Balraj Singh Sohal
BDS (Hons) 2018 - KCL

Mini Smile Makeover – Young Maestro Competition

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Year of Graduation: 2018, King's College London Dental Institute

All of the cases documented in this case study report were done free hand and on the NHS during my dental foundation year. Based on the rules in the foundation training practice I was only allowed to use the NHS composite system from the company AristoChem – body shade composites (A1, A2, A3). Given my minimal experience in composite bonding and accepting the time constraints and restriction of materials during foundation training I feel I was still able to deliver good aesthetic results for my patients. In numerous cases these patients unfortunately failed to attend their follow up appointment for final polishing and refinements.

The opportunity to learn from a skilled clinician such as Dipesh will elevate my composite skills ten-fold. From following Dipesh's work on social media and reading some of his dental articles it is clear to see that he has the highest of ethical standards – equally prioritising function and aesthetics.

There are numerous areas with respect to composite bonding I have little to no experience in – for example knowing the right proportions to layer dentine and enamel shades, when to use opaquers and tints to replicate natural teeth – how much tint/opaquer is needed and how do we know/calibrate this, how to restore the peg lateral and the technique to deliver composite veneers and edge bonding. I believe a 2-day session with Dipesh and his team will clarify the uncertainties I have and provide me with a solid foundation to deliver the best care to my patients.

I feel being fresh out of dental foundation training and already having experience in single shade composite bonding, I am now ready to increase my knowledge and elevate my skillset by learning how to layer composite using the Mini-Smile-Makeover protocol. I believe I will be a good candidate to utilise this opportunity because by doing this course early on in my career it will provide me with a solid foundation to practice and develop my dentistry. After hearing so much amazing feedback about Mini-Smile-Makeover, it is clear to see it is a course I need to partake in in-order to further my skillset.

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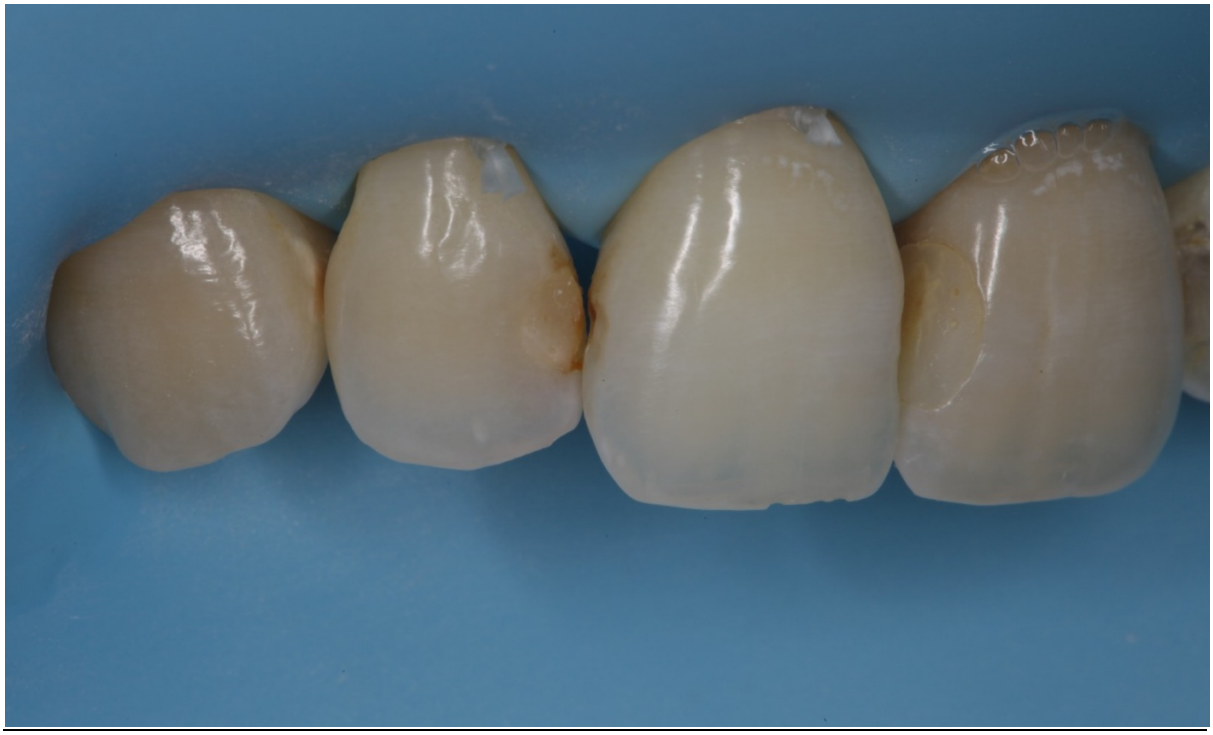
Case 1

A 45-year-old woman presented with caries on the upper right central and upper right lateral incisor. We discussed changing the un-aesthetic composite restoration on the upper left central incisor although the patient declined.

A shade was taken before isolation and we opted to complete this case free hand.

Figure 1 **– pre-operative photograph, rubber dam isolation with floss ligatures to ensure optimum moisture control.**



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Figures 2 and 3 **– show different views of the caries free cavities. Note the clear EDJ and bevelled buccal margin on the UR2. A short bevel of the UR2 margin was done with a diamond medium-grit rugby ball – this exposed more enamel rods for stronger bonding. Both cavities were etched for 30 seconds – selective enamel etching with 37% orthophosphoric acid, cavities were washed for 30 seconds and dried for 10 seconds. Scotchbond universal was agitated in the cavities for 30 seconds and then air-dried for 10 seconds and light-cured.**

