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SIMPLIFIED TECHNIQUE FOR REMOVAL OF PREFABRICATED THREADED POSTS

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Prefabricated post, Post removal, Technique, Threaded post

SIMPLIFIED TECHNIQUE FOR REMOVAL OF PREFABRICATED THREADED POSTS

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ABSTRACT: This paper describes a time-saving procedure for the removal of prefabricated threaded posts. In this technique, a slit is prepared in the head of the post to-be-removed so that it can be engaged by a jewelers' precision stainless steel flat-blade screwdriver which would drive it out when rotated counterclockwise. This simple technique spares the clinician valuable time and effort during removal, requires minimal or no loss of valuable tooth structure compared to other techniques. It is also conservative in the sense that it does not expose dental tissue to thermal insults from use of ultrasound.

KEYWORDS: Prefabricated post, Post removal, Technique, Threaded post

1. INTRODUCTION

Performing endodontic retreatment in teeth restored with posts is a challenging and often unpredictable procedure, due to possible weakening, perforating or fracturing the root structure during post removal. This could complicate further restorative procedures and sometimes renders the tooth non-restorable (Dixon et al., 2002; Gomes et al., 2001). Various techniques have been proposed for post removal, including; application of dislodging force, using rotary instruments or others. One of the most commonly used techniques is ultrasound (Berbert et al., 2015) in conjunction with either trephine burs (Chandler and Purton, 2003) or dislodging force. It was believed to decrease incidence of root fractures or perforations (Adarsha and Lata, 2010; Braga et al., 2005). However, ultrasound is more effective with posts cemented using friable cements like Zinc Phosphate or Glass Ionomer (Gomes et al., 2001) but less effective with more viscoelastic resin cements (Adarsha and Lata, 2010; Lührs et al., 2010). To overcome that, some authors have suggested more application time 8-10 (Buoncristiani and Caputo, 1994; Gomes et al., 2001) or 15.7 (Peciuliene et al., 2005) as well as the use of no-cooling protocol (Adarsha and Lata, 2010; Garrido et al., 2004). This protocol may cause root overheating (Davis et al., 2010; Garrido et al., 2007) and necrosis of surrounding tissues (Chee and Aloum, 2001). On top of that, a micro-CT study has confirmed decrease of root structure volume after post removal using ultrasound (Kim et al., 2016). This article describes a less invasive and fast technique. It involves the use of intraoral flat-blade screwdriver to unscrew the post along its longitudinal axis, after a slit has been cut in the head of the post. The torsional force can easily be generated from the screwdriver. A lot of screwdrivers could be used for this purpose including jewelers' precision stainless steel flat-blade screwdriver (Starrett), or Manual flat-blade abutment driver (ASTRA TECH, DENTSPLY Implants) - See figure 1.

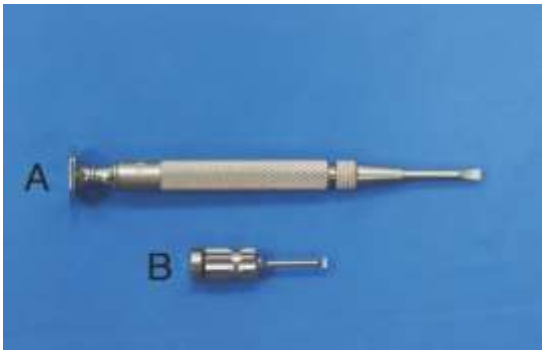

Fig.1: A jewelers' precision stainless steel flat-blade screwdriver. B; Manual flat-blade abutment driver.
Reference: The authors - April 2019

2. TECHNIQUE

After removal of crown, remove the prefabricated post utilizing the following steps:

1) Remove the composite core material using round-end taper bur #H856U.314.016 (Komet, Brasseler) carefully around post. Take good care not to touch the post itself to avoid weakening it, as shown in figure 2a.

