

# Gingival Mask as A Non-Surgical Treatment in Gingival Recession: A Literature Review

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Review Article

# Gingival Mask as A Non-Surgical Treatment in Gingival Recession: A Literature Review

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## ABSTRACT

Aesthetic problem and dentin hypersensitivity are common complaints that are often felt by patients with gingival recession. Treatment of gingival recession in principle aims to overcome the effects caused by the recession. One of the non-surgical treatments for gingival recession is gingival mask creation. The material used to make the gingival mask is the material commonly used as a removable denture acrylic base liner, so that it is easy to shape according to the conditions in the mouth. Another advantage is that the color of the soft liner is slightly transparent, so that when applied to the gingival region that is experiencing recession, the color resembles the original gingival color. Recession treatment using gingival mask can only be performed in Class III and IV Miller recession. Although the gingival mask only covers the recession on the labial / buccal surface, it can minimize stimulation to the tooth nerve, so that both aesthetic complaints and dentin hypersensitivity can be managed simultaneously.

**Keywords:** *Gingival recession, gingival mask*

## INTRODUCTION

Gingival recession is a condition in which the root surface is exposed, due to the apical migration of the gingival margin from the cemento enamel junction (CEJ). This condition can be localized or comprehensive and can affect one or more tooth surfaces.<sup>1</sup> Recession is characterized by loss of attachment, so that clinically, a longer proportion of teeth can be seen when compared to adjacent teeth. This leaves patients with gingival recession susceptible to periodontal disease. Gingival recession can be caused by many factors, and can occur in one or a group of teeth, both in the upper and lower jaw.<sup>2,3</sup>

The incidence of gingival recession is quite high, varying from 8% in children to 100% in over 50 years of age, recession can occur at any age and will increase with age, with men and women having the same risk factors. Various problems can arise due to gingival recession, ranging from esthetic problems, dentin hypersensitivity due to exposed root surfaces, and narrowing of the attached gingiva, but the direct impact of gingival recession that is commonly complained of is aesthetic problems and dentin hypersensitivity, both of these problems often interfere with patient's activity. In principle, gingival recession treatment is aimed at mitigating the effects caused by the recession. Thus, the treatment is

not only to improve esthetics but also to relieve complaints of dentin hypersensitivity.<sup>3,4,5</sup>

Recently, nonsurgical treatments have been developed to treat gingival recession. This treatment is aimed at treating both aesthetic problems and dentin hypersensitivity. This treatment is gingival mask which is applied to the recession area.<sup>4</sup> This review will discuss the use of gingival mask as a treatment for gingival recession.

## LITERATURE REVIEW

### Gingival recession

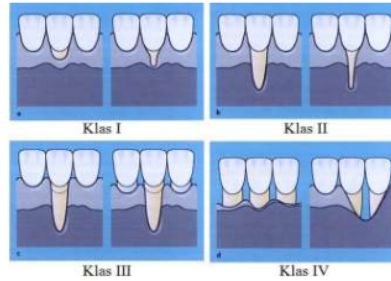
The etiology of gingival recession can be caused by several factors, including anatomy, physiology and pathology. Anatomical factors that can cause gingival recession are fenestration and dehiscence that occurs in the alveolar bone, the position of the teeth that deviates from the arch, and the convex root morphology. All of these conditions can cause the alveolar and gingival bones covering them to become thinner, thereby facilitating gingival recession. In addition, the attachment of the frenulum that is too coronally, narrow attached gingiva, and heredity, such as the gingival epithelium which is thin and easily damaged, tends to result in gingival recession. Physiologically, gingival recession can occur due to orthodontic movement of the teeth, both

lingually and labially, which tends to result in dehiscence. Increasing age is also one of the causes of physiological gingival recession. Meanwhile, pathological gingival recession can occur due to gingival inflammation due to poor oral hygiene resulting in plaque and calculus accumulation, traumatic occlusion, traumatic tooth brushing, smoking, alcohol consumption, poor restoration margins, hormonal factors, and periodontal surgical procedures.<sup>3,6,7</sup>

