

Aesthetic result created in a day

Stephen Mullan presents a case in which a young mother was treated with direct composite veneers to mask a dark central incisor and create an age-appropriate smile

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Direct composite veneers offer cost-effective, quick and aesthetic treatment for patients and have many advantages. The restorations can be reversible due to minimal tooth preparation. Composite bonding may also provide an alternative option for patients preferring to avoid orthodontic alignment and, as shown in this case, can be performed in a single appointment, which is ideal for patients with busy lifestyles.

A 28-year-old female presented at Dental Excellence in Liverpool. She was unhappy with her upper right central incisor, which was dark in appearance due to trauma incurred from a fall when she was a teenager (Figure 1). The tooth suffered apical pathology and had received endodontic treatment on two previous occasions (Figure 2). Following this, internal whitening of the UR1 using the walking bleach technique had been undertaken by her dentist, with limited results after four weeks of treatment.

The patient attended my clinic after her husband had undergone cosmetic treatment with us. In addition to correcting her dark central incisor, she wanted her teeth to appear larger, whiter and straighter (Figures 3 and 4) and was open to all treatment options.

The clinical exam concluded the patient had good general dental and periodontal health with no outstanding issues. She had no tooth wear or temporomandibular joint disorder (TMJ) complaints or symptoms. Bitewing X-rays recorded no caries or notable bone loss.

Restorative options

After consultation and presentation of the findings, several treatment options were discussed, including:

- Doing nothing and accepting the presenting condition
- Repeating the internal whitening of the UR1 combined with external whitening of all the teeth using bleaching trays
- Orthodontic treatment to align the upper arch with internal and external whitening and minimal composite bonding
- Composite veneer treatment on the ten upper anterior teeth
- Porcelain veneer treatment on the same ten teeth.

The patient opted for non-invasive composite veneers and had several goals that influenced this choice. She didn't want to take the orthodontic route, which might not necessarily give her the outcome or 'look' she was after. She also was not keen to repeat the ordeal of internal tooth whitening of the UR1 due to the unsatisfactory results from the previous treatment.

Composite veneers can be placed and completed during one visit using an appropriate shade. The



Figure 1: The patient was unhappy with her upper right central incisor which was dark in appearance

patient preferred the minimally invasive approach and more convenient treatment option, particularly as she had to travel several hours from her home in the Midlands with three young children to attend appointments.

Improved smile design

With the patient's input, an improved smile design was created on an iPad and the photographs edited with a pen using a photo app. The tooth shape was also discussed and finalised. She preferred a slender, feminine design that also had the 'brilliant white finish' of porcelain veneers. To achieve this effect, sufficient thickness of material was needed to block out the dark upper central incisor. The difficulty, in this case, would be to provide the patient with the volume she requested overall, without making the teeth appear fake or 'blocky'.

The process and limitations of the chosen treatment plan were explained to the patient. The longevity and maintenance of the composite restorations were also discussed. Regular flossing, hygienist visits and occasional repolishing were advised to help keep the teeth healthy and looking their best. A simple scale and polish of the lower anterior sextant was carried out to remove small calculus deposits.

Confidence in opaque composite

The teeth were prepared with the gentle application of aluminium oxide 29 micron powder using the Velopex Aquacut. A 37% phosphoric acid etch gel



Figure 2: The tooth suffered apical pathology and had received endodontic treatment on two previous occasions



Figures 3 and 4: She also wanted her teeth to appear larger, whiter and straighter

was placed for 30 seconds to roughen the enamel surfaces, followed by rinsing and drying. Kulzer Ibond Universal was applied and light-cured in accordance with the manufacturer's instructions. I find that the adhesive cures evenly and is easy to use.

An ultra-thin layer of flowable pink opaquer composite was placed over the dark central incisor, using an art brush. The UR5 to UL5 were built up using a layered approach. The composite chosen was Kulzer Venus Pearl Bleach Extra Light (BXL) shade (Figures 5 and 6). The edges of the teeth were created first using a finger as a palatal stent. The buccal and interproximal areas were then built with the same shade. The material has the benefit of ease of placement and is a tried and tested nano-hybrid composite that exhibits high physical strength in compression. ▶



Figures 5 and 6: The UR5 to UL5 were built up using Kulzer Venus Pearl Bleach Extra Light (BXL) shade



Figure 7: The finishing and polishing protocol was completed using the Kulzer Venus Supra pre-polishers and high gloss polishers



Figure 8: The patient was thrilled with the outcome and the time frame of her transformation

Venus Pearl was my go-to composite for this case. The material's quality of becoming increasingly opaque as it is placed in thicker sections was helpful for continuing to mask the dark central incisor. The composite also allows for uniformity of colour across the upper arch – particularly useful for the UL2, which is set back from the rest of the dentition and will ultimately be thicker in section than the neighbouring teeth.

Finishing and polishing

Once cured, the teeth were shaped with care, with the end goal in mind.

Starting with both central incisors, primary and secondary anatomy were drawn onto the teeth. With the anatomy placed, the finishing

and polishing protocol was completed using the Kulzer Venus Supra pre-polishers and high gloss polishers for a fast, predictable and long-lasting lustre (Figure 7).

Next, the length of the centrals was inspected. We progressed through all the teeth using the same method, paying attention to the golden rules of proportion using digital callipers and ensuring that canine guidance was respected.

One compromise to this approach was that the UL1 distal belly required some preparation.

Sof-Lex discs were used to take one millimetre of enamel off the distal belly of the tooth. This was to allow the placement of composite on the UL2 to mirror the UR2 as closely as reasonably possible.

Once polishing was complete, the composite

restorations were covered in a layer of glycerine gel before a final light cure. The gel was then washed off.

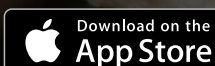
Successful smile transformation

A successful, aesthetic, medium- to long-term result was achieved using a minimally invasive approach. On reflection, I would have preferred to have carried out short-term orthodontic treatment to avoid the need for any preparation of virgin enamel, but it was justified with this case.

The patient was thrilled with the outcome and the time frame of her transformation (Figure 8). She was happy with the choice of tooth colour and that her dark central incisor has been masked. She now has the more age-appropriate smile that she had been seeking for quite some time. **D**

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