

Polyvinyl Siloxane template for making a customized post: A clinical tip

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Introduction

The custom made cast metal post and core has been the traditional, time honored method of restoring endodontically treated teeth.¹ It is usually the coronoradicular stabilizer of choice for single-rooted teeth and premolars,² especially when they have noncircular cross section or extreme tapered canals.^{3,4} Besides, they have inherent strength and antirotational features⁵ with advantages of reduced incidence of microleakage.⁶ The cast post can be adapted to an existing, properly shaped, endodontically treated canal which precludes the necessity of the additional dentin removal.²

Patterns for cast post and core can be made by direct method inside the mouth or by indirect method in the laboratory.⁷ The difficulty with the conventional indirect method is that there is chance of stripping away of the selected reinforcement material (metallic wire, plastic post, or toothpicks) during removal of impression or after pouring of the cast.⁸⁻¹³ Placing of the reinforcement material into the canal is an additional time-consuming procedure and seating the reinforcement material onto the orifices of the root canals may be difficult or impractical in cases with difficult clinical access or in cases where multiple teeth are involved¹³ which may lead to inaccurate impressions.

Conflict of Interest: No

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The direct method may be the operator's method of choice as it results in a pattern that can be invested and casted without any alterations.¹⁴ This results in a prosthesis which will later need very little adjustments. This technique may bring about the best results but it is also practically difficult due to inclusions of voids in the pattern, locking of the pattern into undercuts in the canal, and fracture of the resin during removal.¹⁰ This article suggests a method that will make the direct technique easier to perform with quicker and better results using a polyvinyl siloxane template.

Technique

1. Take a composite bonding applicator tip (Dochem, Shanghai dochem industries Co. Ltd., China) (Figure-1)



Figure 1

2. Remove the bristles from the tip of the brush(Figure-2)



Figure 2

3. Mix heavy body polyvinyl siloxane (Aquasil, Dentsply Caulk, Milford, Del) and shape it to a rectangular block and press the tip in the rectangular block so that it just immerses below the surface of the heavy body but does not penetrate through it. (Figure-3)

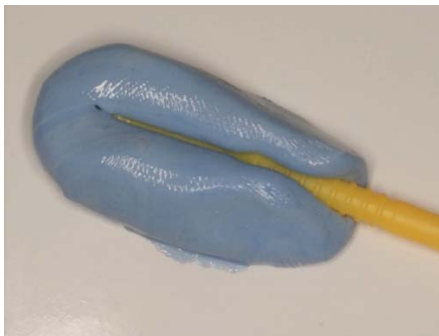


Figure-3

4. Wait until the heavy body sets and then remove the tip to create a mould for the post (reinforcement material) (Figure-4)



Figure-4

5. Pattern Resin LS (GC, America Inc, Japan) is inserted into the mould by bead and brush method (or any method of operator's preference) upto the top of the mould (Figure-5)

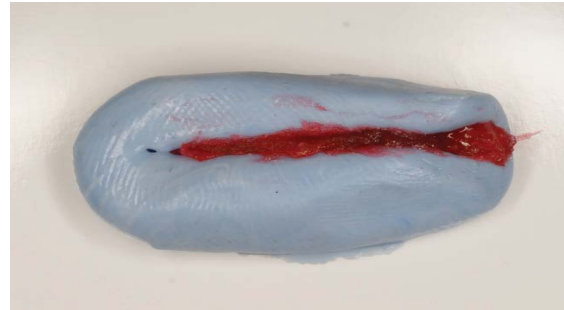


Figure-5

6. The post can be removed easily due to the flexibility of heavy body and then trimmed to the required dimensions of the canal (Figure-6)



Figure-6

7. Proper lubrication of the canal is done using petrolatum jelly and excess is removed using paper points. (Figure-7)



Figure-7

8. Compatibility of post is checked in the canal. (Figure-8)



Figure-8

9. Pattern resin is inserted into the canal by brush and bead method and the previously fabricated post is inserted so that there is bond between the resins. A constant in and out movement is performed to prevent locking of acrylic resin in any possible undercuts.
10. Resin is added until all the intra radicular details are replicated and there is excess on the coronal portion to the desired height. (Figure-9)

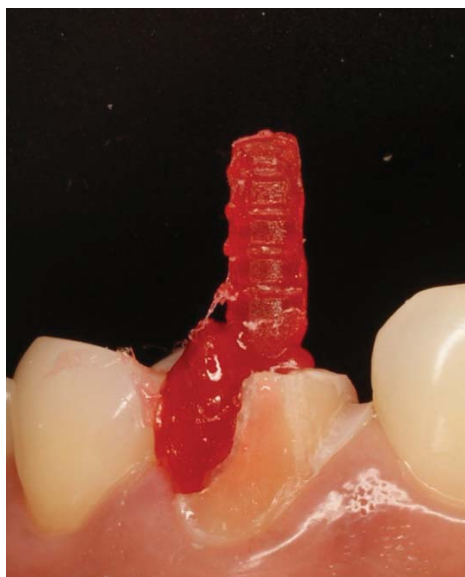


Figure-9

11. The core of the pattern is trimmed intraorally to form the final contour of the post. (Figure-10)



Figure-10

12. This acrylic resin post and core is then casted to form the final metal post and core. (Figure-11 and 12)



Figure-11

Figure-12

Conclusions

The use of a prefabricated acrylic post overcomes the problem of incompatibility of reinforcement materials with final impression materials hence solving the problem of tearing of final impression. There is no need to apply any adhesives to the post, making the technique more user friendly. It is possible to make many posts beforehand from the same mould as the silicon mould is reusable. This technique eliminates the chances of locking of impression in post space and reduces voids in impression.

Hence this technique may help to simplify clinical procedures and reduce chairside time.

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