Fig.2a: Removal of core material around post.
Reference: The authors - April 2019

2) Remove all the cement around the post plus 0.5 mm of intraradicular cement ring around the post using needle bur # 859.314.010 (Komet, Brasseler), as shown in figure 2b.

Fig.2b: Removal of 0.5 mm cement ring around post.
Reference: The authors - April 2019

3) Use needle bur to cut a 1 mm depth screw-slit in the head of the post, as shown in figure 2c.

Fig.2c: Cutting 1mm screw slit in post-head using needle bur.
Reference: The authors - April 2019

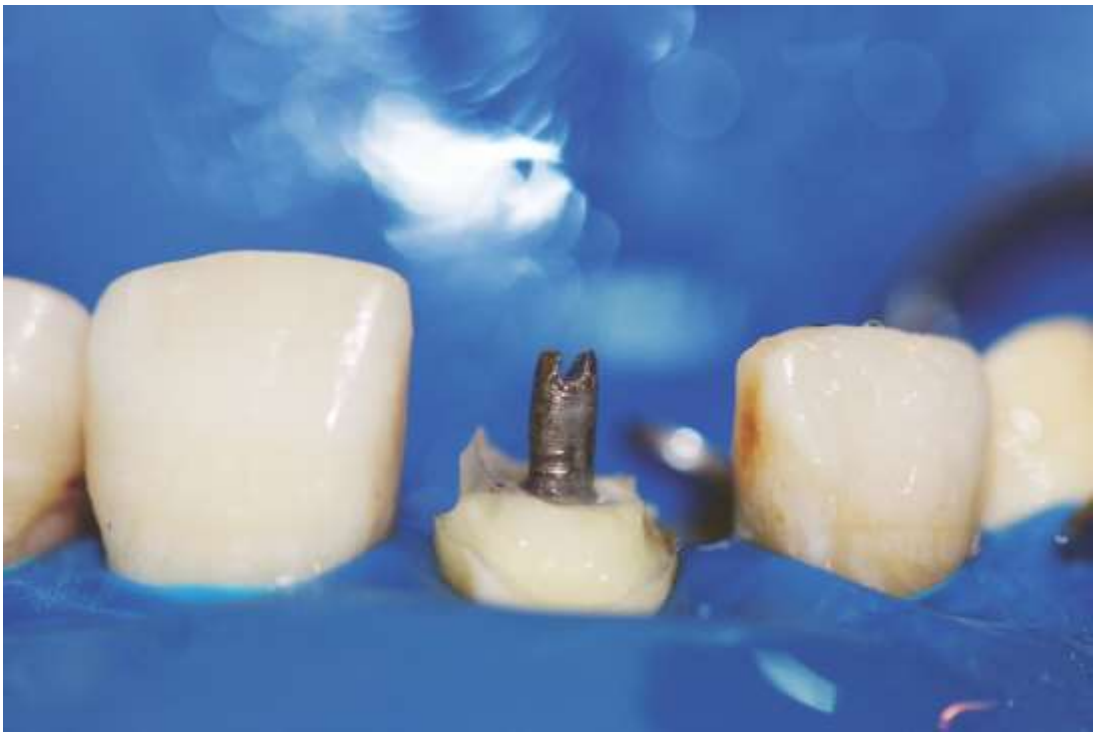

Fig.2d: Screw slit cut in post-head.
Reference: The authors - April 2019

4) Hold the screwdriver parallel to the line axis of the post and insert its flat tip into the screw-slit and slowly rotate it counterclockwise along the long axis of the post, as shown in figure 2e.

