Fibre reinforced composite bridge

Aesthetic, semi-permanent bridges made from composite can be a viable, economic treatment option. Used with reinforcing fibre splints they can have excellent longevity, but poor integration of the fibres in the composite restoration has sometimes been a weak point. The excellent handling characteristics of 3M Filtek Universal Restorative simplify the direct fabrication of a composite bridge, and used with a silanized, pre-impregnated glass fibre reinforcement system it can offer excellent results as can be seen in this clinical case.

1. The lower left bicuspid in this patient needed replacement, and a directly fabricated composite bridge was chosen as treatment for economic reasons. Dental floss was used to measure the length of splint material needed.

2. Cavities were cut in the composite restorations in the adjacent teeth. All bondable surfaces were cleaned with pumice and finishing diamond burs, and then etched and rinsed. 3M Single Bond dental adhesive was applied and light cured for 10 seconds after blotting the surfaces dry.

3. A low viscosity flow type of resin was applied to the bottom of the cavity and to the ends of the fibre material. The fibre was then inserted into the cavities, if necessary it can be bent with tweezers before light curing.

4. View of the composite bridge immediately after sculpting and curing. After occlusal adjustment the bridge is contoured and initially finished. Final polishing will be done at the next appointment. The result of this procedure is an economical and aesthetically pleasing semi-permanent solution that can be used for many applications.

5. The Stick fibre material was cut with scissors to the measured length. To avoid contamination with powder from gloves, the fibre material should only be handled with tweezers or washed gloves.

6. The core structure was coated with 3M Filtek Z250 Universal composite. The bridgework was modelled directly using hand instruments and the layers were light cured. Interdental spaces were created to allow proper cleaning. Due to its very low tendency for slumping and low polymerization contraction 3M Filtek Z250 is especially suited to this purpose.

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Materials:

- 3M ™ Filtek ™ Z250 Universal Restorative
- 3M ™ Vitremer ™ Finishing Gloss
- 3M ™ Single Bond Adhesive System
- Stick ™ Glassfiber Reinforcement

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- 3M™ Single Bond Adhesive System
- Stick™ Glassfiber Reinforcement