



While repeated failures of bonded molar tubes can be exasperating, placing bands is not always a viable option. In this Pearl, the authors demonstrate how a simple extra step can produce better results. By adding a wide buccal composite base, we can improve adhesion of a molar tube.

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Improving the Bond Strength of Molar Tubes

In 2019, Cetta and Kaye introduced the Precision Aligner Button,* an attachment with an extra-wide base that provides a larger surface area for bonding retention.¹ This month's Pearl applies the same principle to bonding molar tubes. We learned it from Dr. Harrison Jo, but Dr. Randy Moles may have introduced it nearly 30 years ago.

Technique

After bonding the tube with Transbond** XT (A), add a small amount of the composite to the tooth's buccal side, over the occlusal part of the base and the tube (B). The composite should not extend over the buccal cusps, since bracket adhe-

sive paste has a high quartz content and can cause wear on the opposing molar (C).² If necessary, the composite can be beveled with a handpiece to avoid occlusal interference. The goal is to increase the surface area of the base, thus enhancing bond strength and deflecting force.

To test the efficacy of this technique, we conducted a small-sample study. Four extracted lower third molars were collected from an oral surgeon and stored in a .5% solution of chloramine-T. A molar tube was bonded to each tooth using an L-Pop*** and Transbond XT, but only two teeth received the extra buccal composite. The shear bond strength of the molar tubes was tested with an ElectroPuls E3000† instrument. Results showed that the application of buccal composite to the molar tubes increased their bond strength by about 60% (a mean of 23.81MPa, compared to 14.82MPa for the control group).

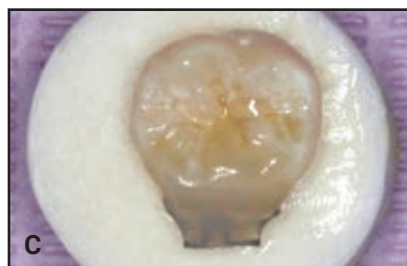
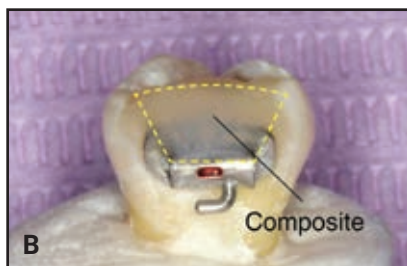
If resin turbos are needed on the lower molars, either T.K.O.*** or Ultra Band-Lok*** can be used instead of bracket adhesive paste for the buccal material. In this scenario, the less abrasive acrylic gel or band cement is extended over the buccal cusps to improve tube retention while opening the bite.²

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†Registered trademark of Instron Corporation, Norwood, MA; www.instron.com.



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