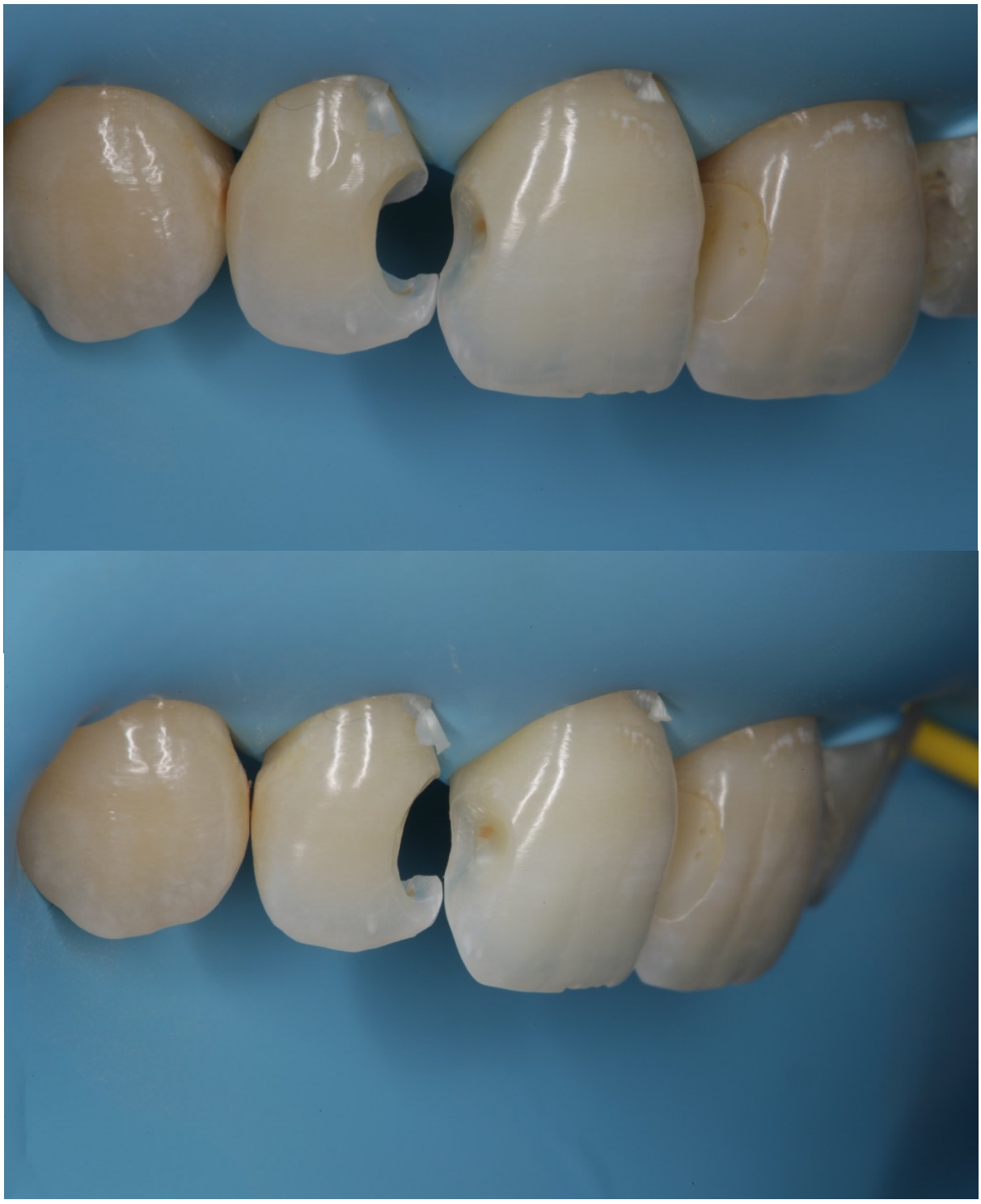

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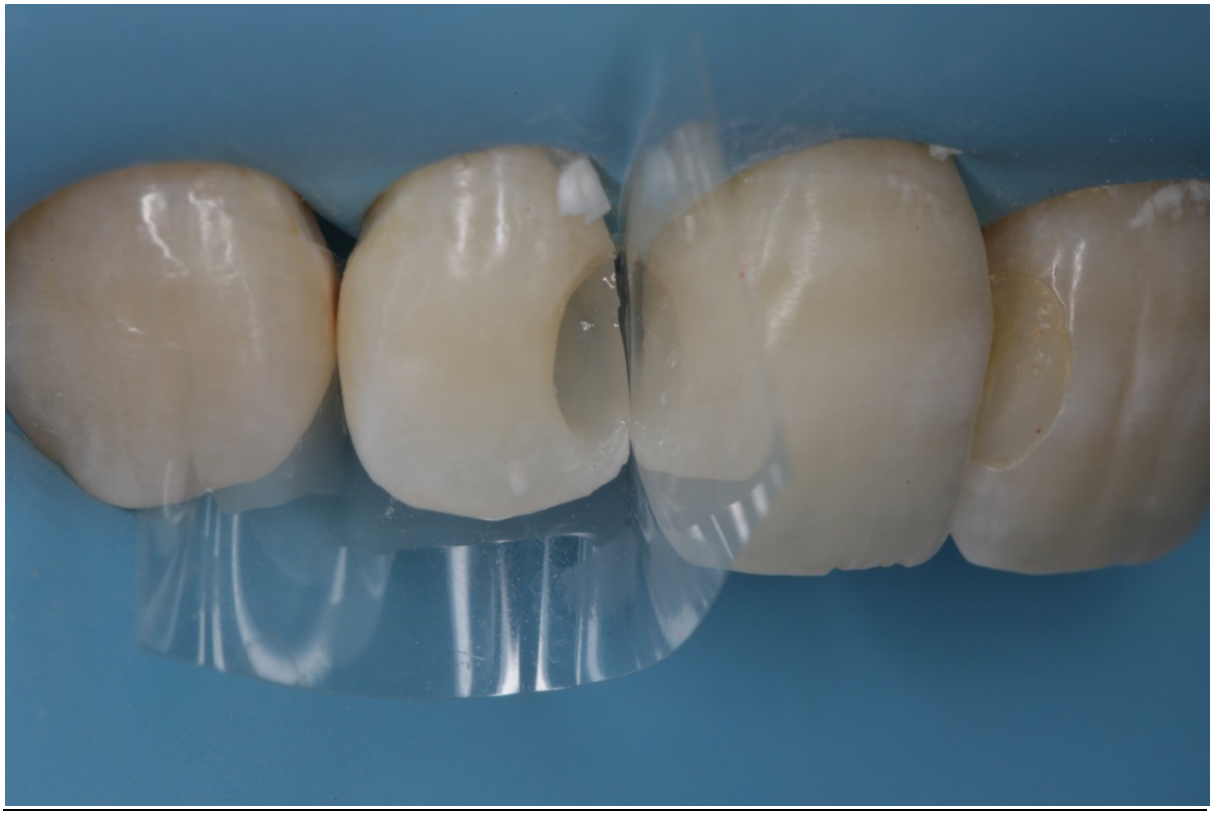
Figure 4 and Figure 5 **– the UR1 was built first as it was easier to access and restore. Once the UR1 was restored a mylar strip was placed with consistent finger pressure from the palatal aspect to build the palatal wall of the UR2. After the palatal wall was built a Tor VM sectional matrix was used to build the mesial wall.**



