

# Clinical Showcase

*Clinical Showcase is a series of pictorial essays that focus on the technical art of clinical dentistry. The section features step-by-step case demonstrations of clinical problems encountered in dental practice. This month's article is by Dr. Stephen Phelan. If you would like to propose a case or recommend a clinician who could contribute to Clinical Showcase, contact editor-in-chief Dr. John O'Keefe at [jokeefe@cda-adc.ca](mailto:jokeefe@cda-adc.ca).*

## Precise and Predictable Provisional Veneers

Stephen Phelan, DDS

With the increase in the public's demand for esthetic dentistry, porcelain veneers are becoming a popular treatment option. One of the main difficulties with porcelain veneers relative to traditional crowns arises in the provisional phase of treatment. The primary challenge is to ensure that the provisional veneers are retentive yet biocompatible with the gingival tissues, in particular the papilla. Excellence in the provisional veneer technique offers many advantages, including satisfied patients, who can visualize and preview the final restorations; healthy gingival tissues; improvements in laboratory communication through the creation of a blueprint for the final restorations; and capability for occlusal, esthetic and phonetic testing.

This article visually demonstrates a technique for creating provisional veneers to ensure predictability in this stage of the overall treatment.

### Case Report

A 30-year-old man with a noncontributory medical history was dissatisfied with his smile after orthodontic treatment (Figs. 1 to 4). He did not like the triangular shape of his central incisors and the labial position of the right lateral incisor. The functional and esthetic analysis revealed a lack of anterior guidance; multiple large posterior interferences; short, triangular central incisors; and poor arch form, with a proclined right lateral incisor and a palatally positioned right first bicuspid.

The treatment plan called for occlusal equilibration, diagnostic wax-up and 8 feldspathic porcelain veneers.

The occlusal equilibration was needed to achieve the appropriate basic occlusal design before the

porcelain veneer treatment. Functional analysis of the study models mounted in centric relation revealed that the desired occlusal design could be achieved with selective enameloplasty. This desired occlusal design, as described by Dawson,<sup>1</sup> with centric stops on all the teeth, lateral guidance on the cuspids and anterior guidance shared with the cuspids and incisors, was achieved over the course of 2 appointments.

The next step in the treatment plan was to take a new set of study models that were poured up in a high-quality die stone. A new set of wax bite records and new face-bow measurements were also required to mount these models on the Sam 3 articulator (Great Lakes Orthodontics Ltd., Tonawanda, NY). The new mounted models were sent, with detailed laboratory instructions, to the ceramist, who then created the diagnostic wax-up.



**Figure 1:** Close-up view of full smile before treatment.



**Figure 2:** One-to-one magnification view before treatment.



**Figure 3:** One-to-two magnification view before treatment.



**Figure 4:** Full smile before treatment.

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**Figure 5:** Diagnostic wax-up on the Sam 3 articulator.



**Figure 6:** Duplicate stone model of the wax-up with the provisional stent.



**Figure 7:** Second provisional stent to assess the preparation depth.



**Figure 8:** Provisional veneer stent placed over the tooth preparations.



**Figure 9:** Removing excess resin in the interproximal area.



**Figure 10:** Body and incisal sections of the provisional veneer roughed in place.



**Figure 11:** Gingival third composite resin being sculpted in place.



**Figure 12:** Gingival third composite resin being smoothed in place.



**Figure 13:** Provisional veneers roughed into place.



**Figure 14:** Adjusting the provisional veneers with polishing cups.



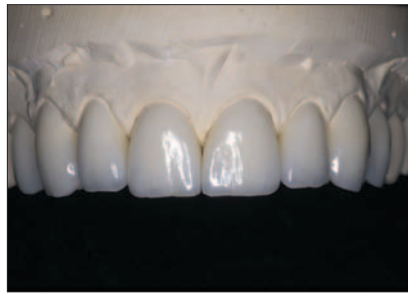
**Figure 15:** Adjusting the provisional veneers with Soflex ET disks (3M ESPE, St. Paul, Minn.).



**Figure 16:** Adjusting the provisional veneers with Brassler Visionflex disks (Brasseler USA, Savannah, Ga.).



**Figure 17:** Completed provisional veneers.



**Figure 18:** Completed porcelain veneers on the solid model.



**Figure 19:** Provisional veneers 5 weeks after placement.



**Figure 20:** Excellent gingival health after removal of the provisional veneers.



**Figure 21:** Close-up view of full smile after treatment.



**Figure 22:** One-to-one magnification view after treatment.



**Figure 23:** One-to-two magnification view after treatment.



**Figure 24:** Full smile after treatment.

### Diagnostic Wax-Up

The diagnostic wax-up is the key to creating excellent provisional veneers and ultimately the final restorations (Figs. 5 to 20). The detailed laboratory instructions given to the ceramist should include a summary of the patient's desires and expectations, the preferred occlusal design and the desired position of the incisal edge. In addition, the ceramist should receive accurate study models mounted on the articulator of choice, slides or digital photographs of the patient and any photographs of the patient's desired smile.

### Clinical Technique for Predictable Provisional Veneers

1. Make a Biostar stent (Great Lakes Orthodontics Ltd.) of the stone duplicate model of the diagnostic wax-up.
2. Trim and customize the Biostar stent to allow access to the gingival third of the tooth preparation.
3. Spot etch a small area of the enamel for 5 seconds.
4. Coat the preparations with enamel adhesive.
5. Load the stent with RSVP light-viscosity material (Cosmedent, Chicago, Ill.) or a high-viscosity flowable resin.

6. Seat the stent and remove excess material, especially in the interproximal papilla area and the gingival third of the tooth preparation.
7. Light cure the resin for 10 seconds on the incisal area and 5 seconds on the body areas.
8. Remove the stent and any further excess material.
9. Place and sculpt RSVP heavy body material (Cosmedent) or a similar shade of composite resin.
10. Evaluate the esthetic results and add any material where desired.
11. Evaluate the occlusal and phonetic results.
12. Finish and polish the provisional veneers.

### Laboratory Communication for the Final Restorations

1. Take accurate impressions of the provisional veneers and pour them in a high-quality die stone.
2. Take accurate wax bite records of the provisional veneers.
3. Take accurate face-bow measurements of the provisional veneers.
4. Take a series of slides or digital images of the provisional veneers.
5. Provide the ceramist with written communication about any changes the patient would like in the final restorations.
6. Have the ceramist make the necessary custom putty matrixes of the provisional veneers.

7. Have the ceramist make a custom incisal guide table of the provisional veneers (if desired).

### Conclusions

This case illustrates how the time and effort spent on provisional veneers will pay large dividends at the time of the appointment to seat the final porcelain restorations. The precision used to create the gingival margin and interproximal contour will result in healthy gingival tissues, which should help to make the bonding procedures more predictable. The time taken to create provisional veneers with the desired esthetic and functional aspects will give the ceramist the direction needed to create predictable final restorations that will yield results that will be satisfactory to the dentist, the ceramist and the patient (Figs. 21 to 24). ♦

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