Clinical Case with Palodent®Plus, Sectional Matrix System

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Replacement of Class I and II restorations

During the initial visit of a 26-year old patient defective composite restorations were found at the 26 and 27.

After consultation these old restorations were replaced by new composite restorations. For an optimal functional and esthetic result we decided to create a restoration with SDR® Smart Dentin Replacement as a base and CeramX® mono+, Nano-Ceramic Restorative, as the occlusal layer.

A good composite restoration is one of the most challenging treatments. This has to do with the number of steps required and the technique sensitivity that entails to come to a good result. But what can be seen as a good result? To my opinion a good result is a restoration with a good internal adaptation of the composite to the cavity wall, a good marginal integrity, optimal contact points and an anatomically correct shape. Also the lack of postoperative sensitivity and long durability in function are fundamental for a successful restoration.

Any technique or material that simplifies the procedure is very welcome to the clinician. SDR has been on the market for a number of years now, in which time it has proven to be very successful. As a result of the low polymerization stress and the flowable characteristic SDR guarantees an optimal adaptation to the cavity walls, which decreases the chance of postoperative pain. Besides that, SDR can be applied in 4 mm layers, what simplifies and speeds up the procedure considerably. However, for a good marginal integrity and optimal contact points just a good composite alone is not enough. The development of sectional matrix systems has made the restoration of the interdental anatomy and contact point much easier and more predictable in the past years.

The new Palodent Plus system is a further development of these possibilities and user-friendliness, with an anatomically correct contour, which enables the systematic and reliable restoration of the lost interdental dimensions.
The matrices are thinner and the wedge and ring system easier to use. The new protective WedgeGuards were added to the Palodent Plus system for protection of adjacent teeth during preparation.

Case

The patient was administered an anesthesia, color was determined. Color matched Vita shade tab A2, which corresponds to the shade tab M2 of CeramX mono+. A rubber dam was used for ideal absolute isolation (picture 2A). To protect elements 26 and 27, Palodent Plus WedgeGuards were inserted before the MO and DO preparations of element 26 (picture 2B). After preparation, the shields (or guards) of the WedgeGuards were removed, which converted the WedgeGuards into regular wedges (picture 2C - 2E). Matrices were inserted and tucked into the interproximal areas and secured by the rings to enable creation of anatomical and optimal contact points (picture 2F).

Next step was etching with 35% phosphoric acid; enamel during 20 seconds and dentin during 15 seconds. After rinsing thoroughly with a mild jet, primer and bonding were applied. In this case OptiBond® FL was chosen, but SDR and CeramX mono+ are compatible with every conventional methacrylate-based dentin/enamel adhesive system (picture 3A - 3 D).

SDR was applied with the canula placed mesial in the cavity, so that SDR could flow into the cavity under the influence of gravity. The self leveling character of SDR ensures an optimal adaptation to the cavity walls. As soon as SDR forms a smooth surface, the material was light cured (picture 3E and 3F).

Then marginal edges were placed in element 26 with CeramX mono+, matrices and rings were removed carefully (picture 4A and 4B). This resulted in remaining class I restorations in elements 27 and 26. These were built up per cusp, first to minimize the effects of shrinkage. Secondly this is the way to realize a perfect anatomical result relatively easy (picture 4C - 4F). After application of CeramX mono+ the composite was shaped with a modified ASH and then fissures were created with a Suter and a probe. The surface was smoothened with a brush.
To finish the interdental excess of the restorations, a scaler, a scalpel and an interdental abrasive strip were used. Finally the restorations were polished with a finishing disc impregnated with aluminum oxide (Enhance® Finishing System) and a polishing point-brush impregnated with diamond particles (Occlubrush®). Final restoration is shown on picture 5