

# TECHNIQUE CLINIC

## Closing-Loop Activation Using Superelastic Wires and Bonded Brackets

**A**ctivating a closing-loop archwire using traditional stainless steel wires and bands is a simple process of cinching the wire behind the molar bands. Cureton and Storie have described an alternative method using a series of figure-8 ligatures to loops on the closing loops themselves.<sup>1</sup>

Today, the use of superelastic wires and bonded brackets creates two problems. First, these superelastic wires do not cinch easily, and when annealed, they may become brittle and break upon activation.<sup>2</sup> Second, cinching a heavy archwire behind a bonded molar bracket can easily lead to bond failure because of the additional force used to cinch or tie back the closing-loop wire.

I have found a solution for both problems. Measure the closing-loop wire in the mouth, then cut it at the distal of the second premolars. Mark the wire at the middle of each second premolar bracket. Make a 90° gingival bend at each mark (Fig. 1). Insert the wire in the brackets, and gently activate it by pulling it through the second premolar bracket slots. Tie it off with ligature wires distal to the second premolar brackets (Fig. 2).

Anchorage can be supported by adding either elastomeric



**Fig. 1** A. Ends of superelastic closing-loop wire bent up 90° outside the mouth. B. Closing-loop wire with 90° bend extends to middle of second premolar bracket.



**Fig. 2** Closing loop activated distally and tied behind second premolar bracket with ligature wire.



**Fig. 3** Anchorage supported with elastomeric module from first molar to second premolar.

modules or ligature wires from the second premolars to the first molars (Fig. 3). When reactivation is needed, simply remove the closing loop, rebend it outside the mouth, and reinsert it.

This design has the added advantage of allowing replacement of a broken bracket without having to cut and remake a closing-loop archwire that has been cinched behind the molars. Of course, those who use convertible molar tubes can remove the caps and use this system with the molar brackets without any additional anchorage support.

### REFERENCES

1. Cureton, S.L. and Storie, D.: Simplified activation of closing loops, *J. Clin. Orthod.* 32:490-492, 1998.
2. Ferreira, M.: The wire material and cross-section effect on double delta closing loops regarding load and spring rate magnitude: An in vitro study, *Am. J. Orthod.* 115:275-282, 1999.



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