

Six Veneers Often Will Limit the Esthetic Outcome

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ABSTRACT

When improving a patient's smile, careful consideration must be given to determining the number of teeth to be enhanced, so as to ensure the desired esthetic result. Largely due to their training in dental school, many dentists are limited in their thinking by the notion that the anterior teeth merely consist of "canine to canine." In reality, the smile most often extends distally, to at least the second bicuspid. Esthetic compromises may occur if the buccal corridor is not considered, and this could potentially create an unfavorable end result for both the dentist *and* patient. In adhering to the aforementioned "anterior limitation," the Periodontal apparatus of the buccal corridor often is ignored, leading to further esthetic compromise. Careful consideration of the canine will be explored here, as it is an integral facet in the foundation of an esthetic smile.

LIMITED PARAMETERS

For years, dental schools across the country have been educating aspiring dentists in the distinction between "anterior" and "posterior" teeth, and their respective positions within the maxillary and mandibular arches. The predefined anterior region that dentistry has known for many years has substantial limits with regard to modern smile design and contemporary philosophies. Its limiting parameters can set up the restoring dentist for an esthetic failure when designing a smile for his or her patients. Is it possible that our educators are misleading young dentists when defining these regions? And where does contemporary smile design fall within this antiquated guideline? Considering only six teeth within the smile zone can impose a psychological restriction for the treating doctor when considering the point where the anterior teeth terminate within the Smile, and where the posterior teeth begin. This transition must be revisited, as there is now a paradigm shift beyond the mere "canine to canine," which has been the industry standard for so many years.¹ Dentistry has evolved to a state where there can be a broadened transition between the anterior and posterior regions, even to the point of having a generous overlap of these two areas to achieve the desired result.²

TRANSITION FROM ANTERIOR TO POSTERIOR

The transition from anterior to posterior teeth, addressed extensively in dental schools, occurs at the distal of the canine. In other words, the distal of each canine marks the termination of the anterior teeth, and the mesial of the first bicuspid is the beginning of the posterior teeth, or so it has been taught. This very well may be one of the reasons that this has traditionally been considered the transition from "front teeth" to "back teeth." Unfortunately, if this traditional definition is strictly adhered to when considering modern smile design, the esthetic limitations are tremendous. Treating only the "anterior" teeth will inevitably yield a less-than-desirable result.

When examining a person's smile (Fig 1), one quickly notices that the smile line most often exceeds the anterior six teeth, often extending beyond the second bicuspid region. Some dentists lose sight of the compromised esthetic result based on their traditional knowledge of where the anterior teeth *should* terminate. There is rarely a reason, save financial, as to why we, as clinicians, cannot extend smiles into the posterior region, which will enhance the smile enormously (Fig 2).³

When a smile is observed from the straight view (Fig 3), one notices that the buccal corridor region, distal to the canines, slightly "drops off" from this smile. If the smile is restored only from canine to canine (with the buccal corridor ignored), the resulting smile, although enhanced on some level, will often be short of ideal. When the buccal corridor is addressed (Fig 4), however, the crafted smile will have a more desired outcome and harmony (providing the patient's budget permits).³ This occurs partly because of the positioning of the canines relative to the bicuspid. In addition, the relative repositioning of the restored teeth can tend to accentuate the imperfect placement of the existing unrestored teeth within the arch. In Figure 5, the photograph was modified (placement of only six postoperative teeth over the preoperative picture, and for illustrative purposes only) using Adobe® Photoshop® 7.0 to show what the smile would look like had only six teeth been restored, versus the actual 10 teeth (Fig 4) that were restored. Notice the substantial differences between Figure 4 and Figure 5 with regard to the buccal corridor, creating a deficiency within the bicuspid region bilaterally. This will constitute a substantial limitation in the esthetic result, causing potential limitations with

regard to the expectations of the dentist (and potentially, the patient). If only six teeth are restored, then the diminished buccal corridor and lack of accompanying gingival apparatus is accentuated still further (Fig 5).⁴ If dentists classify the anterior region as merely “canine to canine,” neglect the gingival structure about the bicuspid, and restore only the anterior six teeth (Fig 5 versus Fig 4), then the overall esthetic result will most likely be limited.

