

Esthetic Rehabilitation of Anterior Teeth (Direct Laminate Veneer Restorations) in Three Cases

Üç Olguda Anterior Dişlerin Estetik Amaçlı Rehabilitasyonu (Direkt Laminate Veneer Restorasyonlar)

Zelal SEYFİOĞLU POLAT,^a
İbrahim Halil TACİR,^a
Şebnem ESKİMEZ,^a
Mansur ÖZCAN^b

^aDepartment of Prosthodontics,
University of Dicle Faculty of Dentistry,
^bDepartment of Deontology and
Medical History, University of Dicle,
Faculty of Medicine, DİYARBAKIR

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Yazışma Adresi/Correspondence:
Zelal SEYFİOĞLU POLAT
University of Dicle Faculty of Dentistry,
Department of Prosthodontics,
DİYARBAKIR
zelalpolat@hotmail.com

ABSTRACT In the esthetic restoration of the anterior teeth, there are many factors to be considered that depend on the patient's expectations and the expertise of the clinician. Porcelain laminate veneers, metal-ceramic restorations, and all-ceramic crowns, as well as minimally invasive procedures such as direct resin laminate veneer restorations can be said for treatment options. Laminate veneer restorations can be processed as an alternative treatment modality due to conservative design, harmless to teeth and excellent esthetic options for esthetic restorations of anterior teeth. Porcelain laminate veneers have high abrasion resistance and color stability, but they are very expensive. Direct composite laminate veneer restorations may preferred due to these are more cheap than porcelain restorations. This clinical report describes the treatment approaches for esthetically restoring lateral and central incisors. Teeth of three patients with have complaints with their lateral or central incisors were restored with direct resin composite laminate veneers.

Key Words: Restoration, esthetic, composite, laminate veneer

ÖZET Anterior dişlerin estetik amaçlı restorasyonunda, hastanın beklentisi ve hekimin deneyimi oldukça önemli faktörlerdir. Tedavi seçenekleri olarak; porselen laminate veneer restorasyonlar, metal-seramik restorasyonlar, tam seramik kronlar, en az invaziv işlem olan direkt kompozit rezin laminate veneer restorasyonlar sayılabilir. Laminate veneer restorasyonlar, diş yapısına zarar vermemesi, konser-vatif yaklaşımı, üstün estetik seçeneği ile anterior dişlerin estetik amaçlı restorasyonunda alternatif tedavi olarak uygulanabilir. Porselen laminate veneer restorasyonların, renk stabilitesine, üstün abrazyon direncine sahip olmalarına rağmen, maliyetleri pahalıdır. Direkt kompozit laminate veneer restorasyonlar daha ucuz olmalarından dolayı, porselen laminate veneer restorasyonlara alternatif olarak uygulanabilir. Bu çalışma, estetik amaçlı restore edilen santral ve lateral kesici dişlere uygulanan tedavi yaklaşımlarını anlatmaktadır. Santral ve lateral kesici dişlerinden estetik olarak rahatsızlık duyan üç hastanın ilgili dişleri, direkt kompozit laminate veneer tekniği uygulanarak restore edilmiştir.

Anahtar Kelimeler: Restorasyon, estetik, kompozit, laminate veneer

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In the esthetic restoration of the anterior teeth, there are many factors to be considered that depend on the patient's expectations and the expertise of the clinician.^{1,2} Treatment options include procedures such as porcelain laminate veneers, metal-ceramic restorations, and all-ceramic crowns, as well as minimally invasive procedures such as direct resin composite bonding.¹ Porcelain laminate veneers have high abrasion resistance and color stability.³ Also, the properties of porcelain laminate veneer such as color, form, surface, individual characterization through internal and ex-

ternal staining, and the fact that these restorations can be further color-corrected during cementation with special cement colors, make them an attractive treatment option.³ However, porcelain laminate veneers are relatively expensive.³

A conservative veneer technique is the application of the resin composite without tooth reduction (in Case 1) or minimal tooth reduction (in Cases 2 and 3). Resin composite veneers can be altered and repolished in situ, and this feature is very useful when subtle changes to the emergence angles are desirable. Also, resin composite veneers are not as expensive as porcelain laminate veneers.³ This clinical report describes a simple direct technique for restoring the esthetic appearance of lateral or central incisors, with good short-term results in 3 patients.

REPORTS OF CASES

Three patients with have complaints with their lateral or central incisors were referred to the Dicle

University Faculty of Dentistry, Department of Prosthodontics (Figure 1A, 2A, and 3A). On examination, all 3 patients had good periodontal health and a stable intercuspal position, normal vertical and horizontal overlap, and canine-protected guidance. The teeth with esthetic problem were restored with direct resin composite laminate veneers using the following technique (Figure 1B, 2B, and 3B). The patients were informed about the treatment.

