



Case Report

Smile makeover with porcelain laminate veneer: A case report

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ABSTRACT

Pincus is credited for evolution of porcelain veneers. He attached the thin labial porcelain veneers temporarily with denture adhesive powders to improve dental esthetic appearance. Improvement of patient's lost natural dental esthetics have become important goal of discipline of dentistry and credited for wide ranging applications from improving common man's appearance to filmstars. Esthetic problems may be result of interplay of complex factors like color, shape, and structural and position abnormalities of anterior teeth. Laminate veneers are used for purpose of improving esthetic deficiencies and discolorations as well as existing abnormalities.

Successful application of porcelain veneers depends on multiple factors such as the clinical and laboratory steps involved, along with the understanding of the scientific background of procedure.

Conservative and esthetic approaches, such as direct and indirect laminate veneer restorations are most preferred way chosen by dentist across world to improve compromised esthetics of human beings. Technological advancements such as intraoral scanner for impression making have significantly improved the success of prosthesis.

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1. Introduction

Perfect smile is most desired outer characteristics sought by every human being. Through smile people express emotions and feelings and this is important barometer that determine how well a person can function in society. Since, the time of Harappan Civilization perfect smile have been most sought aspects within the society.¹

The restoration of unesthetic anterior teeth has always been a problem because restoration has to be dealt with large amounts of sound teeth structure along with adverse effects on pulp and gingiva.

Laminate veneers are a conservative alternative to full coverage restorations for improving the appearance of

anterior teeth and have evolved over the last several decades to become esthetic dentistry's most popular restoration.² Porcelain veneers are recommended treatment option for the dentist because of esthetic and mechanical qualities and biocompatibility of the porcelain, preservation of the tooth structure, durability and reliability of the treatment and improved strength of bonding.

Color, shape, and structural and position abnormalities of anterior teeth might lead to important esthetic problems for patients. Any restoration should be fabricated using mechanical, biological and aesthetic principles.^{3,4}

In this case report laminate veneer along with intraoral scanner for impression making have been employed to correct existing disabilities, discoloration and structural problems associated with restoration of perfect smile.

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2. Case Report

A 20 year male patient is reported in Career Post Graduate Institute of Dental Sciences with chief complaint of poor esthetic. The patient presented with a fractured canine involving the incisal edge, a G.V. Black's Class IV restoration. (Figure 1) The fracture accounted for 35-40% of the missing tooth structure.

The patient was mainly concerned with his appearance as there was no pain, sensitivity or swelling associated with the concerned tooth. The pulp responded normally to the pulp vitality tests. The clinical and radiographic examination also showed no involvement of pulp and healthy periapical and periodontal tissues. It was classified as an Ellis Class 2 fracture.

During intra oral soft tissue examination marginal inflamed gingiva was found.

Root canal treated teeth wrt 46. (Figure 1)

After discussing all the possible treatment plans, i.e. direct and indirect restorative treatments, composites, veneer and crowns; the patient agreed on a veneer restoration due to the need of fewer clinical sessions, its reparability and mainly for being a conservative treatment option. Intraoral scanner was employed for impression making. The patient was informed, and consent was taken to perform the proposed treatment plan. Prophylaxis was initiated in the region with a prophylactic paste, followed by colour selection.

2.1. Clinical steps

First scaling and polishing was completed. Primary impression was done and cast was retrieved. (Figure 2)

Tentative jaw record was taken with facebow and transferred. (Figure 3)

First the upper left canine teeth is prepared followed by lower right posterior teeth and shade selection was done (Figure 4).

Scanning was performed wrt 23,46 (Figure 5)

Scanned images of maxilla and mandible with Intraoral scanner. (Figure 6)

Smile analysis with digital view. (Figure 7)

Patient smile with prosthesis (Figure 8)

