

Orthodontic Treatment Veneers

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One of the most vexing problems encountered by orthodontists is that of undersize or peg-shaped upper lateral incisors. According to “Divine Proportion” calculations, the ideal width of an upper lateral incisor is .618 the width of a central incisor (Fig. 1). Smaller upper laterals virtually guarantee a tooth-size discrepancy between the upper and lower arches, making it difficult to achieve or maintain a stable and esthetic result.

If the orthodontist decides to leave an undersize lateral as is and retain the space for future crowns or ceramic veneers, the tooth must be ideally placed between the central incisor and



Fig. 1 “Divine Proportion” caliper shows correct width of lateral incisor compared to central incisor.

cuspid. Its palatal-labial location and its root torque and tip are all vital to an optimal restorative result. The relative crown-root ratio defines the correct tooth thickness and width for orthodontic positioning. Without a flat facial surface, however, a preadjusted bracket cannot express itself properly, which further complicates tooth movement. Even after an undersize lateral incisor has been properly positioned, keeping it there until final restorative procedures requires almost constant retainer wear and exceptional patient compliance. Any slight movement of the tooth can necessitate retreatment of the anterior teeth prior to ceramic veneer placement.

Another option is to have the general dentist restore the undersize lateral with a temporary composite crown once sufficient space has been obtained. The orthodontist retains more esthetic control, however, by constructing temporary labial composite veneers for use during active orthodontic treatment and retention, until final restorations can be completed (Fig. 2). That option is described in this article.

Orthodontic Treatment Veneers

Orthodontic treatment veneers* (OTVs) are temporary composite facings fabricated by the

*Orthodontic Veneer System, Reliance Orthodontic Products, P.O. Box 678, Itasca, IL 60143.



Fig. 2 A. Open-coil spring placed on mesial of upper right lateral incisor to center it in available space. B. It is easier to level lower arch and achieve desired vertical dimension before placing Orthodontic Treatment Veneer (OTV). If bite is too deep, lingual surface of OTV will be polished too thin. C. Upper left lateral incisor has adequate space for ideal OTV without using open-coil springs.

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orthodontist as an interim solution to upper lateral incisor tooth-size discrepancies (Fig. 3). They are designed to establish proper crown size during active orthodontic treatment, to maintain adequate space mesial and distal to the undersize crown, and to preserve that tooth position until the final crown or ceramic veneer can be placed by the restorative dentist, usually at the completion of jaw growth (in other words, full eruption of the teeth). The OTV allows the orthodontist a better purchase on the undersize tooth and gives the patient an esthetic alternative to full temporary crowns.

The most obvious indication for an OTV is a peg-shaped lateral incisor. Undersize or badly shaped lateral incisors are also good candidates.

When correcting to a Class I occlusion, final overjet is dictated by tooth size and symmetry. If this is not achieved and maintained during orthodontic treatment, it will remain a problem during the restorative phase.

Clinical Procedure

The first step is to establish the correct spacing mesial and distal to the tooth to be veneered. After aligning the upper arch, use open-coil springs as needed to achieve the proper spacing. Because of incisor morphology, the esthetic result is generally better if the lateral incisor crown is slightly closer to the central incisor than to the cuspid.



Fig. 3 A. Undersize upper lateral incisor before placement of OTV. B. Proper shape and size achieved with OTV. C. Lateral incisor bracket direct-bonded to veneer surface to continue orthodontic treatment.



Fig. 4 Interproximal and incisal edges of adjacent teeth may need to be recontoured to achieve proper lateral incisor size.



Fig. 5 Vita-Shade guide, included with OTV system, determines appropriate tooth shade.



Fig. 6 Four faciform sizes are available for each lateral incisor.



Fig. 7 Faciform tried on tooth to check width and length. This one is too long and will need to be trimmed with contouring scissor.

