

Smile Makeover with Ceramic Veneers: A Case Report

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Abstract

Ceramic veneers are one of the most aesthetic restorations. These are conservative and durable restorations provided correct techniques and indications are followed. This case report describes in detail about the case selection, tooth preparation, laboratory procedures and cementation of veneer through a case of anterior central incisors with severe discoloration. This case required interdisciplinary approach in the form of laser gingivectomy due to presence of un-aesthetic gingival margins.

Keywords: Aesthetic, Veneers, Ceramic, Laser Gingivectomy

Introduction

The aesthetics of anterior teeth has always presented a challenge in clinical practice. With the improvement of

dental materials, many restorative options such as resin composites, all-ceramic crowns, and ceramic veneers have become available. In these circumstances, dentists and patients must choose the best alternative to improve oral condition and aesthetic results

Complex cases with high aesthetic needs represent a challenge for clinicians. A multidisciplinary approach is vital to achieve the planned result. The characteristics of dental ceramics, such as colour stability and mechanical and optical properties make this material a good choice for indirect restorations, especially when optimum function and aesthetics are required.

This clinical report presents a periodontal and restorative solution with minimum thickness glass ceramic veneers for discoloured anterior teeth and un-aesthetic gingival margins.

Case Report

Patient named Farida reported to the OPD in Department of Prosthodontics School Of Dental Science Sharda University with the chief complaint of discoloured anterior teeth.

After thorough clinical and radio graphical examination and based on patients history, Intrinsic tetracycline staining was diagnosed. Patient's overall oral health was found to be satisfactory however gingival zenith with respect to central incisors was un-aesthetic.



Figure 1: Pre Operative Image

Therefore, the patient was referred to the department of periodontology for further correction of un-aesthetic gingival margin. 2% lignocaine local anaesthetic agent was administered in relation to 11, 21 and laser gingivectomy was done using 810 nm diode laser at 2 W power (cutting and pulsating mode).

The gingival margins were levelled in accordance to the gingival margins in relation to 13,23. Curettage was done. No periodontal dressing was provided as the tooth preparation was to be performed in the same appointment. Post laser gingivectomy procedure the patient was sent back to the referral department.



Figure 2: Laser Assisted Gingivectomy



Figure 3: Post Gingivectomy

Tooth preparation was done using #2135diamond bur by slightly grinding the incisal edges of the incisors. Enamel surfaces were then polished with sequential aluminum oxide discs from coarse to ultrafine. The tooth preparation was limited to enamel only.



Figure 4 : Post Preparation

Shade selection was performed using Vita 3D Master shade guide. The impressions were made using a vinyl polysiloxane material (Express XT, 3M ESPE, Seefeld, Germany) following gingival retraction. The custom tray was loaded with the heavy-bodied impression material, while the light-bodied impression materials were simultaneously spread on the teeth.

Ceramic laminate veneer restorations were fabricated with a lithium disilicate-reinforced glass ceramic material in the Lab. The veneers' internal surfaces to be bonded were etched with hydrofluoric acid (IPS Ceramic etching gel) for 20 seconds, washed under running water, dried with an air syringe, A layer of silane coupling agent (Monobond-S, Ivoclar vivadent) was applied on the inner

surface of veneer and gently air dried after one minute. The silanized surface was then coated with a thin layer of bonding agent thinned with air from the air syringe. The resin layer was polymerized with light.

The prepared teeth were etched with 37% phosphoric acid for 30 seconds, rinsed thoroughly and dried. A layer of bonding agent (Adper single bond 3M ESPE USA) was applied on to the tooth surface. A dual cure resin cement (Variolink II, Ivoclar vivadent, Liechtenstein) was used for bonding the veneer to the tooth. Excess cement was removed with an explorer and a microbrush.

A coat of glycerine gel (Liquid strip- Ivoclar Vivadent) was applied along the veneer margins. Occlusion was checked to ensure that no contact existed on tooth-porcelain interfaces. The patient was satisfied with her new emergence and smile.

Post Cementation



Discussion

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

Unlike other procedures, the use of ceramic veneers offers an excellent combination of hardness, resistance, and resilience. According with Magne and Belser , a tooth restored with a ceramic veneer that is subjected to posterior-anterior force recovers 89 to 96% of its coronary stiffness when compared to a healthy tooth[1,2]

In the case of improving aesthetics by changing the form and texture of teeth with no severe discoloration, veneers

of smaller thickness may be indicated. After being informed about advantages and disadvantages of each restorative option, the patient opted for the conservative ceramic veneers of minimum thickness. The long-lasting aesthetics and little preparation of the underlying dental structure were among main reasons for this decision. Thus, in the presented clinical situation, the tooth preparation was restricted to the enamel are biologically acceptable to the body owing to their increased chemical stability, lesser cytotoxicity and reduced risk of causing irritation or sensitivity. These restorations exhibit reduced plaque build-up and its easy removal due to their .

The advantages of using these restorations are they are biologically acceptable to the body owing to their increased chemical stability, lesser cytotoxicity and reduced risk of causing irritation or sensitivity. These restorations exhibit reduced plaque build-up and its easy removal due to their smoothly glazed surface.[3,4,5]

Clinical factors such as remnant/substrate colour, laminate thickness and luting system are known to potentially interfere with the final aesthetic result. The professional may resort to clinical interventions prior to optimizing aesthetic results, as well as promote the use of minimally invasive or conservative techniques.[6,7]

Conclusion

The minimum thickness anterior ceramic laminate veneers may be a conservative and aesthetic alternative to re-establish the form, shape, and colour of anterior teeth, thus enhancing the smile with minimum invasion and not violating the Bio-mechanical principle of tooth preparation.

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