

Non Orthodontic Realignment Utilizing a Non Invasive Direct Resin Technique

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In recent years, significant improvements in composite resin technology have occurred. The development of these composite materials has provided clinicians with the ability to directly restore fractured, misshapen, malaligned teeth and to repair enamel defects easily.

The availability of composite materials with improved physical and optical characteristics facilitates the development of enhanced aesthetics while maintaining vital function.

The direct application of composite resin has grown in importance to contemporary dentistry, and its use will continue to expand as material composition is improved by future research.^{1,2}

The introduction and further

development of hydrophilic dentin bonding agents have added a new horizon to restorative possibilities. Since then, more conservative approaches to restorative solutions based on adhesive technology are taking place, causing practitioners everywhere to choose “augmentation” over “amputation” of the remaining sound tooth structure when ever indicated.³

Direct application of composite resins satisfies considerations for the patient and practitioner. They include, single appointment, direct clinician control, and reduced expense. The major drawback why most dentists do not do more direct bonding is they are not receiving a fair fee for the time involved to achieve a natural result. The proficiency of clinicians using direct procedures

must be improved. Significant improvements in the stratification of composites permit natural depth and visual effects similar to those of porcelain build up techniques.⁴

This article presents a simplified technique that combines function with aesthetics, and a very conservative approach, that is 100% reversible.

CASE PRESENTATION

A 34-year-old female patient presented for a consultation concerning anterior aesthetics that she was not pleased with. The patient stated she did not like the way her teeth showed dark spaces against the lower arch when smiling. Another area of concern was the position of her left lateral incisor. It was in lingual version and locked behind

the left central incisor. The midline embrasure also slanted to the patient's left side. Bilateral negative space was present distal to the cuspids. The anterior open bite bilaterally of the laterals and cuspids was caused by a tongue thrust habit. A preoperative smile is shown in Figs. 1 and 2. When the patient was in centric occlusion, she did not contact the lateral incisors and cuspid (Fig. 3). In addition, the upper arch was slightly narrow in the anterior region with moderate crowding (Fig. 4).

Orthodontic treatment was the ideal choice for restoring this case. The patient felt she did not want to go with that treatment option at this time.

Direct free hand bonding was explained to the patient as the most conservative, reversible treatment available. This case would be done without any preparation of tooth structure. This would allow the patient to have the bonding removed in the future if she did not like it, without placing a bur on the teeth.

There would be a small aesthetic compromise in the final outcome to the case, without any preparation of tooth structure, but the conservative nature of doing this case was more important than removing healthy tooth structure.

The treatment involved direct composite veneers on the right first bicuspid, cuspid, and lateral incisor. The mesial incisal embrasure of the left central incisor would receive a small amount of composite. Direct composite veneers on the left lateral incisor, cuspid, and first bicuspid were also employed. The composite would be blended into the cervical of the cuspids and right lateral incisor without covering the whole tooth surface. This would

allow more chroma at the cervical area of these teeth.

Restoring one tooth at a time allows the dentist to develop ideal interproximal contact areas and overall shape and contour. Each tooth needs to be isolated with a matrix band or plastic strip and then acid etched. A bonding agent is applied and light cured. Incremental build up is then accomplished. The tooth is finished and polished prior to starting the next tooth.

CLINICAL TECHNIQUE

Prior to starting the case, the first step is to determine the shade of the teeth. A color map may be needed if there is a significant shade difference between the cervical, middle, and incisal thirds.

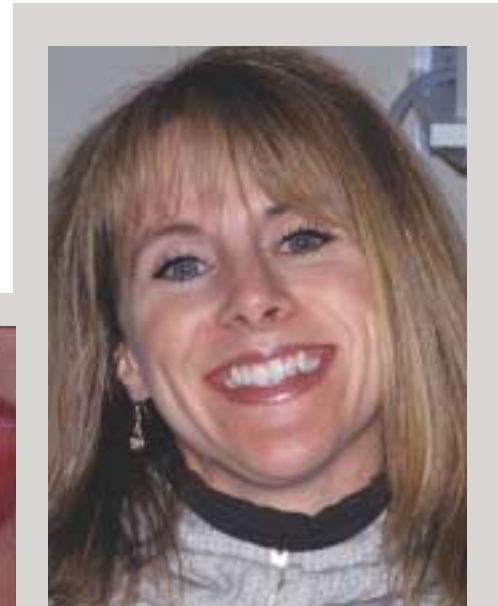


FIGURE 2



FIGURE 1



FIGURE 3



FIGURE 4



FIGURE 5



FIGURE 6



FIGURE 7



FIGURE 8



FIGURE 9



FIGURE 10



FIGURE 11



FIGURE 12



FIGURE 13



FIGURE 14

The left lateral incisor in lingual version is the first tooth worked on. This will help set up the case (Fig. 5). Once the tooth is etched, a bonding agent was applied and light cured for 20 seconds (Fig. 6). The teeth have moderate translucency, and only enamel is being replaced. Therefore, a microfill was chosen to build out the facial contour. A hybrid is not needed for opacity or strength in this area.

Renamel microfill (Cosmedent Chicago, Ill.) was placed in 2mm increments, to establish dentinal lobes and is subsequently light cured (Fig. 7). The mamelon

anatomy can be enhanced through the placement of tints. Violet tint was added to the lobe concavities and interproximal region to provide a more translucent effect (Fig. 8). The tints were light cured for 20 seconds.

Sufficient space must be left on the facial aspect for subsequent placement of the incisal light microfill. Once the microfill is sculpted into the desired shape and position it is light cured for 40 seconds (Fig. 9).

Prior to starting the next tooth, this tooth is contoured, finished, and polished. This step is accom-

plished with disks, and finishing carbide burs such as ET burs from Brasseler and flexi disks from Cosmedent.

The tooth should be viewed incisally to verify the accuracy of the three planes of facial contour.⁵ The subtle surface characterizations must be evaluated, and a high polish should be established on the final surface layer. This is easily accomplished using enamelize polishing paste with flexi-buffs (Cosmedent, Inc.).

Horizontational perikymata can be placed using a diamond with a light touch from mesial to distal surface.

Once the restoration is completed, the same process in sequential fashion would be followed for the adjacent teeth.

It is important to note that when increasing the incisal length, a hybrid composite is needed for strength and opacity.



FIGURE 15

The right lateral incisor requires incisal lengthening. A hybrid is placed first and undercontoured on the facial (Fig. 10). Microfill composite is placed, sculpted and contoured. This is light cured for 40 seconds (Fig. 11).

The final contour and polish of the right lateral incisor is now complete (Fig. 12). The exact same steps are followed for the remaining teeth to be restored.



FIGURE 16

CONCLUSION

Addressing your patients concerns and needs and providing a predictable outcome is paramount to achieving clinical satisfaction. Simply providing a pleasing natural result will fall short in your patient's eyes if their preferences are not addressed. Optimal clinical success can be accomplished once the dentist has an adequate understanding of composite layering techniques, the use of tints, opaquers, and contouring, finishing and polishing protocols. The final result is shown in Figures 13, 14, & 15. **OH**

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Oral Health welcomes this original article.

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