First, retraction cords, (Stay-put, Medium; Roko, Langenau, Germany) were used to minimize crevicular fluid flow. It has been suggested that acid etching prior to application of the self-etching primer procedures higher bond strength to enamel than self-etching priming only.⁴ Therefore, prior to application of the self-etching primer, the buccal, incisal third of the lingual surfaces, incisal, mesial, and distal surfaces of the teeth were conditioned with 37% phosphoric acid gel (3M Scotchbond; 3M ESPE, St. Paul, Minn) for 30 seconds. Care was



FIGURE 1A: The intraoral view of the Patient 1, before treatment.



Figure 1B. The intraoral view of the Patient 1, after treatment.



Figure 2A. The intraoral view of the Patient 2, before treatment.



Figure 2B. The intraoral view of the Patient 2, after treatment.



Figure 3A. The intraoral view of the Patient 3, before treatment.



Figure 3B. The intraoral view of the Patient 3, after treatment.

taken to completely rinse the etchant gel for 30 seconds, and then the tooth was air dried. Teeth were conditioned and primed with a self-etching adhesive (Clearfil SE Bond, Primer; Kuraray Co. Ltd) and polymerized for 10 seconds with a polymerizing unit (Polofil Lux, Halogen light; VOCO, Cuxhaven, Germany).

The restorations were formed using a hybrid resin composite (Clearfil AP-X; Kuraray Co Ltd) which was placed using an incremental technique. Particular attention was given to the contouring of the apical finish line of the restorations. The resin composite restorations were polymerized at least 2 minutes with the polymerization unit (Polofil Lux; VOCO).

The maxillary right lateral incisors of the patient in Case 1 and X were also treated with direct resin composite laminate veneers. The restorations were then contoured and polished with polishing discs (Sof-Lex; 3M ESPE). At the completion of placement, the importance of rigorous and effective oral hygiene was re-emphasized, and the patients were recalled at 3-month intervals.

If the patient's oral hygiene had deteriorated during the follow-up period with a build-up of plaque and associated marginal inflammation, then the patient was given further oral hygiene instruction in an attempt to overcome the problems. If there was unsightly staining, the affected areas were contoured and polished with the polishing disc. In the event that the restorations were chipped but the resultant appearance was acceptable to the patient, the surface was refinished using the previously

described technique. Redness or bleeding on probing were not observed.

DISCUSSION

The treatment of esthetic defect in teeth includes 2 primary objectives: to restore the dental crown and to replace the harmony of the anterior teeth. If the patient does not smoke or drink dark-colored liquids that can alter the color of the teeth, esthetic bonding with resin composite may be the most conservative approach for several reasons: sound tooth structure will not be removed, the procedure may not require administration of local anesthetic, the procedure may be accomplished in 1 appointment, and the treatment is relatively inexpensive.

Walls et al.² used resin composite laminate veneers for masking discoloration or hypoplasia of the anterior teeth of 68 patients. The technique produced an acceptable improvement in the esthetics and the function of patients over a 2-year period. Results of this clinical study showed that the gingival status of patients' teeth improved significantly between the initial assessment visit and placement of the veneers. However, the veneer restorations showed a deleterious effect on the gingival health of the patients who were unable to maintain good oral hygiene. Also, it was found that the gingival score was sometimes associated with a discontinuity of the gingival margin of the veneer; however, there was no correlation between marginal discontinuity and gingival status for the sample as a whole.²

The treatment plan for the patients described consisted of retaining the complaints with maxillary central and lateral incisors and restoring the natural tooth form with bonded composite. This conservative option was chosen because it preserved tooth structure. Resin composite restorations exhibit excellent physical properties, marginal integrity, and esthetic.^{5,6} Moreover, in comparison to all-ceramic restorations, resin composite does not have the potential for catastrophic brittle fracture, nor does it cause abrasive wear of the opposing dentition.⁵⁻⁷ Other advantage of this type of treatment are the lower cost compared to an indirect technique, and the reversible nature of this proce-

dure, which allows for other treatment approaches in the future. A significant advantage of resin composite restorations over other restorative materials is that repair may be possible intraorally without the risk of modifying esthetics or mechanical performance.⁵

Finally, this clinical report describes the treatment of 3 patients with esthetically problem that were restored with resin composite laminate veneers. These simple procedures may be a cost-effective treatment alternative to restore the esthetics of teeth and may prove particularly useful before more definitive restorations can be considered.

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