Reactivation of Open Coil Springs: A Novel Intraoral Procedure

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ABSTRACT

Open coil springs are commonly used in orthodontic practice to create space for a palatally or lingually blocked out tooth. However, very often the clinician encounters a situation where the inter-bracket span is very less and the open coil spring is not long enough to open the required space needed for alignment. In such situations, the clinician needs to remove the arch wire and reinserts a longer coil spring. A new simple and cost-effective technique describes an intraoral reactivation of an open coil spring without the need for removal of the base archwire with the additional benefit of preventing unwanted forces to the adjacent teeth.

Keywords: Open-coil spring, Reactivation, Space regain.

INTRODUCTION

The use of an open coil spring to create space for the alignment of a palatally or lingually blocked out tooth is a common practice in orthodontics. However, the clinician is faced with a situation, wherein periodic removal of the archwire is required to reactivate the spring to regain sufficient amount of space. When the interbracket distance is less it becomes difficult to place an open coil spring of sufficient length for the creation of required space for the alignment of displaced teeth. At this stage, the spring produces reciprocal force on the adjacent teeth. However, once some amount of space opening is achieved (Fig. 1), the clinician has the choice of unilateral activation. This reactivation can also be done by putting single or multiple crimpable hooks. This is neither cost effective nor easily removable if desired intraorally. In such situations, the clinician has to remove the base arch wire and re-inserts a longer coil spring which exerts reciprocal force to the adjacent tooth causing undesirable tooth movement. Binder advocated a method of reactivation of same length of open coil spring by sliding a section of small length of closed coil spring which is pre-placed over the base archwire in the interbracket space adjacent to the tooth being moved. The major disadvantage of this technique is it continuously puts pressure on the adjacent teeth thus resulting in undesirable tooth movement such as rotation and malalignment and requires repeated removal of the base archwire. This article highlights a simple cost-effective technique for the intraoral unilateral reactivation of same open coil spring without removing the base wire of any composition.

The proposed technique, is demonstrated in the illustrated photos. In the first case, unilateral right premolar extraction was done and an open coil spring was used to create space for a palatally displaced upper right lateral incisor (Fig. 1, case 1). In case 2, space was required for the right canine and lateral incisor (Fig. 1, case 2). In order to achieve, unilateral reactivation of the same coil spring; it was compressed by a wire tucker towards the side the tooth need to be moved, exposing a portion of the base archwire (Fig. 2). After surface debridement of the exposed base archwire with water spray, it is dried with oil free compressed warm air. Intraoral sand blasting can be done for added retention suggested by Black and Willems. Flowable composite* is used to make a small stop in the shape of a bead or ball on the exposed base archwire, resulting in reactivation of the coil spring (Fig. 3). Few more similar composite stopper balls can be added for further reactivation of coil spring depending on the requirement. When used with round stainless steel archwire multiple beads or a continuous bead can be made to avoid slippage (Fig. 3, case 2). This composite stopper ball can be easily removed by crushing it with Howe pliers whenever it is not required.

CONCLUSION

This is a simple and effective chair-side technique for the reactivation of an open coil spring. This does not require any

*Synergy flow is trademark of Coltene Whaledent
clinical expertise and also prevents unwanted forces on the adjacent tooth.

**Explanation to Reviewer’s Comment**

1. Photographs has been used for demonstration of the technique and necessary correction has been done as suggested and new photos has been added.

2. I have done twenty-three cases without a single breakage of the bead. Retention of the bead is excellent when used in any rectangular archwire where as when used with round stainless steel wire multiple small beads needs to be made to avoid slippage (in the manuscript this line has been added).

3. Literature has been added in support of increased retention by sand-blasting.

**REFERENCES**