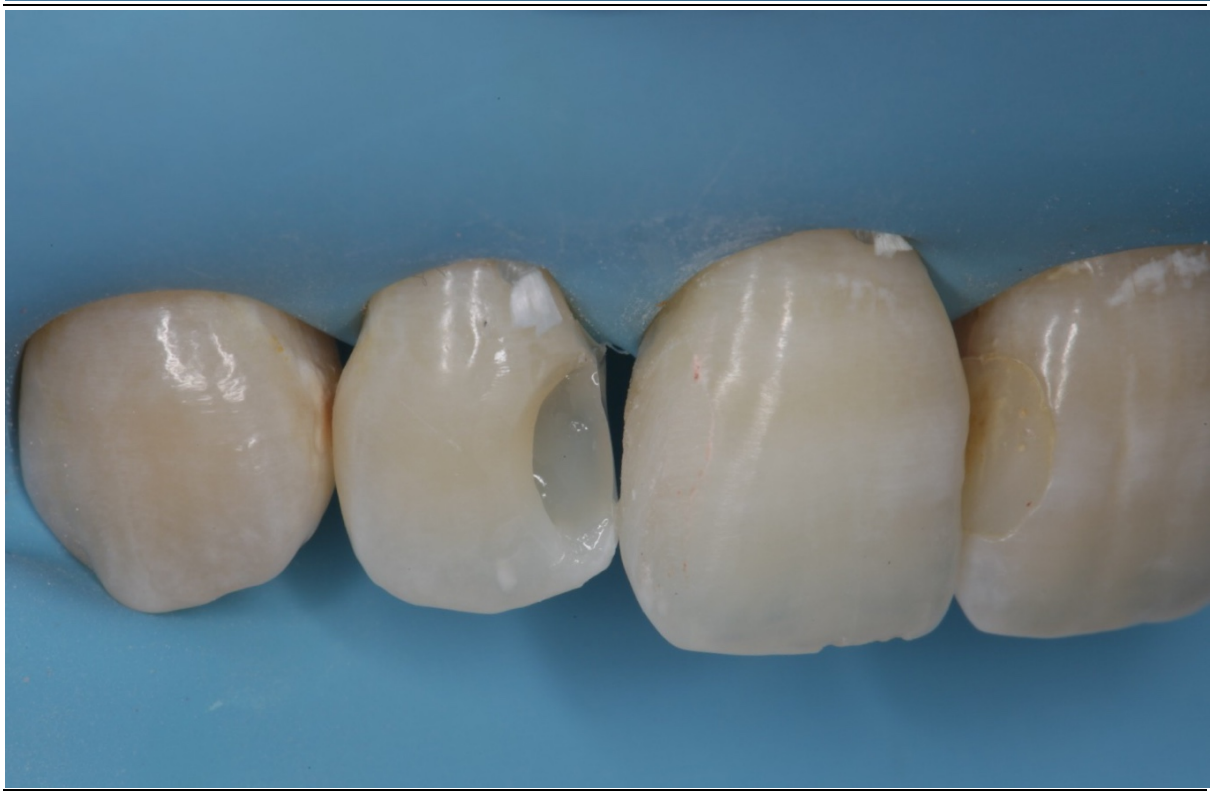


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Figure 6 **– Immediate post-operative view, gross finishing and polishing was completed – for this case only soft flex discs were used. The patient was to return a week later for final polishing although unfortunately failed to attend.**

