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Minimally Invasive Ceramic Veneers for Correction of Maxillary Lateral Incisor Microdontia and Interincisal Diastema: A Case Report

Debbabi I[1,*] and Saafi J[2]

[1]*University Hospital Assistant (UHA), Department of Fixed Prosthodontics, Faculty of Dental Medicine, Tunisia*
[2]*Professor and Head of Department, Department of Fixed Prosthodontics, Faculty of Dental Medicine, Tunisia*

[*]**Corresponding author:** Debbabi I, University Hospital Assistant (UHA), Department of Fixed Prosthodontics, Faculty of Dental Medicine, Tunisia; E-mail: debbabiimen@yahoo.fr

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Abstract

Purpose: This case report describes a minimally invasive approach using ceramic veneers to correct microdontia of maxillary lateral incisors associated with interincisal diastema in a young adult female patient.

Case Presentation: A 21-year-old female patient presented with aesthetic concerns due to small lateral incisors and diastemas. After a diagnostic wax-up and mock-up, two lithium disilicate veneers were fabricated and adhesively bonded to the maxillary lateral incisors following conservative enamel preparation.

Outcomes: The procedure restored proper tooth proportions, occlusion, and smile aesthetics. The patient reported high satisfaction, and follow-up at 6 months confirmed excellent clinical performance and periodontal health.

Clinical Significance: This technique highlights a conservative, predictable, and esthetically effective solution for anterior dental anomalies, emphasizing enamel preservation, diagnostic planning, and adhesive protocol.

Keywords: Ceramic veneers; Microdontia; Diastema; Minimally invasive dentistry; Esthetic rehabilitation

Introduction

Minimally invasive restorative dentistry prioritizes enamel preservation to enhance adhesive reliability and long-term success [1]. Ceramic veneers have become a widely accepted conservative solution for anterior esthetic corrections such as microdontia, diastemas, and morphological anomalies [2]. These restorations offer mechanical durability, biocompatibility, and superior esthetic outcomes while maintaining the majority of the natural tooth structure. This report details the clinical management of a 21-year-old female patient with microdontia of the maxillary lateral incisors and associated diastemas using minimally invasive ceramic veneers.

Case Presentation

Patient information: The patient, Ghada, a 21-year-old dental student, presented with concerns about diastemas between her maxillary incisors and disproportionate lateral incisors affecting her smile. Oral hygiene and periodontal health were satisfactory.

Clinical examination: Maxillary lateral incisors (#12, #22) were underdeveloped.

Occlusion: protrusive contact only on #11, #21, #31, #41; lateral incisors were unloaded in functional excursions.

Canine guidance was present in lateral movements without interference.

Patient expectations: The patient requested an aesthetic solution using only ceramic restorations.

Prosthetic decision: The young patient asked to have an aesthetic prothesis made only by ceramic material. We decided to make to her two veneers (IPS Emax Cad ceramic) on the two maxillary lateral incisors. Veneers are considered to be a modern, fast and

conservative treatment, especially in the case where the teeth are pulped and have a small volume.

Figure 1: *Initial state at the first consultation.*

Figure 2: *Patient's smile.*

Figure 3: *#11and #21 are completely unloaded during propulsion.*

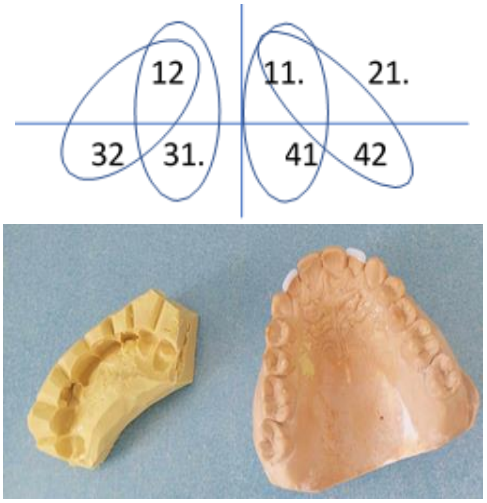

Figure 4: *Diagnostic cast with diagnostic wax-up (#12 and #22) and silicone key.*

Figure 5: *A mock-up of autopolymerizing resin is made to evaluat the prosthetic project intraorally.*

Figure 6: *Both teeth prepared.*

Figure 7: *Vita master shade guide.*

Figure 8: *Photopolymerizable dam.*

Figure 9 and 10: *The final result.*

Treatment Plan

Objective: To correct microdontia and close diastemas while preserving enamel and achieving optimal esthetics.

Approach

Diagnostic wax-up and mock-up

- Silicone key fabricated on wax-up casts to simulate final tooth dimensions.
- Intraoral mock-upusing auto polymerizing resin to preview prosthetic outcome and assess tissue removal.

Tooth preparation

- Conservative enamel reduction of 0.5 mm on buccal surfaces.
- Incisal reduction 0.5 mm; minor palatal extension to accommodate veneer thickness.
- Finishing with fine and extra-fine diamond burs; proximal surfaces polished with strips.

Shade selection

- VITA Master shade guide used considering adjacent teeth.

Impression

- Retraction cord #0 placed; digital intraoral scanning performed.

Veneer fabrication and bonding

- IPS e.max CAD veneers fabricated.
- Try-in to confirm shape, fit, contacts, occlusion, and shade.
- Light-curing resin cement used following enamel etching and silanization.
- Excess cement removed; occlusion checked and adjusted.

Follow-up

- Clinical evaluations at 1, 2, and 6 months showed intact restorations, healthy periodontium, and patient satisfaction.

Discussion

Ceramic veneers are conservative prosthetic options for restoring anterior teeth with esthetic concerns [3-5].

Advantages demonstrated in this case include

- Minimal tooth preparation, preserving enamel.
- Superior color stability and wear resistance compared with direct composite restorations.
- Predictable esthetic and functional outcomes.
- Ability to manage diastemas and microdontia without orthodontics.

Critical success factors

- Careful case selection
- Diagnostic wax-up and mock-up to guide preparation
- Adhesive protocol strictly confined to enamel
- Occlusal adjustment to prevent overloading

Although alternatives such as direct composite bonding or orthodontic treatment exist, ceramic veneers provide predictable, durable, and highly esthetic outcomes with minimal biological cost.

For cementation of porcelain veneers, a light-curing l uting composite is preferred. A major advantage of light-curing is that it allows for a longer working time compared with dual cure or chemically curing materials. This makes it easier for the dentist to remove excess composite prior to curing and greatly shortens the finishing time required for these restorations. In addition, their color stability is superior compared with the dual-cured or chemically cured systems. Aesthetic veneers in ceramic materials demonstrate excellent clinical performance and, as materials and techniques have evolved, veneers have become one of the most predictable, most aesthetic, and least invasive modalities of treatment. Based on this literature review, it is possible to conclude that the clinical success of ceramic veneers depends on both the suitable indications of the patient and the correct application of the materials and techniques available for that, in accordance with the necessity and goals of the aesthetic treatment [6-14].

Conclusion

Ceramic veneers offer a minimally invasive and effective treatment for anterior dental anomalies such as microdontia and diastemas. Conservative enamel preparation, precise diagnostic planning, and meticulous adhesive techniques are essential for predictable and long-lasting results.

Clinical Significance

This case illustrates how a stepwise, minimally invasive approach with ceramic veneers can restore anterior esthetics, enhance patient confidence, and preserve natural tooth structure.

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