



Filtek™

Bulk Fill
Flowable Restorative

About the Case

This 30-year-old male presented with irreversible pulpitis on tooth # 18. Significant recurrent decay was present underneath a poorly done Class V composite. He was a new patient emergency referred by a staff member.

Challenge

With the Coronavirus Pandemic looming, I was compelled to provide a long-term endo-restorative outcome that did not involve the multiple appointments required for an indirect restoration. In addition, these “pumpkin shell” type caries may be poorly served with a traditional full crown because the “outside shell” of the tooth is nearly all that remains.

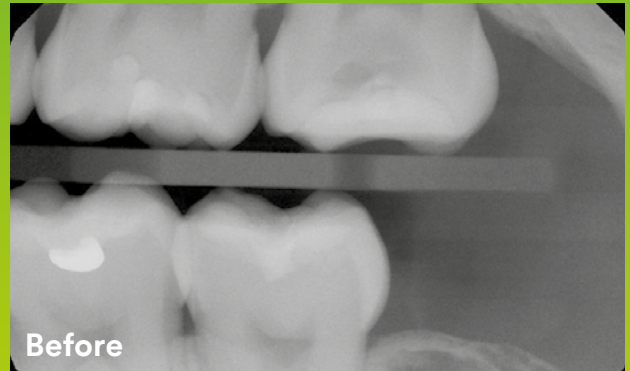
Outcome

The ability to adapt flowable deep in the tooth is more predictable than trying to pack or inject traditional paste composites. The problem, until now, was that bulk fill flowable composites have been particularly prone to bubbles. In my hands the new “low bubble” delivery system from 3M (3M™ Filtek™ Bulk Fill Flowable Restorative) provides a consistently bubble free bulk fill flowable composite.



Clinical Case
Dr David J. Clark

Posterior Composite Injection Over-Molding Following Root Canal Treatment.



See a step-by-step
Case Overview on back.

About Dr David J. Clark

Dr. Clark is director of Bioclear Learning Centers International. He founded the Academy of Microscope Enhanced Dentistry, is on the editorial board for several journals, and has lectured in 21 countries. Dr. Clark developed the Bioclear Matrix System with the goal of advancing biologically appropriate, esthetically pleasing direct composite restorations for treating minimally invasive Class II preparations, diastema closures, and black triangle elimination. He has designed numerous instruments, burs, wedges, matrices, separators and equipment, has been granted several US patents, and has written chapters for both esthetic dentistry and endodontic textbooks. Dr. Clark also served for 18 months as the lecturer and lead dentist for CRA during Gordon Christensen's absence and served on CRA's board of directors for several years.

He maintains a private practice in Tacoma WA USA.

Case Overview



Fig 1: Endodontic therapy is complete and caries removal is confirmed with advanced magnification and hardness testing using a sharp explorer.



Fig 2: Lateral cuspal overlay preparation will protect the undermined buccal cusps, and the Clark Class I or "Calla Lily" preparation will splint the lingual cusps. Radius bevels are key.



Fig 3: After application and 10 second light curing of 3M™ Scotchbond™ Universal Adhesive, a first layer of 3M™ Filtek™ Bulk Flowable Restorative (Universal Shade) was placed over the gutta percha stumps (counter-sunk 1 mm below the surface) and light cured for 10 seconds using a 3M™ Elipar™ DeepCure-S LED Curing Light. The new 3M™ Filtek™ Bulk Fill Flowable Restorative delivery system allows virtually bubble free injection directly on to the prepared tooth and up to a 4 mm depth of cure.



Fig 4: Before final injection molding, a flowable composite "curb" is placed and light cured to improve management of the injection phase.



Fig 5: This photo shows the final phase of injection molding the steps of which included:
 1) Re-applying 3M™ Scotchbond™ Universal Adhesive and air thinning without light curing.
 2) Injection of warm 3M™ Filtek™ Bulk Fill Flowable Restorative without light curing.
 3) Injection of warm 3M™ Filtek™ One Bulk Fill Restorative.
 3M has extensively tested the 3M™ Filtek™ products described above (material properties, pulp temperature, toxicology, and more) and has determined they can be safely warmed.*



Fig 6: The composite is "troweled" with the Clark Sculpting Paddle (Bioclear) and excess composite is maintained at the curb.



Fig 7: After light curing the composite, a 3M™ Sof-Lex™ Extra-Thin Contouring and Polishing Disc (Course Grit) is critical for sculpting of cuspal areas, margination of the infinity edge, and pre-polishing.



Fig 8: Simple occlusal anatomy is carved with the Q-Finisher® from Komet®

*3M internal data on file.



Fig 9: A TruContact Saw (Bioclear) is used to clean and groom the unrestored mesial contact. It is common that adhesive and small bits of flowable can block the occlusal embrasure. Beautiful contacts are an important part of the patient experience.



Fig 10: Magic Mix (Bioclear) is worked over the entire tooth-restoration complex to achieve infinity edge margins that are stain resistant. The composite will now have a matte finish with omni-directional scratches. This is the first step of the Bioclear Rockstar Polish.



Fig 11: The RS Polisher (Bioclear) is diamond impregnated and autoclavable. It is utilised with light pressure in the dry phase, and then heavy pressure and constant air-water spray in the final polishing phase.



Fig 12: 3M™ Filtek™ One Bulk Fill Restorative (B1) provides the best of both worlds ... beauty and bulk filling. It has a 4 mm depth of cure (5 mm in class II restorations with 3-point curing), stress mitigation to offset polymerisation shrinkage, and beautiful esthetics and shine retention rivaling anterior composites.



Fig 13 and 14: Pre and post-operative radiographs of the completed endo-restorative procedure are shown. The treatment was completed in one appointment. The cuspal splinting and monolithic restoration should serve the patient for years, even decades, without having to remove the strong "shell" of enamel to make way for a crown. Note: The radiographic appearance of the 3M™ Filtek™ Bulk Fill Flowable Restorative, which is bubble-free, and the slightly more radiopaque 3M™ Filtek™ One Bulk Fill Restorative "paste". The author feels that the radiopacity of these materials is ideal for monitoring recurrent decay.

Fig 14



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