

**Conservative technique for management of gingival recession: A case report**

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**Abstract:** Development of gingival marginal recession is common consequence of periodontal disease impairing not only the esthetic appearance but also problems with oral hygiene, plaque accumulation, speech, and tooth sensitivity. A non-surgical conservative approach was carried out in this case report to manage the recession in a novel way using gingival composites to achieve natural gingival appearance.

**Keywords:** cemento-enamel junction, gingival composites, gingival recession, hypersensitivity, periodontium.

**Introduction**

Gingival recession is displacement of marginal tissue apical to the cemento-enamel junction.<sup>1</sup> Gingival recession is defined as the apical shift of the gingival margin with respect to the cemento-enamel junction (CEJ); it is associated with attachment loss and with exposure of the root surface to the oral environment. It is a commonly occurring condition with varying etiologies such as anatomical, pathological, and physiological factors.<sup>2,3</sup> Gingival recession defects can either be localised or generalised and can be located at labial, lingual and/or interproximal tooth surfaces.<sup>4</sup> Gingival

recession occurs due to a direct mechanical or physical influence on the gingival tissues or indirectly due to an inflammatory reaction in the gingival tissues.<sup>5</sup> The etiology is multifactorial and includes excessive or inadequate teeth brushing, destructive periodontal disease, tooth malposition, alveolar bone dehiscence, high muscle attachment, aberrant frenal pull, occlusal trauma, iatrogenic factors (such as orthodontic, or prosthetic treatment) and smoking.<sup>6</sup> Recession may be accompanied by root caries or abraded surfaces, and patients may complain of esthetic defects or root hypersensitivity. The occurrence may or may not be in conjunction with loss of attached tissue and may be associated with sensitivity because of the exposed dentin.<sup>7,8</sup>

Gingival recession with the loss of the interdental papilla (also known as open gingival embrasures or “black triangles”) causes a notable defect in the patient’s smile when it affects the anterior teeth. This gingival defect also contributes to retention of food debris, adversely affecting the health of the periodontium (Kurth and Kokich, 2001; Donovan, 2009; Roshna and Nandakumar, 2012).<sup>9</sup>

Gingival recession has a diverse etiology and may result in exposure and secondary damage of exposed root surfaces. The consequences may include gingivitis, periodontitis, and hypersensitivity.<sup>8</sup> The prevalence of recession was 37.8% in the youngest age cohort (30–39 years), and in contrast, the oldest cohort, aged 80–90 years, had a prevalence of 90.4% (more than twice as high). Whereas the management can include surgical treatment options, sometimes a more conservative, yet still esthetic approach may be required. The use of gingival-colored composites provides one such alternative and can be applied to varying presentations of the problem.<sup>8,10</sup>

Interdisciplinary approaches are often required for restoration of esthetics and function of the periodontal supporting structures lost due to periodontal disease.<sup>8</sup> Gingival replacement prosthesis has historically been used to replace lost tissue. Materials used for replacing lost tissue architecture include pink auto cure and heat cure acrylics, porcelains, composite resins, as well as silicone based soft materials which can help in re-creating natural tooth proportions and provide a realistic alternative to surgery.<sup>11</sup>

While surgical treatment can be successful in re-creating favorable esthetic anatomy as well as achieving accurate tissue contour in cases when minor amounts of tissue are reconstructed, long-term results vary because of the vascularity and complexity of the interdental space.<sup>8</sup> Reconstruction of the lost interdental papilla is difficult surgically, according to Tarnow et al., the distance between the contact point and alveolar crest should be at least 5 mm for the formation of the interdental papilla. Factors such as surgical costs, healing time, discomfort, and varying long-term results make this choice unpopular.<sup>8,12</sup>

If tooth-colored restorative materials are utilized to restore cervical tooth exposure as a result of severe recession, the disproportionate appearance of the visible crown may give a dissatisfying result. Gingival-colored composites in conjunction with the utilization of tooth-colored restorative material allow for a minimally invasive adhesive restorative technique.<sup>8</sup>

The pink composite was introduced by Zalkind and Hochman in 1997, a gingival-colored composite that helps to create a life-like tooth easily by reconstructing the red-white boundary with superior esthetics. This material provides long-lasting, high esthetic restorations with low abrasive values, high compressive, and transverse strength.<sup>13</sup> In this article, we present a case

report where pink composite was used to restore multiple teeth with gingival recession.

