

# The Masserann technique for the removal of fractured posts in endodontically treated teeth

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Occasionally, the dentist is confronted with an endodontically treated tooth with a hopeless prognosis because of a fractured dowel. Retreatment with a post and core cannot be attempted unless the fractured post is removed; this can be dangerous, however, because the roots are brittle.

## LITERATURE REVIEW

In his 1923 text, Prothero<sup>1</sup> mentions the "little Giant Post Puller," a device designed by Dr. F. H. Skinner, which is the forerunner of "The Post Puller" advocated by Warren and Gutmann.<sup>2</sup> Both of these instruments have a clamp with strong beaks to grasp the dowel and a shoulder-post to rest on the root face. A screw is turned to remove the dowel occlusally.

Ewing<sup>3</sup> and Roberts<sup>4</sup> suggest removal of cast post and cores by cutting a hole in the core, threading a brass wire through the hole to form a loop, attaching a crown puller to the loop, and tapping the post out in an incisal direction.

The S. S. White Crown Repair Kit (S. S. White Dental Mfg. Co., Philadelphia, Pa.) uses trephines to gain access to the dowel. Threads are then cut on the dowel, and a jack screw is threaded to the dowel. Another screw on the tube removes the dowel incisally.

Shelby<sup>5</sup> and Tylman<sup>6</sup> advocate troughing around the post with a small bur and then trying to vibrate the post out of the canal by grasping the post with either an endosilver point forceps or a hemostat. The forceps and hemostat can be used only on posts that are clinically exposed so that the instrument can be attached; they are of little value for posts broken within the root canal.

Tylman and Malone<sup>7</sup> state that sometimes posts need to be drilled out of the root completely, with the

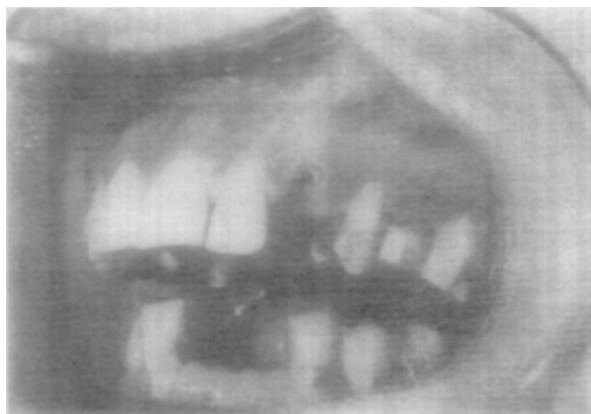


Fig. 1. Fractured maxillary left canine.



Fig. 2. Radiograph of fractured tooth with para-post in root.

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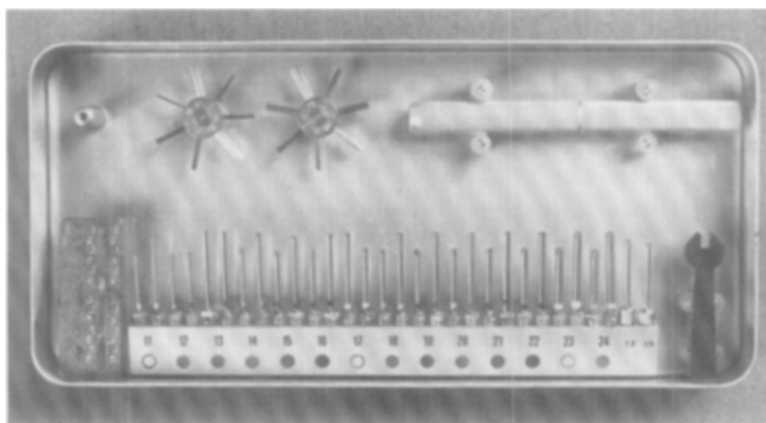


Fig. 3. Masserann kit.

