

Clinical

Conservative composite treatment for an anterior restoration

Nadeem Younis of Bridge Dental Practice in Lancashire discusses a recent case

A regular male patient of mine presented with a fractured upper right central incisor. The tooth had been previously repaired, but the restoration was unaesthetic and had not lasted very long (Figures 1-2).

Since the tooth remained vital, the following treatment



Figure 1: Preoperative



Figure 2: Preoperative intraoral unaesthetic composite UR1

options were discussed with the patient:

1. A direct composite build-up
2. A ceramic veneer.

After consultation, the patient consented to a direct composite build up. This method of treatment was ultimately chosen because it would be both less disruptive and more conservative than a veneer. The expediency of this treatment was also considered, as was the relative ease with which composites can be accurately colour-matched with the rest of the patient's dentition.

Assessment

The initial assessment found that, aside from the evident fracture, the UR1 was slightly misaligned. This presented an added complication to the proposed treatment since the composite would have to be placed in such a way that it would appear to be in line with the patient's other central incisor. Apart from this, there were no other overt abnormalities. ▶



Dr Nadeem Younis qualified in 1993 from the University of Sheffield. He has a special interest in aesthetic dentistry and orthodontics for which he accepts referrals in his practice in Burnley. Nadeem was elected as a full member of the British Academy of Aesthetic Dentistry in 2009 and he is currently the secretary. Nadeem has lectured extensively and published articles on aesthetic dentistry and has been running hands-on courses for GDPs on composites.

Clinical

Restoration

Firstly, a mock-up was created chair-side where the tooth was built up with composite. The occlusion was checked in centric occlusion, lateral and protrusive excursions, and adjusted accordingly. Once this was satisfactory a silicone matrix was then created for the palatal surface and a rubber dam was applied for moisture control (Figures 3-4).

The adjacent teeth were protected with a PTFE tape and the upper right central incisor was conditioned with a fifth-generation etch and rinse system (Ibond Total Etch from Heraeus Kulzer) (Figure 5).

The palatal shell was constructed with a clear enamel shade of Filtek Supreme XTE Universal Restorative from 3M Espe (Figure 6).

The approximal walls were then built up with Filtek

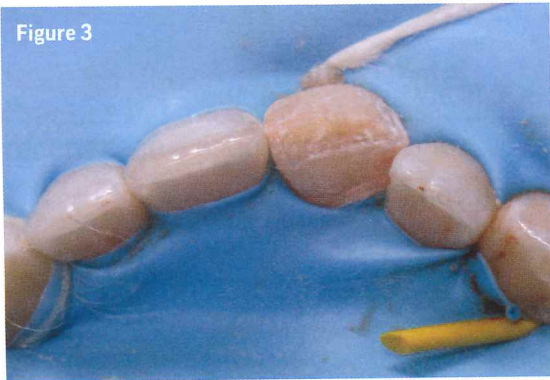


Figure 3: UR1 incisal view, rotated upper central incisor



Figure 4: Labial view UR1 after composite removal

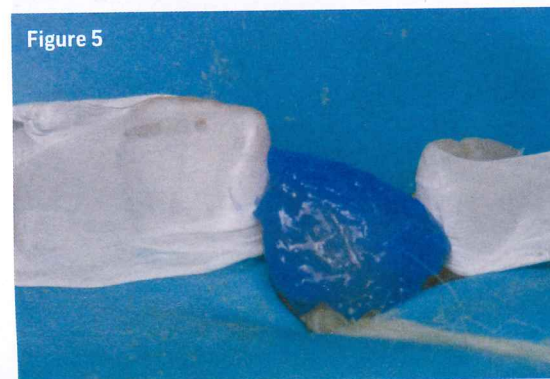


Figure 5: Isolation and etch

Supreme XTE in an A2 enamel shade using Mylar Matrix Strips from Kerr. The shape of the palatal shell was checked and adjusted so that the outline was similar to the periphery of the adjacent tooth. Excess white residue resulting from the adjustment of the composite was removed using a modelling resin (Signum, Heraeus Kulzer).



Figure 6: Palatal shell with clear enamel

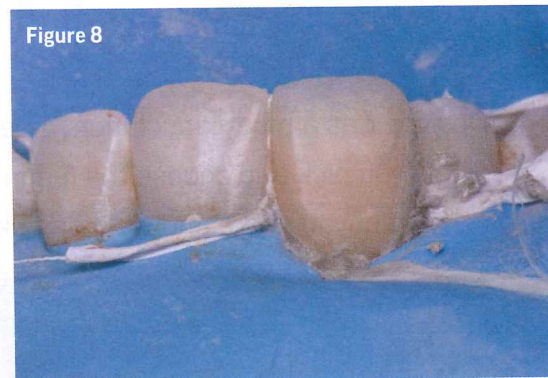


Figure 8: Enamel layers and polishing



Figure 7: Dentine shades and tints



Figure 9: Postoperative



Figure 10: Postoperative smile

Following this, the majority of the dentine was built up with a Filtek Supreme XTE A3 dentine shade. At this stage, a Venus Colour white tint composite from Heraeus Kulzer was added to recreate the fluorosis effect of a natural tooth and then a Venus Colour blue tint was applied to recreate the opalescent effect at the incisal edge (Figure 7).

Next, a Filtek Supreme XTE A2 enamel shade was used to build up the body of the tooth and a little Filtek Supreme XTE incisal enamel was applied to the incisal edge to allow all the characterisations to show through.

3M Espe Sof-Lex spiral finishing and polishing discs were then used to adjust the approximal areas and modify the transitional line angles. Finally, red ring tapered finishing diamond burs from Heraeus Kulzer were used to finely shape the labial surface of the body of the restoration, in order to achieve the correct primary and secondary anatomy (Figure 8).

The very last polish was achieved with a combination of aluminium impregnated silicone points and an ultra fine

buff with the 3M Espe Sof-Lex polishing and finishing discs (Figure 9).

Result

Overall, the patient was absolutely happy with the result of the restoration (Figure 10). Having enamel and dentine shades of various translucency and opacities makes the layering technique easier for a corresponding vita shade. 3M Espe Filtek Supreme XTE is a true nanohybrid composite material with good polishability.

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