To take this discussion a step further, an additional modified photograph was created (using Photoshop 7.0, superimposing only four postoperative teeth over the preoperative picture, and for illustrative purposes only), with only four teeth restored (Fig 6). Compare Figure 6 with Figure 5 and it will be observed that there still is a loss of the buccal corridor and no improvement of the gingival tissue from the canines to bicuspid. It is interesting to note, however, the improvement over Figure 5 (the restored six veneers). The differences are subtle but noticeable between these two Figures. This example illustrates how four veneers (Fig 6) or 10 veneers (Fig 4) satisfy a degree of esthetic improvement. Although the six-veneer example (Fig 5) is an enhancement as well, further scrutiny will reveal that this is the least desirable of the options.

When viewing Figure 4 and Figure 5, the astute observer will also notice the deficiency within the gingival apparatus.⁴ Gingival heights, zenith, and symmetry also may be compromised if not addressed using a laser or electrosurge unit (depending on the clinician’s preference). Figure 4 shows that the gingival height was increased approximately 2.0 mm on the patient’s right side and 1.0 mm on the patient’s left side (this author used the Odyssey Diode Laser [Ivoclar Vivadent; Amherst, NY]). In addition to improving the gingival height and zenith, laminate veneers were also bonded from teeth #4-#13 in Figure 4.³ The combination of gingival contouring and placement of the veneers from tooth #4 to tooth #13 widened the buccal corridor, substantially adding to the final esthetic result.

Opinions as to the beauty of specific smiles are subjective, but the majority would agree when viewing a patient’s smile, Figure 7 and Figure 8 the buccal corridor must be considered when determining the number of teeth to be restored.⁴ In comparison to the earlier Figures, Figure 9 was also modified with Photoshop 7.0 (for illustrative purposes only), to demonstrate that the placement of six veneers would greatly have compromised the final outcome of this case.

CANINES’ ROLE

In addition, the canines play an important role in the transition from the anterior to the posterior region, based on the fact that the canines hold characteristics true to both the posterior and anterior regions, respectively.⁵ For example, when viewed from the incisal, the canine has a facial component that transitions the arch form from anterior to posterior more than any other tooth (Fig 10).³ The canine is key in defining arch form and often is thought of, mistakenly, as the anterior termination point of a smile even though a smile usually will extend well beyond the canines. Given that the canine does hold such a strong position within the arch, it should also be considered that if teeth are restored within the limits of the canines (meaning two to four teeth) then this often will result in an increased esthetic result even though a limited number of restorations were crafted (Figs 11 & 12).

In other words, it may be beneficial to prepare only four, rather than six, teeth to balance the smile. Obviously, with limited restorations, the buccal corridor cannot be addressed, but the esthetic result is nevertheless often favorable. This can be an alternative for those patients that have financial restrictions as well. Adding restorations to the canines (Figs 11 & 12) may very well have reduced the esthetic outcome due to the tendency to “build out” (or slightly pronate) the canines with porcelain, thereby enhancing the deficiency of the buccal corridor. As demonstrated in Figure 13, this actual smile, although enhanced, exemplifies what has been discussed here. Due to the fact that only six teeth (Fig 13) were restored, the shading difference between the restored and unrestored teeth is approaching six to eight shades; as a result, this will be a focal point when viewing this patient’s smile.

To illustrate these points from an occlusal view, the esthetic result is compromised without restorations placed on the bicuspid (Fig 14); the result would have been improved if the buccal corridor were built out more, as shown in Figure 15.³

SUMMARY

Many factors affect the outcome of a smile.⁶ Aesthetic Restorations placed upon two to four teeth often will improve a smile tremendously but extending the restored teeth to eight or more will most

often have a significantly more positive effect. Limiting the number of Restorations to only six teeth often will have a detrimental affect. The buccal corridor must be explored closely when designing the smile and it must be ascertained as the number of restorations needed to obtain the desired result. When designing the smile, two, four eight or more but avoid six as it may very well limit the potential of that smile.

