

CASE REPORT

Porcelain Laminate Veneers – An Esthetic Bond: A Case Report

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Abstract

The print and electronic media is bombarded with models exhibiting perfect smiles. People are giving a lot of importance to the red and white aesthetics i.e., the teeth and the gums. Multiple options are available to treat the problems arising in the highly aesthetic zone. The use of porcelain laminates veneers to solve aesthetic and/or functional problems has been shown to be a valid management option especially in the anterior aesthetic zone. This Case report discusses a patient having diastema in the anterior region with discoloured and chipped off old composite restorations. The patient was treated with porcelain laminate veneers in the maxillary arch for the same.

Key words: Aesthetic dentistry, Conservative preparation, Diastema closure, Laminated ceramic veneers.

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Introduction

The print and electronic media is bombarded with models exhibiting perfect smiles. Confidence is an important aspect of one's personality and a confident smile makes the picture complete. People are giving an increasing importance to the red and white aesthetics.

Advancements in the field of cosmetic and aesthetic dentistry have provided the dental professionals with new opportunities in conservative and aesthetic restorative procedures. There are various ways to treat cosmetic dental problems depending upon the problem per se. Diastema, tooth size discrepancy, discolorations, staining, fractures in teeth, endodontic treatment, and smile designing are some of the reasons for which patient seek aesthetic dental treatment.

For many years, the most predictable and durable aesthetic restoration of anterior teeth has been achieved with full-coverage crowns. Because this approach requires the removal of substantial amounts of tooth structure, it is more invasive. The use of porcelain laminate veneers to solve aesthetic and/or functional problems has been shown to be a great treatment option¹⁻⁵.

The techniques and the materials employed to fabricate porcelain laminate veneers offer satisfactory, predictable and lasting results⁴. Porcelain laminate veneers are popular because tooth preparation is conservative and the restorations are aesthetic. More ever they behave similarly to natural teeth in terms of strain and stress transference.^{4,6,7} This case report focuses on a multiple diastema closure by using porcelain laminate veneers.

Case Report

A 26 year old female patient reported at my private clinic at Seawoods, Navi Mumbai with a chief complaint of discoloured anterior teeth and gaps between the teeth. The patient was unhappy with the appearance of her teeth and restrained herself from smiling due to self consciousness. On examination, diastemas were found in her maxillary anterior region, she had discolored composite restoration in her central incisors and anterior deep bite. Thorough examination and case history recording revealed that the patient had undergone composite restoration on her maxillary incisors which got discoloured and chipped off (Figure- 1). On diagnosing the case a treatment plan was formulated and options were suggested. The

patient consented to the treatment of maxillary teeth correction with Porcelain Laminate Veneer.

Figure 1: Diastema and discolored composite restorations (Pre-treatment)



The treatment was to be carried out as follows;

Pre-prosthetic phase: Removing all old composite restorations, thorough scaling and polishing.

Prosthetic phase: Impressions for diagnostic wax-up in order for the patient and the operator to know the final outcome of the treatment and preparation for laminates.

Procedure:

After the pre-prosthetic phase, diagnostic impressions were made in irreversible hydrocolloid (Septodont, USA). The models were studied and a diagnostic wax up was carried out (Figure- 2). The wax-up was shown to the patient and the patient accepted and consented to the prescribed option.

Figure 2: Diagnostic wax up



Before carrying out the tooth preparation for laminates Shade selection was carried out using Vitapan Classical shade guide (VitaZahnfabrik, Germany). The 6 maxillary anterior teeth were then prepared to receive porcelain laminate veneers. Tooth preparation was kept in enamel at a depth of 0.5mm using a depth cutting diamond and a tapered diamond 1 mm in

diameter. 0.25 mm chamfer was maintained in the cervical region finish lines were kept at the level of gingival margin.

The length of the maxillary central incisors was adjusted corresponding to the aesthetic plane. Mesial reduction was kept at a minimum in the maxillary right lateral incisor and more of reduction on the distal side was done in order to compensate for the diastema. The incisal chamfer was extended palatally as little increase in height was desirable. The centric stops were carefully avoided during preparing the palatal finish line. The proximal preparation was extended beyond the contact area to avoid visibility of the tooth restoration junction (Figure- 3).

Figure- 3: Tooth preparation for Porcelain Veneers



Provisional restorations were not required as the tooth reduction was minimal and restricted to enamel. The porcelain laminates were fabricated and were tried in for shade, fit, marginal adaptation, shape, size, symmetry and contacts. Patient's approval was obtained at the time of try-in.

The cementation appointment: Was carried out as laminate preparation and tooth preparation for cementation. Dual cure composite crown and bridge luting agent (Duolink, Bisco, USA) was to be used for cementation.

Laminate Preparation: The laminates were arranged denoting the position of the tooth in the arch to avoid incorrect placement and inadvertent breakage. The laminates were treated as per the instructions for cementation.

Tooth preparations The procedure for cementation was performed on two teeth at a time starting from the midline. The prepared teeth were also treated according to the

cementation instructions. The laminates were spot cured for 5 seconds initially. Excess cement was removed with explorer and then complete curing was done for 20 seconds. On completion of the cementation procedure, the occlusion was checked in centric and eccentric positions for interferences. The high points were removed and polished.

Figure- 4: Intraoral post treatment



Figure- 5: Extra oral pre treatment



Figure- 6: Extra oral post treatment



Discussion

The aetiology of diastema may be attributed to:

1. Hereditary- congenitally missing teeth, tooth and jaw size discrepancy, supernumerary teeth and fraenum attachments

2. Developmental problems- habits, periodontal disease, tooth loss, posterior bite collapse

Treatment planning for diastema correction⁷ include orthodontic closure, restorative therapy, surgical correction or multidisciplinary approach depending upon the cause. The restorative closure of diastema can be achieved by using any of the techniques mentioned; direct composite veneers, indirect composite veneers, porcelain laminate veneers, all ceramic crowns, metal ceramic crowns and composite crowns⁸. Smaller diastema can be closed with hybrid resins, composite resin are easy to use, but offer less wear resistance and surface staining. Besides, failure of the same prompted the patient to opt for porcelain laminates in this case. The highly glazed surface of the porcelain laminates prevents plaque accumulation, and provided a life like appearance.⁹⁻¹² However, porcelain laminates have their own limitations too.

Conclusion

Bonded porcelain veneers can provide successful aesthetic and functional long-term service for patients with diastema. Bonded porcelain veneers have a number of significant advantages over metal-ceramic or all-ceramic crowns. One of the most important advantages is that they are extremely conservative in terms of tooth structure reduction.

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