

# Simplifying Posterior Restorations: A Direct Bulk Fill Composite Resin Placement case

by Dr Fred Calavassy B.D.S., F.I.C.D. (2015).

In this clinical case Dr Fred Calavassy clearly demonstrates the steps to successfully using a Bulk Fill composite resin as an option for posterior restorations. The patient presented with existing amalgam restorations with recurrent carious lesions and it was decided to restore and rejuvenate these teeth. Digital radiography revealed no relevant clinical signs and confirmed the treatment plan of replacement with direct bonded composite resin, Filtek™ Bulk fill Posterior Restorative being chosen for this case. Dr Calavassy shares some handy hints as he moves step by step through the clinical procedure.

## History

The patient is a 65 year old female in good physical health. Her remaining dentition is in good health and she is now regularly attending our practice for restorative and ongoing maintenance care. The 24, 23 and 22 presented with existing amalgam restorations and recurrent carious lesions and it was decided to restore and rejuvenate these teeth. Digital radiography revealed no relevant clinical signs and confirmed the treatment plan of replacement of the existing amalgam restorations and restoration of the carious lesions with a direct bonded composite resin restoration. All teeth were also periodontally sound. The pretreatment appearance of the tooth is illustrated in Figure 1.



Figure 1: Pre-treatment

## Treatment

The treatment involved amalgam removal under local anesthesia, followed by placement of a bonded composite resin restoration using a new bulk fill material – 3M<sup>TM</sup> ESPE<sup>TM</sup> Filtek<sup>TM</sup> Bulk Fill Posterior Restorative - as outlined below.

Clinical treatment involved the following steps:

1. Occlusion was checked and noted.

2. Shade selection was performed prior to placement of rubber dam. In this case the bulk fill material from 3M (“Filtek<sup>TM</sup> Bulk Fill Posterior Restorative”) was used due to its ease of placement, stress relief in bulk increments up to 5mm depth of cure, excellent handling and sculptability, without compromising its superb polishability and excellent durability. The shade chosen was A2.

3. The upper left posterior quadrant was isolated with rubber dam to facilitate a dry operative field. It is worth noting the importance of placement of rubber dam due to high relative humidity which may affect bonding through contamination. The technique for the placement of the rubber dam is outside the scope of this submission. The photo following shows the completed restorations on the 22 (distal), 23 (distal), and following amalgam removal and adhesive application (3M<sup>TM</sup> Scotchbond<sup>TM</sup> Universal - utilising a selective etch technique) on the 24.



Figure 2: Following amalgam removal and application of adhesive



Figure 3: Bulk filling of the cavity and following final sculpting and curing

4. The 24 was etched with 37% phosphoric acid and washed as per recommendations.

5. A wet bonding technique was used using Scotchbond<sup>TM</sup> Universal - utilising a selective etch technique after cavity cleansing with 2% chlorhexidine.

6. A flowable composite resin (Filtek<sup>TM</sup> Supreme XTE Flowable) was used over the dentine of the preparation of the 24 to a depth of under 1mm and cured. The shade of the flowable was also A2 to match that envisaged in the composite placement.

7. The next step involved bulk placement of the Filtek<sup>TM</sup> Bulk Fill Posterior Restorative in 1 increment with a maximum depth in the proximal boxes of 5mm.

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**HANDY HINT:** Once the single increment is placed, the material can be burnished to the margins to allow an immaculate finish line.

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8. Following the placement of the composite material anatomical contours can be easily readily achieved using conventional carving instrumentation of choice and sculpted for final anatomy. The bulk filled restoration is finally cured in three easy 10 second cures, (Occlusal, Buccal and Lingual) and the result can be seen in Figure 3. The composite flows easily from the longer tipped capsules, which also provides for easy access.

9. Following composite placement, the resin was grossly contoured then the rubber dam was removed.

10. Prior to final finishing, occlusion was checked for chewing cycle interferences and confirmed in an upright posture.

11. Composite resin was finished with fine and ultra-fine grit diamond burs, and rubber impregnated points.



Figure 4 (top) and 5 (below): Final Restorations

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**HANDY HINT:** *The rubber impregnated points finish the restoration very nicely though tend to destroy any anatomical contour created during composite placement. In order to produce a restoration mirroring the natural anatomy of the tooth, final anatomical contour can be achieved with a fine grit tapered diamond bur to enhance fissure patterns.*

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### Dr Fred Calavassy



Dr Fred Calavassy received his BDS from Sydney University in 1989. He was an active member of the part time teaching faculty in the early 1990's being involved in the undergraduate fixed prosthodontic, tooth conservation and oral health courses.

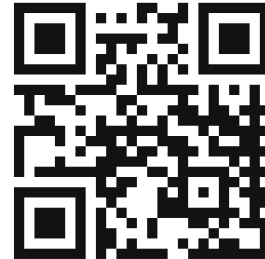
He was a Clinical Associate in 1995 and commenced his own practice in 1997. He is a clinical instructor and fellow of the prestigious Las Vegas Institute for Advanced Dental Studies, a fellow of the International Association of Physiologic Aesthetics and continues to further his knowledge through continuing education both locally and abroad. He has been awarded his Fellowship in the International College of Dentists and maintains a private general practice in Castle Hill, NSW, which is centred around comprehensive aesthetic rehabilitation.

For more information on the 3M materials utilised in this case, please visit [www.3M.com.au](http://www.3M.com.au) or [www.3M.co.nz](http://www.3M.co.nz), or contact your local 3M Product Specialist.  
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