

Compiled by Geoffrey M. Knight



Dabbling with diastemas

A young dentist, working in rural Victoria, recently made a significant observation about many of her patient's perceptions of cosmetic dentistry. 'Patients say they can afford a single crown but this won't fix their smiles, whereas for about the same fee, direct bonding enables them to solve *their* aesthetic problems with their teeth'.

As dentists we often get caught up in the processes of dentistry, when maybe we should be focusing with our patients more on the outcomes.

Diastema closure was one of the early applications using direct composite resins and remains a popular treatment option either to improve aesthetics or help stabilize an arch after orthodontic treatment.

Early space closing techniques involved merging composite resin from the gingival margins to meet centrally between the two teeth. This technique creates good gingival margins but causes an unsightly black space at the gingivae. Building out the composite resin at the gingival margins improves aesthetics but difficulties with creating smooth margins predisposes to gingival inflammation (Fig. 1).

The following technique will create an aesthetic result that assures smooth gingival margins.



Fig. 2.

Microfill composite resin placed on the facial aspect will assure a long term aesthetic result when applied in a disciplined manner repolished about three months after initial placement. Nulite I resin may be used on the lingual surfaces if added strength is required in the restoration.

• Prior to placement carefully check the occlusion in protrusive and lateral excursions to the limits of mandibular movement. Pronounced interferences should be corrected or may disqualify direct composite resin as a treatment option (Fig. 2).

• Clean surfaces on both facial and lingual aspects with pumice paste in a rubber prophyl cup. Remove pellicle from the gingival margins both facially and interproximally with a blunt, 12 fluted tungsten carbide bur, taking care to avoid traumatizing gingival tissue. Food or nicotine stains on the lingual aspects of upper incisors will interfere with shade taking.

• Choose resins prior to etching. The type of composite will be determined by function: Microfill resins for aesthetics, Nulite F for strength, Hybrid resins for wear resistance. Shades will be determined by the body shade of the teeth, a suitable incisal hue and possibly white or brown tints to blend the restoration into the overall tooth surface.

• Chemically cauterize gingival tissues adjacent to the procedure with Trichloroacetic acid to minimize gingival exudate that may cause marginal staining. A solution of Sodium Bicarbonate should be on hand as an antidote to TCA burns. Carefully wash away the TCA with copious amounts of water. The white eschar that forms is self limiting and soon disappears without permanent tissue damage.

• Etch the teeth with 37 per cent phosphoric acid for 10 seconds, wash and dry with oil free air.

• Isolate the teeth with cotton rolls. The use of rubber dam for this procedure may interfere with the aesthetic results of the restoration.

• Apply a layer of Fuji Bond LC over the entire tooth surface, thin the layer with air from a triplex syringe and cure for 20 seconds. This creates a fine flexible film at the restorative interface that subjectively seems to reduce fractures and resist staining.

• Apply a layer of resin bond with a Ward's carver or suitable plastic instrument. Place a small increment of body shade microfill resin on the proximal facial surface from just above the gingival margin to just short of the incisal edge. Spot cure for 10 seconds (Figs. 3 and 4).

• Repeat the process on the adjacent proximal surface. Closing diastemas

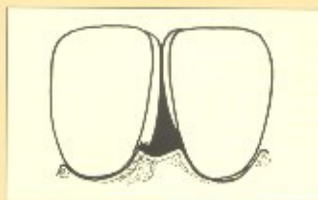


Fig. 1.



Fig. 3.



Fig. 6.

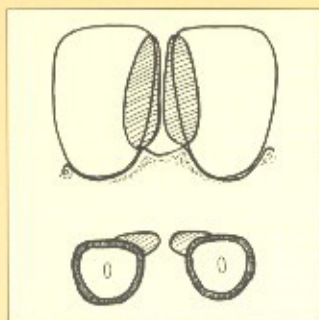


Fig. 4.

between central incisors requires building up the proximal surfaces so that both restorations will contact at the midline.

• Defects on the enamel surface can be carried over onto the restoration using suitable coloured tints at this stage of the restoration. As a 'rule of

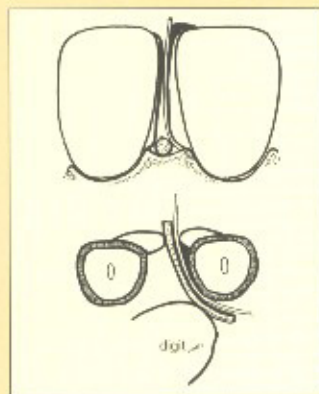


Fig. 5.



Fig. 7.

thumb' always place fewer tints than seems to be required.

• If the proximal area requires strengthening, Nulite F can be placed on the proximal lingual aspect up to the incisal edge.

• Place a paper point of a size that fits comfortably into the interproximal space. Insert a Mylar strip between the paper point and tooth. Place a forefinger on the lingual surface over the Mylar strip and paper point (Fig. 5).

• Apply a thin layer of resin bond and gently pack an increment of enamel shade microfill resin to just overfill the proximal area defined between the tooth and Mylar strip (Figs. 6 and 7).

• Wrap the Mylar strip over the labial surface and light cure the restoration for 20 seconds.

• Repeat the process for the adjacent proximal surface.

• Check the restorations with articulating paper to determine there are no occlusal interferences in centric lateral or protrusive positions.

• Using a coarse emery disc cut the labially placed resin back to the enamel contour. Finish the restorations with high speed tungsten

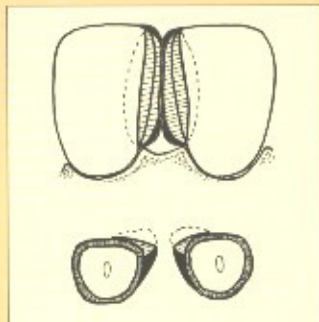


Fig. 8.



Fig. 9.

carbide points, slow speed pointed and round diamond burs and mini interproximal discs. Polishing is carried out with fine discs and rubber wheels and interproximally with flexible abrasive strips (Fig. 8).

• Recall patients in a week for a final polish and to establish there are no occlusal interferences or overhangs at the proximal margins (Fig. 9).

No single technique is applicable for every clinical situation, however practitioners may find this a useful outline that can be applied to a range of clinical situations.

Compared to porcelain laminates that require removal of significant amounts of enamel, often from young unmarked teeth, direct composite resin procedures rarely require tooth removal. While the half life of a porcelain laminate is about 14 years, the half life of a direct restoration is as long as the patient chooses to have it maintained.