

A stamp technique to restore central incisor dentinal tooth body

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Abstract:

This case report describes palatal wall direct restoration with the stamp technique in Twenty-eight-year-old patient. The procedure was completed with the silicone index, transparent silicon and composite resin. After 5 years function patients was satisfied with the obtained functional result and had a wish to improve the adjacent tooth aesthetics.

Keywords: root filled teeth, resin composites, direct restoration.

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INTRODUCTION

Direct tooth-coloured restorations are often used for root-filled teeth as a relatively low cost, aesthetic alternative [1]. Opalescence, fluorescence, color, and translucency parameters must be previously known to allow the proper resin application according to the different stratified layers to obtain a dental natural appearance [2]. A diagnostic wax-up is created for the case planning, and a silicone barrier or "wall" is made as a guide to the treatment to facilitate the dental

anatomy reconstruction. This silicone barrier can be made from pre-existing restorations, when the restoration shape is good, but need color change; or from a diagnostic wax-up at the study model, due to the need of smile rehabilitation or any fracture presence.

Limitations of past resin-based composites like mechanical fracture resistance and surface instability have been partially solved first by micro-hybrid composites and recently with the introduction of nano-hybrid and nano-filled composites. Regardless of mechanical and surface characteristics, various other aspects have improved in RBCs in last decades, such as biocompatibility [3] and cytotoxicity [4, 5].

The aim of this case report is to demonstrate proposed technique with up to five years follow-up

CASE REPORT

Twenty-eight-year-old patient came at the dental office in October 2016 to improve strength of palatal area of his upper central right incisor (tooth №1.1). Tooth previously underwent root canal treatment. Frontal aesthetic aspect has been recently restored with a direct composite veneer, so the treatment showed in this sequence had just the aim to restore the palatal aspect (Fig. 1).

A silicon index, built with an ordinary silicone and relined with a transparent silicon, has been used intra orally to realize



Fig. 1. Initial situation.



Fig. 2. Traditional and transparent silicone index.

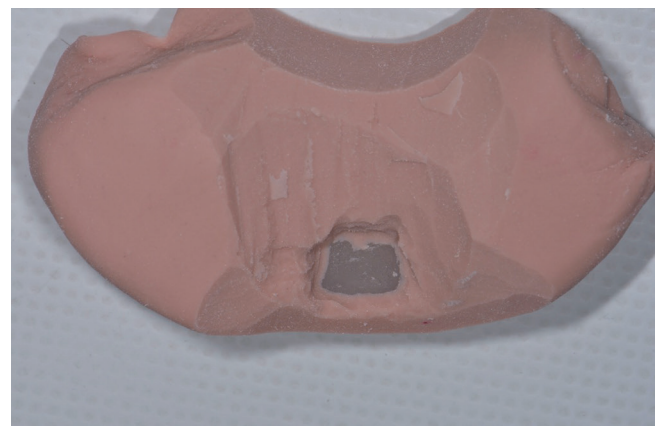


Fig. 3. Silicone index modification.

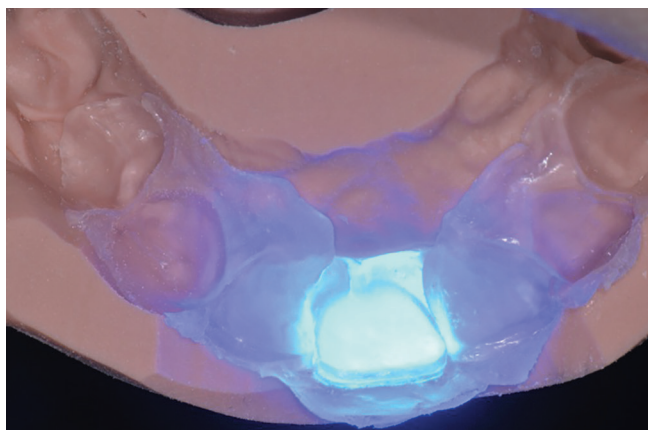


Fig. 4. Silicone index translucently check.



Fig. 5. Tooth isolation.

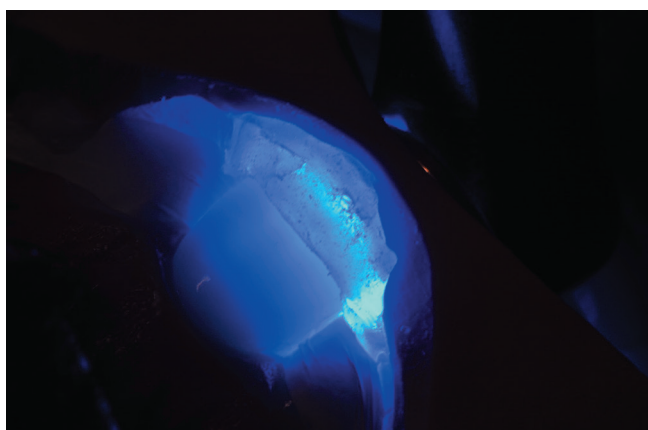


Fig. 6. A dentin composite polymerization (UD 2 Enamel Plus Micerium S.p.A., Avegno, Italy)



Fig. 7. A dentin composite resin after polymerization (UD 2 Enamel Plus Micerium S.p.A., Avegno, Italy)



Fig. 8. Restoration after finishing and polishing



Fig. 9. Five-year recall visit.

a sort of "stamp technique" to restore the composite core of the old post endodontic restoration (Figures 2-4). A dentin composite (UD 2 Enamel Plus Micerium S.p.A., Avegno, Italy) was used to replicate a dentinal body (Figures 5-8).

May 2021 the patient came back to the dental office for a routine checkup (Fig. 9). Restoration on tooth 1.1 maintains a good aspect but patient ask me to improve general aesthetic.

After treatment plan acceptance the patient was treated in couple of week with an lithium disilicate glass-ceramic IPS e.Max veneer on tooth 1.2 and with a zirconia- ceramic full crown (core composite was not replaced in order to insert a endodontic post because the composite core was well compacted in 2016 thanks to "stamp technique "). Analyzing the benefit-costs ratio, I preferred to avoid removing the old composite with the risk to create some micro-cracks. In this picture sequence here, you can see the final result (Figures 10-11).

DISCUSSION

Restorative procedures of direct anterior teeth based on the use of a silicone index are well established since many years [6-10]. Natural teeth are characterized both from shades and from opaque and translucent areas. Contemporary composites can emulate both characteristics, providing therefore, the clinician powerful tools to face esthetic challenges.

Composite repair is a reliable procedure that is generally carried out either immediately (shade adjustments, contact point augmentation or shape modification) or on aged composite restorations (in case of secondary caries or fracture) [11-13]

Upon complete polymerization, the matrix and the resin prosthesis are removed from the mouth; the provisional restorations are contoured, adjusted, and polished. The



Fig. 10. Final result after indirect restoration.



Fig. 11. Final result after indirect restoration. Side view.

presented technique has many advantages including: the elimination of seating error, maximizing the occlusal precision and margins adaptation with less entrapment of bubbles during the loading phase.

CONCLUSION

The technique presented allows the clinician to easily prepare, model and check the thickness of composite restorations. Furthermore the risk to incorporate “bubbles”

or areas of minor resistance in composite mass is less compared to a composite free hand modeled. It could be therefore considered a contribution to the well-known silicone index technique, while providing predictable and functional palatal restorations in a single stage appointment, therefore allowing chair-time and laboratory costs savings.

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Giovanni Dolce – has made a substantial contribution to the concept or design of the article; the acquisition, analysis, or interpretation of data for the article; drafted the article or revised it critically for important intellectual content; approved the version to be published.

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