

Non-Surgical Uprighting of Mesially Impacted Lower Molars

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A lower second or third molar that is mesially angulated beneath the gingival margin can be difficult to treat without extraction or surgical intervention. Accessing the tooth for bonding often requires either a modified gingivectomy, which may denude the attached gingiva, or painful de-impaction techniques using copper wire or springs.

I have developed a simple, painless method of uprighting such a molar enough to bond a bracket, thus avoiding more invasive approaches. Using the distal marginal ridge of a well-positioned, mesially adjacent molar as a fulcrum, a highly flexible wire can be placed to upright the target molar as follows.

Procedure

1. Referring to the patient's panoramic radiograph (or a periapical radiograph of the molars), cut a segment of rectangular Copper Ni-Ti* wire long enough that, when inserted vertically along the distal marginal ridge of the anchor tooth, it will just clear the mesial marginal ridge of the impacted molar and extend to the anchor tooth's occlusal surface (Fig. 1). Add 3mm to this measurement to accommodate the curvature over the anchor tooth's distal marginal ridge. The exposed end of the wire will lie across the central occlusal groove of the anchor molar, ending short of the mesial marginal ridge.
2. Insert the wire between the distal wall of the

anchor molar and the mesial marginal ridge of the impacted molar, making certain that the target tooth's mesial marginal ridge is cleared.

3. Place a small amount of light-cured composite (such as Band-Lok**) in the central fossa, bend the exposed end of the wire over the anchor tooth's distal marginal ridge until the end of the wire is embedded in the composite, and hold the wire end in place for light-curing.
4. Flow a small amount of composite over the

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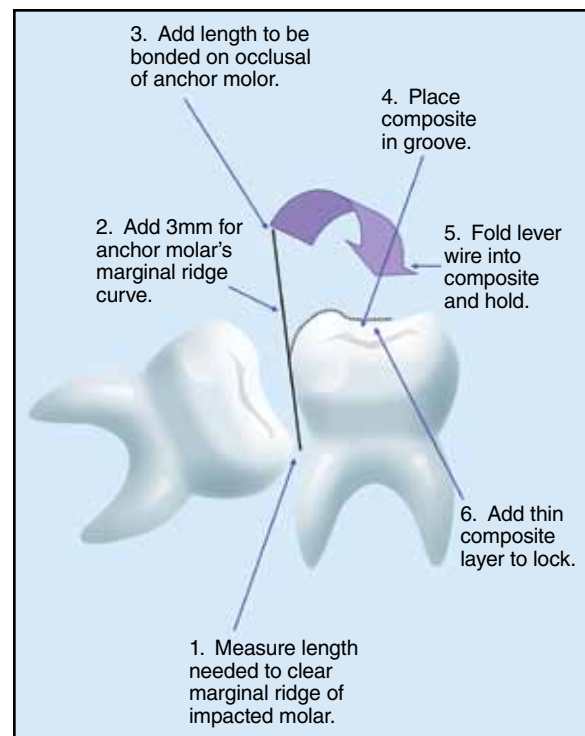
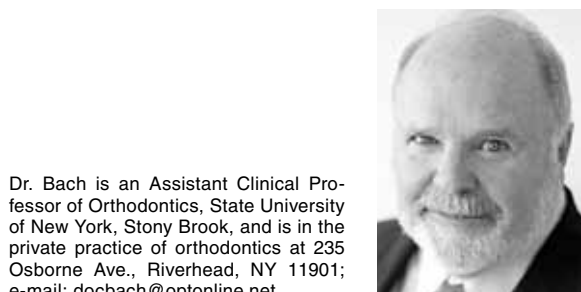


Fig. 1 Placing and bonding Copper Ni-Ti uprighting lever for uprighting of mesially impacted mandibular second or third molar.

bonded wire, and light-cure it to reinforce the bond (Fig. 2).

The lever wire needs no adjustment and may be removed when the target molar is sufficiently exposed for bonding. Figure 3 shows a patient after insertion of the wire segment and after eight and 16 weeks of treatment—a typical length of time for this procedure.