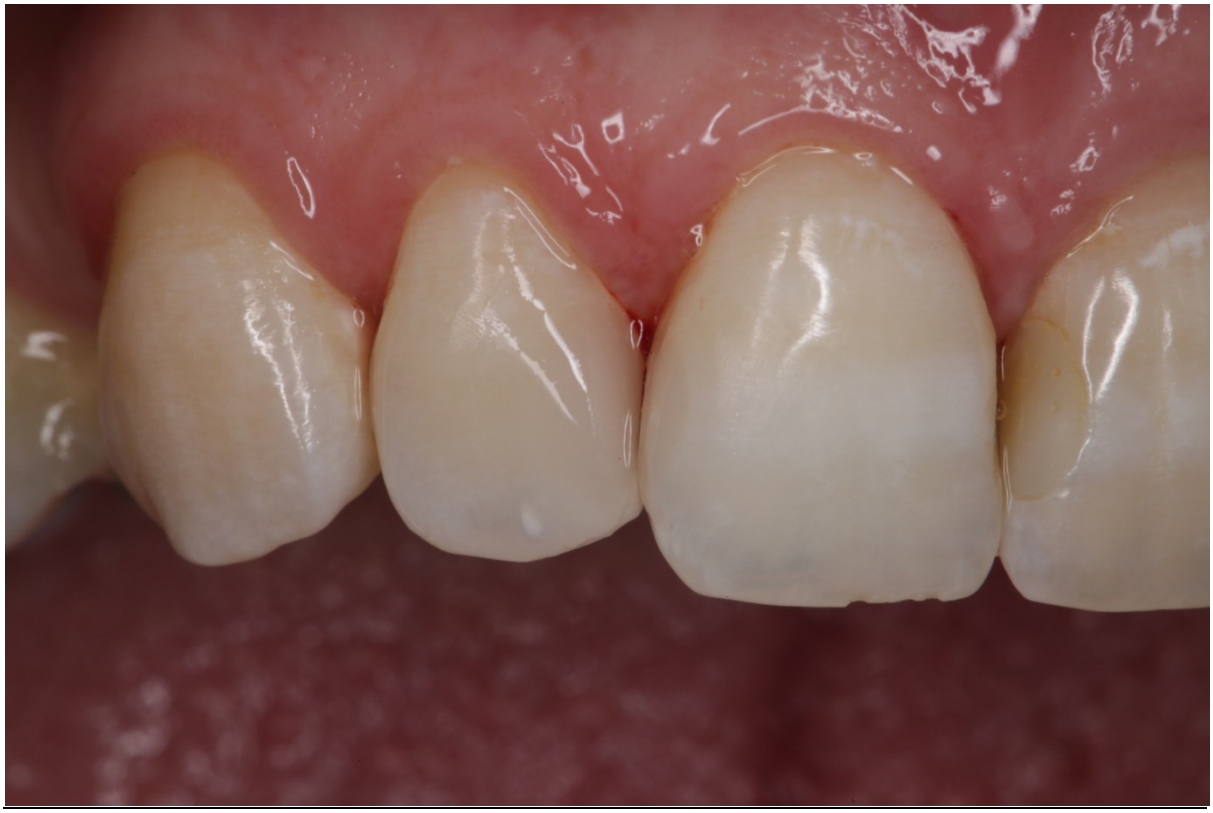
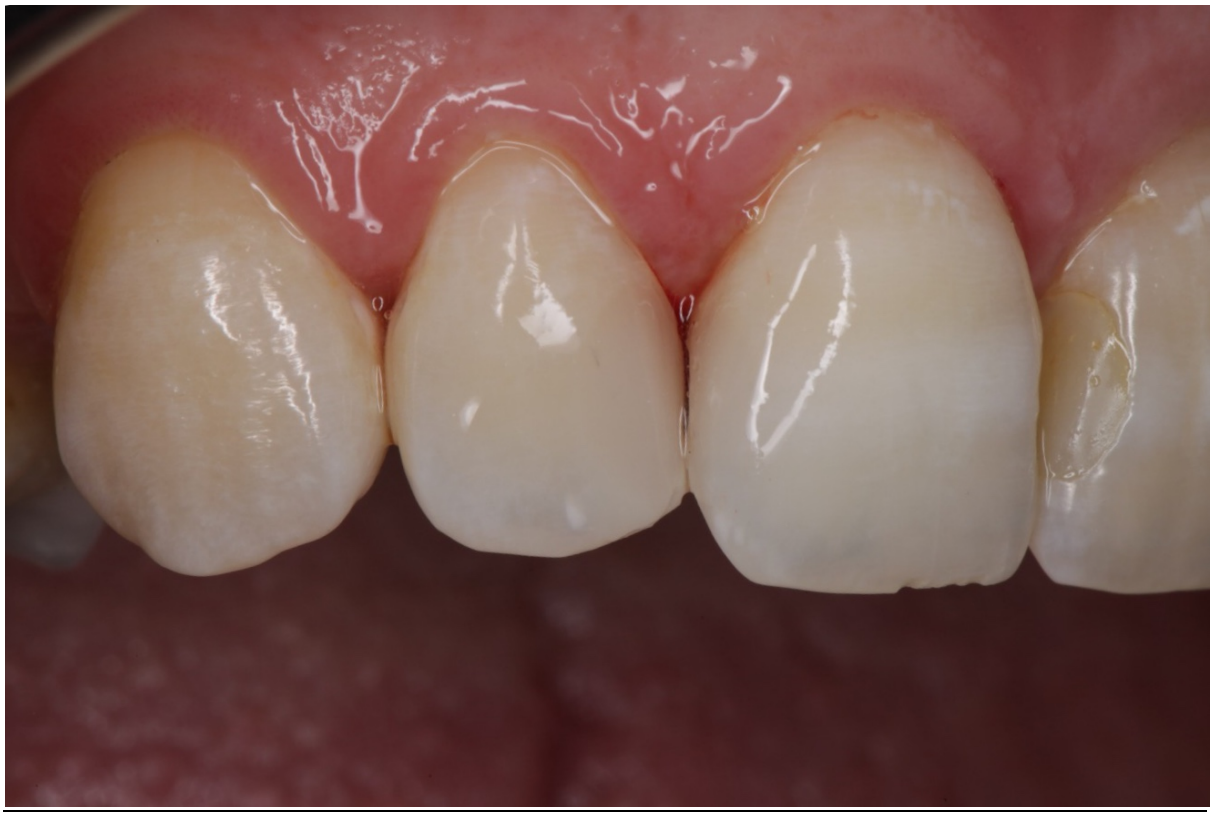


***Figure 7 and Figure 8* – different views to showcase the effect of different angles of light on the restorations. The teeth of course look dehydrated as these photos were taken immediately after removing the rubber dam.**



