



## INTERNATIONAL JOURNAL OF PEDIATRIC NURSING

Journal homepage: [www.mcmed.us/journal/ijpn](http://www.mcmed.us/journal/ijpn)



### A CASE REPORT ON PORCELAIN LAMINATE VENEER ON A HIGHLY DISCOLORED TOOTH

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#### Article Info

Received 25/02/2014

Revised 15/03/2014

Accepted 29/03/2014

#### Key words:

Dental Ceramic,  
Porcelain, Laminated  
Veneer, Bleaching etc.

#### ABSTRACT

Porcelain Laminate Veneer is used widely around the world for esthetic correction for discolored and damaged tooth structures. Esthetic treatment of a single darkened tooth represents a great challenge to the dental practitioner as restoring to its formal structure and form is very difficult. Dental ceramic possesses many properties like colour stability, mechanical strength, clinical longevity, esthetic appearance and compatibility with periodontal tissues that makes this material a good choice for such a treatment. A case of restoration of a single highly darkened anterior tooth with a feldspathic porcelain veneer is reported. The patient was very satisfied with the result and had no complaints in the follow-ups.

#### INTRODUCTION

For esthetic corrections of discolored and damaged tooth structures, Porcelain Laminate Veneer is nowadays used widely throughout the world [1, 2]. Esthetic treatment of a single discolored anterior tooth presents a challenge to dentist. Laminates are the second most used material of choice for treating discolored tooth after bleaching as it can also mask or reduce the discoloration and can reproduce the characteristics of the tooth structure [3]. The biomimetic characteristics of ceramic laminate veneers allow them to behave similarly to natural teeth in terms of strain and stress transference [4, 5]. The article presents a restoration of a single highly discolored anterior tooth with a feldspathic porcelain veneer.

#### CASE REPORT

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A 37 year old female complained about the darkness of her mandibular central incisor. The severe discoloration and the position of the tooth more labially limited esthetic resolution using direct and conservative techniques like dental bleaching and restoration with composite resin veneer. So a porcelain laminate veneer was chosen to correct position and colour mismatch.

#### METHOD

The reason for tooth discoloration was previous endodontic treatment of the tooth and filling of cement inside the pulp chamber. The pulp was restored accordingly to correct it.

A round diamond bur was used to determine the margin of the cervical region of the tooth while the two vertical depth-orientation grooves were made using a tapered round-ended diamond bur. The depth of the grooves was used as a guide for the reduction of labial surface. The distal half of the labial surface was further reduced to correct the position of the tooth. A thin diamond bur was used to prepare the proximal surface.

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Around 2-3 mm of the incisal edge was also removed.

The incisal finishing line consisted of a palatal chamfer margin. The preparation margins were finished with diamond burs to form a gingival chamfer. The first impression of the prepared tooth was made with silicone putty on a stock tray and after the final impression was made, a temporary restoration was fabricated using a composite resin to protect dental tissues and reestablish tooth shape. The veneer was fabricated with a feldspathic porcelain material based on a refractory die system, following the manufacturer's recommendations.

Luting was performed after carefully checking the proximal contacts, shade match, contour and marginal adaptation. After cleaning, the tooth surface was etched for 20 seconds with 37% phosphoric acid then rinsed for 20 seconds. Excess water was removed with absorbent paper and an adhesive system was applied to the prepared surface. At the same time, the ceramic veneer was etched for 2 minutes with 10% hydrofluoric acid washed with water and dried. A silane agent was mixed and applied to the internal surface of the veneer. Finally dual cement was placed on the internal veneer surface and the veneer was placed on the prepared tooth and pressed lightly with the fingers. The veneer was covered with a glycerin gel as an oxygen barrier to ensure better polymerization of the resin cement and then light polymerization was carried out on both surfaces for 120 seconds. After the margins were finished and polished, occlusion was checked. No post operative complication was there.

## DISCUSSION

A veneer is a thin layer of restorative material

placed over a tooth surface either to improve the aesthetics of a tooth or to protect a damaged tooth surface [6]. Composite and dental porcelain are two main types of material used to fabricate a veneer. A composite veneer may be directly placed or indirectly fabricated by a dental technician in a dental laboratory. In contrast, a porcelain veneer may only be indirectly fabricated. The use of veneers for instant orthodontics or simulated straightening of the teeth is harmful, especially for younger people with healthy teeth so it is contraindicated in these cases. Veneers are an important tool for the cosmetic dentist and are becoming very much popular nowadays [7, 8]. Many people have small teeth resulting in spaces that may not be easily closed by orthodontics and some have worn away the edges of their teeth resulting in a prematurely aged appearance, while others may have mal-positioned teeth that appear crooked [9]. So for such cases, multiple veneering systems can be used. Such treatment provides a uniform color, shape and symmetry and makes the teeth appear straight and healthy [10].

## CONCLUSION

Veneering can be done either directly or indirectly depending on the case and dentists skill. Porcelain veneers are very much useful to dentist and help in the management of esthetic problems while minimizing dental tissue reduction. These are good looking in appearance and also cover up for the damaged or discolored tooth. They require the dentist to pay close attention to detail throughout the whole clinical procedure thereby giving good result.



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