Minimal-Preparation Veneers

From the laboratory’s perspective, using the platinum-foil technique with minimally invasive preparation techniques can yield very satisfactory results.

By A. T. Klemma, DDS | Luke Kahng, CDT

Porcelain veneers and their preparation designs have come full circle over the last 30 years. From the original designs of minimal tooth reduction to the gross over-reduction of tooth structure, we are now heading back to a more conservative preparation, which can yield a very satisfactory result. Minimal or no-preparation veneers are heavily advertised as the answer to our patients’ cosmetic needs—which they can be if they are used correctly in the appropriate case.

For years, laboratory technicians have asked clinicians for more room on the veneer preparation to allow for the placement of several different porcelains to give a natural look to the veneer. The room needed for some types of veneers was actually 0.8 mm to 1.5 mm. This is quite a difference from the original idea of not destroying any tooth structure to help the patient receive an improved smile. In some carefully selected cases of no-preparation veneers, the author has seen outcomes that parallel a full-preparation veneer case in copying nature’s beauty. So when a clinician asks about the laboratory’s perspective on no-preparation veneers, the authors’ answer is that success depends on proper case selection and the patient’s goals. Several factors lend themselves to a successful outcome in no-preparation veneer cases: spacing between teeth, teeth that need to be lengthened, and teeth that do not need to be lightened more than three shades. The following case will illustrate how even when all three of these rules are violated, with careful use of the multi-porcelain layering technique, a successful result can still be achieved.

Case Description

A 17-year-old boy presented with significant discoloration on all of his teeth, in particular the anterior teeth (Figure 1 and Figure 2). He and his parents sought esthetic correction of this problem, and they had been presented with a treatment plan of veneers with a direct bonding technique. Several mock-ups were performed to evaluate whether the discolorations could be masked by the direct bonding technique. Several different shades were used along with a composite opaquing system to try to mask the discoloration while restoring the teeth to natural brilliance. After mixing and matching composite material as a possible solution, it was determined that the composite results were not the solution that had been hoped for. It was at this point that the clinician called the laboratory about the possibility of using a minimal-preparation veneer technique as a solution to the problem. The laboratory’s thinking was to fabricate a trial veneer that would determine if the multi-porcelain layering technique would cover the discoloration and result in a harmonious smile. After speaking to the laboratory, the clinician gathered the necessary information, which included digital photographs, polyether impressions of the patient’s teeth, and a request that the patient visit the laboratory to evaluate the trial veneer. Several veneers were fabricated for the evaluation process. When the patient arrived for his scheduled appointment at the laboratory, the trial veneers were tried in with water soluble try-in paste and evaluated by the patient and his parents. The multi-porcelain veneers were well received by the patient and he and his parents scheduled an appointment at the clinician’s office for minimal-preparation veneers.

The appointment for minimal-preparation veneers is a very simple appointment. The laboratory generates a computer image that acts as a guide for the clinician as to where he or she needs to reduce the convex areas and how to eliminate any undercuts. The appointment for minimal-preparation veneers needed to the laboratory about the possibility of using the platinum foil technique with minimal invasive preparation techniques can yield very satisfactory results.
on a mirror (Figure 8). Measuring the veneers with a caliper reveals their contact lens-like thinness, 0.2 mm in the lateral areas and 0.3 mm in the body of the veneer (Figure 9).

The veneers for teeth Nos. 8 and 9 were tried in the mouth for fit and appearance (Figure 10). After the patient approved the two centrals, teeth Nos. 9 through 12 were tried in with a water-soluble try-in paste and evaluated by the patient for any possible changes that he would like accomplished before final cementation (Figure 11). After final approval, the teeth were pumiced, etched, and bonded into place (Figure 12).

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In a photograph taken while looking down over the top of the patient’s head, the beautiful thin margins are clearly evident (Figure 13). One of the clinician’s main concerns about this case was the marginal thickness, but the technician found that he could reach natural tooth form because the previous gingival area was under-contoured. Figure 14 shows the finished restorations immediately after cementation, and Figure 15 is a portrait of the patient.

Conclusion
No-preparation veneers are a sought-after treatment for esthetic smile improvement. There are several reasons for this popularity. Obviously, the lack of preparation is one; this alone is a psychological bonus for the patient. With minimal or no preparation, there is no temporization involved, which is a plus for the patient, too, because most patients do not care for anesthetization. But when the clinician considers the amount of preparation necessary for a porcelain veneer, he or she must keep in mind the patient’s goal, as well as the cant, lip position and fullness, color, incisal edge position, tooth contours, and occlusion.

Often, patients cannot really describe what they want to accomplish by having veneers placed on their teeth. If they are looking for opal and clear translucency and mamelon, this cannot be accomplished with no or minimum preparation. A traditional preparation will be needed to create this illusion.

Conversely, for simple two-color veneers, no preparation will have close to the same effect as a traditional preparation. Everyone will be pleased with the results if that is the look they are interested in. It all depends on the perception of the patient and the clinician as to how they will view the final outcome and whether or not they will both be satisfied.