

Direct Composite Laminate : A Case Report

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Abstract

Veneer restorations are well suited for conservative and aesthetic improvement of the anterior dentition. Laboratory fabricated porcelain and composite resin veneers present optimal aesthetics and durability. Although there are disadvantages associated with direct bonding, it provides control of color and contour for the operator, particularly in the case of a single anterior central incisor. Direct/indirect composite resin veneers utilize the advantages of both direct and indirect techniques in reconstruction of restorations with improved physical properties. The learning objective of this article is to review the available composite resins, opaquers, and tints, and present a step-by-step protocol for predictable restoration of discolored anterior dentition with direct composite resin veneers in a single appointment. Patient evaluation, preoperative aesthetic considerations, selection of the restorative composite resins, and the clinical procedure are discussed.

Key Words: Direct laminate, Composite, Technique, aesthetics.

Introduction

Growing advances in dental materials and adhesive protocols have expanded the restorative procedures available to today's clinicians^{1,2}. With combination with proper treatment planning, these innovations enable dental professionals to provide enhanced aesthetic care that achieves the increasing expectations of their patients. Using a case presentation, this article will document the steps required to harmoniously integrate smile design, material selection, and patient communication that are involved in the provisional of aesthetic dental care. This article discusses the utilization of composite resin as a tool to enhance the patient's smile. Upon reading this article, the reader should: Become familiar with a smile-enhancing technique which can be completed in one office visit. Realize the benefits that intra-oral composite mockups offer in terms of prototyping and confirming patient satisfaction.^{3,4}

Case Report

A female patient of 28 years old reported to our dental wing with the chief complaint of unaesthetic teeth. On clinical examination she had a pulpal exposure in relation to 11, with absence of the enamel. The periodontal tissues were healthy.

Treatment objectives for this patient were set to be a) root canal therapy, b) improvement of esthetics, c) prevention of further deterioration of the remaining

dentition and d) patient education and motivation. The patient demanded to have less chair time treatments and minimal cost for the restoration. A treatment plan was developed to improve the patient's appearance with direct composite laminate veneers. The patient refused to use rubber dam during the treatment period to feel relaxed in the dental chair. First, the maxillary teeth were dried and prevented from contact with saliva using cotton rolls. The total etch bonding system was preferred to prepare the surfaces of the teeth because it was deemed necessary to etch the remaining enamel and provide higher bonding strength for the composite resin. Before applying the bonding agent, all of the surfaces to be restored were etched with 35% phosphoric acid gel for 15 seconds. Care was taken to rinse the etchant gel completely for 20 seconds, and the teeth were then blot-dried. After this etching procedure, bonding agents were applied to the etched surfaces, dried, and then cured with a light curing unit for 20 seconds. The buildups were formed with hybrid resin composite. Composite was placed using an incremental technique, and specific attention was given to the contouring of the marginal finish line of the restorations. The contacts and proximal side of the restorations were formed with celluloid bands. The mandibular anterior teeth were restored using the same technique. Gingival finish lines were examined, and the occlusion was controlled. The final resin composite restorations were polymerized for 40 seconds in the buccal and palatal or lingual direction.

The restorations were polished with polishing discs according to the manufacturer's instructions.

In this case, the patient presented with unaesthetic teeth due to abnormal enamel erosion. The poor appearance was due not only to the innate color of the teeth, but also due to increased staining (Fig. 1).

There was pulpal involvement so root canal treatment was initiated before further damage was done (Fig. 2) & (Fig. 3).

Composite laminates, porcelain laminates, metal ceramic crowns and all-ceramic crowns are typical prosthetic treatment alternatives for such patients.⁵ In this case, the patient refused to have more chair time treatments or to pay a high cost for the restoration (Fig. 4).

So a treatment plan was developed to improve the patient's appearance with a direct composite laminate veneer.

The advantages of the direct laminate technique are its low cost, that the restoration may be evaluated as a reversible treatment

procedure, and that the restoration may be repaired intraorally.⁶ Although composite resins are esthetic and easy to manipulate, they have some undesired properties such as staining, micro leakage, low abrasion resistance, and plaque accumulation, so they are more appropriate to use for anomalies limited with enamel and as provisional restorations. Drinking hot coffee, carbonated beverages or alcohol may increase discoloration.⁷ Increasing the particle size of the resin by decreasing the proportion of organic filler matrix can decrease the change in color. Hybrid composite resins were used in this case because they have good mechanical resistance and can be polished. Light-cured hybrid composite resins are both esthetic and easy to manipulate. In the twelve-month follow-up, there was no remarkable color change, fracture, or damage of the composite restorations. Periodontal tissues remained healthy, and there was no plaque accumulation on the gingival side of the restorations. Porcelain laminate veneers, metal ceramic crowns, and all-ceramic crowns are expensive and need tooth preparation. These kinds of restorations also take a long time and are irreversible.⁸ Based on this knowledge, a direct composite laminate technique may be an important choice for treatment compared with other fixed dental prostheses.

Conclusion

The cosmetic rehabilitation of a patient with enamel erosion and pulpal exposure has been described.

The use of modern dental materials and a justifiable reliance on the predictable artistic abilities of the dental technologist allows the fabrication of both aesthetic and durable restorations.

References

For a complete list of references are available on request, please mail us editor@healtalkht.com

Legends

- Fig. 1 Pre-operative photograph (labial Abrassion) in 11
Fig. 2 Intra oral periapical radiograph (IOPA) during root canal treatment in 11
Fig. 3 Post operative IOPA of 11
Fig. 4 Post operative photo graph showing composite direct laminate in 11

