BelleGlass Inlays cemented with NX3 Nexus Third Generation

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Resin composites are widely used in our daily practice to answer the increasing aesthetic demands of our patients. The developments and research achieved in the field of adhesive dentistry and the improvement of the properties of resin composites enable their use in both anterior and posterior cavities. Direct restorations are an attractive choice because of their one-appointment technique and their affordability for the patient, but in some clinical situations where the loss of tooth structure is significant, the use of indirect restorations (inlay-onlays) is indicated.
Indirect resin composite inlay-onlays have many advantages over direct restorations, namely reduced polymerization shrinkage, control of the contour and tooth anatomy by the Laboratory Technician, and thus enhanced aesthetics. Ceramics can be used, but one of the major advantages of composite is the ease of repair, in the case of fracture.

The following clinical case illustrates the restoration of a lower premolar and a molar (45 and 46) using BelleGlass.

Figure 1 is the preoperative view of the right lower arch, showing an occlusal decay on tooth number 47, a distal decay on tooth number 45, and a failed composite restoration on tooth number 46.


Figure 1

The second molar (47) was restored using a direct technique with Premise™ composite. The failed composite restoration and the decay were respectively removed from teeth 46 and 45. Our choice of material for the indirect restorations was with BelleGlass, due to the wide cavity size and the optimal degree of conversion of this material. After taking the impression, provisional restorations were immediately fitted using Fill-In™ temporary resin, and seated with TempBond™ NE (Figure 2).


Figure 2

Figure 3 shows the two inlay-onlay restorations achieved in the laboratory with BelleGlass “Poly-Glass” composite.

During the second appointment, the temporary restorations are removed, the cavities cleaned and the indirect restorations cemented using NX3 Nexus® Third Generation Universal Resin Cement. Field isolation of the right lower arch is achieved using the OptiDam™ system and fixed on the second molar with a SoftClamp™, and premolars with Fixafloss™ (Figure 4). The use of Fixafloss™ is much more convenient for the patient and the dentist, and enables a better view of the working field. The first inlay is cemented on the second premolar (45) and then contoured and polished, and then the second inlay is cemented according to the following steps (figures 5 to 13).

Figure 5. Etching of the cavity using phosphoric acid (37.5%) for 20 seconds, followed by rinsing for 10 seconds.

Figure 6. Application of OptiBond Solo™ Plus using a microbrush followed by 30 seconds of polymerization.


Figure 3


Figure 3-bis

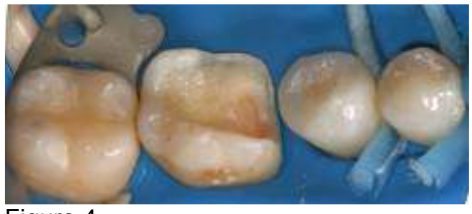
Figure 4


Figure 5


Figure 6

Figure 7 & 8. NX3 dual-cure luting agent is applied in the cavity and restoration. The use of the mixing tips makes the application of NX3 very easy and precise.

Figure 9 & 10. The inlay is seated in the cavity with the aid of a CompoRoller™ that is used to push it manually using the cylinder silicone tip. The excess of NX3 is removed with a probe, and then the restoration is light cured for at least 60 seconds from each side.

Figure 11. Inlays before finishing and polishing.

Figure 7

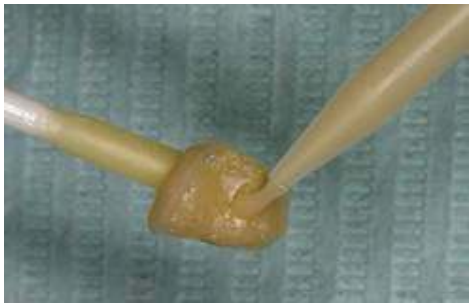
Figure 8


Figure 9


Figure 10


Figure 11

Figure 12 & 13. These are post operative views of the inlay-onlays, after finishing and polishing. Note the excellent aesthetic results and the adequate contact point achieved despite the slight rotation of the premolar.


Figure 12


Figure 13