

Multiple Direct Restorations Using Premise Composite

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Direct resin composite restorations remain a widely used technique in our daily practice.

The continuing technological development of resin composites and dental adhesive systems enables the dentist to achieve reliable and undetectable restorations.

Composite materials are used to replace the loss of dental tissues; enamel and dentin. Consequently their optical and aesthetic properties (refractive index, translucency, fluorescence etc...) must be as close as possible to those of the dental tissue. Recent composite systems have improved mechanical properties and provide excellent aesthetic results. Many shades divided into three different levels of opacity are available; opaque (or dentine), body (or enamel) and translucent. Depending on the depth of the cavity, one, two or three different opacities are used in combination to restore the missing structure.

Despite being a little bite longer, restoring a complete arch during the same appointment is very convenient for the patient and the dentist. In fact the number of sessions is reduced, only one anesthesia is delivered, and the patient can appreciate

faster, the aesthetic outcome of the treatment.

The following case shows the direct restoration of a full lower arch, achieved in one session with Premise™, Trimodal resin composite (Kerr).

A 32-year old woman presented in our office with two defective restorations on teeth # 45 and 46, and with an initial caries lesion on tooth # 47, and a class V amalgam on the buccal side (Figure 1).



Fig. 1

After administering local anaesthesia, the old fillings are removed and the cavities prepared. The OptiDam™ (Kerr) is placed prior to preparation, to reduce the risk of mercury exposure during amalgam removal and to ensure a proper isolation from the external contaminants of the oral cavity during the restorative procedure. OptiDam™ was secured with a SoftClamp™ (Kerr) on the molar and with

two Fixafloss[®] (Kerr) pieces on the premolars (Figure 2).



Fig. 2

May be the most challenging aspect of a direct posterior composite restoration, is to obtain an adequate contact point. In the following case, the patient has two adjacent cavities; a class II (OD cavity) on tooth 45 facing a class II (OM cavity) on tooth 46. The treatment modality is to restore each cavity separately, and to finish and polish the contour of the first tooth, before placing the matrix and restoring the second cavity.

An Adapt[®] transparent Sectional Matrix (Kerr) is placed on the OM cavity on tooth 46 (Figure 3) and fixed with a translucent Luciwedge[®] and an Approximal Shaper to ensure an adequate reconstruction of the contour of the restoration.



Fig. 3

The adhesive system used is OptiBond[®] FL Unidose (Kerr). It is a 4th generation adhesive (total-etch technique) where the etching, primer, and the bonding are delivered and applied separately. Teeth 46 and 47 are restored simultaneously; they are first etched with phosphoric acid gel (37% concentration) over a period of 20 seconds (Figure 4).



Fig. 4

Then the acid is rinsed thoroughly for at least 10 seconds with water and air. The cavities are gently dried prior to and after the application of the primer using a microbrush (Figure 5).



Fig. 5

The bonding is applied and brushed actively between 10 to 15 seconds (Figure 6) and polymerized for 30 seconds (Figure 7).



Fig. 6



Fig. 7

The build up of the restoration is achieved according to the layering technique concept; the number of layers is dictated by the volume of the cavity. Different layers of

Premise™ composite (shade A2 Dentine, A2 Enamel and Translucent clear) arranged in different geometrical aspects, are introduced into the cavity in order to reproduce the anatomy of the tooth (Figures 8 & 9).



Fig. 8



Fig. 9

To prevent overbuilding of the dentin layer, it is imperative to monitor the thickness of the composite material, in order to allow sufficient space for the enamel layer.

Each increment is placed and adapted to the cavity walls using a clean non-sticking condenser, then polymerized from the occlusal aspect with a powerful and efficient light-curing unit, with a minimum power of 600 mW/cm². This will ensure an

optimal degree of conversion and thus optimal mechanical behaviour of the restoration.

The matrix is removed and the contour of the restoration is finished and polished, and then the matrix is placed on the second cavity (OD on tooth 45) (Figure 10).



Fig. 10

The same procedure described above, is followed for restoring the OD cavity. Note the precise anatomy of the restorations and the height of the proximal ridges (Figure 11).



Fig. 11

The finishing and polishing procedure of the restoration is the final step that must be done properly using adequate instruments, (discs, burs and polishing paste) in order to

ensure the harmonious integration of composite restoration within the tooth structure and with the periodontal environment (Figure 12).



Fig. 12

In this case, the finishing of the composites was achieved using fine diamond burs followed by polishing, achieved with Occlubrush® and Identoflex points that ensure a high gloss surface (Figure 13).



Fig. 13

The success of a direct restoration depends on three important factors; material selection, placement technique and light curing method.