

Case Report

Combination of Composite Veneering with Resin Bonded Fixed Prosthesis for Improving Esthetics: A Case Report

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ABSTRACT

This article describes the use of resin-bonded fixed partial denture as a conservative solution for the replacement of an incisor. It is a minimally invasive technique that does not reflect on the abutment teeth. On the other hand, Photo cured composite veneering was described in this case report in maxillary anteriors and it was preferred because of their recent improvement in mechanical and handling properties.

Key words: Minimally invasive technique, composite veneering, resin bonded fixed partial denture.

Received: 22 January 2018

Revised: 20 February 2018

Accepted: 26 February 2018

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This article may be cited as: Sarke A, Gupta H, Sudan R, Subramaniam M, Singh R. Combination of Composite Veneering with Resin Bonded Fixed Prosthesis for Improving Esthetics: A Case Report. *Int J Res Health Allied Sci* 2018; 4(3):7-9.

INTRODUCTION:

Teeth spacing is a dental anomaly characterized by interdental spaces and lack of contact points between the teeth. And the maxillary midline diastema is a space or gap between two teeth in upper anterior tooth region.¹ These two are the common esthetic problem in the adult that alters appearance of the smile or a person's appearance which has to be corrected to bring out the perfect smile everyone wish for.

The dental spacing can occur either as a transient malocclusion or created by developmental, pathological or Iatrogenic factors.² However, there are various treatment modalities such as orthodontics braces treatment, direct and indirect veneers, crown and bridges, dental implants etc which can be done to correct the spacing of the teeth.³

Among those the resin-bonded fixed partial denture technique can be considered to be a clinically reliable method of treatment and it is the only prosthesis which requires minimal removal of tooth structure to replace the missing teeth. This technique offers multifaceted possibilities for optimal esthetics of single tooth

replacement for clasp-free retention of RPDs by using resin-bonded extracoronary retainers.⁴ On the other hand Composite resin veneers which are placed free-hand and are more stable and have better esthetics. If a composite veneer is bonded with a correct adhesive technique and optimal oral hygiene care is maintained, studies have shown that the long-term survival rate of veneers is very high.⁵

CASE REPORT:

A 28 year old patient had reported to the Department of Prosthodontics and Crown and Bridges in Maharaja Ganga Singh Dental college and Research centre, Sri Ganganagar with the chief complaint of spacing in her upper and lower anterior tooth. On intraoral examination, it was revealed that maxillary midline diastema was present and interdental spacing was present in between the lower anterior tooth region which is tilted and rotated [FIG 1]. For this patient, orthodontic treatment was not preferred due to poor periodontal status (i.e gingival recession and severe bone loss).

The maxillary midline diastema was treated with composite veneering. Even though it did not completely close the space, the esthetic was improved a bit by reducing the space and by straightening the teeth. The procedure for composite veneering which carried out by cleaning the teeth with pumice and water, followed by acid etching with 37% phosphoric acid for 30 sec, water rinsed and the area was dried where the bonding agent was applied, followed by composite filling. Ease of fabrication, predictable intraoral repairability and less wear of opposing teeth or restoration are the advantages of these type of fillings. [FIG 2]. The lower anterior spacing was treated with Maryland bridge with maximum conservation of tooth structure (ie. A minimal tooth structure was removed only in the lingual side of the lower anterior so that the stress transfer to the adjacent teeth are as less as possible and the esthetics will also be maintained).

The procedure that was followed for Maryland bridge is as follows: [FIG 3,4 and 5]

Tooth preparation was done from mesial contact point to distal contact point leaving 1mm tooth structure in incisal region so as to protect the incisal translucency and gingival region in order to maintain periodontal health. Supra-gingival chamfer margin was given and the enamel undercut was removed during the margin preparation and same was done in the study conducted by Kara HB et al.⁶ Mesial, lingual and distal planes were created through the distal marginal ridge area to create a chamfer finish line. 0.5mm deep slot was created with the help of tapered carbide bur which was placed slightly lingual to labial termination of the proximal reduction on both the sides. Care was taken in paralleling the proximal grooves to each other and the same was done in study conducted by Brabant et al.⁷ and Marinello et al.⁹ 0.5mm clearance was given for the metal retainer in the maximum intercuspation occlusion and throughout the lateral and protrusive excursive pathway. Enough clearance was given, or else the final restoration may lead to selective enameloplasty or reduction of the opposing teeth. However this is not recommended as it will wear or attride the incisal edges. Then the impression was made with irreversible hydrocolloid and it was poured with type IV dental stone with high strength. The wax pattern was fabricated and it was cast with nickel chromium alloy. The metal was finished and tried in the patients mouth for the accuracy of fit. Now the pontic was build up with porcelain and it was re-evaluated clinically for its fit. When the fit was satisfactory, the porcelain was characterized and glazed same as done in the study conducted by Turker S et al.⁸ On the other hand, the lower teeth were cleaned with pumice and water and acid etched with 37% phosphoric acid for 30 sec, rinsed & dried and air drying was maintained until the primer was applied. The adhesive cement was mixed and applied to the inner surface of the casting and it was seated firmly with gentle pressure. The excess resin cement was removed and the margins were

light cured in same way as in a study conducted by Turker S et al.⁸

FIGURE 1:



FIGURE 2



FIGURE 3



FIGURE 4



FIGURE 5



CONCLUSION:

The patient was evaluated clinically 2 months after the treatment. There was no change in the color as well as no chipping of the Tooth in upper anterior tooth region where the composite veneering was done. In the lower anteriors, the periodontal status was fair, no food lodgement between the teeth were encountered, no breakage and mobility of the resin bonded fixed partial bridge was seen. The patient had no complaints. To conclude, Resin Bonded FPDs can be used successfully in both the anterior and posterior regions of the mouth to replace 1 or 2 missing teeth and also they achieved popularity because of their conservative and non invasive nature. The success rate of prostheses is related to the adhesive system and to the design of tooth preparation for optimum retention and resistance form. The composite veneering material is excellent in terms of wear resistance, but that there is room for improvement in colour stability and veneer surface texture, especially in long-term service.

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