Discussion

Although the impacted molar may appear to be in contact with the molar it abuts, there is invariably an anastomosis between the oral cavity and the submarginal ridge of the target molar. Because the patient will feel discomfort if the lever wire is overseated, careful measurement is critical. A wire placed in the interproximal space will not impinge on the sensitive buccal or lingual tissues,



Fig. 2 Insertion and light-curing of .014" x .025" Copper Ni-Ti wire uprighting lever.



Fig. 3 A. Patient prior to insertion of lever wire segment. B. Eight weeks later. C. Another eight weeks later.

which are often affected in other de-impaction techniques.

A rectangular wire holds its plane of insertion, so that it can be angled slightly to the buccal or lingual without slipping past the contour of the target molar. This is especially important if a submerged target tooth is angled to the buccal or lingual of the anchor tooth. In early trials of this technique, I had three cases in which round wires slipped past the contours of the target molars. When I inserted .014" × .025" wires at slight buccal or lingual angles, they held successfully.

I have found that if I can fit an .014" Copper Ni-Ti wire into the contact space between the molars, I can usually get an .014" × .025" wire into the same space. The larger wire is also more rigid, which can be helpful during insertion. If the contact area is too tight for the .014" × .025" wire, however, I will revert to an .013" Copper Ni-Ti wire and replace it with an .014" × .025" wire eight to 10 weeks into treatment.

When using a wire larger in diameter than .018" Copper Ni-Ti, I place 2oz vertical elastics from the anchor molar to the upper molar to help the anchor molar resist the mesial and intrusive effects of the larger wire.

I have seen one molar that failed to erupt, but moved distally because the lever wire was not seated below the marginal ridge (Fig. 4). I left the tooth to settle to see if it might erupt after being freed from the marginal ridge of its mesial neighbor, and it has since begun to upright slowly.

After using this technique on 24 molars, I have yet to experience any breakage or debonding of the lever wire. I have found this to be an excellent, unintrusive, and reliable procedure for uprighting molars without surgery or miniscrews. □

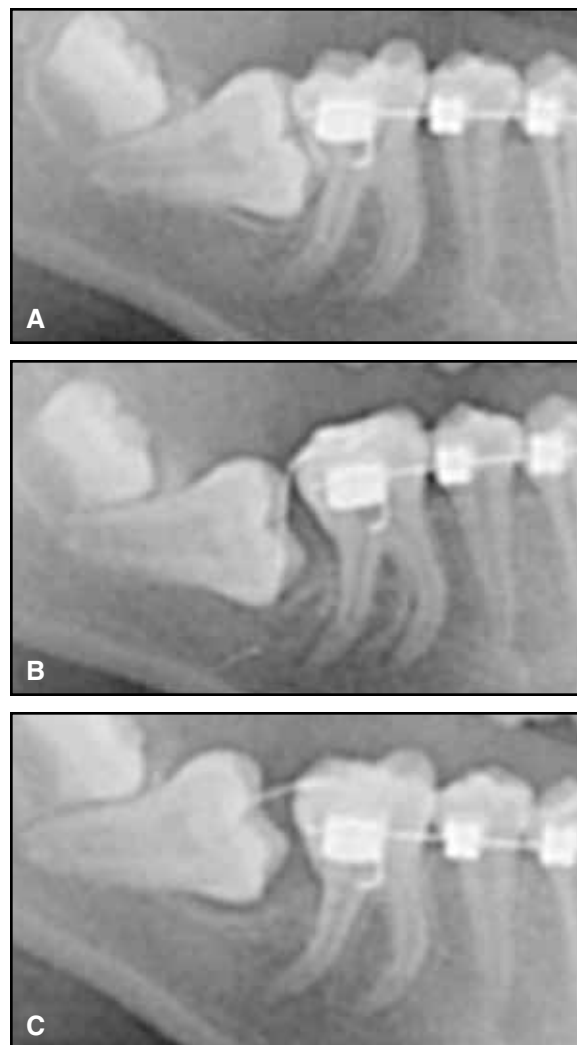


Fig. 4 Unsuccessful placement of uprighting lever below marginal ridge of target molar, resulting in bodily distalization rather than uprighting. **A.** Prior to initial insertion. **B.** Eight weeks later. **C.** Another eight weeks later.