**Case Report**

**Gingival prosthesis: an efficient solution to severe gingival recessions in aggressive periodontitis**

*ElGhoulbzouri Houda¹, Soualhi Hicham², Er-raji Samir³, Ennibi OumKeltoum⁴*

¹,³,⁴Department of Periodontology, Laboratory of Oral Biology and Biotechnology, Dental School, Mohammed V University, Rabat, Morocco ²Departments of Prosthodontics, Dental School, Mohammed V University, Rabat, Morocco

Clinical attachment loss in periodontal disease may lead to gingival recessions, elongation of the crowns, black triangles and unaesthetic appearance of maxillary anterior. For these problems surgical procedures may not have acceptable results in case of severe gingival recessions. Thus, non-surgical methods, like gingival prostheses/veneers, should be considered as an alternative treatment approach in such cases. It is an easy constructed and practical device to optimize the esthetic and functional outcome after the control of periodontal disease. This case report of young female patient illustrates treatment for an advanced tissue loss in a maxillary anterior area using a removable gingival prosthesis/veneers. This treatment modality offered a good optional solution and optimum esthetic patient satisfaction with a 2-year follow-up.

**Keywords**: aggressive periodontitis, gingival recession, Interdental Papilla, black triangles, gingival prosthesis, Esthetic

**INTRODUCTION**

Periodontal disease may lead to alveolar bone and soft tissue loss resulting in an esthetic and functional problems, including gingival recessions, elongated clinical crowns, phonetic problems, dentinal hypersensitivity and visible interdental embrasures (black triangles) (Tugnait et al., 2001; Kassab et al., 2002). These black triangles are rated as the third most disliked esthetic problem below caries and crown margins (Cunliffe et al., 2009).

The management of these esthetic problems can be a big challenge for periodontist. It includes both non-surgical and surgical approaches. Non-surgical approaches advocate orthodontic, restorative or prosthetic interventions. Surgical techniques aim to preserve, re-contour or reconstruct the interdental papilla. Surgical techniques that have been used include coronally advanced flap, laterally displaced flap, the pedicle graft procedure and an envelope type flap prepared for coverage of a connective tissue graft (Sharma 2017). However, the results of these techniques have largely been unpredictable and are documented as case studies.

In moderate to severe periodontitis, where class III and even more class IV gingival recessions can be general and extended, surgical root coverage procedures have a limited esthetic interest. Thus, gingival veneers/prostheses may be an efficient alternative solution (Mekayarajjnanoth et al., 2002; Thakkar et al., 2017).

A gingival mask is defined as a prosthesis worn in the labial space of the dental arch that aims to restore the muco-gingival contour and esthetics in areas where periodontal tissues are deficient (Ellis et al., 2000) when other methods (surgery or regenerative procedures) are considered unpredictable or impossible (Tomar et al., 2016). It is also known as flange prosthesis, party prosthesis, gingival slip, gingival mask, gingival replacement unit and artificial gingiva. It can be made as thin acrylic or silicone mask or flexible valplast. Thus, it improves the aesthetics by masking the tissue loss, preventing food impaction and improving speech (Patil et al., 2011).

**Corresponding author**: Dr. Elghoulbzouri Houda, P.O. Box 6624, Al Irfane, Rabat, 10112, Morocco; Email: houda.elghoulbzouri@gmail.com; Tel: +212661666408
A good case selection, with adequate oral hygiene is a key factor to the success of the gingival veneer. This case report illustrates a method of treatment for an advanced tissue loss in an esthetic area using a removable gingival prosthesis.

CASE REPORT

In April 2015, 24-years female patient, with no particular medical history, referred to the Department of Periodontics of dental faculty of Rabat, complaining of gum recession, elongated upper incisors and esthetic dissatisfaction with black triangles. She reported that she received both non-surgical and surgical periodontal treatment, in private clinic, associated with adjunction of antibiotics in 2013, followed by orthodontic treatment for 2 years to correct pathologic tooth migrations. She revealed also that she tried masking papilla loss by composite restauration between11 and 21(Figure 1). Tooth 36 was pooled out many years ago.

Periodontal assessment revealed plaque index (PI) of 2.3, gingival index (GI) of 2.1, with calculus deposits in lingual of inferior incisors. Periodontal probing using , the Williams probe, recorded probing depths ranging from 4 to 6 mm in 17,16,12,11,21,22,25, 37,45,46 and 47. Gingival recession was ranging from1 to 3mm in maxillary anterior incisors and tooth mobility class I in 11,12,21,22,45 and 46.

Radiographs showed vertical intra-bony defects in 16, 24,26,43,44 and 46 in addition to horizontal bony defects in upper incisors (figure 2).

Based on the clinical and radiographic findings, a diagnosis of generalized aggressive periodontitis was assigned to the patient as 45, 43 and 24 were affected in addition to incisors and first molars (Armitage, 2004).