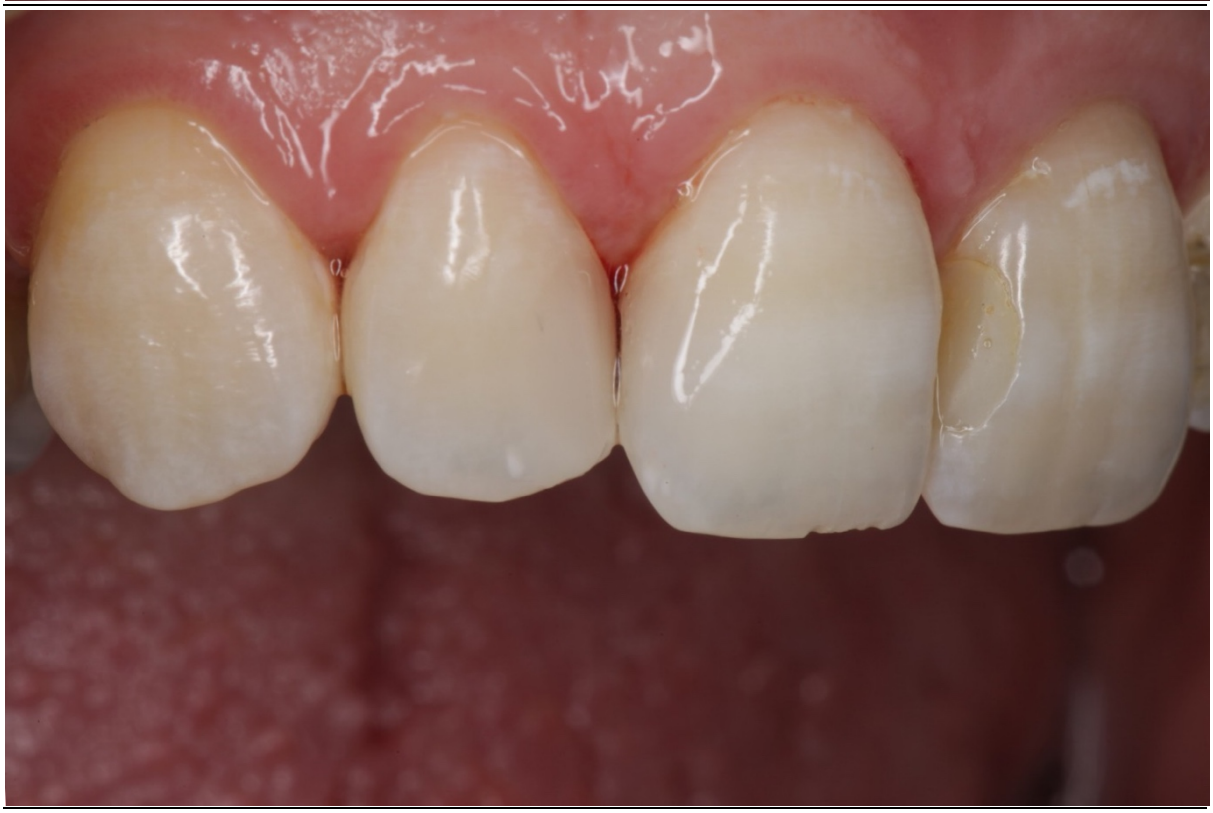
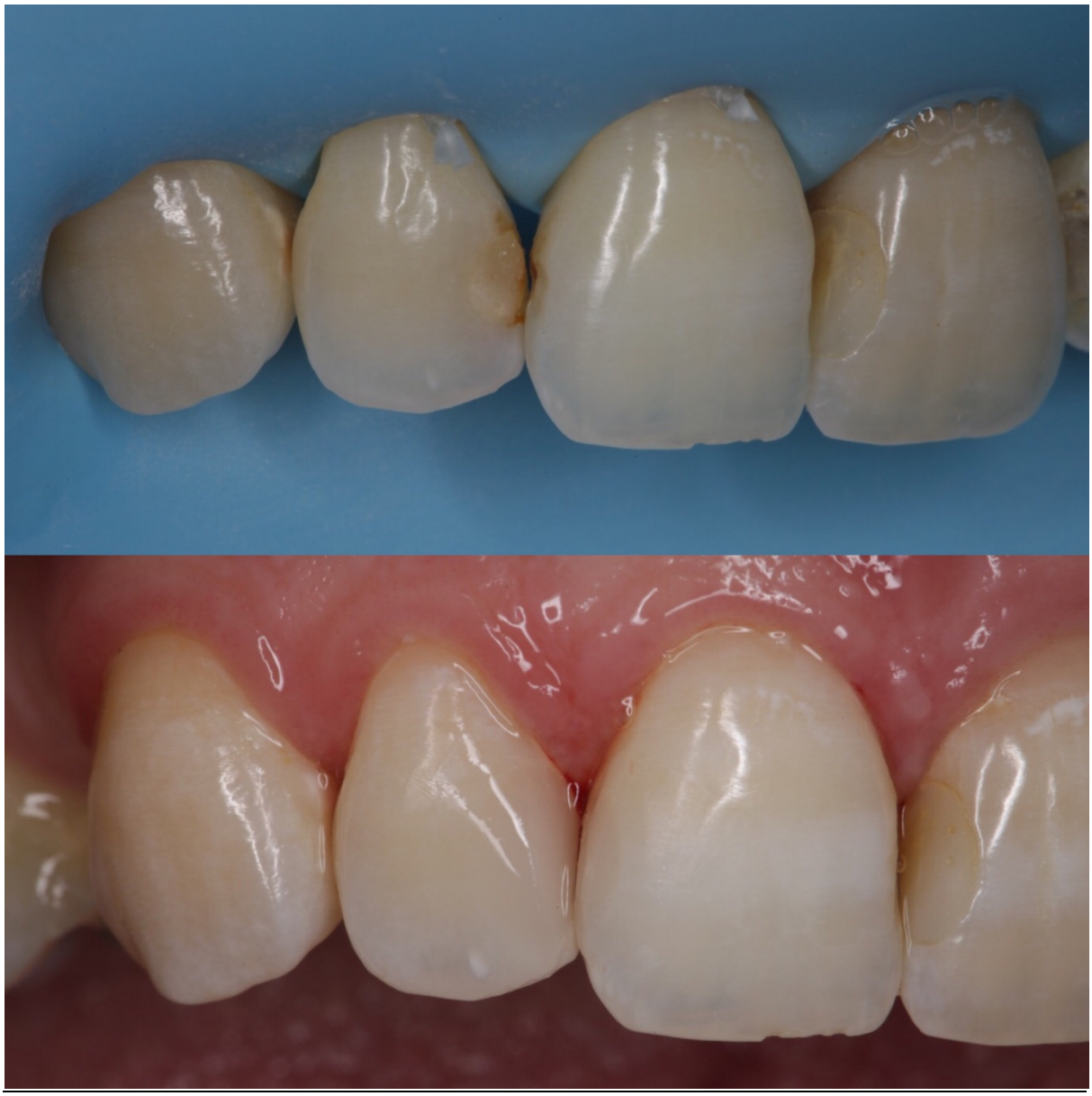


