

**DR NISHAN DIXIT**

BDS LDS RCS (ENG)

Nishan qualified from Guy's Dental Hospital in 1994. In 2000, he established Blue Court Dental in Harrow, Middlesex. He has a particular interest in minimally invasive aesthetic dentistry. He is a past president of the British Academy of Cosmetic Dentistry (BACD).

**ENHANCED CPD**

GDC anticipated outcome: C

CPD hours: one

Topic: Aesthetic dentistry

**Educational aims and objectives:**

To present a restorative and aesthetic case, from caries stabilisation and direct restoration to straightening, whitening and composite bonding. This article qualifies for one hour of enhanced CPD; answer the questions on page 96.

**T**his gentleman came to see me back in early 2021 because he was unhappy with his smile. His goal was to have straighter teeth with an improved smile.

**DENTAL HISTORY**

The patient reported that, prior to COVID-19, he had been a regular attendee at his previous GDP.

He had no history of orthodontics and had a minimally restored dentition. However, he did mention that recently his gums were bleeding on brushing, and he had cracked a lower tooth a few weeks prior. Medically, he was fit and well with no allergies or conditions to note.

**EXAMINATION**

Examination of the extraoral tissues, temporomandibular joint (TMJ) and muscles of mastication revealed nothing abnormal. Intraorally, the soft tissues were normal. It was noted that his lower left second molar had fractured and there was also caries present on the lower left first molar.

His BPE scores were:

- 323 in the upper arch
- 323 in the lower arch
- Both of his bleeding and plaque scores were recorded as 30%.

After an in-depth consultation, which included a full set of intraoral X-rays and an Itero scan, the initial plan was to stabilise the caries at the LL6 and LL7 with composite restorations and for him to have a course of treatment with the hygienist.

From the Itero scan the patient saw a smile simulation, which showed the correction of his crossbite and realignment of his teeth. At this stage, we explained that after the alignment he would

require some further treatment to repair his worn teeth and tooth whitening to change the colour of his teeth.

After approving a Clincheck, he underwent a course of Invisalign clear aligners, which consisted of 18 aligners worn for 22 hours a day, changing them every 10 days.

He was happy with the outcome after alignment. We then went ahead with tooth whitening treatment using the Boutique home whitening system with 10% carbamide peroxide. Once whitening treatment had finished, we subsequently looked at the overall aesthetics of the mouth.

The patient was given an option of either porcelain veneers or composite bonding to further improve his smile. He decided on composite bonding on the upper arch (UR3 to UL3) with G-aenial Injectable A1 (GC), using the injection moulding technique.

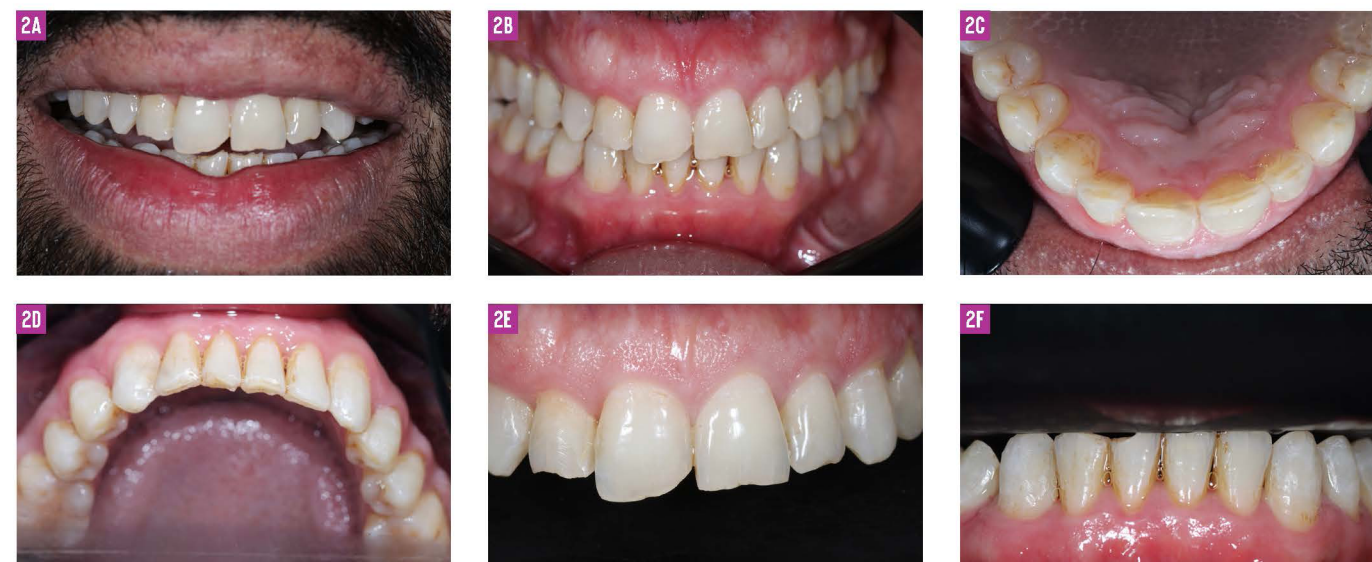
Further enameloplasty was carried out on the LR3, LR2, LR1 and LL3, LL2 and LL1 to smooth the teeth. Finally, we fitted some upper and lower bonded lingual wires and gave him a set of Essix retainers.