### **Case report**

A 29-year-old male patient reported to the Department of Conservative dentistry and Endodontics, Panineeya Mahavidyalaya Institute of Dental sciences and Research center, Hyderabad with the chief complaint of teeth sensitivity. Also the patient was dissatisfied with the appearance of his existing dentition.

On clinical examination, patient had no relevant medical history, had gingival recession with loss of the interdental papilla involving maxillary (15, 14, 13, 12, 11, 21, 22, 23, 24, 25), pinkish brown pigmentation of the marginal and attached gingiva and discoloration of 11. The patient was thoroughly informed about the different options for restoration of gingival tissue. He expressed opposition to surgical procedure to reconstruct the lost gingiva. Instead he opted for restoration of the dento-gingival complex using the pink composite resin because this technique allowed satisfactory function and aesthetics at lower cost and could be completed chairside in a single visit.

### **Clinical procedure**

Prior to beginning the procedure shade matching was done. The teeth were isolated and etched using 37% phosphoric acid for 30 seconds [Figure 2]. Teeth were then blotted dry and dental adhesive bonding agent (Ivoclar bonding agent) was applied and light cured according to manufacturers' instructions [Figure 3,4]. The lost tissues were constructed using pink colored composite (SHOFU Beautiful II) in layered pattern. The interproximal areas were built-up first followed by the marginal area. Final contouring was performed using a composite finishing and polishing system [Figure 5]. Patient was given post- operative oral hygiene

instructions and kept on follow up. The 12-months post follow up showed acceptable results [Figure 7].



Figure 1: Pre-operative



Figure 2: Acid etching.



Figure 3: Bonding agent application



Figure 4: Light curing



Figure 5: Composite placement followed by finishing polishing



Figure 6: Post-operative



Figure-7: Follow up after 12 months

### Discussion

Gingival recession associated with root surface exposure is a complex phenomenon that may present numerous therapeutic challenges to the clinician.<sup>7</sup> The main goal of periodontal therapy is to improve periodontal health and thereby to maintain a patient's functional dentition right through his/her life. However, aesthetics symbolize an inseparable part of today's oral therapy, and numerous procedures have been proposed to preserve or enhance patient aesthetics.<sup>10</sup>

The step-by-step approach presented in this paper introduces a systematic treatment concept for periodontal recessions using gingiva-shaded composites. It is a conservative alternative to a surgical treatment, especially for seniors or anxious patients with systemic or oral risk factors, or in cases when a surgical treatment is contra-indicated. The presented restorative concept allows aesthetically and functionally satisfying results to generate with minimal intervention.<sup>14</sup>

Features that define a desirable smile have been refined while retaining consideration and respect for individual variations (Tanaka et al.,2008). Challenging cases involving the anterior teeth require a more comprehensive approach and a deeper understanding of the pink component of the smile, the gingiva. The gingival architecture represents the frame for the teeth. If

it is not restored correctly, either surgically or prosthetically, it will impair the final three-dimensional aesthetic (Zalkind and Hochman,1997; McCoyetal.,1998; CoachmanandCalamita,2010).<sup>9</sup>

Prosthetic gingival restoration with gingival coloured “pink” composite resin materials can overcome the limitations of grafting (Coachman et al., 2009) and can be a good alternative for reconstructing tissue lost due to ridge deformities (Coachman et al., 2010).<sup>9</sup> Therefore, composite resin should be a consideration in the initial treatment plan. Resin-based composites and glass ionomer cements have been proven to produce positive results in treating class V lesions and associated gingival recession. Should further recession take place, additions of composite could be made to cover the resulting defect, although in such a case, serious consideration would need to be given to why the recession was progressing. Careful finishing of the margin of the gingival composite would be necessary to ensure that plaque trapping around the restoration did not contribute to this situation. For that reason, using high magnification loupes or microscopes is essential if precise margin finishing and polishing is to be achieved, which is one of the greatest benefits of this novel approach.<sup>8,15</sup>

