Adhesive cementation of partial veneers

By Dr Eduardo Mahn, Chile

The desire for esthetically pleasing, minimally invasive and perfectly matching anterior restorations has existed since the beginning of dentistry. Only recently, however, has it become possible to translate this desire into reality. For many years, dentists were struggling with the opacity of PFM crowns before all-ceramic crowns became available. However, these ceramic materials were not resistant enough to be suitable for less invasive indications. Finally, ceramic veneers were launched. Veneer preparations are far less invasive than crown preparations - some preparation was nonetheless still needed. In addition, the veneers had to be designed in such a way that they covered the entire buccal surface.

However, given the advancements in ceramic technology and the luting composites available today, it is now possible to use partial veneers and to insert them without any difficulty. Partial veneers are ceramic veneers that only cover that part of the tooth that is missing, broken off or abraded. As a result, the tooth warrants only partial preparation or none at all.

This approach has become feasible for two reasons:
1. New ceramic materials are available. Dental technicians have now the option of layering any ceramic restoration. They can choose to use a fluorapatite ceramic material such as IPS e.max Ceram or to press the restoration from a highly translucent ingot such as the Opal or HT ingots of the IPS e.max Press range.
2. Luting composites have improved. A wide range of modern esthetic cements have become available. They are offered in several degrees of brightness to match them to the brightness of the natural teeth being restored with a veneer or partial veneer. In addition, these luting composites contain newly developed photoinitiators which improve their curing capabilities and long-term shade stability.

The ceramic material selected for a restoration depends on the size of the defect and/or the optical effects and stability that the dentist intends to achieve. The layering technique is likely to be the first choice for teeth featuring multiple optical effects. If large partial veneers that do not warrant special effects but include the entire incisal edge are required, a high-strength ceramic such as lithium disilicate is a likely choice.

When it comes to selecting a luting material for veneers and partial restorations, Variolink Veneer from Ivoclar Vivadent is bound to be the first choice for many dentists. Not long ago, the successor product, Variolink Esthetic, has been launched. This luting material is available in...
a dual-cure and light-cure version. The effect shade concept on which the five shades of the product are based enables the dentist to adjust the shade effect of the restoration to make it appear warmer or brighter, as required. In addition, the shade effect can be checked prior to the final cementation with the help of try-in pastes in the corresponding effect shades. The composite comprises the newly patented light initiator Ivocerin, which provides the cement with long-term shade stability. In addition, Variolink Esthetic is easy to use due to its flexible situational consistency and easy clean-up characteristics.

The clinical report below describes the insertion of two partial veneers seated with Variolink Esthetic LC in the shade “Warm”.

Clinical case

A 46-year-old male patient visited our practice with the request to have his 20-year-old Mirage partial veneer replaced. He was convinced that the veneer needed replacing because of the wear of the adjacent central incisor (Figs 1 and 2). It was decided to use partial veneers to improve the situation. Figure 3 shows the preparation performed on the teeth. Once we received the veneers (IPS e.max Press H7) from the lab, we used the Variolink Esthetic Try-In pastes to determine a matching cement shade for the final cementation. In this specific case, we achieved the best result with the shade “Warm” (Figs 4 and 5). Next, the neighboring teeth were covered with Teflon tape. Then, a Mylar strip was placed between the teeth (Fig. 6). The enamel was etched for 20 seconds and the dentin for 10 seconds (Figs 7 and 8), followed by rinsing with water (Fig. 9). Then, Adhese Universal was rubbed in and allowed to react for 10 seconds (Figs 10 and 11). Variolink Esthetic LC “Warm” was applied to the partial veneers before they were seated (Figs 12 and 13). Excess cement was carefully removed with a brush before light curing (Fig. 14). After the veneers were first illuminated with two Bluephase Style lights whilst cooling the teeth with water spray (Fig. 16), the final result after four weeks is shown in Pictures (blade no. 12) (Fig. 17). The final result was removed using a scalpel light curing, any remaining excess water spray, as shown in Fig. 16. After prudent to cool the teeth with light curing for 5 seconds from both sides (Fig. 15) whilst cooling the teeth with two curing lights operating at a light intensity of 1,100 mW/cm² may result in a considerable heat buildup, there is a potential risk for causing damage to the pulp. It is therefore prudent to cool the teeth with water spray, as shown in Fig. 16. After light curing, any remaining excess cement was removed using a scalpel.

Dr. Eduardo Mohr, Chile, has graduated from the University of Chile in 2004. He received the German DDS one year later. The New York University Collec4e of Dentistry certified him as Implantologist. In 2007-2008, he published his doctorate thesis in 2008 titled “Overintegration of zirconia implants, an in vivo study” and got his doctorate degree in 2010 from the University of Düsseldorf, Germany.