

# Quick Tips

## Restoring Endodontically Compromised Teeth With Fiber-Reinforced Light-Transmitting Anchors

Certainly one of the most challenging aspects of restorative dentistry is the esthetic restoration of the endodontically treated tooth. In the past, the focus has been the search for the best methods to achieve clinical success based on the post itself. Currently, evidence points to the deficiency of focusing on the type of posts and materials rather than considering the post-core complex in function.



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Although teeth flex in function, the ultimate restoration in its totality should create an integrally sealed unit that does not yield, bend, or flex. Extreme impact forces should be absorbed by the periodontal complex, and the internal structures of the root should be reinforced to resist fracture.

### LUSCENT ANCHOR™ FULFILLS ALL THE CRITERIA

With the introduction of the Luscent Anchor™ (Dentatus USA, Ltd.) (Figures 1 and 2), past technical compromises are eliminated. The anchors transilluminate light, are easy to use, and offer significant benefits in radiolucency, retention, and superb esthetics.

Endodontic treatment compromises the strength of the tooth. The Luscent Anchor™ combines strong fiberglass rods encapsulated in a resin matrix that transmits light within the canal confines. A benefit of the translucent anchor is that it can be used with dual-cure resins and bonding techniques, which allow sufficient time for exact centering and seating of the anchor, as well as a complete fill of the composite inside the canal (Figure 3). The Luscent Anchor™ integrally bonded to the composite core/crown complex provides durable support with natural background hues for esthetic restorations (Figure 4).

### CASE STUDY

#### Clinical Technique

The patient's earlier endodontically treated maxillary central incisor that has progressively discolored will be restored with a Luscent Anchor™ and composite core with an all-ceramic crown (Figure 5).

#### Canal Preparation

The gutta-percha and residual cement are removed from the root canal using a Probos® I™ (Dentatus USA, Ltd.) canal finder, using the radiograph as a guide. The canal is refined using the Luscent Reamer™

(Dentatus USA, Ltd.) to match the selected anchor (Figure 6). Additional mechanical retention within the root canal is created with the Probos® II™ Reamer-Router (Dentatus USA, Ltd.), making slight unidirectional notches within the thickest walls of the root canal.

#### Adhesive Technique

The Luscent Anchor™ is tried into the canal and cut to length using a diamond or carborundum disk. The root canal is etched for 15 to 30 seconds with phosphoric acid etchant, rinsed, and dried. A fourth-generation dental adhesive is placed inside the root canal using a Microbrush® (Microbrush, Inc.) applicator; first dentin primer, then adhesive resin.

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#### Luscent Anchor™ Placement

The Luscent Anchor™ is coated with adhesive resin. A light-cured or dual-cured composite is syringed into the root canal, and the anchor is centered and fully seated into the canal (Figure 7).

The light-curing probe is placed directly over the Luscent Anchor™, and the entire complex is light-cured multidirectionally for 2 minutes. Using this technique eliminates the need to wait for self-curing resin to harden, and the core can be immediately built with an appropriate color of composite.

#### Core Build-Up and Tooth Preparation

Any qualified composite resin core material can be used with the Luscent Anchor™. When the composite core has set, the tooth can be prepared for the crown, and a well-adapted tem-



Figure 1—The Luscent Anchor™.

# Quick Tips *continued*

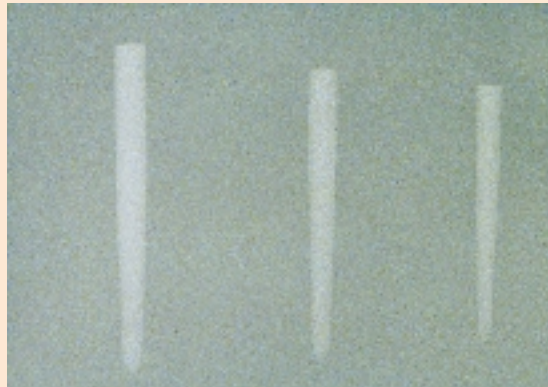


Figure 2—Radiograph of three different diameters of the light-transmitting Luscent Anchors™.



Figure 3—Luscent Anchors™ in facial and lingual canal of a maxillary premolar.



Figure 4—Occlusal view of Luscent Anchors™ with integral composite core complex.



Figure 5—Discolored endodontically treated maxillary central incisor.

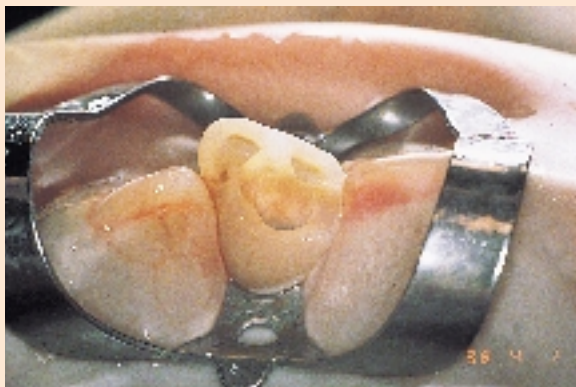


Figure 6—Compromised structural integrity of the tooth with a widely flared canal.



Figure 7—Luscent Anchor™ bonded to the root canal walls and composite core.

porary crown is cemented. The completed all-ceramic crown demonstrates the translucency and esthetics of a natural-looking tooth as a result of the light-transmitting properties of the composite core/Luscent Anchor™ complex (Figure 8).

## CONCLUSION

Data support the effectiveness of self-curing composite with plastic light-transmitting posts.<sup>1-5</sup> The innovative Luscent Anchor™ is in sync with both the current-generation esthetic crown materials and the large patient demand for flawless esthetic restorations.

Unlike many nonmetallic prefabricated post techniques that require specific adhesives and resins, Luscent Anchors™ can be placed with a wide range of materials used by experienced practitioners in their clinical applications. The Luscent Anchors™ position can be confirmed by the differential radiolucent outline at the anchor composite interface, as well as inside the core.

The Luscent Anchor™ has been placed in more than 1,000 canals during a 2-year period

with excellent clinical results using this light-transmitting, translucent esthetic post technology. Luscent Anchors™ are available in an introductory kit with three assorted diameters (1.4 mm, 1.6 mm, and 1.8 mm) and matching Luscent Reamers.™

Additional data and other information can be obtained from Dentatus AB, Sweden, and Dentatus USA, Ltd., NY; 800/323-3136.

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## ACKNOWLEDGMENT

Clinical procedures and photography courtesy of Drs. R. Martelli and D. Massironi. ■

## REFERENCES

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Figure 8—All-ceramic crown supported with a Luscent Anchor™ and matching hue composite core. Note the natural vitality, translucency, and flawless gingival crown interface.

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