Minimum Preperation Porcelain Laminate Veneers- A Clinical Report

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Abstract: Minimum preparation ceramic laminate veneers is a newer form of porcelain veneer which is as thin as contact lens and bond to the teeth with very little, if any, preparation. With traditional veneers, a portion of enamel has to be removed to allow the placement of the veneer. But since minimum preparation veneers are exceptionally thin, very little, if any, tooth structure needs to be removed in order for the veneers to be placed on the surface of the teeth. This helps to preserve the remaining tooth structure as well.

I. Introduction

Restorative dentistry has reached a new era with the help of adhesive technologies where both conservative tooth preparation and excellent aesthetics outcome are possible. Aesthetic veneers in ceramic materials demonstrate excellent clinical performance . As materials and techniques evolved, veneers have become one of the predictable, aesthetic, and least invasive modalities of treatment¹. For a long time, the material of choice for cosmetic and conservative procedures was composite resin. Porcelain greatly mimics the natural structure of dental elements and is a good option to overcome the various deficiencies of composite resin². Porcelain veneers can be used as a solution for esthetic problems requiring modifications in relation to tooth color, shape, contour, size, volume, and positioning³. Porcelain veneers can be made in various degrees of translucencies to mimic the natural tooth structure, resulting in satisfactory esthetic results⁴

Minimum preparation porcelain laminates are a newer form of porcelain veneer that are as thin as contact lens and bond to the teeth with very little, if any, preparation. With traditional veneers, a portion of enamel has to be removed to allow for the placement of the veneer. But since minimum preparation veneers are exceptionally thin, very little, if any, tooth structure needs to be removed in order for the veneers to be placed on the surface of the teeth. Various studies about non prep/minimum preparation veneers like the one by "Strassler and Weiner^{5,6,7} reported long term follow up for periods ranging from 7 to 20 years. Measurements were made for color stability, marginal integrity, and marginal discoloration. In all of the cited studies, the outcomes were in favour of no prep/minimum preparation veneers.

Advantages Of No Preperation/Minimum Preperation Ceramic Laminates

- 1. They can be placed on the teeth with no/minimum removal of the enamel. No local anesthesia is needed. Anyone who is afraid of needles or has a low pain threshold will appreciate this advantage. 8
- 2. Minimum preparation ceramic laminate bond directly to the tooth, making the bond very strong and durable.
- 3. This is a reversible procedure so it can be replaced with conventional veneers /crown at any time in future.
- 4. They are usually less costly than traditional veneers.

Disadvantages Of No/ Minimum Preparation Ceramic Veneers

- 1. Because there is very little or no tooth preparation, a small bump is likely to develop between the veneers and the gum. This doesn't happen when traditional veneers are used. The bump may create an irritation to the gum, and may increase the chances for staining and tooth decay
- 2. Not possible to achieve the desired shape just by addition of ceramic since there is only minimum tooth preparation
- 3. The minimum / no preparation veneers cannot mask colour alteration of more than two tones above the $scale^{10}$
- **4.** Pigmentation in margin area and loss of marginal integrity were cited as rare complication after 5 years of use⁹
- 5. Not possible on teeth which are structurally not intact
- **6.** Not possible in teeth with decay
- 7. Not indicated if existing restoration is weak.
- 8. Gingiva should be healthy. Bleeding from the gums will interfere with the bonding procedure.

- **9.** Not indicated if gingival recession is present
- 10. Not indicated if oral hygiene is not good

Indications

- 1. Teeth having cracks and chips
- 2. Slight discolorations and stains.
- **3.** Uneven spacing between teeth.
- **4.** Oddly shaped or pointy teeth.
- **5.** Mild malalignment.
- **6.** Minor crowding
- 7. Slightly worn down teeth.
- 8. Small teeth

II. Case Report

A patient reported in the Dept of Prosthodontics, Govt Dental College, Trivandrum with complaint of discoloration of maxillary anterior teeth. On examination there was mild discoloration of maxillary anterior teeth .But teeth were healthy and caries free . Periodontium was healthy .FIGURE 1 shows the pre operative frontal view of the patient and FIGURE 2 shows the lateral view .Since the teeth and gingiva were healthy and the discolouration was minimum , minimum preparation ceramic laminate veneers were prefered over traditional veneers. Minimum tooth preperation was needed for this patient to provide extra translucency and aesthetic . Appropriate shade selection was done in natural day light FIGURE 3 . Impression was made and FIGURE4 and cast was poured for minimum preparation ceramic laminate fabrication.FIGURE 5 shows upper six minimum preparation veneers. Minimum preparation veneers are really thin and they should be handled carefully as they can break easily. Acid etching of the teeth was done, bonding agent was applied and minimum preparation veneers were cured with plasma arc curing lamp .FIGURE 6 shows the post operative view of the patient .



Figure 1 Pre Operative Front View Of Patient



Figure 2 Pre Operative Side View Of Patient



Figure3: Shade selection done for appropriate veneer fabrication



Figure4: Alginate impression of maxillary arch

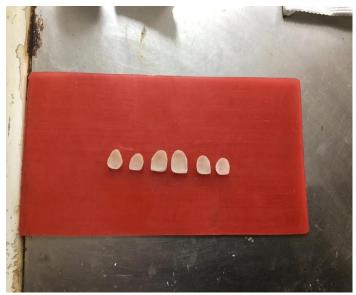


Figure 5 Fabricated minimum preparation veneers of anterior six teeth

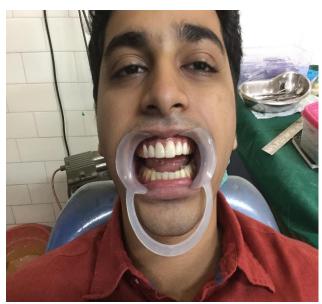


Figure 6 Post operative view of patient

III. Conclusion

Minimum preparation ceramic laminate veneers work just like traditional veneers. They are much more thin. They do not require more enamel reduction like conventional veneers . They very well fullfill the principle of preservation of tooth structure . Minimum preparation ceramic laminate veneers can be replaced with conventional veneers or crowns at any time , making them a very flexible treatment option. But selection of case, clinical skill of the operator and precision of lab work are very critical.

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