

All Ceramic Veneers- A Case Report

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Abstract

The challenge to copy nature and at the same time to maintain oral harmony is a complex theme in the field of anterior tooth restoration. The know how about the synthesis of form, function and superficial structure and the color finish of the natural teeth, together form the basis of aesthetic restorations. Metal free restorations have a strong ceramic core onto which layering ceramic is applied to achieve natural appearance. These have unique light optic relation feature that facilitates the reproduction of natural teeth. This article presents a case report in which teeth discolored due to tetracycline staining were aesthetically managed by all ceramic veneers.

INTRODUCTION

Although porcelain veneers date back to the Hollywood days of Dr Charles Pincus¹ the etched porcelain veneer only became available to the profession in the early 1980s². Since then, improvements in preparation design, cements, and porcelain materials have made the porcelain veneer one of the finest restorations available today^{3,4}.

Veneer/laminate bonding is indicated for a combination of mild to moderate anomalies of color, position, and form of the teeth⁵. In heavily discolored teeth, to mask dark discolorations, the veneer had to be made from a very opaque porcelain. This opacity could mask the discoloration but resulted in a lifeless tooth. The more translucent the veneer, the better the aesthetic outcome, but poorer the masking ability⁶. If the esthetic problem is limited to contour, cosmetic reshaping of the teeth might suffice; if limited to color or staining, consider bleaching⁵. In other situations, bleaching prior to veneer placement is an adjunct to a successful veneer outcome⁷. If the problem is localized to a specific portion of the tooth consider a composite restoration. Teeth without sufficient enamel for bonding and/or with moderate to severe loss of coronal structures are crowned⁵.

INDICATIONS FOR PORCELAIN LAMINATES

Diastema, fractures, stained/defective restorations, discolorations/Staining of teeth - extrinsic/intrinsic, attrition, root exposure, erosion/abrasion of teeth, slight malpositioning of teeth, malformation of teeth, situations where metal ceramic crowns are difficult -large adolescent

pulp, mandibular incisors, occlusal limitations⁵.

CASE REPORT

A 24 years old female patient visited the dental office with the complaint of discolored maxillary anterior teeth. Her teeth had got discolored in childhood due to tetracycline administered during illness at a very young age. The stains were intrinsic in nature. The patient had got bleaching done earlier but was not happy with the results. So we decided for porcelain laminates for the maxillary anterior teeth.

TOOTH PREPARATION FOR PORCELAIN VENEERS

The tooth reduction involved placement of multiple depth wells or horizontal grooves prepared with round diamond burs positioned so that limiting shank is laid parallel against the enamel.

Bur depth wells were placed at the gingival in the mesiodistal center, at both proximal angles. Three more were placed in the midincisogingival surface.

Incisal reduction was required as the incisal thickness was not enough to support the veneer, so a half round bur⁹ [0.07 mm] was used to notch the incisal edge in 3 parallel positions.

Anesthesia was required, although preparation was confined to enamel. The patient was having sensitivity as the preparation approached gingiva, enamel became thinner and tissue retraction was required to dilate the intracrevicular space to observe the CEJ and to avoid laceration of gingiva.

Gingival chamfer was placed at the height of gingival crest using a coarse tapered diamond bur. The margin was made to continue into the interproximal areas to the height of labiopalatal contours to avoid display of cement lines. Incisal preparation was modified to get incisal wrap as the incisal thickness was too thin to support the veneer. Facial surface was uniformly reduced with the fine diamond bur to the peripheral margins and labial depth guides. The preparation was progressively refined and polished to remove contour irregularities, internal line angles, and bur striations to minimize stress to thin porcelain veneer. The natural lusture was maintained so temporization was not required.

IMPRESSION

The impression was recorded using elastomeric impression [rubber base impression] material using a combination of putty and light body for the reproduction of finer details.

TRY IN OF THE PORCELAIN VENEERS

The fabricated laminates were examined for fracture and excessive thickness. Colour accuracy was verified. The preparation and inter proximal embrasures were cleaned. Each veneer was trial seated with the help of glycerine and checked for colour, fit and placed simultaneously to check for displacement from bulky proximal contacts. Excess proximal contacts were relieved using abrasive polishing wheels. Using a neutral composite shade under the laminate color was Checked and confirmed.

BONDING OF PORCELAIN VENEERS

TOOTH PREPARATION

The prepared tooth surface was etched using 37% phosphoric acid for 45 seconds. Enamel-dentine bonding agent was applied on the etched tooth surface.

VENEER PREPARATION

Etching -using hydroflouric acid the under surface of laminates were etched for a minute.

The laminates were placed in a padded ultrasonic cleaner with the solution of acetone and alcohol to remove contaminates. They were then rinsed dried and arranged in left and right contralateral pairs, beginning with the centrals. A thin layer of silane coupling agent was brushed on the etched laminate surface and air dried for 1 minute, then a thin layer of light-cure enamel -dentine bonding agent was applied but not cured.

Then the laminates were uniformly loaded with low

viscosity/flowable composite resin and placed on the tooth surface ready for bonding first facially then pressure was applied gingivally because of presence of lingual wrap at the incisal edge for complete seating. The excess was removed from the proximal margins while maintaining the steady finger pressure. Then the laminates were cured first for 20 seconds, then the excess composite was removed again and then the entire laminate was cured for 1.5 to 2 minutes.

Figure 1



DISCUSSION

Tetracycline -stained teeth are particularly difficult to bleach, and lightening can require 4 to 12 months of nightly treatment. 8 to 11 Internal tooth staining and discoloration can be managed better by ceramic veneers where bleaching is ineffective. Porcelain veneers are stain resistant, patient does not need to worry about change in color over years because of smooth surface. Any stain that occurs can be easily removed. They can be used in lieu of minor orthodontic treatment to correct minor rotations, gaps, malalignments. Porcelain like enamel allows light to penetrate through it until it reaches the dentine from where it is reflected back out this has better esthetics than composites. These veneers can mask extremely discoloured teeth from older fillings and root canals which cannot be done by composite bonding or any technique⁵.

CONCLUSION

Porcelain veneers are excellent means of meeting the esthetic demands of the patient without compromising and disturbing the function. These preparations are less stressful for the patients. They usually do not require the use of anesthesia. They usually involve just enamel so, pulpal sensitivity is not a problem. Natural contacts are maintained. There is no compression of interproximal gingiva. They eliminate the metal collar and gingival metal display as in case of metal ceramic crowns.

With the disadvantage being that quality of laminates depends on laboratory expertise. They are extremely difficult to repair in case of fracture.

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