Tooth Preparation

1. After properly positioning the teeth to be veneered, remove the brackets.
2. Reshape the teeth adjacent to the undersize teeth if necessary (Fig. 4).
3. Polish off any residual cement.
4. Determine the appropriate shade of the veneers (light, medium, or dark) using a Vita-Shade guide (Fig. 5).

Veneer Placement

1. Choose a faciform with the correct mesio-distal width from among the four sizes for each lateral incisor (Fig. 6).
2. Try the faciform on the tooth to check its width, length, and gingival fit (Fig. 7). Use a contouring scissor to shorten the faciform if necessary.
3. Isolate, etch, and seal the entire facial surfaces

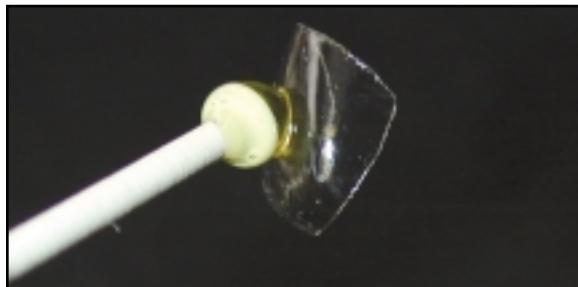


Fig. 8 Stick-n-place wand attached to labial surface of trimmed faciform.

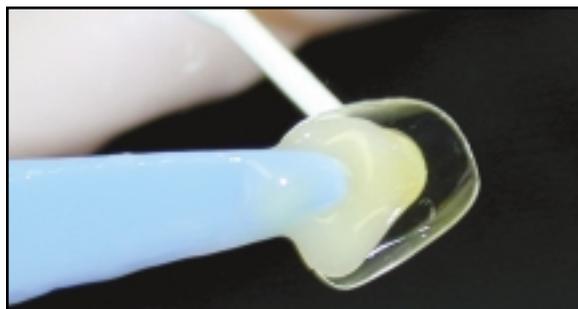


Fig. 9 Faciform filled with appropriate shade of composite in thin, even layer.

of the teeth to be bonded. Keep the teeth isolated with cotton rolls.

4. Attach a Stick-n-place wand* to the labial surface of the trimmed faciform (Fig. 8). Fill the faciform with Reliance composite* of the appropriate shade in a thin, even layer (Fig. 9). Adding drops of sealant can help soften the composite while pressing it into the faciform.
5. Press the faciform with the composite onto the prepared tooth surface, holding it steady with the Stick-n-place (Fig. 10). Keep it in place with the fingers while removing the Stick-n-place from the faciform.
6. Remove excess composite from the lingual and gingival margins with a scaler. Smooth the remaining composite over the lingual surface with a styrofoam pledget moistened with sealant (Fig. 11). The composite should extend through the contacts to the lingual surface of the tooth.

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Fig. 10 Filled faciform pressed onto prepared tooth surface with Stick-n-place.

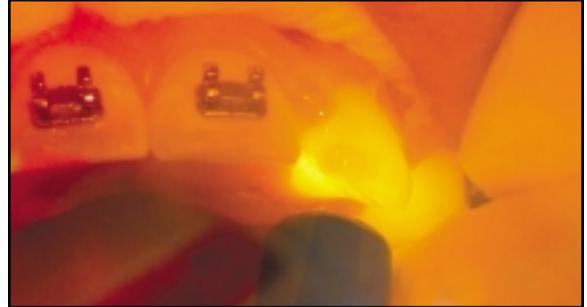


Fig. 12 Facial and lingual surfaces light-cured for 30 seconds.



Fig. 11 After excess composite is removed from lingual and gingival margins, remaining composite is smoothed over lingual surface using styro-foam pledget moistened with sealant.



Fig. 13 Faciform peeled away with scaler or explorer, starting at incisal edge.

7. Light-cure the facial and lingual surfaces of each tooth (with the faciform still in place) for 30 seconds (Fig. 12).

Finishing

1. Peel away the faciform with a scaler or explorer, starting at the incisal edge (Fig. 13).
2. Polish and shape the incisal edge and lingual surface as needed (Fig. 14). Use a flame bur along the gingival margin to remove any composite flash and a sandpaper disc to smooth the incisal edges and round the corners.
3. Use a lightning strip to ensure that the mesial and distal contacts are open.

