Bulk fill restorations in the posterior area

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Introduction

Traditionally cavities in posterior teeth were generally filled with amalgam. With the advent of direct composites this approach gradually changed, but there were quite a few challenges that had to be overcome. These challenges included reducing polymerization shrinkage and postoperative sensitivity, achieving tight contacts in posterior teeth and sufficient strength in load bearing areas.

With the improvement in adhesive bonding systems and composite materials most of these challenges were addressed but still it has always been recommended to place composite in increments due to a variety of reasons. These include penetration of curing light to a limited depth and placing composite in increments will help reduce the effect of polymerization shrinkage to a certain degree. From a clinician’s point of view this approach is certainly time consuming and there has always been a desire to fill the cavity in a single increment and get the job done as fast as possible.

Considering the demand of the dental practitioners, manufacturers such as 3M, have now introduced bulkfill composites which can be placed in cavities in a single increment and yet can be cured effectively and have good adaptability and reduced shrinkage. We tried bulkfill material in a clinical case in which 3 posterior cavities were filled with Filtek™ Bulk Fill Posterior composite.

Clinical Case

A female patient presented with multiple cavities in her teeth. There was a moderate sized cavity in the first molar, the first premolar had a large distal carious lesion and the second premolar had caries mesially. We decided to manage the 3 adjacent large cavities in her posterior teeth in 4th quadrant with bulkfill composite in a single appointment. Fig. 1 to Fig 15.

Conclusion

Previously with composites being placed in multiple increments, it would have been quite time consuming and tedious to do a number of such restorations in a single appointment. Certainly bulkfill composites made the job easier. Their handling and manipulation with instruments are also quite user friendly. With the composites being applied in a single increment, an ideal shade match might not be possible in all situations but in posterior restorations the effect can be masked to a certain degree. Overall I would say that bulkfill composites will definitely speed up the work and make things easy for the clinician.

Fig. 1. Initial case 1: 44 large carious lesion distally, 45 large carious lesion mesially, 46 moderate size lesion occlusally.

Fig. 2. Isolation of the affected teeth with rubber dam.

Fig. 3. Caries has been removed and cavities prepared. Premolars have been separated by sectional matrices and wedge.

Fig. 4. Selective etching done on enamel margins.

Fig. 5. Single Bond Universal adhesive being applied in the molar cavity.

Fig. 6. Single Bond Universal application in all cavities.

Fig. 7. Adaptation of Filtek™ Bulk Fill Posterior composite after completely placing in molar cavity.

Fig. 8. Occlusal anatomy being carved on the molar surface.

Fig. 9. Anatomy being carved after complete filling of Filtek™ Bulk Fill Posterior composite in both premolars.

Fig. 10. Finishing of the restorations.

Fig. 11. Polishing with 3M Spiral Polishing disc and diamond polishing paste.

Fig. 12. Restorations after finishing and polishing.

Fig. 13. Completed restorations.

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