

Minimum Preperation Porcelain Laminate Veneers- A Clinical Report

Dr. Prasanth V¹, Dr. Sijin Sivankutty², Dr. Harshakumar³

¹Associate Professor Department Of Prosthodontics Government Dental College Trivandrum

²Ind Year Mds Department Of Prosthodontics Government Dental College Trivandrum

³Head Of Department Department Of Prosthodontics Government Dental College Trivandrum

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 Preparation/Minimum Preparation 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 scale¹⁰
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 preferred over traditional veneers. Minimum tooth preparation 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 fulfill 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.

References

- [1]. Radz GM. Minimum thickness anterior porcelain restorations. *Dent Clin North Am.* 2011;55(2):353–370
- [2]. E. A. McLaren and Y. Y. Whiteman, “Ceramics: rationale for material selection,” *Compendium of Continuing Education in Dentistry*, vol. 31, no. 9, pp. 666–668, 670, 672, 680, 700, 2010
- [3]. Strassler HE (2007) Minimally invasive porcelain veneers: Indications for a conservative esthetic dentistry treatment modality *General Dentistry* 55(7) 686-694; quiz 695-686, 712
- [4]. Magne P, & Belser UC (2004) Novel porcelain laminate preparation approach driven by a diagnostic mock-up *Journal of Esthetic and Restorative Dentistry* 16(1) 7-16; discussion 17-18
- [5]. H.E. Strassler and S. Weiner, Seven to Ten Year Clinical Evaluation of Etched Porcelain Veneers, *J Dent Res*, 74(Sp Issue):176, (Abst 1316), 1995.
- [6]. H.E. Strassler and S. Weiner, Long Term Clinical Evaluation of Etched Porcelain Veneers, *J Dent Res*, 77(Sp Issue A):233, (Abst 1017), 1998.
- [7]. H.E. Strassler and S. Weiner, Long Term Clinical Evaluation of Etched Porcelain Veneers, *J Dent Res*, 80(Sp Issue AADR):60,
- [8]. *Dental Advisor*, LUMINEERS BY CERINATE, 22(4):16, May 05
- [9]. H. P. Petridis, A. Zekeridou, M. Malliari, D. Tortopidis, and P. Koidis, “Survival of ceramic veneers made of different materials after a minimum follow-up period of five years: a systematic review and meta-analysis,” *The European Journal of Esthetic Dentistry*, vol. 7, no. 2, pp. 138–152, 2012.
- [10]. B. T. Rotoli, D. A. N. L. Lima, N. P. Pini, F. H. B. Aguiar, G. D. S. Pereira, and L. A. M. S. Paulillo, “Porcelain veneers as an alternative for esthetic treatment: clinical report,” *Operative Dentistry*, vol. 38, no. 5, pp. 459–466, 2013.