***Figure 9* – showing before and after**



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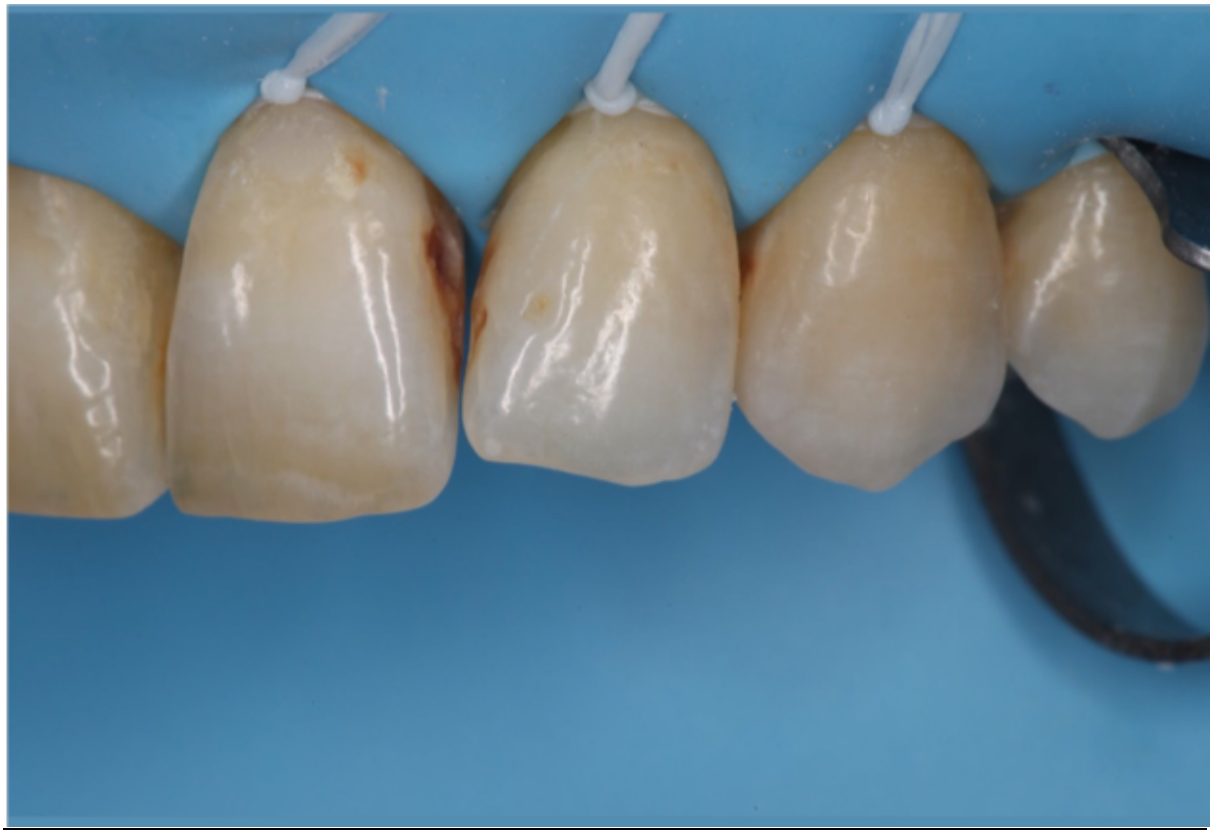
Case 2

A patient presented complaining of staining and large black triangles between her teeth. Upon examination caries was noted on the distal of the upper left central incisor, the mesial and distal of the upper left lateral incisor and the mesial and distal surface of the canine. Her periodontal condition was stable – she visits the hygienist 4 times per year for regular maintenance. The patient wanted to restore these carious teeth and asked if we could remove the unsightly black triangles between the teeth.

A shade was taken before isolation and we opted to complete this case free hand using a combination of mylar strips, Tor VM matrices and bioclear matrices.

Figure 1 **– pre-operative photograph, rubber dam isolation with floss ligatures to ensure optimum moisture control.**



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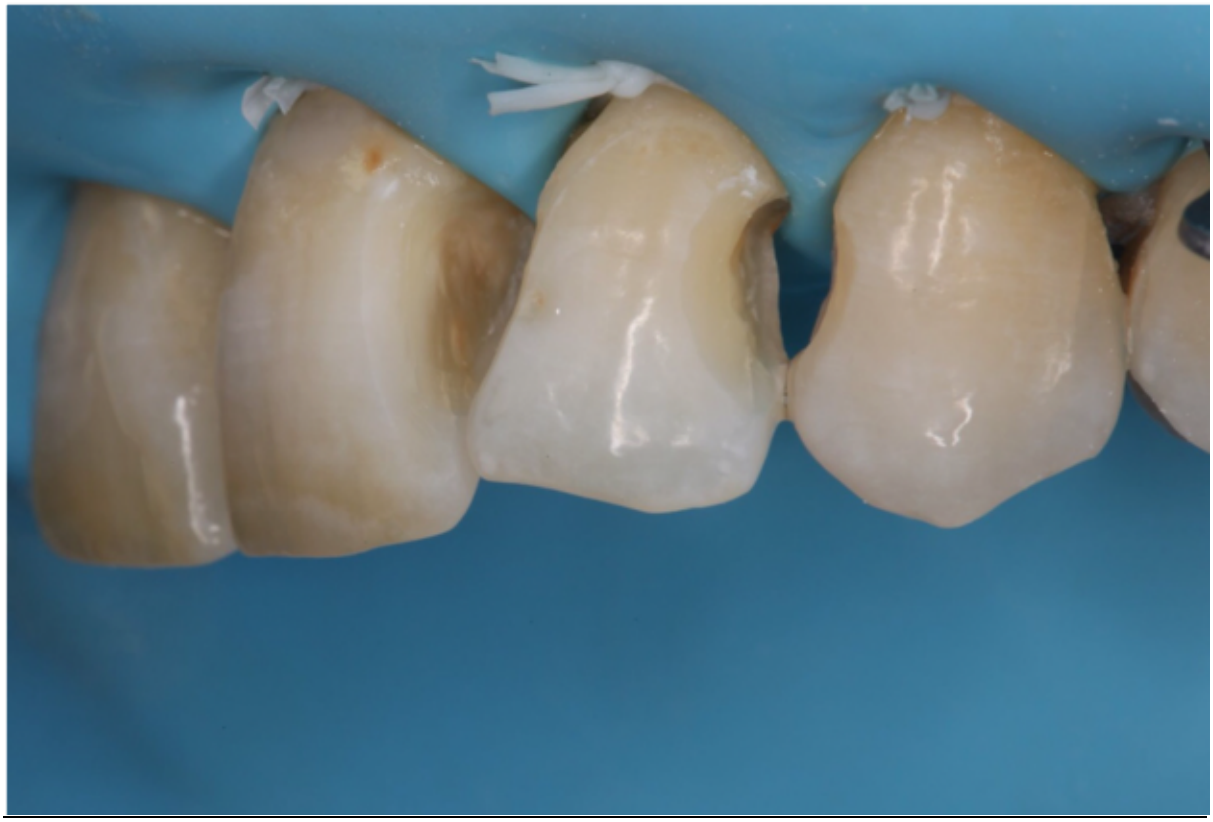
Figures 2 & 3 **– caries removed, cavities prepared, margins bevelled and air-abrasion to allow a clean substrate ready for bonding. Note the UL3 distal cavity – the UL3 buccal enamel was preserved, as the caries was accessed palatally to ensure we preserved as much tooth structure as possible.**



