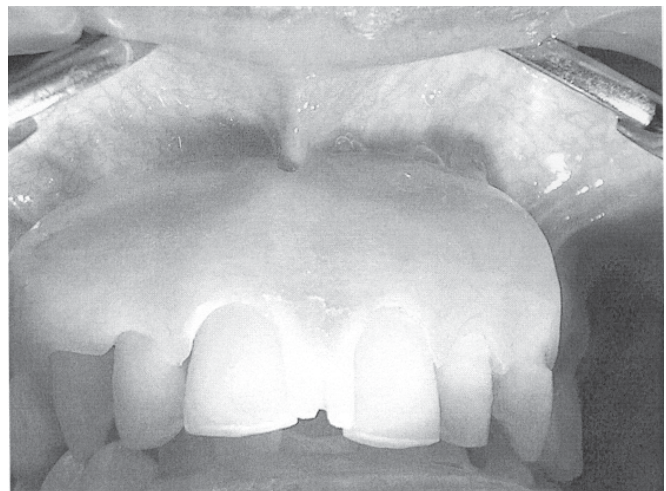


Fig 4: The gingival prosthesis/mask is in position

Super 20 Dentine Acrylic; Lang Dental Mfg Co ) to manage gingival recession and esthetic problem.

The impression of maxillary arch was recorded with a vinyl polysiloxane ( Express; 3M of Brazil Ltd, Sao Paulo, Brazil) using a custom tray made with an autopolymerizing acrylic resin (Resina Classico; Artigos Odontologicos Classico, Sao Paulo, Brazil) to register the gingival margin and the interproximal dental spaces. The gingival prosthesis was then waxed by incorporating acrylic tooth to close midline diastema and processed with a heat-polymerized polymethylmethacrylate resin. The prosthesis was then polished and carefully adjusted with acrylic resin burs. The patient was advised to insert the prosthesis by placing it interdentially and pressing it in position (Fig 4). The patient readily adapted to the prosthesis and was satisfied with the result (Fig 5). One year post-operative radiograph showed appreciable bone regeneration (Fig 6). The patient was recalled every 4 months for a

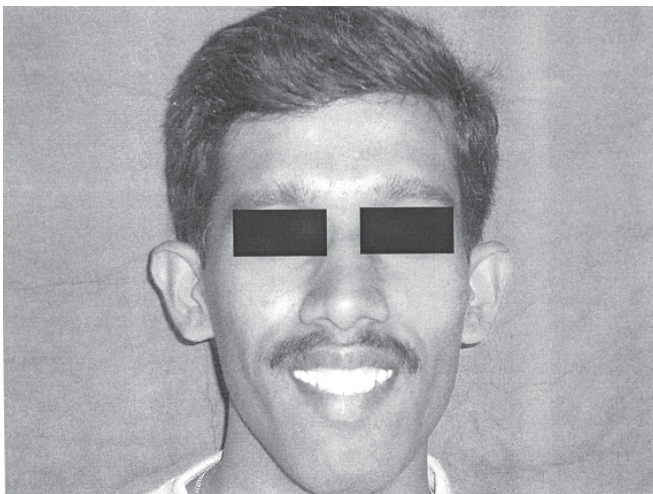


Fig 5: Achieving esthetics with gingival prosthesis/mask

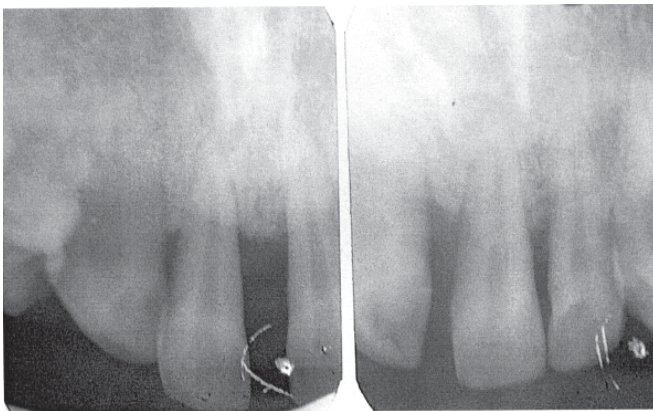


Fig 6: Post-operative radiograph showing appreciable bone regeneration after one year

period of 2 years and oral hygiene instructions were reinforced. No complications were observed. Finally the patient was put on long term maintenance phase.

## CONCLUSION

A removable gingival prosthesis/mask may be an alternative prosthetic procedure to treat advanced tissue loss achieving esthetic results *and* patient satisfaction at an affordable cost.

## REFERENCES

- 1 Tugnait A and Clerehugh V. Gingival recession-its significance and management. *J Dent*2001;29:381-94
- 2 Carvalho W, Barboza EP, Gouvea CV. The use of porcelain laminate veneers and a removable gingival prosthesis for a periodontally compromised patient: a clinical report. *J Prosthet Dent* 2005; 93: 315-17
- 3 Kassab MM, Cohen RE. Treatment of gingival recession. *J Am Dent Assoc* 2002; 133: 1499-506.
- 4 Rees JS, Jin LJ, Lam S, Kudanowska I, Vowles R. The prevalence of dentine hypersensitivity in a hospital clinic population in Hong Kong. *J Dent* 2003; 31: 453-61.
- 5 Chabanski MB, Gillam DG, Bulman JS, Newman HN. Prevalence of cervical dentine sensitivity in a population of patients referred to a specialist periodontology department. *J Clin Periodontol* 1996; 23: 989-92.
- 6 Chabanski MB, Gillam DG, Bulman JS, Newman HN. Clinical evaluation of cervical dentine sensitivity in a population of patients referred to a specialist periodontology department: a pilot study. *J Oral Rehabil* 1997; 24: 666-72.
- 7 Taani SD, Awartani F. Clinical evaluation of cervical dentine sensitivity (CDS) in patients attending general dental clinics (GDC) and periodontal speciality clinics (PSC). *J Clin Periodontol*2002; 29: 118-22.
- 8 Yoeli Z, Samet N, Miller V. Conservative approach to posttraumatic treatment of maxillary anterior teeth: a clinical report. *J Prosthet Dent* 1997; 78: 123-26.
- 9 Morgano SM, Verde MA, Hadded MJ. A fixed-detachable implant-supported prosthesis retained with precision attachments. *J Prosthet Dent* 1993; 70: 438-42.
- 10 Brygider RM. Precision attachment-retained gingival veneers for fixed implant prosthesis. *J Prosthet Dent* 1991; 65: 118-22.
- 11 Misch CEo Contemporary implant Dentistry. 2<sup>nd</sup> ed. St. Louis: Mosby: 1998. P. 549-73.
- 12 Worthington P, Bolender CL, Taylor TO. The Swedish system of osseointegrated implants: problems and complications encountered during a 4-year trial period. *Jnt J Oral Maxillofac Implants* 1987; 2: 77-84.
- 13 Lai YL, Lai HF, Lee SY. In vitro color stability stain resistance and water sorption of four removable gingival flange materials. *J Prosthet Dent* 2003; 90: 293-300.
- 14 Taylor TO, Fixed Implant Rehabilitation for the Edentulous Maxilla. *Int J Oral Maxillofac Implants* 1991; 6: 329-37.