Clinically, the gingival recession is characterized by exposing the root of the tooth due to the migration of the gingival margin from the cemento enamel junction (CEJ) to the apical direction.<sup>12</sup> Gingival recession usually begins with a gradual apical migration of all facial aspects of the gingiva so that the CEJ becomes visible. The first sign of a recession is the rapid formation of a small groove on the gingiva, called Stillman Cleft, but this is rare.<sup>1</sup> This groove can develop into a more severe recession. As a result of the recession, the remaining attached gingiva becomes thick and curled, which is a fibrotic response to inflammation known as McCall's Festoons.<sup>8,9</sup>

There are several theories about the classification of gingival recession, but the classification that is commonly used is the classification of gingival recession based on Miller's Theory, with gingival recession divided into 4 classes, including:

- Class I : Recession in the gingival margin that has not extended to the mucogingival junction. In this class there has not been any loss of bone or soft tissue in the interdental area. This recession can be small or large.
- Class II : Recession in the gingival margin that extends towards the mucogingival junction, but there has been no loss of bone or soft tissue in the interdental area. This recession can be small or large.
- Class III : Recession in the gingival margin extending towards the mucogingival junction, accompanied by loss of bone and soft tissue in the interdental area or a mild malposition of the teeth.
- Class IV : Recession in the gingival margin extending towards the mucogingival junction, accompanied by severe loss of bone and soft tissue in the interdental area or there is a severe malposition of teeth.



**Fig.1: Gingival recession according to Miller classification<sup>3</sup>**

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Gingival recession is one of the most common disorders in patients who visit dentists. Generally, patients come with complaints in the form of teeth being sensitive to temperature stimulation or certain foods, causing root caries and disturbing esthetics, especially in the anterior area.<sup>10,11</sup>

Treatment for patients with gingival recession varies according to the severity of the recession, type of recession, and cause of the recession. Therapy is divided into two types, namely surgical therapy and non-surgical therapy.<sup>3</sup>

#### Gingival mask as Non-Surgical Therapy

Not all patients and not all types of recession can be treated surgically. To cover a recession that cannot be performed surgically, a non-surgical treatment technique using gingival mask was developed. This technique is quite easy to manufacture and practical in use.<sup>4</sup>

According to some literature, the management of recession had done with gingival mask, where they used gingival mask made of soft liner (chairside vinyl polysiloxane resilient denture liner). This material was used because it had good compatibility with tissue, and the color and texture were closest to the natural gingiva.<sup>12</sup>

Patients must adhere to regular follow-up visits to maintain healthy periodontal tissue and prevent the recession from getting worse. In addition, to keep the gingival mask from changing color, the patient should be instructed to keep the gingival mask clean. The main function of this gingival mask is aesthetic function, specifically covering the gingival recession.<sup>12</sup>



**Fig.2: Gingival mask insertion in a patient with gingival recession (A) prior to application of gingival mask. (B) After application of the gingival mask.<sup>6</sup>**

Treatment using gingival mask can only be performed in Class III and IV Miller recessions, whereas Class I and II are not an indication of treatment with this technique. It stands to reason that the gingival mask requires mechanical retention for attachment. This mechanical retention utilizes the proximal gap between the teeth as an undercut for the gingival mask. Such a proximal gap is absent in the Miller class I and II recession types.<sup>4</sup>

Gingival mask should be made two to three months after periodontal treatment to obtain healthy gingiva. However, in certain situations gingival mask can be used as a temporary measure to improve anterior crown aesthetics after initial periodontal therapy to allow time for healing and establishing periodontal stability and prognosis. In this way the patient's aesthetics can be maintained while the final treatment planning decisions are postponed until the periodontal prognosis is established.<sup>13,14</sup>

#### DISCUSSION

Clinical conditions such as gingival recession are common and result in poor esthetic effects and increased prevalence of caries. The main etiology of recession is the inflammatory process caused by the accumulation of biofilms and incorrect brushing techniques. In patients who are contraindicated or refuse to undergo surgery, gingival mask can be chosen as an alternative treatment option for cases of gingival recession.<sup>12,15,16,17</sup>

The fabrication of gingival mask is quite easy because the material used is the same with the material used in the removable denture acrylic base liner, so it is easy to shape according to the conditions in the mouth. The properties of this soft

liner material are quite beneficial, because it can make the gingival mask flexible so that it is easy to apply. The gingival mask can be easily inserted and removed from the proximal gap without causing pain. This flexible property also makes the gingival mask undercut function properly so that the retention is quite good.<sup>4,11,18</sup>

