

ESTHETIC REHABILITATION OF PATIENT USING PORCELAIN VENEERS: A SERIES OF 3 CASE REPORTS

1. Dr.Ashishkumar Rathod,

Post graduate student,

Dept.of Prosthodontics,

Bharati Vidyapeeth Deemed University Dental College

Pune.

2. Dr.Prachi Bhatia

Post graduate student,

Dept.of Prosthodontics,

Bharati Vidyapeeth Deemed University Dental College,

Pune.

3. Dr. N. Vasantha Vijayaraghavan. M.D.S

Associate Professor,

Dept.of Prosthodontics,

Bharati Vidyapeeth Deemed University Dental College,

Pune.

4. Dr.Divya Prakash,

Consultant Prosthodontist,

Private Practice,

Pune.

Corresponding Author: Dr.Ashishkumar Rathod

Rathod537@gmail.com

ABSTRACT

Porcelain Veneers have become an essential treatment modality today for esthetic problems of teeth. It is used in treatment of fractured, malposed teeth, teeth with diastema, discoloured or pitted teeth. Porcelain Veneers are a conservative treatment modality but proper case selection is mandatory for successful outcome of the restoration. In this article three different case reports have been described with diastema, peg laterals and discoloured anteriors and use of porcelain veneers for their restoration.

Key words: Porcelain, veneers, diastema, discoloured teeth, peg laterals

INTRODUCTION

Initially the most durable restoration for unesthetic anterior teeth was full coverage crowns which removed substantial amount of tooth structure. Following the introduction of bonding by Buonocore in 1955, research led to the development of conservative adhesive techniques to treat aesthetic problems.¹ Composite resin can also be used to improve tooth appearance and position but their major drawback is discolouration and polymerization shrinkage.

Due to these shortcomings of Composite resin, Porcelain Veneers came as esthetic restoration for anterior teeth. Advances in

bonding techniques have made veneers as an alternative to full coverage crowns.^{2,7}

Case Report I

A 36 years old male patient reported to the Department of Prosthodontics, Bharati Vidyapeeth Dental College and Hospital, Pune with the chief complaint of spaces between the teeth and their unesthetic appearance. There was no relevant medical or dental history. On intraoral examination it was found that there was midline diastema with slight labial tilt in 11 and 21 were found. Also there was space between 22 and 23.

Three treatment options were given to the patient: porcelain veneer, composite restoration and full veneer crown. The treatment option chosen was porcelain veneer from canine to canine.

Scaling was done before the treatment (Figure 1(a) and 1(b)). Shade selection (VITA classical) was done before the tooth preparation. After thorough examination impressions for the diagnostic model were made with alginate (Heraplast, Heraeus Kulzer, USA). The impression was poured in dental stone. On this model a diagnostic waxup was done to access the final outcome of the restoration (Figure 2). Incisal overlap preparation was chosen. Depth orientation groove of 0.3mm and 0.5 mm on the gingival and incisal half respectively. The structure in between the grooves was removed with round tapered diamond and a chamfer supragingival finish line was given. Mesially the finish line extended beyond the contact area and distally it was terminated facial to the contact area (Figure 3). The lingual finish line was placed with a round end tapered diamond, approximately one fourth the way down the lingual surface connecting the two proximal finish lines. The finish line should be minimum 1mm

away from centric contacts. After the preparation was done retraction was done with retraction cord soaked in viscostat.(Figure 4) impression was made with two stage putty wash reline technique.(Figure 5).

The impression was send to the lab for fabrication of porcelain veneers (IPS – e. max) (Figure 6 a). Once the veneers were fabricated the patient was recalled for trial of the prosthesis. The esthetics and fit were verified in the mouth. After the verification was done the veneers were removed from the mouth and dried. The inner side of porcelain veneer was etched with 5% hydrofluoric acid (IPS Ceramic etching gel) for 20 seconds, washed under running water and dried. After this a bonding agent is applied and light cured. The prepared teeth were etched with 37% phosphoric acid etchant gel for 30 seconds. After that the bonding agent is applied (PRIME N BOND, DENTSPLY). Dual cure resin cement (RELYX U 200) was dispensed with a clicker dispenser, mixed and applied on the veneers. The veneers are seated in position and excess cement is removed with a probe and light cured. Excess cement is also removed after initial set (Figure 6 b) ⁸.

Case Report II

A 20 year old female patient reported to the Department of Prosthodontics, Bharati Vidyapeeth dental college and hospital, Pune. Her chief complaint was spaces between the teeth and unesthetic smile (Figure 7, 8a and 8b). She had no relevant medical history. The treatment plan was discussed with the patient as above. It was decided to place porcelain veneers for the peg laterals. Procedure was carried out as above. (Figure 9a and 9b, 10, 11)

Case Report III

A patient reported to the Department of Prosthodontics, Bharati Vidyapeeth Dental College and hospital, Pune with a chief complaint of stains in the teeth. Intraoral examination revealed intrinsic stains and were due to generalized enamel hypoplasia and fluorosis (Figure 12). Also the both the maxillary canine teeth were deciduous. The treatment plan was discussed with the patient as above and porcelain veneers were decided for the treatment option from 12 to 22. Tooth preparation for veneers was done as case I (Figure 13). After that veneer

cementation was done similar to above case (Figure 14).