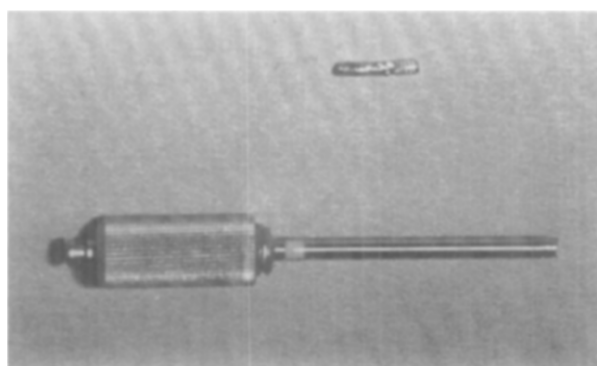


Fig. 4. Trepan and retrieved parapost.



Fig. 5. Root prepared for cast post and core.

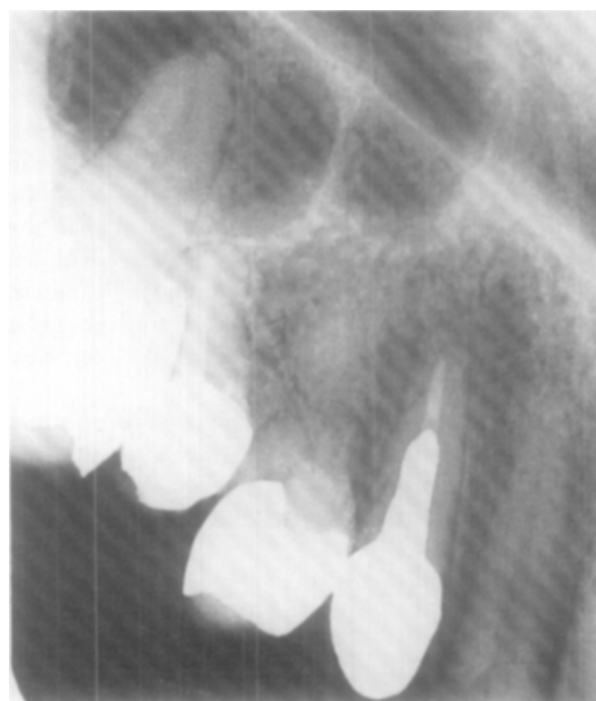


Fig. 6. Cemented cast post and core.



Fig. 7. Completed crown (maxillary left canine).

attendant problems of weakening the root, and perforation.

Masserann<sup>8,9</sup> developed and designed an instrument for extracting posts or rigid instruments that are broken deeply within the roots with minimum damage. The method involves gripping the object through a tube or trephine which acts as a tube-vice. This method is relatively harmless to the tooth and periodontium.

## PROCEDURE

Often, a clinical examination will reveal a fractured parapost at the cervical portion of the crown, with gingival hyperplasia covering a part of the exposed root (Figs. 1 and 2). After anesthesia, the root is exposed with electrosurgery (Cameron-Miller, Chicago, Ill.) to gain access. From the Masserann Kit (MicroMega SA, Besancon, France) (Fig. 3), the appropriate size trepan bur is determined by a gauge supplied in the kit. Since the trepan burs are hollow end-cutting tubes, they fit over the end of the post and slide down its outside. The instrument is turned by hand cutting a small trench around the post. The fragment serves as the guide in the removal of the dentin or cement from around the post. After proceeding from one third to one half the way down the post, the trepan bur is replaced with the next smaller size, which will grip the end of the post to lift it out of the canal. If necessary, the trepans can be used to extend to the bottom of the post for easy removal.

After the parapost is removed (Fig. 4), the root canal is enlarged with a Peeso reamer so that a conventional cast post and core can be made (Fig. 5). Later an appropriate crown can be made for the tooth (Figs. 6 and 7).

The advantages of this technique are that (1) it is simple, (2) little heat is generated, (3) there is no danger of pushing fragments further into the root, and (4) excessive forces are eliminated with little chance of perforation or splitting the root.

This technique may make it possible to save strategic teeth that otherwise might be lost.

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