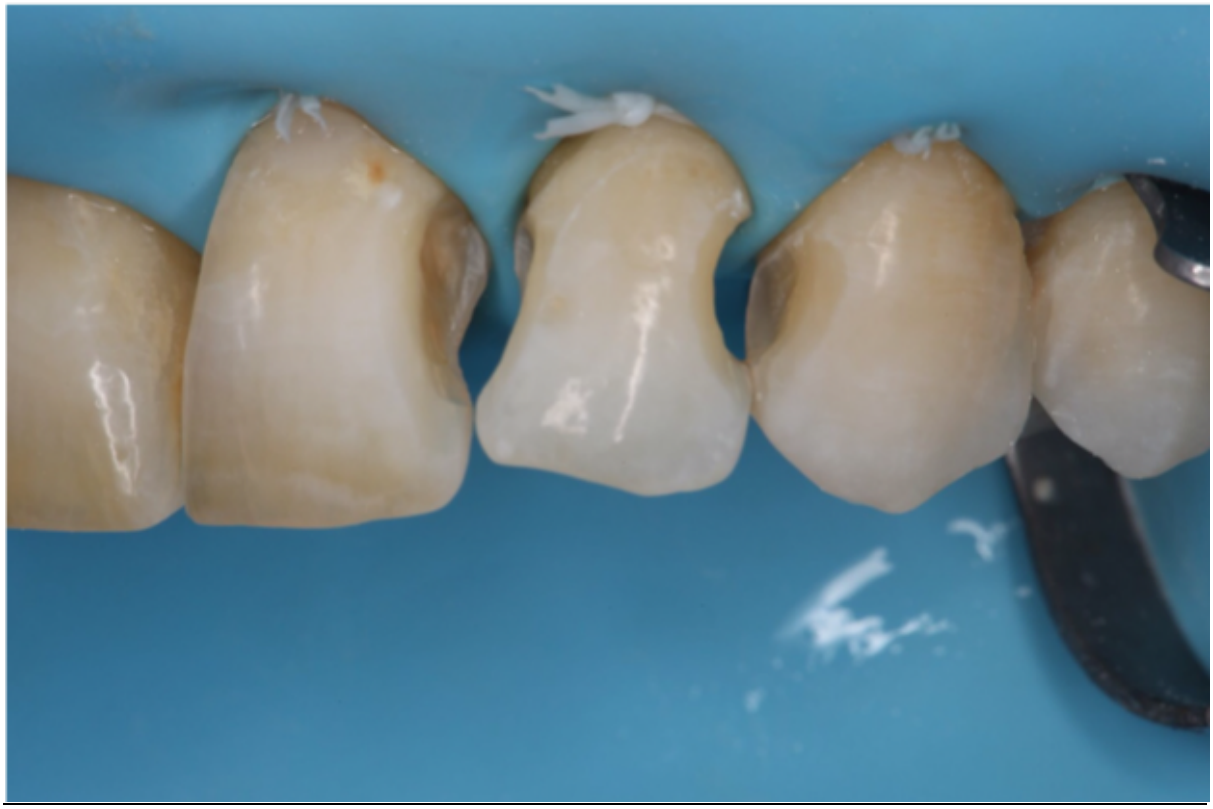


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Figure 4 **– These cavities were restored using a combination of mylar strips, Tor VM matrices and the bioclear matrix system. Shade A3 composite was placed in the respective cavities caries removed. Gross finishing and polishing was carried out using soft-flex discs and a kerr occlubrush.**

