

# A New Approach to Indirect Bonding

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In addition to being a highly technique-sensitive procedure, indirect bonding has two significant disadvantages. First, the occlusolingival insertion of a transfer tray causes the adhesive-coated bracket to scrape along the long axis of each tooth, resulting in more uneven distribution of the adhesive compared with the perpendicular placement of direct bonding. Second, when opaque transfer trays are used, the putty covering the palatal surfaces prevents light-curing from the palatal or occlusal side.

Our indirect technique uses a modified acrylic platform in which the putty is placed only on the labial and buccal surfaces, providing easier access for light-curing. Two L-shaped handles are squeezed together to flare out the transfer tray, allowing placement of the brackets at right angles to the tooth surfaces.

## Procedure

1. Pour an impression in plaster, and affix the brackets to the working cast with a water-soluble adhesive (Fig. 1).
2. Center the bracketed cast on a transfer tray that

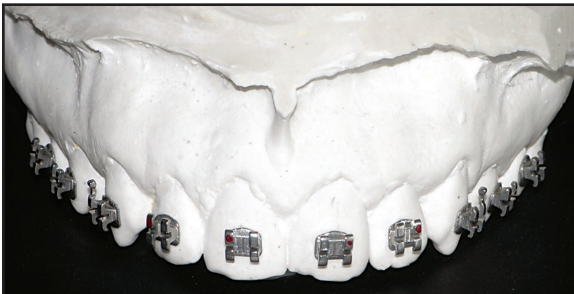


Fig. 1 Brackets placed on working cast with water-soluble adhesive.

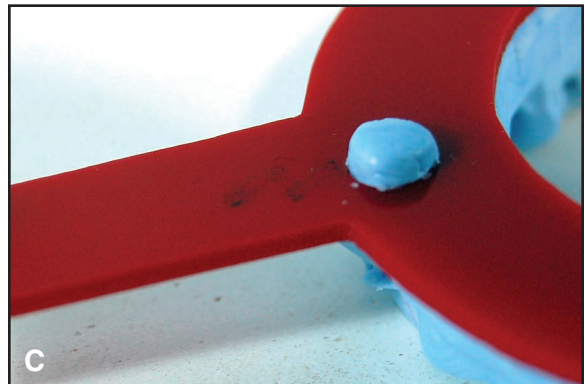
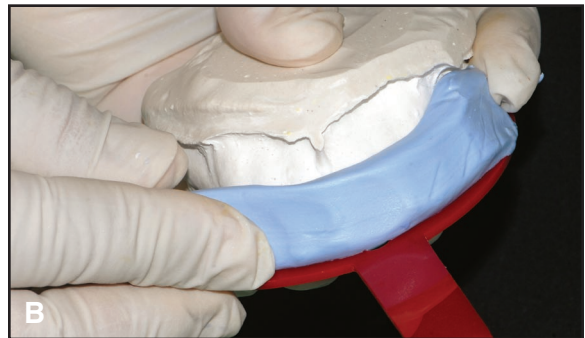


Fig. 2 A. Working cast centered on flat, horseshoe-shaped platform. B. Putty applied over buccal surface of cast. C. Putty pressed through hole in platform.