DISCUSSION

Treatment planning for diastema correction includes orthodontic closure, restorative therapy, surgical correction or multidisciplinary approach depending upon the cause of diastema. The position of the gingiva as related to recession was monitored. 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.^{3, 12.}

Small diastema (1mm- 1.5mm) can be closed with composite resin. Advantages of using composite resin are ease of use, less costly and less time consuming. Disadvantages include less wear resistance and surface staining as compared to dental porcelain veneers⁴. Porcelain veneers is a conservative restorative option for teeth in esthetic zone as compared to a full ceramic crown.

Porcelain veneers provide adequate colour match and translucency to natural tooth. Modern ceramic materials sintered feldspathic porcelain and pressable ceramic, which can be also, be used milled using a computer-aided manufacturing technique⁵ and conservative treatment modality have made veneers a good option for restoring esthetic areas. Uses of porcelain veneers include diastema closure, fractured teeth, stained and unesthetic appearance of teeth. Incisal overlap preparation provides resistance form to the preparation and also increases the surface area. Therefore this preparation was chosen for all the cases. Etching of the veneer with hydrofluoric acid was done to increase the surface area for bonding⁶. The depth of preparation was more than 0.8- 0.9 mm in the middle third of the tooth therefore dual cure resin was used for cementation.

Antibiotics and analgesics were given as required^{9, 10} and the healing of the gingival structures were monitored carefully throughout the procedures¹¹.

CONCLUSION

Porcelain veneers are excellent restorations when proper case selection is done. Regular maintenance by the patient should be done. Recall visits after 1 day, 1 week, 1 month and every 6 months should be followed to ensure the longevity of the restoration and prevention of debonding.

REFERENCES

1. Ho Christopher CK, Gobler Brad. Porcelain veneers: Treatment guidelines for optimal aesthetics. Australian Dental Practice. March/april 2011: 154-164
2. Kamble Vaibhav D., Parkhedkar Ramabhau D. Porcelain veneers: Treatment guidelines for optimal aesthetics. Contemporary Clinical Dentistry. Jan-March 2011;4: 124-126
3. Bhoyar A.G. Esthetic Closure of Diastema by Porcelain Laminate Veneers: A Case Report. People's Journal of Scientific Research. Jan 2011; 4: 47-50.
4. Cho GC, Donovan TE, Chee WW: Clinical experiences with bonded

- porcelain laminate veneers. Journal of California Dental Association, 1998; 26:121-127.
5. Peumans M., Meerbeek Van B., Lambrechts P., Vanherle G. Porcelain veneers: a review of the literature. Journal of Dentistry. April 2000; 28: 163–177.
 6. Kurien Biji , Vasunni Gilsa K, Kuruniyan Mohamed S., Correya Bennett A., Vinni T K. Enhancing Smile with Laminate Veneers – A Case Report. IOSR Journal of Dental and Medical Sciences. May 2015; 14:49-53.
 7. Veerakumar R, et al. Caution! We are erupting as twins. Journal of Clinical & Diagnostic Research. 2011; 5(5):1123-1124.
 8. Veerakumar R, Prabhu MN et al. A comparative evaluation of interfacial micromorphology of two adhesive systems in primary and permanent teeth -a SEM evaluation. Indian Journal of Multidisciplinary Dentistry. 2011;1(6), 321 -324.
 9. Priyavadhana P, et al. The role of antibiotics in treatment of chronic Periodontitis". International Journal of Dental Sciences and Research, 2014, 2 (1), 16-18.
 10. Prabhu Manickam Natarajan. Analgesics Used In Periodontal Surgery” International Journal of innovations in Dental Sciences, December 2016, Vol. 1(1), 1-9.
 11. Priyavadhana P, et al. Wound Healing in Periodontics”, Biosciences Biotechnology Research Asia, August 2014. Vol. 11(2), 791-796.
 12. Prabhu MN, et al. Prevalence of Gingival recession among the different races of patients reporting to Penang International Dental College. International Journal of Dental Sciences and Research, 2014, 2(4 A), 1-3.



Figure 1(a): Preoperative view

Figure 1 (b): Preoperative view rt. Side



Figure 4: Gingival Retraction done

Figure 5: Impression of prepared tooth



Figure 2: Diagnostic Mock-up

Figure 3: Tooth preparation for veneers



Figure 6(a): e.Max Veneers

Figure 6 (b): Cemented Veneers



Figure 7: Preoperative frontal view



Figure 8 a: Preoperative left side view

Figure 8 b: Preoperative right side view



Figure 9 a: Tooth preparation on 12

Figure 9 b: Tooth preparation on 22



Figure 10: Post operative view
Figure 11: Post operative view (frontal)



Figure 13: Tooth preparation for veneers form 12 to 22



Figure 14: Post-operative view



Figure 12: Pre operative view