With the increased effectiveness and predictability of endodontic therapy, the dentist is restoring more pulpless teeth (1). There are numerous methods for the restoration of endodontically treated teeth and most require the use of a post and core to support a full coverage restoration (2-7). Posts and cores can be fabricated either intraorally on the tooth or indirectly on the die. This paper presents one technique that utilizes a commercially available post system (Coltene/Whaledent Corp.) for the fabrication of an indirect cast post and core (CPC). Additionally, this paper will cite the indications for an indirect cast post and core, as well as, the advantages and disadvantages of the presented technique.

In the laboratory phase, the corresponding plastic burnout post is fitted to the die (Figure 7) and wax is used to customize it to the post preparation and build the core to the appropriate contours (Figure 8). The wax post and core pattern is marginated, sprued, and invested for casting. The post and core is cast in Type III or IV gold or a silver-palladium alloy and passively fitted to the die (12). The sprue is then removed and the cast post and core is adjusted and finished on the die (Figure 9). With a small amount of calcium hydroxide, the post and core may be luted to the die to resist dislodgement during crown fabrication. Die spacer is applied, covering the post and core. The die is now ready for crown fabrication (Figure 10). A porcelain fused to metal (PFM) crown is made on the cast post and core included in the die (Figure 11 and 12).

In the second patient visit, the provisional is removed and the cast post and core is fitted to the tooth (Figure 13). A periapical radiograph is taken to check the fit (Figure 14). Next, the crown is seated and checked for proper form and function (Figure 15). Once the two pieces of the restoration seat properly, they are cemented individually and simultaneously. The final restoration is complete with removal of excess cement (Figure 16).
Indications:
- Conservative root canal therapy
- Canals with circular cross section
- Multiple post and core fabrication
- Post preparations with undercuts
- Limited patient availability

Advantages:
- Simple technique
- Requires one less patient visit
- Allows for the fabrication and cementation of a CPC and crown simultaneously

Disadvantages:
- Crown is dependent on the fit of the cast post and core

The purpose of a post is to provide sufficient retention for a core and to stabilize (support) the remaining tooth structure (9). The presented indirect cast post and core technique is a simple way to achieve this purpose. Whether a cast post is fabricated directly or indirectly, the amount of remaining tooth structure (ferrule) is the key to clinical success for this restorative approach (10).

References:

Dr. Brockman is a resident and Dr. Maxwell is a staff mentor in the Comprehensive Dentistry Department at the Naval Postgraduate Dental School.

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