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Case Report

Transforming Smiles with No-Prep Veneers

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Abstract

This clinical case report illustrates the successful rehabilitation of a patient presenting with rotated teeth, diastema, and interdental spacing through the use of minimally invasive adhesive restorations. The treatment strategy involved the application of no-prep veneers to enhance overall dental aesthetics while preserving natural tooth structure.

Keywords: No-Prep Veneers; Dental Aesthetics; Adhesive Restorations; Smile Transformation

Introduction

Aesthetic restoration in dentistry must be carried out as conservatively as possible, selecting the appropriate techniques and materials to meet the patient's aesthetic, structural, and biological requirements. Currently, the use of adhesive technologies allows for the conservation of as much tooth structure as possible, which also ensures the clinical durability of the restoration [1].

Unlike other treatment methods with a long history, such as dentures or bridges, dental veneers are relatively new. They first appeared at the beginning of the 1900s.

In 1928, the film industry in Hollywood was thriving. Recognizing the significant impact of teeth on actors' smiles, self-confidence, and overall appearance, Dr. Charles Pincus, a California-based dentist, pioneered the development of veneers. His innovation gained widespread recognition, particularly among his clientele, which largely consisted of actors. He treated numerous celebrities, finding a way to enhance the brightness and symmetry of their teeth. These veneers were made of acrylic [2]. Later, in the 1930s and 1940s, dentists began to use veneers not only for Hollywood actors but also for ordinary people. The veneers were no longer made of acrylic but of ceramic or composite materials, which were more durable and offered better aesthetics, though they remained a temporary solution.

In 1959, Dr. Michael Buonocore discovered that etching the porcelain surface with acidic solutions and preparing natural teeth created a much better surface for adhesive agents [3]. In 1982, J.R. Calamia and R.J. Simonsen combined the research of Drs. Pincus and Buonocore to create a stronger bond between the tooth surface and porcelain, making cementation truly permanent [4-6].

Today, dental veneers represent a modern and accessible procedure for patients. Considering their durability, longevity, conservative nature, biocompatibility, and aesthetics, veneers have been regarded as one of the most viable treatment methods since their inception [7-9].

Dental veneers are single-unit prosthetic restorations cemented to the visible surface of teeth (on the vestibular surface), particularly the front teeth, to improve their appearance. They are used in restorative or cosmetic treatments to enhance the harmony, color, and shape of teeth, being the most conservative solution for correcting aesthetic issues [10]. Unlike traditional dental veneers, which require tooth reduction through grinding, no-prep veneers are used in additive cases (teeth with volume changes, such as microdonts or teeth diastemata, where space closure is necessary.

Being a purely additive and non-invasive treatment, no-prep veneers do not require tooth preparation through grinding, and therefore, they do not involve pain. Veneers are maintained just like natural teeth, through brushing, flossing, and using oral irrigators. The material used for veneers does not change color, but adjacent teeth can discolor, making the color difference visible. Thus, it is recommended to avoid foods or drinks that cause staining. Additionally, hard foods and harmful habits, such as nail-biting or chewing on hard objects, should be avoided to prevent detachment or breakage of the veneers [11]. If the patient suffers from bruxism, it is important for them to wear a protective splint.

Indications for No-Prep Veneers [12]:

- Palatally positioned teeth;
- Teeth with volume changes (small or short teeth);
- Teeth with shape alterations (chipped, scratched, or broken teeth);
- Teeth with diastemata;
- Teeth with congenital malformations;
- Teeth with slight discolorations or stains.

No-prep fully ceramic veneers have limited applicability because patients must meet certain strict conditions, such as having: a stable and balanced occlusion, structural integrity, no severe discoloration or tooth fractures, excellent oral hygiene [13].

Contraindications for No-Prep Veneers [12]:

- Compromissed structural integrity;
- Poor oral hygiene;
- Unstable occlusion or edge-to-edge bite;
- Crowded, rotated, or large teeth;
- Teeth positioned vestibularly.

Today, both dentists and patients aim for restorations that are as conservative as possible, while ensuring maximum transformation in terms of dental restoration [14].

Clinical Case Report

A 33-years-old male patient, visited the dental clinic with the following requests: aesthetic restoration of the maxillary anterior group through no-prep veneers, while refusing orthodontic treatment. At his first visit, clinical examination revealed the following: presence of diastema and spacing, rotated teeth (1.3, 2.2), cervical demineralizations, deep overbite. To analyze the cosmetic aspect of the case, intraoral photographs were obtained (Figure 1-6).

Figure 1: Initial appearance in maximum intercuspation – frontal view.