Another advantage is that the color of the soft liner material is slightly transparent, so when applied to the gingival region that is experiencing recession, the color of the gingival mask can be similar to the color of the natural gingiva, thus gingival mask is chosen as an alternative treatment for aesthetic problems in cases of gingival recession. Besides being able to overcome esthetic problems, clinical facts prove that gingival mask applied to the region of teeth experiencing gingival recession can reduce the complaints of dentin hypersensitivity.<sup>4,11,12,19</sup>

The consequence that the patient should know about the use of gingival mask is that gingival mask cannot be used all the time, but must be removed during meals and must be cleaned diligently, because the remaining food will be a place for plaque accumulation, besides the treatment with gingival mask cannot be done in patients with poor plaque control, uncontrolled periodontal health, high carious activity, smoking and allergies to acrylics or silicones.<sup>4,13,14,20</sup>

In addition, the disadvantage of this technique is that it cannot cover the entire root surface, especially the palatal / lingual part, so that this surface can still be affected by stimulation of the tooth nerve. However, this effect is minimal, since most of the root surface has been covered by gingival mask.<sup>4,11</sup>

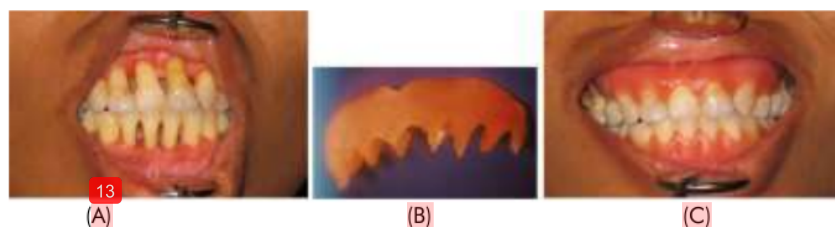


Fig.3: Treatment of gingival recession using a gingival prosthesis. (A) Before treatment, (B) gingival prosthesis, (C) after treatment. 3

#### CONCLUSION

Gingival recession is a condition in which the root surface is exposed due to the apical migration of the gingival margin from the cemento enamel junction (CEJ). Gingival recession is a disorder that is often found in patients who visit the dentist. Treatment of gingival recession varies depending on the severity of the recession, the type of

recession, and its cause. In addition to covering the recession area, the gingival mask procedure is intended to cover the area of the recession as well as an aesthetic correction, but the use of gingival mask can only be done in Miller Class III and IV recessions, whereas Class I and II are not indicative of gingival mask treatment.