After six months follow-up, patient was satisfied with esthetics and function



Fig. 1: Preoperative photograph showing broken tooth

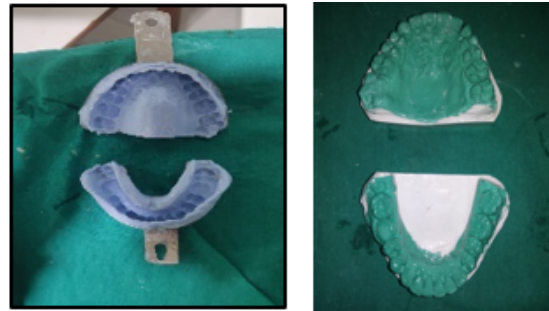


Fig. 2: Primary impression and diagnostic cast

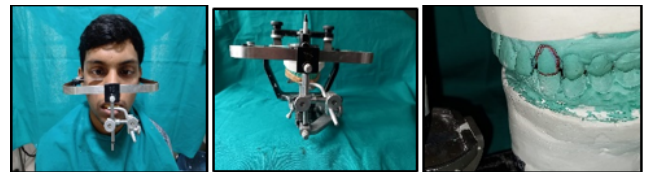


Fig. 3: Facebow record, transfer and diagnostic mounting

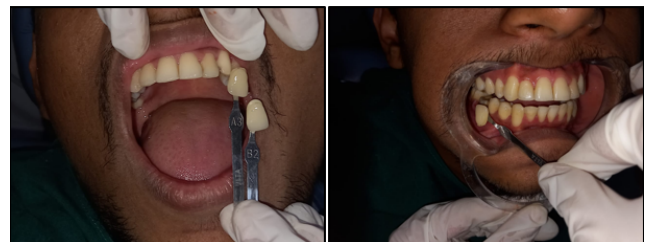


Fig. 4: Tooth preparation wrt 23,46 and shade selection

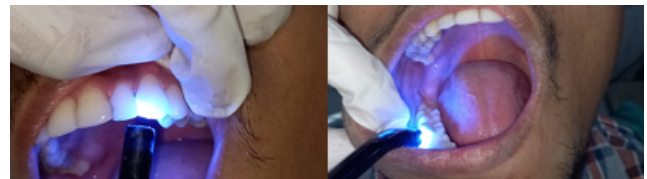


Fig. 5: Intraoral Scanning wrt 23,46

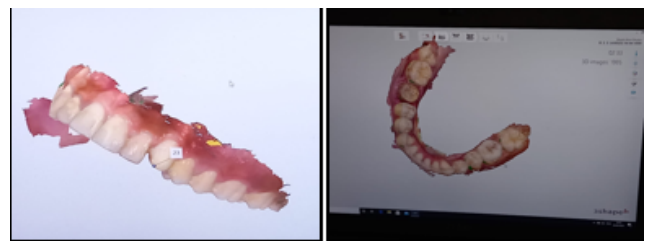


Fig. 6: Scanned images of maxilla and mandible with Intraoral scanner

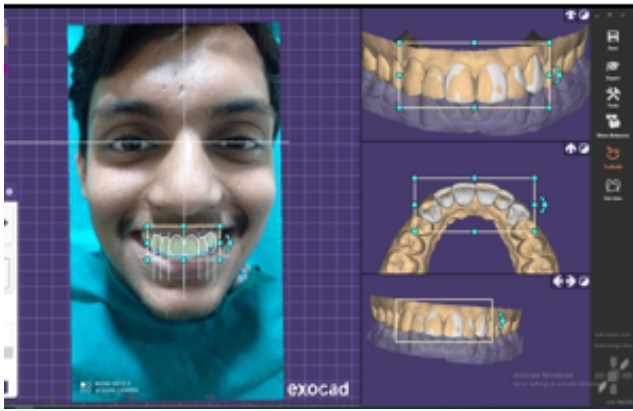


Fig. 7: Digital Smile analysis



Fig. 8: Final Prosthesis with smile

3. Discussion

Laminate veneer restoration is the most preferred treatment method for anterior teeth to improve esthetic appearance. Proper Diagnosis and Treatment planning is very important to make the decision for the condition in which the direct, indirect composite resin and indirect ceramic laminate veneers are chosen for the success of the treatment.

The dentist has to make the decision after a complete review and a correct indication after proper clinical examination. The dentist should also analyze the patient's socioeconomic status, esthetic expenses also.⁵

Impression taking is the most crucial step in prosthesis fabrication since the accuracy of the impression leads to better retention and stability.

In this case report presented current evidence suggesting that all-ceramic restorations have an acceptable clinical longevity that accompanies their long-lasting esthetic advantages. Evidence from many clinical studies suggests that clinicians may choose from any all-ceramic system on the basis of patients' esthetic needs for veneers, intracoronal restorations and full-coverage restorations for single-rooted anterior teeth. Additional clinical factors such as adequate preparation depth and cementation can outweigh materials considerations.⁶

Tooth veneering is a minimally invasive procedure that enables the practitioner to apply biomimetic materials in cosmetic dentistry, finding a balance between ceramic and enamel.

The great majority of restorative procedures violate the balance between enamel and dentin in natural teeth. Unlike these procedures, the use of porcelain laminate veneers offers an excellent combination of hardness, resistance, and resilience.⁷ According with Magne and Belser, a tooth restored with a porcelain laminate veneer that is subjected to posterior-anterior force recovers 89 to 96% of its coronary stiffness when compared with a healthy tooth.⁸

When compared with conventional techniques, optical impressions have comparable accuracy when short span restorations are considered.²⁴ However, with long span restorations, conventional impression techniques are still considered ideal.

Many studies have reported valuable precision (20-48 μm) and trueness (4- 16 μm) of impressions taken by IOS, both in vitro as well as in vivo.²⁵ When IOS was used for full arch impressions for complete denture prosthesis fabrication, a distortion in the impressions have been reported by some studies. With respect to implants, distance and angulation errors are reported with multiple implant prosthesis.⁹

A systematic review has reported that digital impressions provided better margins and internal fit of restorations when compared to conventional impressions.¹⁰

With respect to handling and learning, digital impression techniques are more efficient, comfortable, patient friendly and faster when compared to conventional impression techniques.¹¹

In this case report 6 months follow-up showed good results and esthetics. Patient was fully satisfied with form, function and esthetics.

4. Conclusion

As with most dental treatment, there should not be a "one size fits all" philosophy for veneers. Clinicians need to consider all esthetics options when treatment planning. A thorough clinical examination with esthetic evaluation is important for achieving an acceptable final result.

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6. Conflict of Interest

The authors declare that they have no conflict of interest.

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