Figure 2: Initial appearance – frontal view.

Figure 3: Initial appearance – lateral view, quadrant I.

Figure 4: Initial appearance – lateral view, quadrant II.

Figure 5: Initial appearance – incisal view.

Figure 6: Initial appearance in edge-to-edge position, protrusion.

To determine if the patient was suitable for no-prep veneers, the structural integrity of the teeth and oral hygiene were evaluated and found to be in good condition. The treatment plan with no-prep veneers was approved by the patient, who signed an informed consent which also included the approval for publication of all photographs and case details.

However, creating a wax-up and mock-up was necessary—essential steps for testing functionality and allowing the patient to preview the final appearance. Dental arch impressions for study casts were made using alginate and also an occlusion impression in maximum intercuspation was made with silicone (Figure 7-16).

Figure 7: Study casts.

Figure 8: Study casts.

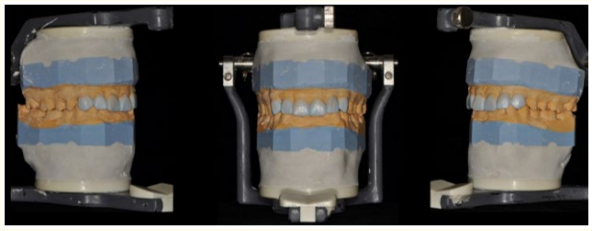

Figure 9: Wax-up on study casts.

Figure 10: Mock-up impression.

Figure 11: Functional testing of the mock-up – frontal view.

Figure 12: Detailed frontal view of mock-up testing.

Figure 13: Lateral view of mock-up testing, quadrant I.

Figure 14: Lateral view of mock-up testing, quadrant II.

Figure 15: Smile with mock-up.

Figure 16: Mock-up in edge-to-edge position.

After mock-up testing, for the impression-taking process, periodontal probing was conducted to measure sulcus depth and select the appropriate retraction cord diameter. Despite the absence of a finish line preparation, through gingival retraction is created a better gingival emergence profile (Figure 17,18).

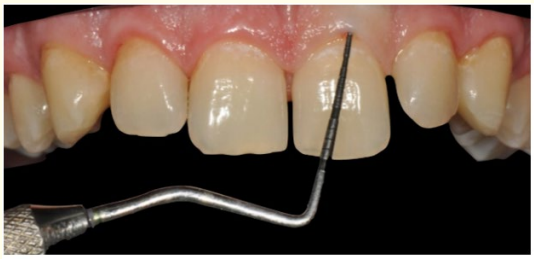

Figure 17: Periodontal probing.

Figure 18: Gingival retraction.

Functional impressions were made using the two-phase technique in one step, with spacer foil, and addition silicone materials—Virtual Refill Heavy Body (putty) and Virtual Refill Light Body (fluid)—chosen for their precision and detail reproduction (Figure 19).

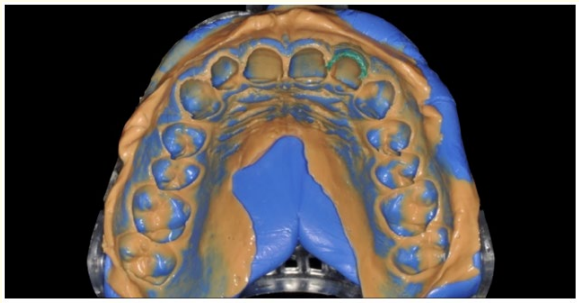

Figure 19: Functional impression.

The functional impression was sent to the dental laboratory where the cast models were made and then mounted in an articulator (Figure 20-25).

Figure 20: Working cast pouring.

Figure 21: Working cast pouring.

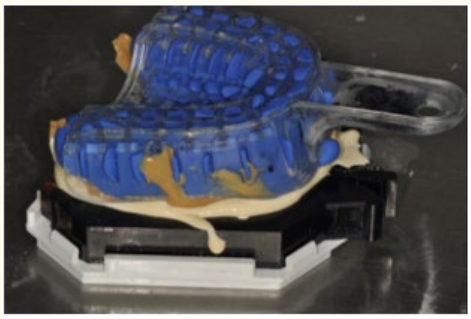

Figure 22: Working cast pouring.

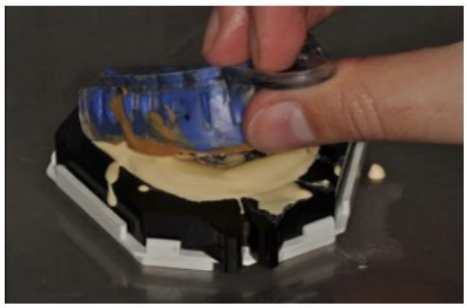

Figure 23: Working cast pouring.