New resin materials and better adhesive bonding allow minimally invasive preparation, yet still allow predictable bond strength and longevity. These features satisfy numerous clinical indications with immediate results for even the most cosmetically discerning patients (Terry, 2004; Koczarski and Fligor, 2005). Conservation of healthy tooth structure is especially important in patients who have only cosmetic concerns (Heymann and Swift, 2001; Christensen, 2006; and Radz, 2008).<sup>9</sup>

## **Conclusion**

Gingival-colored composite provides dental practitioners with a versatile material that can be used to directly restore cervical defects caused by gingival recession, thus correcting the appearance of the gingival anatomy. It offers a treatment option that may increase patient satisfaction through the provision of a cost-effective, minimally invasive solution with highly esthetic results.

## **References**

1. Anarthe R, Mani A, Kale PP, Mustilwar R. Gingival Recession At Glance: A Review. Pravara Medical Review. 2018;10(4):18-23.
2. Cortellini P, Bissada NF. Mucogingival conditions in the natural dentition: Narrative review, case definitions, and diagnostic considerations. Journal of periodontology. 2018;89:S204-13.
3. Guttiganur N, Aspalli S, Sanikop MV, Desai A, Gaddale R, Devanoorkar A. Classification systems for gingival recession and suggestion of a new classification system. Indian Journal of Dental Research. 2018;29(2):233-237.
4. Anuradha B, Devakar R, Aarthi J, Mitthra S. Reconstruction of the red-white boundary with pink composite. Indian Journal of Multidisciplinary Dentistry. 2019;9(2):123-125.
5. Patel M, Nixon PJ, Chan MY. Gingival recession: Part 1. Aetiology and non-surgical management. British dental journal. 2011;211(6):251-254.
6. Ravipudi S, Appukuttan D, Prakash PS, Victor DJ. Gingival Recession: Short Literature Review on Etiology, Classifications and Various Treatment Options. Journal of Pharmaceutical Sciences and Research. 2017;9(2):215-220.
7. Kassab MM, Cohen RE. Treatment of gingival recession. The Journal of the American Dental Association. 2002;133(11):1499-1506.

8. Paryag AA, Rafeek RN, Mankee MS, Lowe J. Exploring the versatility of gingiva-colored composite. Clinical, cosmetic and investigational dentistry. 2016; 8:63-69.
9. Wahbi MA, Al Sharief HS, Tayeb H, Bokhari A. Minimally invasive use of coloured composite resin in aesthetic restoration of periodontially involved teeth: Case report. The Saudi dental journal. 2013;25(2):83-89.
10. Pradeep K, Rajababu P, Satyanarayana D, Sagar V. Gingival recession: review and strategies in treatment of recession. Case reports in dentistry. 2012; 2012:1-6.
11. Parolia A, Thomas MS, Kundabala M, Shetty N, Gautam S, Kumar S. Rehabilitation of gingival architecture by a conservative method: An innovative approach. Journal of conservative dentistry. 2008;11(3):131-135.
12. Tarnow DP, Magner AW, Fletcher P. The effect of the distance from the contact point to the crest of bone on the presence or absence of the interproximal dental papilla. Journal of periodontology. 1992;63(12):995-996.
13. Anuradha B, Devakar R, Aarthi J, Mitthra S. Reconstruction of the red-white boundary with pink composite. Indian Journal of Multidisciplinary Dentistry. 2019;9(2):123-125.
14. Günay H, Geurtsen W, Lühns AK. Conservative treatment of periodontal recessions with class v-defects using gingiva-shaded composite—a systematic treatment concept. Dental update. 2011;38(2):124-132.
15. Fahl Jr N. Direct-Indirect Class V Restorations: A Novel Approach for Treating Noncarious Cervical Lesions. Journal of esthetic and restorative dentistry. 2015;27(5):267-284.