Endodontic treatment of teeth with significant coronal destruction is a very common clinical procedure in the restorative clinical practice. When we are faced with this clinical situation, there will be an eminent need for the use of intra-radicular retainers to obtain greater stability and retention of the restoration to the remaining teeth.1, 2

The use of an anatomical pin is proposed for the rehabilitation of anterior teeth with extensively compromised root canals and with significant loss of dentine tissue.3 In this restorative method, in addition to the fibre-glass pin, a compound resin is used to model the radicular conduit with the objective of reducing the space that would be filled by the resin cement.

In this way, the combination of two restorative materials (pin and compound resin) will serve and behave biomechanically as a replacement of the dentine structure lost.4 Anatomical pins have an extremely favourable prognosis in cases of fragile roots due to loss of dentine structure and they contribute significantly to the rehabilitation of the tooth in terms of both masticatory function and aesthetics.1 In addition, the fibre-glass pins have a more uniform distribution of tension in the occlusal and radicular regions compared with metal pins.7 Etching and silanisation of the pins are of the utmost importance for promoting interfacial adherence, especially in the region prepared for the core.7, 8

This study reports on a clinical case that demonstrates the preparation technique for the anatomical pin, using fibre-glass pins and compound resin, in a maxillary central incisor with weakened roots, with the objective of re-establishing the coronal portion of the tooth.

**Case report**

A young male patient came into the integrated dentistry clinic at Universidade Severino Sombra needing restorative treatment of tooth #21. In the clinical and radiographic examination, significant coronal destruction and satisfactory en-
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Restoration with an endodontic treatment were noted (Figs. 1–3). The patient, in order to recover the function and aesthetics of the tooth and provide for future rehabilitation, a ceramic crown was proposed to the patient (Fig. 4).

First, the decayed tissue was removed from the remaining tooth structure and the fibre-glass pin was selected (Exacto & 3, Angelus), as well as the accessory pins (Reforpin, Angelus; Fig. 4). The radicular conduit was isolated with mineral oil and the compound resin was applied (Fill Magic NT Premium, Vigodent; COITENE) over the remaining tooth with the aid of a #1/2 SuprAFil spatula (SS White; Figs. 5 & 6).

After filling of the conduit with resin, the Exacto pin and the pre-silanised accessory pins (Silano, Angelus) were inserted with the application of an adhesive (Fusion-Duralink; Angelus; Figs. 7–9). Next, the initial photoactivation was conducted on the pins and resin for 20 seconds.

Finally, the coronal reconstruction was performed with the previously used compound resin in incremental portions and photoactivation was conducted (Figs. 10 & 11).

After the preparation phase of the tooth, this clinical approach provided the possibility of a more balanced distribution of masticatory forces without compromising the remaining tooth structure, minimising the risk of radicular fracture.

In order to complete the restorative process, the prosthetic preparation of the core was performed for future seating of a full ceramic crown (Fig. 25).

Conclusion

The anatomical pin constituted a clinical alternative for coronal and radicular reconstruction of endodontically treated teeth with significant destruction of dentine. In addition to rehabilitating the tooth, this clinical approach promotes a more balanced distribution of masticatory forces without compromising the remaining tooth structure. Moreover, this restorative alternative provides the possibility of an aesthetic result with the use of a metal-free full crown.

Editorial note: A complete list of references is available from the publisher.

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