A Quick and Simple Method of Reactivating Space-Opening Push-Coil Springs

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One way to open space for teeth that are displaced from the arch is by compressing nickel titanium open push-coil springs on a continuous archwire (Fig. 1). We have found that a continuous open push coil can unwind off the archwire, as opposed to an open-and-closed type such as Sentalloy* Stop Wound.

Activation of Push-Coil Spring

In most situations, a medium force of 150g should be suitable,[1] but if less movement is required, a lighter force may be more appropriate.[2] The size and type of archwire depends on the orthodontist's choice of mechanics.

The first piece of spring should be slightly longer than the space available to ensure that it is compressed about 2-4mm between the brackets on either side, thus providing a light, continuous force. Slide the push coil onto the archwire before placing the archwire in the brackets. The spring can be stabilized temporarily with a small piece of soft wax to keep it from sliding off or around the archwire (Fig. 2).

Tie the archwire with the attached push coil into the brackets. For the brackets on either side of the spring, metal ligatures will provide extra security and reduce the risk of tooth rotations, since elastomeric ligatures tend to permanently deform.[3]

*Trademark of GAC International, Inc., 185 Oval Drive, Central Islip, NY 11722.

Fig. 1 Preformed, open-and-closed push-coil spring placed on continuous archwire between two preadjusted edgewise brackets to open space for lateral incisor. At second appointment, coil has become inactive.

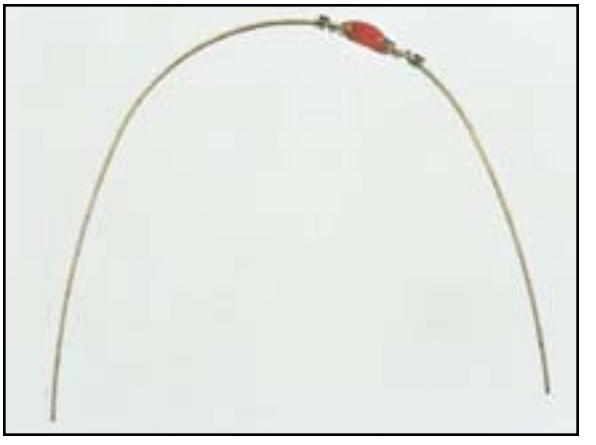

Fig. 2 Spring stabilized with small piece of soft wax to keep it from sliding on archwire. Wax is easily removed after ligation.

Fig. 3 Two views of stainless steel split tubing used for reactivation.

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By the next appointment, the teeth will usually have moved far enough along the archwire that the push coil becomes inactive (Fig. 1). One activation is often insufficient to open the required amount of space. Rather than removing the coil from the archwire and replacing it with a longer piece, however, the push-coil spring can be quickly reactivated with small pieces of split stainless steel tubing (Fig. 3).

Reactivation Procedure

The C-shaped tubes can be cut to the required length from 1-1.13mm-diameter stainless steel tubing or purchased from one of several orthodontic manufacturers.

To prevent the piece of tubing from accidentally falling to the back of the mouth before it is attached, place a piece of dental gauze or napkin behind the area of the spring. Pick the tube up gently with a plier to avoid compressing it too soon (Fig. 4). Use a ligature tucker to pull back the push-coil spring, opening a space for the tubing (Fig. 5), then squeeze the tube with the plier to close the split. The tubing should still able to slide along the archwire.

Release the push coil so that it contacts the tubing and is reactivated (Fig. 6). Further reactivations can be performed as necessary (Fig. 7) until the required space is created.

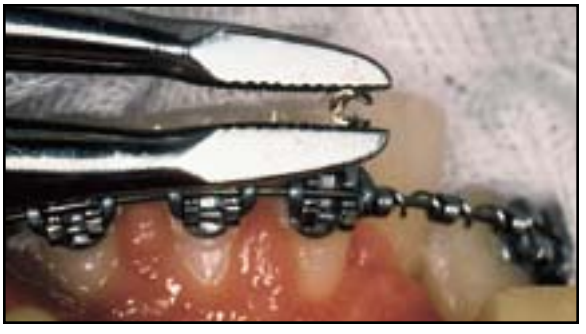

Fig. 4 Split tubing held carefully with plier to avoid closing tube before placing it over archwire.

Fig. 5 Push coil compressed with ligature tucker to allow placement of split tubing, which is then squeezed with plier.

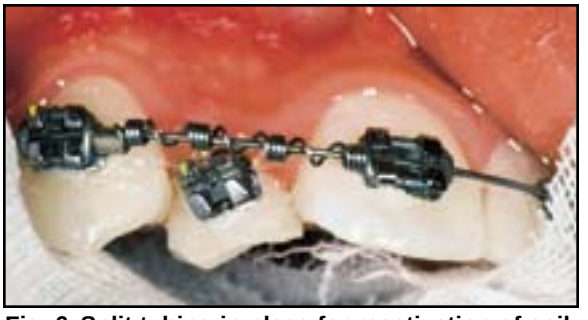

Fig. 6 Split tubing in place for reactivation of coil.

Fig. 7 Push coil reactivated for third time (in different patient).

If an insufficient length of spring is inadvertently placed on the archwire at the beginning, the push coil can be activated by adding split tubing as described above.

As with any space-opening system, the orthodontist should carefully monitor the positions of the adjacent teeth for unwanted and uncontrolled vertical and rotational movements throughout the procedure.

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