According to these findings, treatment was started with preliminary periodontal therapy, which included meticulous oral-hygiene instructions followed by full mouth debridement within 24 hours. Both ultrasonic and manual instrumentation were used (Quirynen 1995). During this active phase, systemic antibiotics of amoxicillin (500mg, 3
times a day) and metronidazole (250mg, 3 times a day) were administrated for 7 days (Beikler 2004). Chlorhexidine Digluconate (0.12%) was used for rinsing, twice a day for two weeks (Quirynen 1995; Beikler 2004). Two months later, the patient was re-examined: both pocket depth and bleeding on probing were reduced. However, the patient exhibited moderate-to-severe gingival recession in anterior maxillary teeth with an unsatisfactory aesthetic result. Gingival recessions were classified as Miller’s class IV (Miller 1985, Zucchelli 2015) (Figure 3).

![Figure 3: Intraoral view in re-evaluation phase](image)

The severe bone loss and gingival condition were not suitable and could not be managed by plastic periodontal surgery. As the patient was very much concerned about esthetics, the decision was to refer her to the Prosthodontics Department to cover the exposed root by gingival prosthesis.

Maxillary impression was made using alginate and silicone impression materials, by double mixtechnique. Care was taken to record embrasures details from canine to canine. This helps providing prosthesis retention. Then the tray was removed carefully. After the cast were made, it was followed by wax-up. (Figure 4).

![Figure 4: maxillary impression and cast](image)

The gingival veneer was made using flexible valplast. It was finished, polished and tried; minimal adjustments were made (Figure 5).

![Figure 5: intraoral view of gingival prosthesis](image)

Instructions were given to patient, to maintain a continuous good plaque control and to clean gingival veneer every time after having food, and to store it in water during night, to prevent detrimental effect of the acrylic prosthesis (Nair et al, 2003).

Patient was very satisfied as this was a minimally invasive alternate approach. (Figure 6)

![Figure 6: Esthetic satisfaction of the patient with 2 years follow-up](image)

**DISCUSSION**

Aggressive periodontitis results in the loss of the bone and supporting tissues. Unfortunately, after healing, the successful treatment will often lead to unaesthetic gingival defects. These can be treated with surgical or prosthetic approaches.

The ultimate goal of esthetic root coverage (CRC) is having gingival margin positioned at the level of the cementoenamel junction (CEJ) or coronally. To achieve that, various surgical techniques can be used for recession treatment which include pedicle flaps (rotated flaps or advanced flaps), free gingival grafts and sub-epithelial connective tissue graft. The choice of the technique is essentially based on the evaluation of different factors as the depth and width of the recession defect, the availability of donor tissue, the presence of muscle insertions, and,
finally, the patient esthetic needs (Censi 2014 and zucchelli 2000). Meanwhile, interproximal periodontal support has also a very important role in achieving successful esthetic results (Cairo, 2017).

In this regard, Miller in 1985 proposed a classification that relates the type of recession defect to the treatment predictability. This classification distinguishes recessions into 4 classes, and even if replaced by newer ones, it is still the most used one (Miller 1985).

The periodontal surgery for root coverage is predictable in presence of class I and II defects. In case of Class III defects, it is possible to have partial root coverage, whereas it is not possible to get the root coverage for class IV defects.

In these severe situations, surgical approach needs bone augmentation and leads to surgical costs, healing time, discomfort and can have unpredictable results as large volume of tissue is missing. For all these reasons, this choice may be not an interest approach. (Wahbi et al., 2013).

In cases of Miller class III and IV recessions, prosthetic replacement can be more predictable approach for replacing the lost tissue using removable gingival prosthesis. Different materials and methods of construction of gingival prostheses have been described. It can include pink auto cured and heat cured acrylics, porcelains, composite resins, thermoplastic acrylics, flexible valplast as well as silicone based soft materials (Hickey et al., 2009, Alani et al., 2011, Agrawal et al., 2014, Shakuntala et al., 2015, Thakkar et al., 2017).

In the literature each material has some limitations; Acrylic resin has the disadvantages of being brittle, with inherent opacity and plaque accumulation tendency (Tomar et al., 2016; Choudhari et al., 2015). For silicone, the biggest disadvantage is its tendency to discolor. Valplast offers good natural appearance along with soft tissues, making prosthesis invisible (Agrawal et al.,2014; Choudhari et al., 2015).

The present clinical case report highlighted the use of the gingival veneer in replacement for severe defect of soft-tissues, associated with periodontal disease. We based our choice of flexible valplast as material based on its characteristics’ comparing them to acrylic resine and silicone ones. We choose this prosthesis because it is easy to make, comfortable to wear, resistant to mechanical pressure and permits efficient esthetic outcomes (Agrawal et al.,2014; Choudhari et al., 2015).

CONCLUSION

The present case report has presented interest of gingival prosthesis especially in advanced periodontal disease among young patient with esthetic and functional requirements. Good esthetic results have been achieved renewing the patient’s self-confidence.

This gingival veneer is easy to make, has light weight and it is inexpensive. However, a good case selection with adequate oral hygiene is a key factor in the success of this conservative approach.

REFERENCES


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