Rebracketing

1. Rebracket each tooth immediately after re-



Fig. 14 Lingual surface and incisal edge smoothed and polished with appropriate bur.

shaping the veneer (Fig. 15). Etching is not necessary, but the sealant recommended for your bonding system should be applied. The brackets can be positioned to provide optimal crown placement of the veneered lateral incisors.

2. Replace the archwire and continue with treatment. Level and align the arch as needed, closing

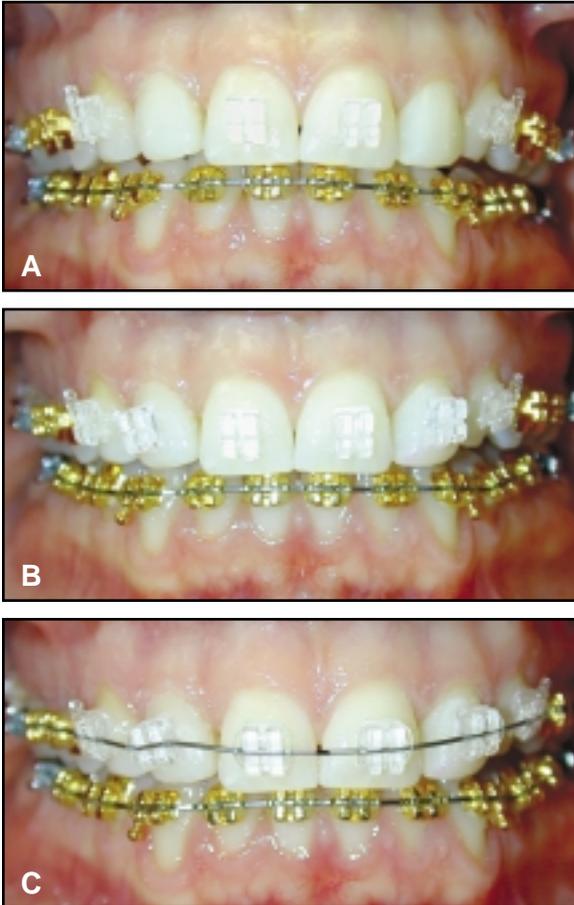


Fig. 15 A. Finished OTVs on upper right and left lateral incisors. B. Brackets bonded to veneer surfaces. C. Archwire placed for continuation of treatment.

any remaining spaces with elastic chain (Fig. 16).

Restorations

1. After the completion of orthodontic treatment (Fig. 17), use the OTVs to maintain the space around the small upper laterals while the patient is in retention.
2. Refer the patient for final placement of veneers or crowns by the restorative dentist (Fig. 18).

Conclusion

The OTV is an excellent tool for maintaining space around small laterals, enhancing the esthetic finish, and establishing a framework for the final restorative crowns or porcelain veneers (Fig. 19). The orthodontist should communicate clearly to the patient that the OTV is a temporary measure. While the patient is in active treatment, we assume the responsibility for taking care of the veneer and repairing it if necessary. Should the OTV become dislodged after orthodontics is completed, the patient needs to see the general dentist for a more secure restoration. It is also important to make the restorative dentist aware that you are placing the OTV as an interim facial composite that allows the crown and root of the undersize tooth to be properly positioned for the final veneer or crown placement.



Fig. 16 During leveling and alignment, OTV on upper left lateral incisor helps maintain normal spacing for small lateral.



Fig. 17 Patient after completion of orthodontic treatment.



Fig. 18 After placement of final ceramic veneers by restorative dentist.



Fig. 19 A. Different case showing correct spacing, with undersize lateral incisor left slightly to mesial. B. Placement of OTV. C. Rebracketing for continuation of orthodontic therapy.

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