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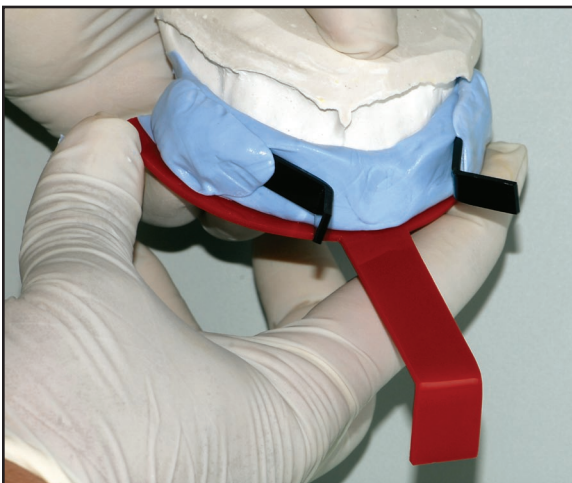
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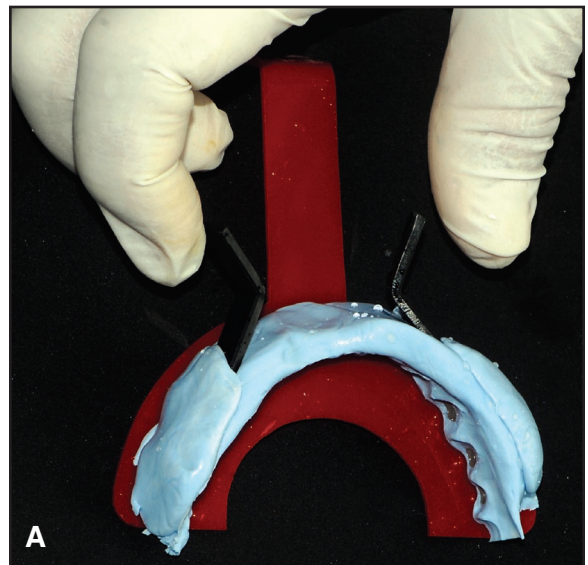


**Fig. 3** Two sticks of acrylic bent at 90° angles and attached to buccal sides of putty tray to form handles.

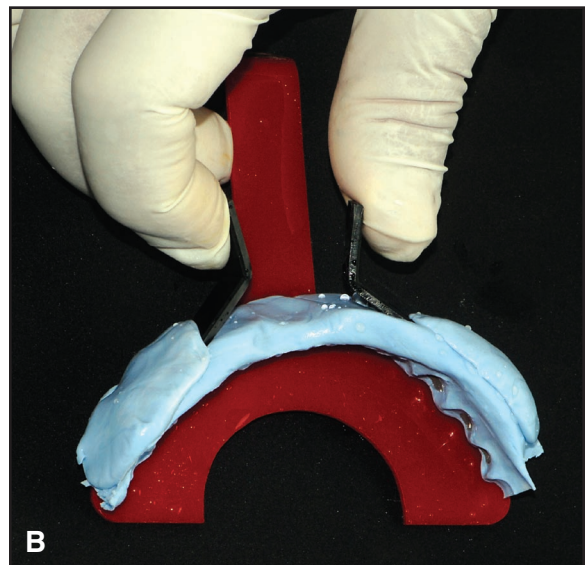
has been modified into a flat, horseshoe-shaped platform (Fig. 2A), and apply putty\* over the buccal surfaces of the cast (Fig. 2B). The registration hole in the center of the platform allows some putty to pass through, holding the putty tray in position and acting as a pivot point (Fig. 2C).

3. Attach two acrylic or metal strips (60mm long × 7mm wide × 3mm thick), bent at a 90° angle (Fig. 3), to the buccal sides of the putty transfer tray using excess putty material. Once the material has set, place the transfer tray in water for a few minutes to dissolve the adhesive.

4. Remove the transfer tray with the brackets intact. Expand the posterior sections of the tray by gently squeezing the acrylic handles (Fig. 4), which will enable placement of the posterior



A



B

**Fig. 4** A. Completed transfer tray. B. Posterior regions of transfer tray flared out by squeezing handles.

\*Aquasil, trademark of Dentsply International, P.O. Box 872, York, PA 17405; www.dentsply.com.

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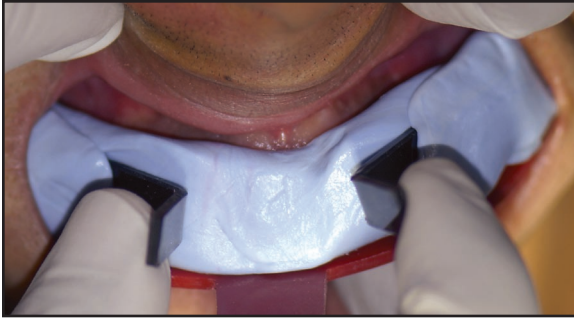


Fig. 5 Tray tried in patient's mouth.