Author's Note

The author wishes to note that Figures 5, 6, 9, 10, and 14, were all manipulated using Photoshop 7.0 (specifically, the “cut and paste,” “smudge,” and “blend” functions) to superimpose a portion of the final result over the indicated preoperative pictures, to illustrate the point visually. In the case of Figures 10, 14, and 15 the occlusal pictures were taken from the author's book *Platinum Paradigm*(Platinum Paradigm, Innovative Esthetic Solutions, Tempe, Arizona. **480.961.7744**) and are of actual teeth, but the background was blocked in black. No photographs other than those specified were retouched.

REFERENCES

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3. Magne P, Belser U. *Bonded Porcelain Restorations in the Anterior Dentition, A Biomimetic Approach* (pp. 64-66). Carol Stream, IL: Quintessence Publishing; 2002.
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5. Preston JD. The golden proportion revisited. *J Esthet Dent* 5:247-251, 1993.
6. Smallwood TW. *Platinum Paradigm, Visual Smile Creations* (pp. 2-20). **This Book is self-published** 2003.

PRODUCT REFERENCES

Product: IPS Empress, Ivoclar Vivadent, Inc Amherst, New York
Product: Platinum Paradigm, Innovative Esthetic Solutions, Tempe, Arizona.

FIGURE LEGENDS

Figure 1: Ten veneers using Ivoclar's Empress TC-1 Ingot. Smile line is distal to the second bicuspid, even extending to the first molar.

Figure 2: 1:2 Patient smiling naturally. Six veneers would have been a compromise.

Figure 3: 1:2 Preoperative view. Lack of buccal corridor present. Notice that 12 teeth are showing in smile line.

Figure 4: 1:2 Postoperative view. Note buccal corridor and gingival apparatus are restored.

Figure 5: 1:2 Postoperative view (modified with Photoshop 7.0), illustrating the deficiency of the buccal corridor if only six veneers are fabricated.

Figure 6: 1:2 Postoperative view (modified with Photoshop 7.0), illustrating the deficiency of the buccal corridor if only four veneers are fabricated. Notice the lack of buccal corridor is not as apparent as in Figure 5.

Figure 7: 1:2 Preoperative view. Lack of buccal corridor and irregular gingival heights, zenith, and symmetry are present.

Figure 8: 1:2 Postoperative view. Ten veneers using Ivoclar's Empress 01 Ingot. Note buccal corridor and gingival apparatus are restored.

Figure 9: 1:2 Postoperative view (modified with Photoshop 7.0), illustrating the deficiency of the buccal corridor, gingival height, zenith, and symmetry if only six veneers are fabricated.

Figure 10: Occlusal view of 10 veneers showing the transition of the anterior to posterior teeth by way of the canines. The red lines depict the varying angle of the canine, showing both anterior and posterior characteristics.

Figure 11: 1:2 Preoperative view.

Figure 12: 1:2 Postoperative view, with four veneers using Ivoclar's Empress TC-1 Ingot. Notice that even though only four teeth were restored, the buccal corridor is intact and the smile enhanced.

Figure 13: Six veneers restored, ##6-11. Severe deficiency in the buccal corridor region, as well as six to eight shade differences between restored and unrestored teeth.

Figure 14: Occlusal view of teeth where the buccal corridor is deficient (red line), versus Figure 15, which is approaching an ideal arch form and 10 teeth restored. This Figure was modified using Photoshop 7.0 to illustrate the collapsing of the buccal corridor in relationship to Figure 15.

Figure 15: Occlusal view of teeth with more ideal (red line) arch form. True form, unmodified.