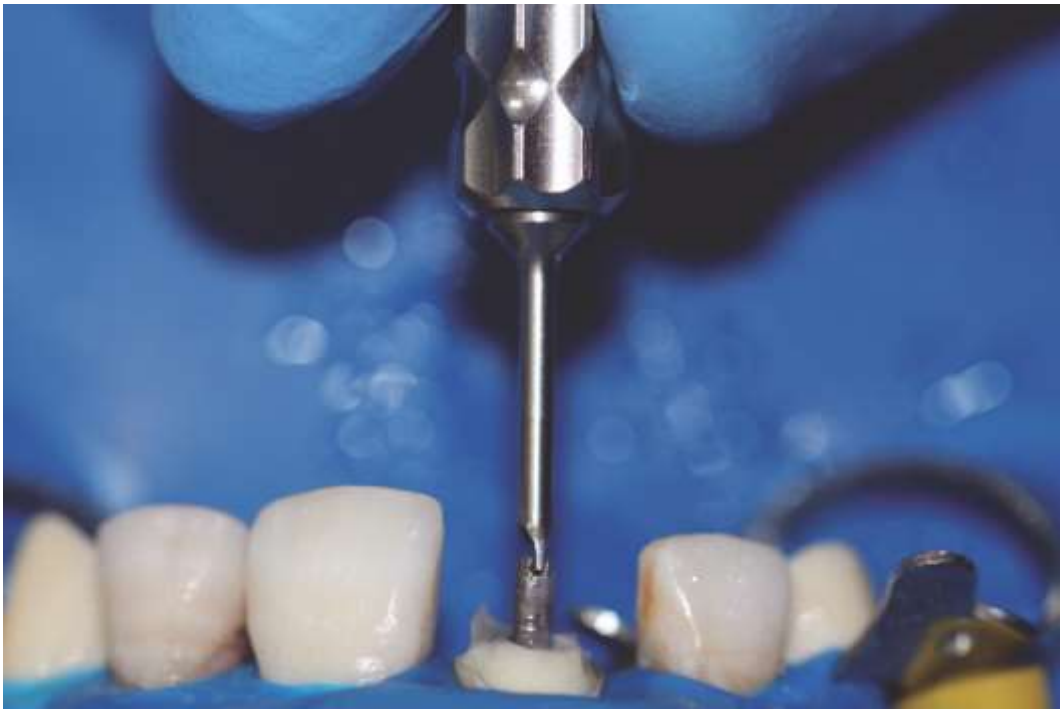

Fig.2e: Screwdriver positioned parallel to post long axis.
Reference: The authors - April 2019