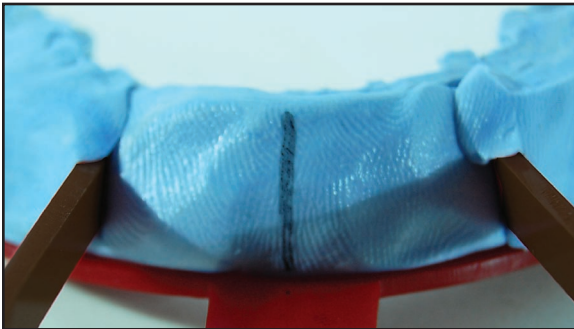


Fig. 6 Midline marked on transfer tray.

brackets at 90° to the surfaces of the teeth.

5. Try the transfer tray in the mouth, first holding it against the anterior teeth while squeezing the handles together, then slowly releasing the handles to position the posterior brackets perpendicularly (Fig. 5).

6. Mark the midline on the transfer tray for ease of placement (Fig. 6).

7. Prepare the teeth as usual for bonding. Clean the bracket bases with a three-way syringe and a brush (Fig. 7).

8. Apply a light-cured or self-curing primer to the bracket bases (Fig. 8).

9. Load the brackets with an appropriate amount of chemically or light-cured adhesive.

10. Transfer the loaded tray to the mouth while gently squeezing the handles for posterior expansion. First press the tray against the labial surfaces of the anterior teeth, then slowly release the handles to place the posterior brackets.

11. Hold the tray until the adhesive sets, or light-cure the palatal and/or occlusal surfaces for 60 seconds each. Curing from the occlusal is easier if the flat platform is gently dislodged from the transfer tray.

12. After the adhesive has cured, remove the tray (Fig. 9).

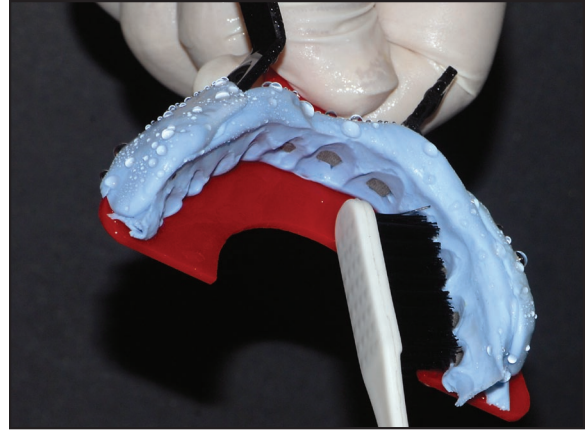


Fig. 7 Bracket bases cleaned with brush.

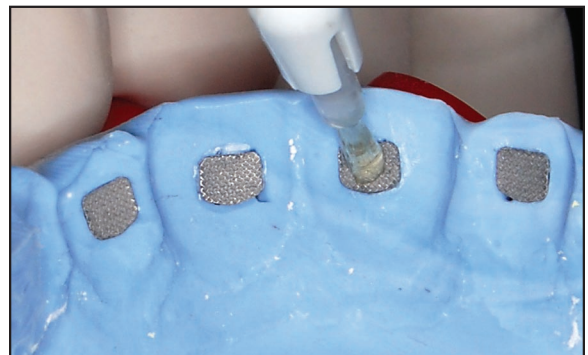


Fig. 8 Primer applied to bracket bases.



Fig. 9 Brackets in place after curing.

### Discussion

This technique combines the major advantages of direct bonding (uniform adhesive distribution from perpendicular bracket placement) and indirect bonding (precise placement and shorter chairtime). In most cases, we have found this procedure to be more clinically efficient than the methods previously used in our department. For extremely rotated teeth, however, we have found it easier to bond brackets directly. □