

Midline Diastema Correction by Laminate Veneer - A Case Report

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ABSTRACT

Since its introduction more than two decades ago etched porcelain veneer restoration has proved to be a durable and aesthetic modality of treatment. These past 25 years of success can be attributed to great attention to detail in the following areas: planning the case, conservative (enamel saving) preparation of teeth, proper selection of ceramics to use, proper selection of the materials and methods of cementation of these restorations, proper finishing and polishing of the restorations and proper planning for the continuing maintenance of these restorations. This article represents a case of midline diastema which was aesthetically corrected using laminate veneer.

Keywords: Midline diastema correction, laminate veneer.

INTRODUCTION

A porcelain laminate veneer is one of the most conservative and aesthetic techniques that we can apply when restoring the human dentition. Since their development 25 years ago, interpreting the indications and applying the correct techniques has been key to providing their longevity. [1] Longterm (15- and 20-year) retrospective studies indicated that the success rates of veneers are as high as 94% to 95% percent. [2,3] Tooth preparation is one of the most important considerations in this technique. Bonding to enamel rather than dentin provides the best or strongest bond values when we want to bond porcelain to tooth structure. [4-6] When a porcelain veneer

restoration is bordered on all margins by enamel, microleakage or debonding of these restorations is not likely to occur. A main objective of any restorative case involving these restorations is to keep the preparation simple and be conservative in reduction of sound tooth structure.

CASE REPORT

A young lady of 30 years age attended the Department of Prosthodontics for correction of her midline diastema in between 11 and 21 (pic 1). She wanted immediate result and did not want to go for orthodontic intervention. So, diagnostic wax-up was done before treatment to check the proper tooth width and occlusion (pic 2,3). Laminate veneer preparations over 2 adjacent teeth were planned because it is a conservative alternative to full coverage for improving the appearance of an anterior teeth. It was also preferred as the preparation is minimal, limited to enamel but sufficient to provide correct contour of restoration

Tooth preparation: Depth orientation grooves (gingival half) were prepared with three-wheel diamond depth cutter (0.3 mm) labial surface. Depth-orientation grooves (incisal half) were prepared with three-wheel diamond depth cutter (0.5mm) labially. The incisal wraparound preparation was done for several reasons as it can be used in most patients, easily fabricated by the technician and easily handled by the dentist due to positive seating on delivery.

0.5 mm depth cuts were prepared in the incisal surface of tooth [7,8] (pic 4). The incisal surface was reduced in a manner similar to incisal butt-joint preparation. The lingual finish line was reduced with the round-end tapered diamond.



Pic 1: Pre-treatment front view in occlusion



Pic 4: Teeth reduction irt 11, 21 with wrap around preparation



Pic 2: Diagnostic wax-up prior treatment



Pic5: Impression by dual body single step technique



Pic 3: Diagnostic wax-up prior treatment in upper cast



Pic 6: Acid etching of the teeth surface before luting



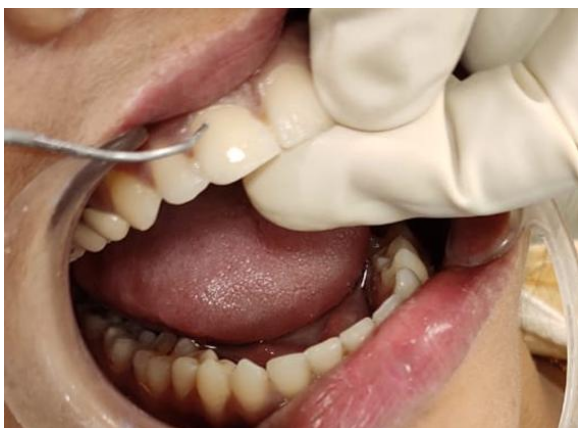
Pic 7: Application of bonding agent on teeth surface



Pic 8: Intaglio surface and cameo surface of veneer prosthesis



Pic 9: Application of luting agent on intaglio surface of veneer prosthesis



Pic 10: Proper sitting of prosthesis during luting



Pic 11: Light cure the veneer prosthesis



Pic 12: Post treatment frontal view in occlusion



Pic 13: Post treatment palatal view of prosthesis



Pic 14: Post treatment right side view in occlusion



Pic 15: Post treatment left side view in occlusion



Pic 16: Patient's satisfaction after treatment with veneer prosthesis

The instrument was held parallel to the lingual surface, with its end forming a light chamfer 0.5 mm deep for lingual tooth preparation. The finish line was prepared approximately one-fourth the way down the lingual surface, 1 mm from centric contacts, and connecting the two proximal finish. Round-end tapered diamond was used to remove the sharp features that may have formed where the facial, proximal, and lingual planes of reduction meet. The completed preparation has no sharp angles. After preparation of teeth, impression ([pic 5](#)) was taken with light body and putty polyvinyl siloxane material and model were poured with die stone. Then model was sent to laboratory for fabrication of laminate.

Cementation

Laminate surface preparation: Laminates were arranged on a wax sheet denoting the position of the tooth in the arch to avoid incorrect placement and inadvertent

breakage. Laminates were etched with 4% hydrofluoric acid. After etching, they were washed thoroughly using liberal amount of water. On drying, a coat of Silane coupling agent was applied on fitting surface.

Tooth preparation-For preparation of tooth first the all residue was removed. Then teeth were etched using 37% Phosphoric acid ([pic 6](#)) for 15 seconds and air dried. Then bonding agent ([pic 7](#)) was applied & light cured for 10 seconds. Dual cure composite crown and bridge luting agent ([pic 8](#)) was used for cementation Then veneer ([pic 9, 10](#)) was positioned onto the preparation, with slight pressure gradually to allow the excess material to exit and to avoid the formation of air bubbles and lifting of veneer itself. ^[7-9] The laminates were spot cured for 5 seconds initially. Excess cement was removed with explorer and then complete curing was done for 20 seconds ([pic 11](#)). After luting proper occlusion ([pic 12, 13, 14, 15](#)) was checked and was asked the patient to come for post treatment check-up. The Patient was well satisfied with the veneer prosthesis ([pic 16](#)).

CONCLUSIONS

Porcelain laminate veneers have been one of the most used restorations for aesthetics. Although this approach is one of the most conservative treatment options, some rules must be followed. Aesthetics is a subject that is objective and necessitates excellent communication among the dentist, patient, and ceramist. The case must be carefully selected and treatment planned. The use of mock-ups, followed by a wax mock-up and silicone index not only lets us to get the best aesthetic, phonetic, and functional outcome but also allows for better communication with the patient and laboratory. Best of all, however, is that it allows for minimal preparation on the recipient tooth.

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