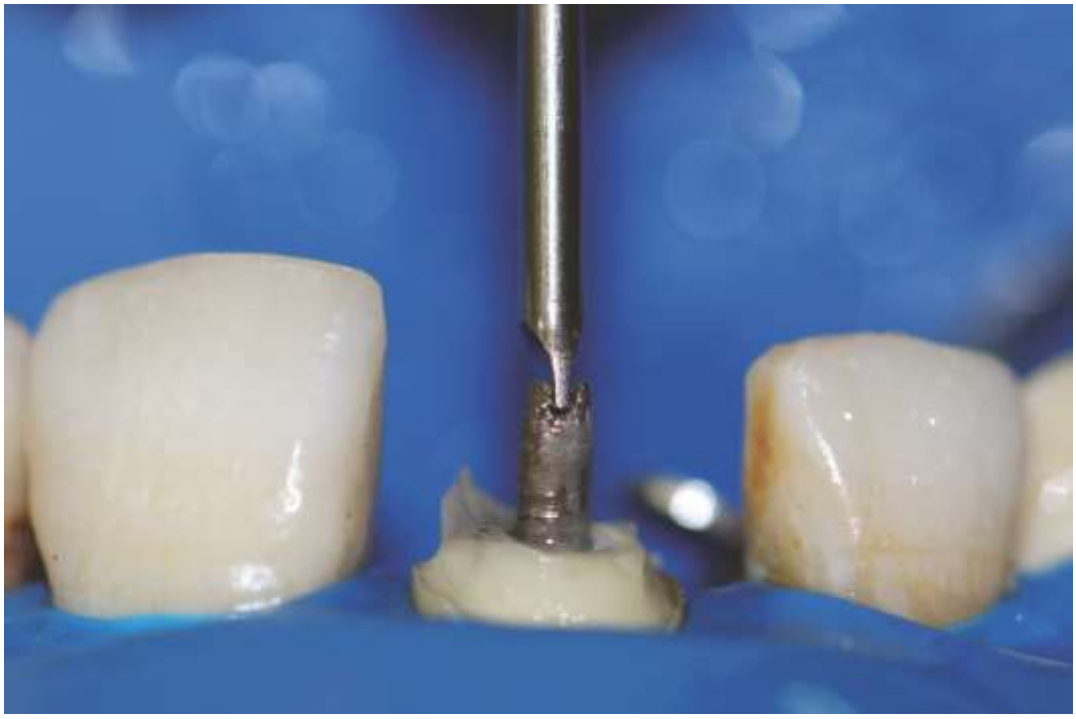

Fig.2f: Screwdriver engaging post-head.
Reference: The authors - April 2019

5) Continue rotation till the post is completely removed - Figure 2g, h, and i.

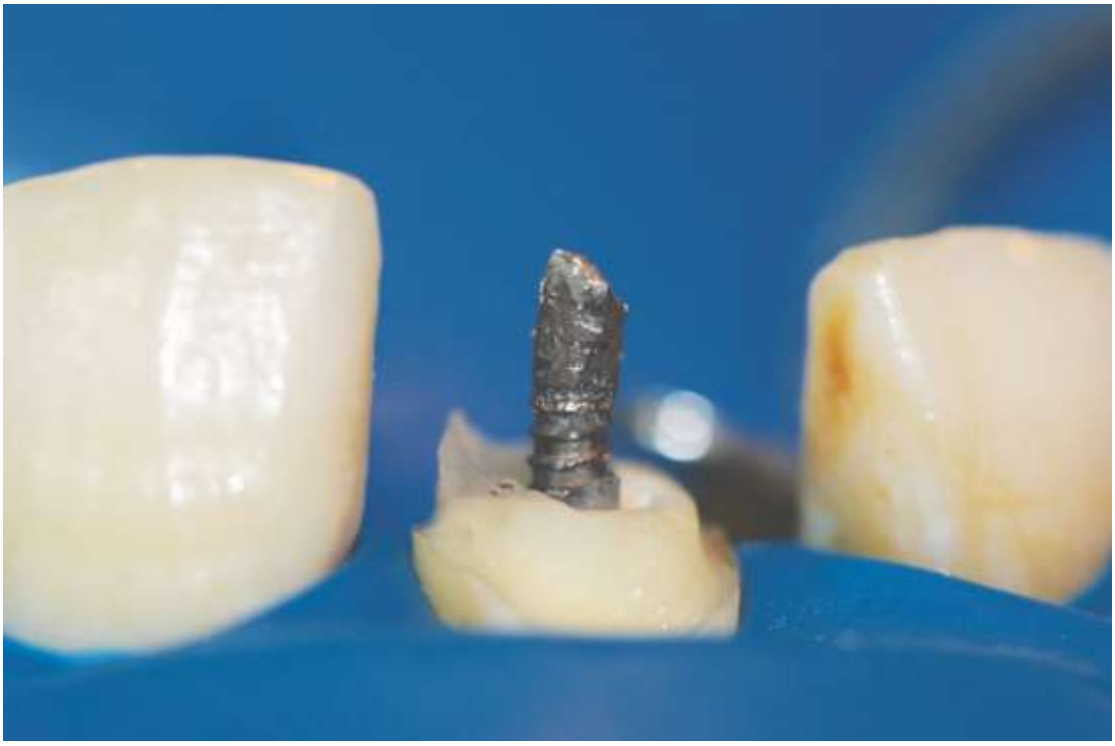

Fig.2g: Rotated screw with visible threads.
Reference: The authors - April 2019

Fig.2h: Removed post with remnants of cement around it.
Reference: The authors - April 2019

Fig.2i: Empty post space with intact remaining tooth structure.
Reference: The authors - April 2019

6) Clean the post-hole from remaining cement using low-speed Peeso-Reamers (DENTSPLY Maillefer) and proceed to endodontic retreatment.

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