Clinical Pearl

A modified endodontic post for three-dimensional root control in orthodontics

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Abstract

Interdisciplinary teamwork is a complex process in which different specialties work together to share expertise, knowledge, and skills to impact on patient care. This article describes the interdisciplinary management of a patient with a new innovative method of using endodontic post and core in orthodontics for three-dimensional root control of a root stump.

Key words: Interdisciplinary approach, modified endodontic post, three dimensional root control

INTRODUCTION

The team approach to dentistry promotes continuity of care that is comprehensive, convenient, cost-effective and efficient. Individually the best treatment imparted by a specialist may not help to achieve the optimum results for the patient, but the multidisciplinary approach to treatment can be very effective, as one specialist cannot deal with all aspects of a complicated problem.[1,2]

A post and the core are used to sufficiently build up tooth structure for future restoration that is, crown. Post and core can also be used in orthodontics for controlling root position by different methods. An innovative method for controlling root position by welding an edgewise bracket to the metallic post has been described as under.

FABRICATION

1. The root canal of maxillary right lateral incisor was prepared for receiving a post. Then a passive prefabricated metallic post (Mani PG post-4 L) was ground on one side, and a bracket was welded to the metallic post [Figure 1]. The bracket can be welded at any angle to the post for angulation correction of the root [Figure 1b].
2. This post was cemented with glass ionomer cement into the prepared post space [Figure 2]. The welded bracket to the post can be used for effecting various movements of the concerned root structure as shown in [Figure 3].
3. The post and core come in different length sizes. The length of the post can be selected depending on the height at which the bracket has to kept in relation to the adjacent teeth.

Advantages

1. A three-dimensional control of fractured root.
2. Better control of root inclination.
3. As seen in the above case when the remaining anterior teeth are intruded, and the fractured root is not included in the segment, the level of gingival margins post orthodontically varies amongst them. But when the fractured root is also included in the segment to be

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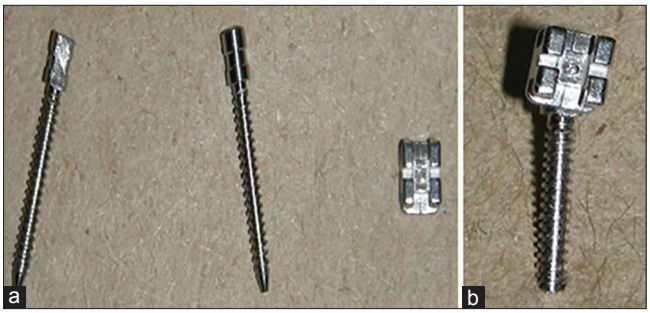

Figure 1: (a) The metallic post and the bracket. (b) The bracket welded to the metallic post at an angle

Figure 2: Bracket welded to metallic post and cemented into post space

Figure 3: Figure showing bracket welded to the post which can used for controlling root position when intruding other teeth

intruded same level of gingival margins can be achieved post orthodontically.

4. The bracket can be welded at varying angulations to achieve the desired tip in the root.
5. It can also be used for forced eruption of the fractured root segment where desirable.
6. For correction of root inclination along with other teeth while being uprighted/proclined.
7. In cases of occlusal interferences where it is not possible to build up the fractured root after post and core, this method provides a better root control three-dimensionally.

DISCUSSION

The purpose of a post is to retain a core that is needed because of extensive loss of coronal tooth structure. The fundamental or basic requirements of an endodontic post include high tensile strength, high fatigue resistance to occlusal and shear loading and stress-free distribution of forces affecting the tooth root.[3,4] Many varieties of posts are available nowadays such as metal posts, ceramic posts, composite posts and fiber-reinforced posts. The selection of an endodontic post should be dictated primarily based on the properties of stiffness and elastic limit, and only by a secondary concern for retention.[5] The prefabricated metal posts have been widely used in dentistry since they can be placed easily and quickly. The advantages of a prefabricated metal post are:

1. That they are available in various metal alloys which are quite strong and allow for placement of a relatively thin post.
2. They can usually be removed if root canal retreatment is required. Prefabricated posts are available in both active or passive forms. In most cases, passive posts are preferred because active posts have greater potential to cause root fractures and are more difficult to remove.

In the above case, we have described a new innovative use of prefabricated metal post in orthodontics for controlling the root movements. In this case, we required to intrude and also torque the maxillary anteriors for correction of deep bite, but since the crown structure of maxillary right lateral incisor was missing it was impossible to torque and intrude it. Therefore, we decided to weld a standard edgewise bracket to a prefabricated metal post for moving the root stump in harmony with the other anterior teeth.

The above case describes the importance of interdisciplinary teamwork in dentistry as one specialist cannot handle all aspects of a complicated or a complex case.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Patil PG, Nimbalkar-Patil SP, Karandikar AB. Multidisciplinary treatment approach to restore deep horizontally fractured maxillary central incisor. J Contemp Dent Pract 2014;15:112-5.
2. Nancarrow SA, Booth A, Ariss S, Smith T, Enderby P, Roots A. Ten principles of good interdisciplinary team work. Hum Resour Health 2013;11:19.
3. Manhart J. Fibre glass reinforced endodontic post. Endod Prac Sept 2009; 16-20.
4. The AAE Public and Professional Affairs Committee and the Board of Directors. Restoration of endodontically treated teeth: The endodontist's perspective part 1,Spring/Summer 2004 p. 1-4.
5. Lambjerg-Hansen H, Asmussen E. Mechanical properties of endodontic posts. J Oral Rehabil 1997;24:882-7.