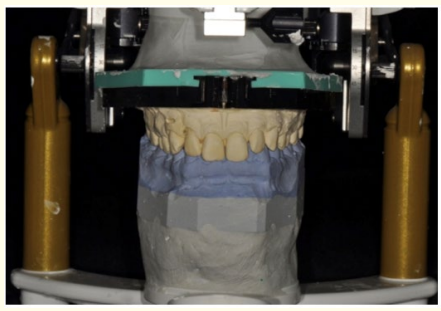

Figure 24: Mounting of the cast model on the articulator.

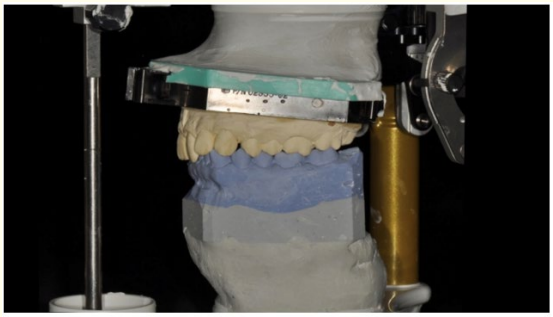

Figure 25: Mounting of the cast model on the articulator.

In the lab, a silicone key was made to transfer the shapes from the wax-up model to the working model for creating the final restorations (Figure 26,27).

Figure 26: Silicone key from the wax-up cast.

Figure 27: Working cast with the silicone key.

The next step consisted in creating, pressing and permanently cementing the veneers using Variolink Veneer LV-3 adhesive cement (Ivoclar Vivadent AG) (Figure 28-35).

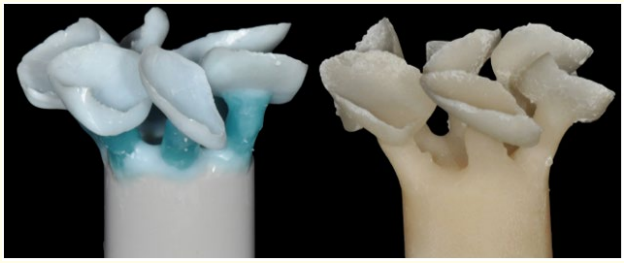

Figure 28: Veneers before and after pressing.

Figure 29: Veneers on the maxillary cast, before cementation frontal view.

Figure 30: Veneers on the maxillary cast, before cementation lateral view quadrant I.

Figure 31: Veneers on the maxillary cast, before cementation lateral view, quadrant II.

Figure 32: Veneers on the maxillary cast, before cementation incisal view.

Figure 33: Post-cementation appearance – frontal view.

Figure 34: Post-cementation appearance – lateral view, quadrant I.

Figure 35: Post-cementation appearance – patient's smile.

Discussions

Studies confirm favorable clinical performance for these restorations, with excellent aesthetic maintenance, high patient satisfaction, and no adverse effects on gingival health [15-17]. Reported failure rates range from 0%-7%, with higher rates (14%-33%) attributed to predisposing factors such as unfavorable occlusion, significant tooth structure loss, improper adhesive use, or incorrect tooth preparation [18,19].

This case report exemplifies how a patient with rotated teeth, diastema and dental spaces was rehabilitated with a minimally invasive adhesive restoration. From the beginning the patient refused orthodontic treatment but desired to have an improved smile. Thus, no-prep veneers were the best treatment choice due to the maximum preservation of tooth structure, longevity and appearance. Another option would have been direct resin composite restoration, which is also a conservative approach, less expensive and faster but with short-term color stability and a lower resistance to wear [20-22].

No-prep veneers of high quality can be more challenging to create compared to conventional veneers. Success relies on proper case selection, precise restoration margin placement, appropriate adhesives, and the expertise of both the dentist and the dental technician.

Conclusions

This study presents a comprehensive restorative treatment case utilizing no-prep all-ceramic veneers. The primary objective was to enhance dental aesthetics by addressing concerns related to the appearance of the anterior teeth visible in the smile. Veneers were selected as a treatment option in situations where orthodontic intervention was not feasible due to clinical, financial, or personal considerations. The treatment approach was deliberately minimally invasive.

When appropriately indicated and executed with precision, no-prep veneers demonstrate both durability and high quality. The use of wax-up and mock-up techniques plays a critical role in ensuring clinical success and optimizing patient satisfaction.

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