**TREATMENT SEQUENCE**

1. Hygiene treatment
2. Composite restorations LL6 and LL7
3. Alignment with Invisalign – 18 aligners (after patient approved smile simulation)
4. Tooth whitening
5. Composite bonding on UR3, UR2, UR1 and UL3, UL2 and UL1 using the injection moulding technique and G-aenial Injectable shade A1
6. Recontouring/enameloplasty on LR3, LR2, LR1 and LL3, LL2 and LL1 to remove any sharp edges
7. Retention with U/L bonded lingual wires and U/L Essix retainers.

Nishan Dixit presents a restorative and aesthetic case, from caries stabilisation and direct restoration to straightening, whitening and composite bonding

# Composite bonding: injection moulding technique

**FIGURES 1A to 1F: Before treatment****FIGURES 2A to 2F: After alignment****TREATMENT TECHNIQUE WITH G-AENIAL INJECTABLE (GUI)**

A diagnostic wax-up was prepared by my technician Kevin Vara at Sai-Tech Digital Dental Laboratory.

From the diagnostic wax-up, silicon stents were made with holes for injecting the GUI for injection moulding chairside.

The patient's teeth were cleaned and alternate teeth isolated with PTFE tape to inject using the alternate teeth technique.

Teeth were then etched with phosphoric acid, rinsed and dried. Bond was applied onto etched teeth and light cured.

The clear stent was placed over the arch and GUI A1 was injected through the custom holes on

alternate teeth and light cured through the clear stent. The stent was removed and the final layer was cured through Gradia Air Barrier (GC) to help with polymerisation of the final layer.

The process was then repeated on the other untreated teeth (3-3).

Excess cured composite was removed with a number 12 scalpel.

The composite restorations were polished with Eve DiaComp Plus polishers and application of Enamelize.

**Reflections on the materials used**

G-aenial Injectable is easy to handle, to inject and sculpt, which offers control and precision when restoring the teeth.

The composite can be easily shaped and contoured. GUI has high strength and durability, which ensures long-lasting restorations with good wear resistance, thereby minimising fracture. This is due to full silination of the fillers to the resin (GC's full-coverage silane coating [FSC] technology).

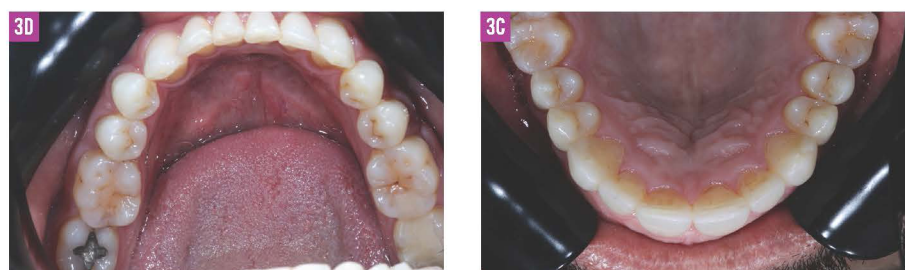
The material polishes very well, giving a smooth and glossy finish and did not need repolishing on review.

**SIX-MONTH REVIEW**

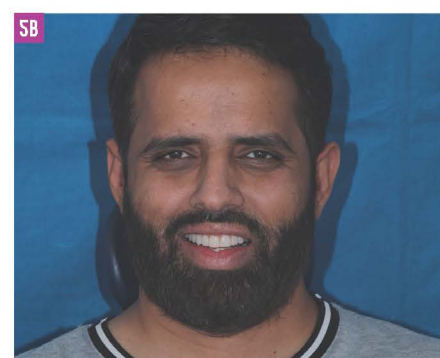
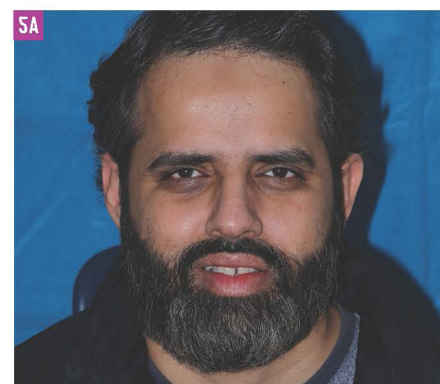
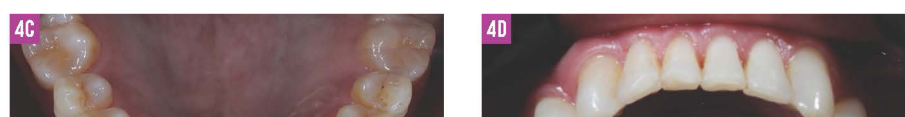
At the six-month review, it was clear that the material was holding up well. There were no chips and the polish had been maintained (Figures 4a to 4f).







FIGURES 3A to 3F: Post treatment



FIGURES 5A and 5B: Full face, before and after

**CONCLUSION**

The patient has been delighted with the results of his treatment. His new smile has increased his confidence and he is motivated to maintain his teeth and keep his gums healthy to preserve it. He has improved and maintains a full oral hygiene regime to protect what he calls the best investment he's ever made in his dental health.

My treatment approach in this case was fully in line with my ethos of providing minimally invasive dentistry. This additive technique has enabled me to take my patient from misalignment, tooth wear and a fracture to aligned, restored, natural-looking teeth without any drilling, damage or destruction of teeth.

## G-aenial™ Universal Injectable

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Exceptional strength and wear resistance  
Long-lasting restorations  
with exceptional gloss retention

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