

Componeer : Esthetic correction with Minimal Interventional approach

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Abstract: Cosmetic dentistry is generally used to refer to any dental work that improves the appearance (though not necessarily the functionality) of teeth, gums and/or bite. It primarily focuses on improving dental aesthetics in color, position, shape, size, alignment and overall smile appearance.

Veneering is a minimally invasive restorative procedure for anterior teeth where buccal surface of tooth is involved and clinical need is mainly about improving the esthetics. This technique was introduced by Dr. Pincus as early as 1937 (1). Veneering can be done by ceramics or by composites.

Componeer is a preformed composite laminate with high gloss buccal surface for patients where esthetic correction is required for anterior teeth. It combines the skill of the operating dentist and preformed art thus reducing the chaos of tooth build up, by sensitively tiring direct composite technique. When a composite is added to the internal surface of the componeer laminate and light cured, it is just as if the two materials were layered freehand on the tooth.

This article describes the steps for componeer placement and two cases where anterior esthetic correction was done using composite laminates.

Keywords: esthetic, veneers, componeer, smile design, spacing.

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I. Introduction

There is an ever increasing demand for better results in anterior esthetic corrections. Recent advances in adhesive dentistry has led to the development of new materials and techniques specifically aimed at improving the esthetic results of anterior teeth.

Veneering is a minimally invasive technique for anterior teeth where there is requirement for esthetic correction of buccal surface. Veneering can be done by ceramic veneers or componeers.

Ceramic veneers provides excellent properties in terms of esthetics, biocompatibility, and wear resistance. The short coming of ceramic veneers are that it is very technique sensitive, requires significant tooth reduction, multi-visit procedure and is costly for general population (2-3).

Componeer veneers (Coltene, whaledent, Altstätten, Switzerland) are preformed composite laminates which has excellent buccal gloss surface, require minimal tooth preparation, is less technique sensitive, single visit procedure and cost effective in contrast to ceramic veneer. Made from nanohybrid composites these are preformed composite shells. These are extremely thin (0.3mm cervically and 0.6mm incisally) veneers, thus requiring minimal tooth preparation and giving a natural look to the teeth. In addition, they have novel inner surface with micro-retentive feature for permanent bond (24MPa). These are easy to finish and can be shaped as per the case requirement without compromising the physical or mechanical properties.

Case selection:

Componeers for anterior teeth can be considered when there is need to correct malpositioned teeth, to close gaps between anterior teeth (midline diastema), to cover discoloured teeth and various other smile designing procedures. Vitality test, radiographical examination, patients dental history should be considered before starting with restorative procedure.

Procedural steps:

1. Size and shade selection:

Most suitable size for the teeth should be selected using compeer countour guide. It consist of 4 size categories that is S,M,X, and XL. Slightly bigger size are selected as it can be trimmed and contoured using trimming disk to match the required teeth contour.

Shade selection is done using compeer synergy D6 shade guide which contains six dentine cores (A1/B1,A2/B2,A3/B3) and two Enamel shells (Bleach opaque and white opalescent shade). Enamel shell is suprimeposed over dentin core and then placed adjacent to teeth for shade selection.



2. Tooth preparation:

Tooth preparation for compeer is minimal upto 0.2 to 0.3 mm depending upon case requirement .

3. Adaptation of the compeer :

Compeer is adapted on the prepared tooth surface and countouring of the tooth is done according to the requirement. Countouring is done using trimming disk on a slow speed handpiece.

4. Application and bonding of compeer over the prepared tooth surface:

The tooth is etched using 37% phosphoric acid for 20 seconds followed by water flushing for 60 second and moist drying the tooth. Bonding agent is applied over the tooth and light cured for 20 second. Bonding agent is also applied over the compeer shell and left uncured. Then the selected shade composite layer is applied over the tooth surface and compeer is adapted over the tooth, excess of composite is removed and light cured cervically and then from incisal and palatal aspects respectively. Finishing and polishing can be done using abrasive strips, Silicon rubber points and flexible aluminium oxide disks(Super-Snap mini kit, SHOFU).



Clinical cases 1:

A 25 year old patient reported to the department of conservative dentistry. Her primary concern was spacing between anterior teeth leading to unpleasant smile. After clinical examination it was found that their was spacing between all the incisors. All treatment options were explained to the patient and it was decided to close the space with compeeners for all four anterior teeth. Size L and shade A2 was selected for this procedure. All the required steps for compeer placement were performed and compeeners were bonded over all four incisors.



Figure 1 : Pre-operative photo



Figure 2: lateral view



Figure 3: minim al tooth preparation



Figure 4: minim al tooth preparation



Figure 5: post operative view

Clinical case 2:

A 21 year old male reported to department of conservative dentistry with complain of spacing between his anterior teeth. Clinical examination revealed peg shaped lateral incisor and diastema with retroclined central incisors. Clinical need was to correct the size of the lateral incisor, to correct the alignment of central incisors and to close the spacing. All the available treatment options were explained to the patient and it was decided to manage the case using componeers. Size L and shade A2 were selected to manage the case. All the required steps were performed and componeers were bonded over tooth 11, 21 and 22.



Figure 6: pre-operative view



Figure 7: pre-operative lateral view



Figure 8: post-operative view



Figure 9: post-operative lateral view



Figure 10: pre-operative smile



Figure 11: post-operative smile

II. Discussion

Clinical studies have confirmed good results of porcelain veneers with excellent esthetics, overall patient satisfaction and no adverse effect on the periodontal tissues when handled properly (4). The primary reason for ceramic veneer failure was fracture of ceramic. In addition it has many disadvantages when compared with componeers of being non-affordable to general population, technique sensitive, multi-visit procedure etc.

Componeer system simplifies direct veneering technique and is an affordable and time saving alternative for patients who are not able to afford the cost of porcelain veneers and also present with many advantages:

- Can satisfy various clinical needs
- It is minimally invasive (5)
- No lab work or impression required
- High quality veneering material used for bonding
- Natural looking, long lasting, highly polished surface gives excellent clinical results (6).
- Can be easily repaired and smile can be refreshed by polishing the veneer surface at any time if required(6).

Outcome of the treatment depends upon the bond strength of two interfaces: the tooth/resin cement and the veneer/resin cement interfaces. A recent bond strength study reported that componeer microshear bond strength is statistically similar to those of etched IPS E maxpress (7). Further investigation are needed to determine the longevity of this new treatment modality with long term follow up to report that no failure of the restoration.

III. Conclusion

On the basis of the results, it can be concluded that componeer can be a better dentist armamentaria for anterior veneering cases when all the steps are properly followed starting with case selection. It can help resolve any anterior aesthetic problem in single visit, thus reducing the stress of multivisit procedure for the patients.

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