## REFERENCES

1. Alghamdi H, Babay N, Sukumaran A. Surgical management of gingival recession: A clinical update. *Saudi Dent J.* 2009; 21 (2): 83–94.
2. Suryono. Use of composite resin in cases of gingival recession, *dental magazine.* 2012; 19 (1): 86-88
3. Krismariono A. Basic Principles of Treatment (Basic Principle in the Treatment. *Dentika Dent J.* 2014; 18 (1): 96–100.
4. Krismariono, A. Artificial gingiva as an alternative treatment for gingival recession : A Case Report. *Periodontic Journal.* 2017 ; 1 (7), 10–14.
5. Pradeep, K., Rajababu, P., Satyanarayana, D., & Sagar, V. (2012). Gingival Recession: Review and Strategies in Treatment of Recession. *Case Reports in Dentistry,* 2012, 1–6.
6. Ravipudi S, Appukuttan D, Prakash PSG, Victor DJ. Gingival recession: Short literature review on etiology, classifications and various treatment options. *J Pharm Sci Res.* 2017; 9 (2): 215–20
7. Chetru, V., I. Jati, AS, Furquim, LZ, & Consolaro, A. (2016). Gingival recession: Its causes and types, and the importance of orthodontic treatment. *Dental Press Journal of Orthodontics.* 2014; 21 (3) : 18–29.
8. F. Wolf H, Hassell TM. *Color Atlas of Dental Hygiene.* Stuttgart · New York: Thieme; 2006.
9. Maulani, C., & Nurwanti, K. Gingival Recession Level Using Soft and Medium Toothbrush Bristles in YARSI University Medical Faculty Students. *Yarsi Journal of Medicine.* 2017; 25 (1): 1–9.
10. Utami ED. Gingival Recession Surgical Treatment with Subepithelial Connective Tissue Graft Technique. *J Kedokt Gigi Dent.* 2017; 11 (1): 96–102
11. Ulfah N, Augustina EF. Surgical and non-surgical treatment of gingival recession. *J Dentomaxillofacial Sci.* 2010; 9 (1): 29.
12. Achmad H, Djais AJ, Petrenko EG, Larisa V, Putra AP. 3-d printing as a tool for applying biotechnologies in modern medicine. *International Journal of Pharmaceutical Research,* 2020. 12(4), pp. 3454-3463.
13. Achmad H, Djais AI, Jannah M, Huldani, Putra AP. Antibacterial chitosan of milkfish scales (*Chanos chanos*) on bacteria *porphyromonas gingivalis* and *agregatibacter actinomycetescommitans*. *Systematic Reviewa In Pharmacy,* 2020. 11(6), pp. 836-841.
14. Achmad H, Djais AI, Syahrir S, Fitri A, Ramadhany YF. A literature us regarding the use of herbal medicines in pediatric dentistry. *International Journal of Pharmaceutical Research.* 2020. 12,PP. 881-897.
15. Achmad H, Djais AI, Syahrir S, Fitri A, Ramadhany YF. Impact Covid-19 in pediatric dentistry: A literature review. *International Journal of Pharmaceutical Research,* 2020. 12,p.830-840.
16. Eka Fitria Augustina. Management of Gingival Recession Using Artificial Gingiva. *Dentika Dent J.* 2011;16(1):82–5.
17. Verdine Virginia Antony RK. Gingival Mask - Restoring The Lost Smile. *IOSR J Dent Med Sci.* 2013;5(3):20–2.
18. Shenava A. Gingival mask: A case report on enhancing smiles. *J Oral Res Rev.* 2014;6(2):68–70.
19. Bruckmann C, Wimmer G. Gingival Recession Management. In: *Gingival Recession Management.* 2018
20. Achmad H, Thahir H, Rieuwpassa I, Mardiana S A, Oktawati S, Samad R, Djais AI, Gani A, Singgih MF, Madjid F, Admy SC. The Effectiveness of *Channa striata* Extract Antimicrobial Effect on Periopathogen Bacteria (*Porphyromonas gingivalis* and *Aggregatibacter actinomycetemcomitans*). *Systematic Reviews in Pharmacy.* 2020; 11(4): 319-323. doi: 10.31838/srp.2020.446
21. Achmad H., Huldani, Carmelita A.B., Fauziah, Hidayah N., Bokov D. Antioxidant and antiviral potential of brown algae (*Phaeophyceae*). *International Journal of Pharmaceutical Research.* 2020; 3(12): 2117-2125. DOI: 10.31838/ijpr/2020.12.03.292 <http://www.ijpronline.com/ViewArticleDetail.aspx?ID=17012> <http://www.scopus.com/inward/record.url?eid=2-s2.0-85089415736&partnerID=MN8TOARS>
22. Sukmana B.I., Edyson, Thahir H., Achmad H., Huldani, Bokov D.O. Research review on secondary metabolite compounds of *Mangifera casturi* bark and their functions. *International Journal of Pharmaceutical Research.* 2020; 3(12): 2155-2161. DOI: 10.31838/ijpr/2020.12.03.309 <http://www.ijpronline.com/ViewArticleDetail.aspx?ID=17079> <http://www.scopus.com/inward/record.url?eid=2-s2.0-85089431331&partnerID=MN8TOARS>
23. Achmad H., Sarina, Bokov D.O., Ramadhany Y.F., Kirichenko E.V., Markov A. The Impact of Using Antibiotic Drugs in Pediatric Dentistry. *International Journal of Pharmaceutical Research.* 2020; 4(12): 2901-2910. DOI: 10.31838/ijpr/2020.12.04.400 <http://www.scopus.com/inward/record.url?eid=2-s2.0-85095790474&partnerID=fpDjhFsn> <http://www.ijpronline.com/ViewArticleDetail.aspx?ID=18024>

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Publication

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