CLINICAL

A natural-looking smile

Máirtín Brennan presents a case highlighting a positive outcome after using Venus Pearl

A female patient in her 40s had consulted an orthodontist about her upper anterior teeth. She was unhappy with her smile and wanted to investigate the treatment options. After an initial examination, the orthodontist referred her to me.

All her life, the patient had been very self-conscious about her teeth. Her main treatment goal was to attain a more attractive, broader smile. She had seen a dentist in London and had been researching on the internet for some time. She assumed I was going to talk about porcelain veneers. But I felt composite was a more appropriate material until other dental issues were resolved.

Planning

The patient's situation was quite challenging. She had several root-treated posterior teeth, so I sought the opinion of an endodontist. Some of these teeth had very little structure remaining, so it would be risky to fit a post and crown. The patient also had in-standing pre-molars and very high plaque levels. I was very concerned and, initially, I only offered to treat her four upper incisors.

After further discussion, the patient decided to have eight direct composite veneers, thereby widening the arch and giving her a more attractive profile. A major benefit of this approach is less tooth destruction. My objective was to increase the arch width by building out the teeth facially, to improve the patient's profile. As a consequence, certain foods, such as lettuce, would be more likely to stick to the face of her teeth. This is due to the greater emergence angle from the soft tissue of the more facial surface of the new veneer. Therefore the patient would need to be more careful when brushing her teeth.

Pre-treatment

I made a diagnostic mock-up with Heraeus Kulzer Venus Pearl composite resin on the four anterior teeth. An impression cast was taken and a photographic record of the mock-up was captured with a Canon 30D camera and ring flash. This mock-up gave us both a sense of what was possible and whether it was what the patient was looking for. During the initial consultation, I also discussed long-term options for her posterior teeth, including the possibility of implant treatment.

I was quite concerned about the prognosis for her posterior teeth; hence the advantage of working with a composite material that is aesthetic, strong and yet easily repairable. Looking at the chroma of the teeth, I decided to use Venus Pearl. I like the consistency of this composite very much. It is a great material to work with and very easy to manipulate.

Restoration technique

The treatment was carried out over two appointments. At the first, the upper incisors and first premolars were restored. My technique was very simple. The teeth were cleaned using a Cavitron ultrasonic scaler and air polished with sodium bicarbonate. Existing composites were removed. An erbium YAG laser was used to abrade the tooth surface, which increases the adhesion of the bonding agent. This was followed with air abrasion using 50micron aluminium oxide. I then etched, primed and bonded the surfaces.

With both an impression of the mock-up and photographs at my side for reference, I built up the new restorations free-hand with Venus Pearl A1 shade. Glycerine gel was applied after the final cure to account for the oxygen inhibition layer. The distal and mesial marginal edges were developed with pre-curved sectional matrices (Kerr Hawe Adapt Sectional Matrix Art Number 756).

To finish the restorations, I first established the overall macroscopic shape of the teeth. I then focused on the microscopic surface anatomy, lowering the handpiece speed and using a flame-shaped diamond bur (Henry Schein). This was followed with a very fine red diamond bur (Komet) to remove any excess composite at the gingival interface.

Sandpaper disks were used to start polishing the restorations. A three-micron and then a one-micron diamond paste, applied with a goat hairbrush, followed this. I completed the polishing with aluminium oxide paste on a rag wheel.

The profile of the teeth had been brought facially by the build-up. I asked the patient to first get used to the change and then to think about having the canine teeth restored. She adapted quickly and decided to go ahead with the next stage. At the second appointment her canines were treated in the same way. During both treatment appointments the patient's plaque levels were addressed and she was given oral hygiene advice.

Result

The resultant shape of the restorations was aesthetically pleasing. This was important to providing a natural-looking, attractive smile. The direct composite approach allowed the tooth tissue to be maintained, with reversibility and flexibility for future treatment needs.

The patient was delighted with the outcome. She was overjoyed and started to cry. She kept saying: 'You have no idea what you have done for me.'

Figure 1: Smile before treatment

Figure 2: Smile after treatment

Figure 3: Retracted view before treatment

Figure 4: Retracted view after treatment

Figure 5: A diagnostic mock-up was made with Heraeus Kulzer Venus Pearl composite resin on the four anterior teeth

Figure 6: The patient had several root-treated posterior teeth

Dr Máirtín Brennan MSD has a masters of science in prosthodontics. He has lectured on all aspects of aesthetic dentistry and runs a practice dedicated to implant, aesthetic and laser dentistry in Dublin.
Web: www.belgravedentalclinic.ie
Email: mbrennan@belgravedentalclinic.ie