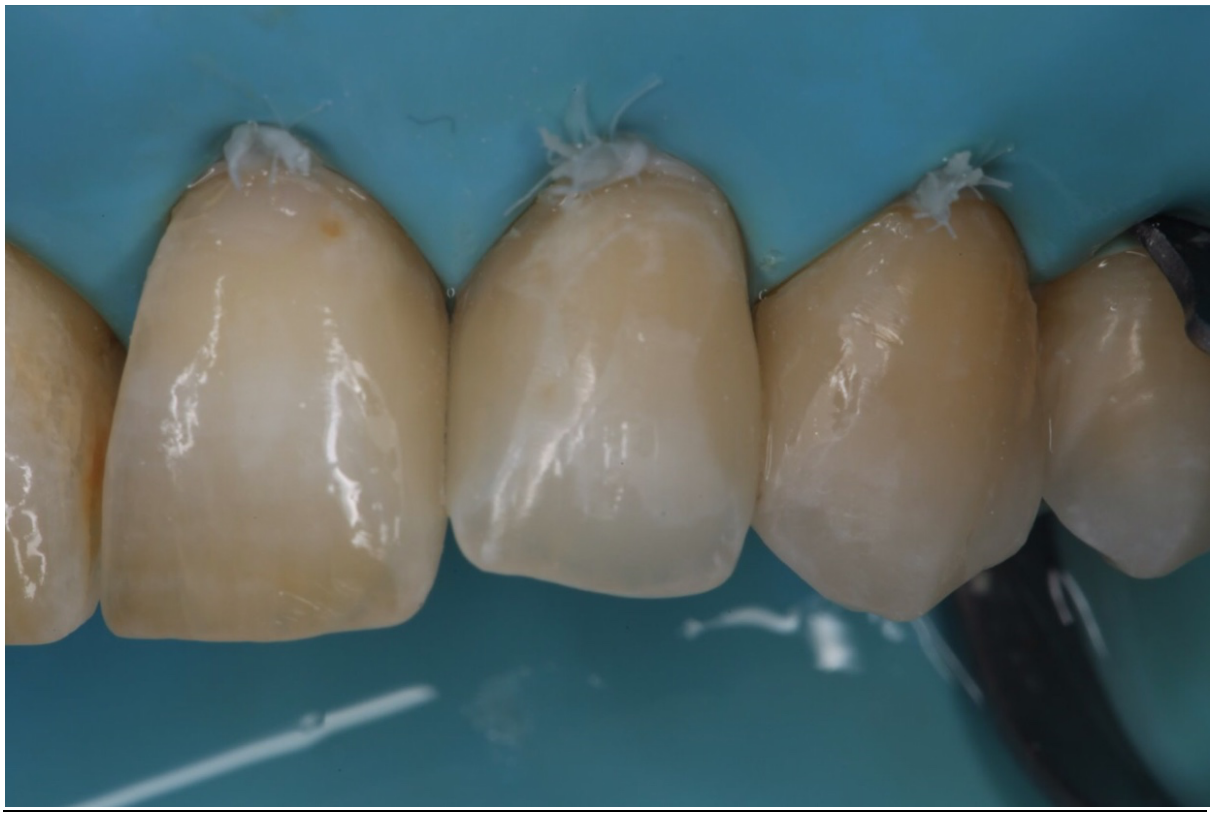

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Figure 5 **– The rubber dam was removed; minor adjustment was made to palatal aspect of the restorations to ensure they were comfortable in static and dynamic occlusion and to ensure they felt smooth to the patient's tongue. Note the inflammation of the gingiva due to the tight floss ligatures, this will subside.**

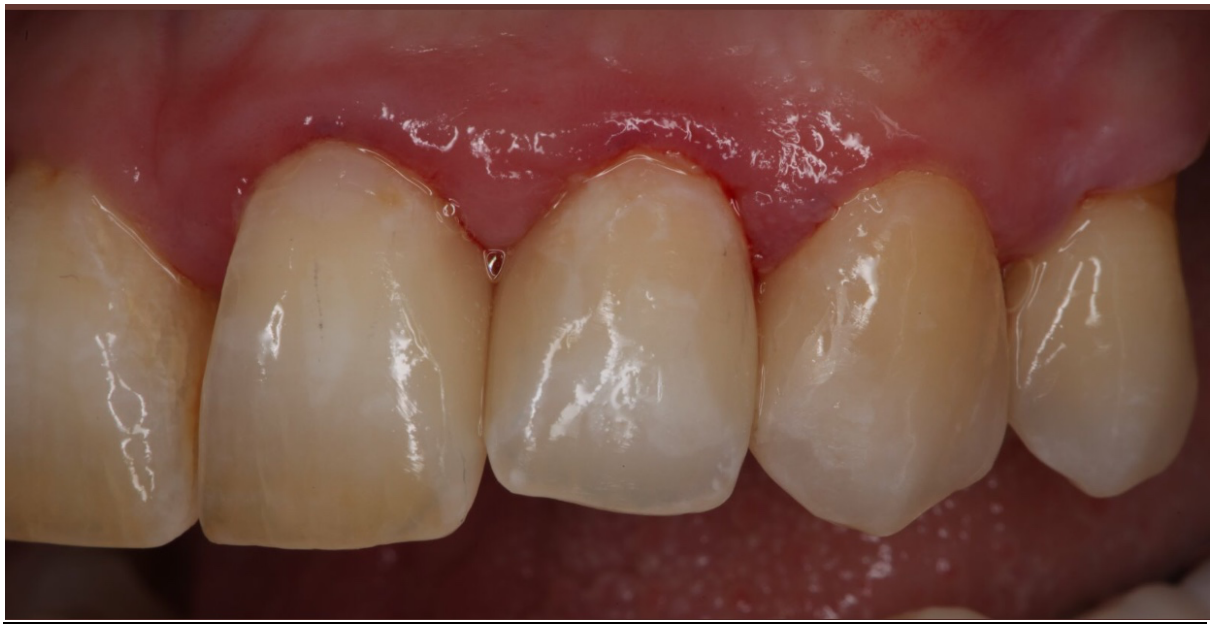


Figure 6 **– A different view of the restorations. The patient was delighted with the result as we removed the decay and closed the black triangles.**

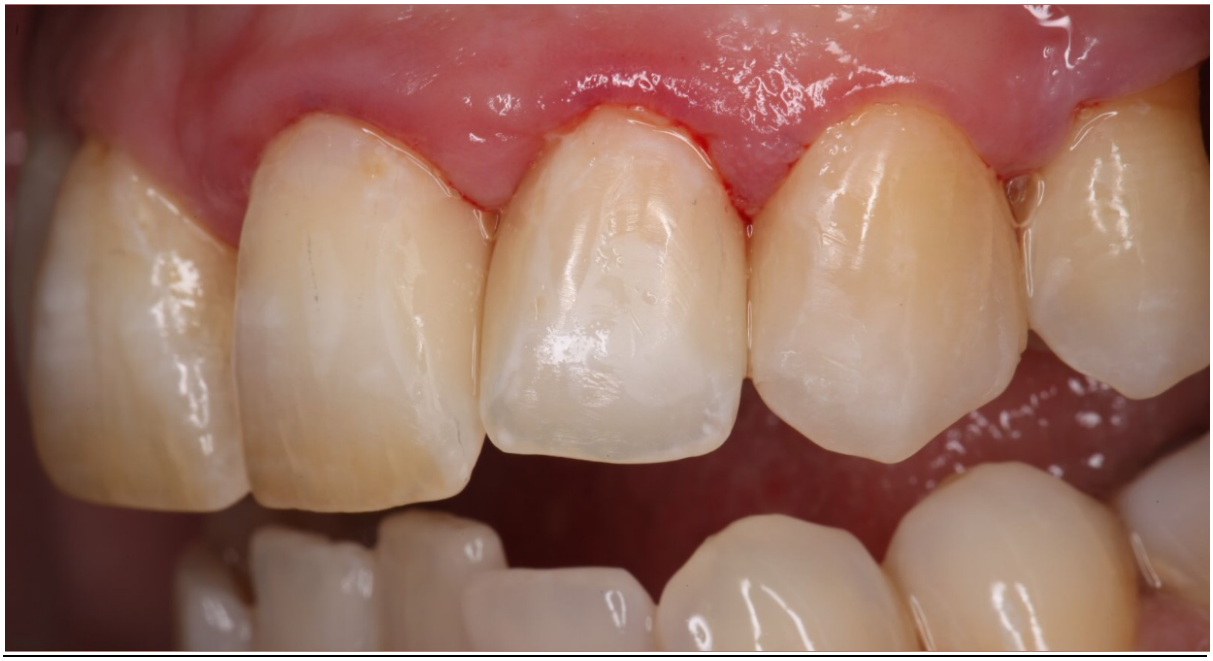
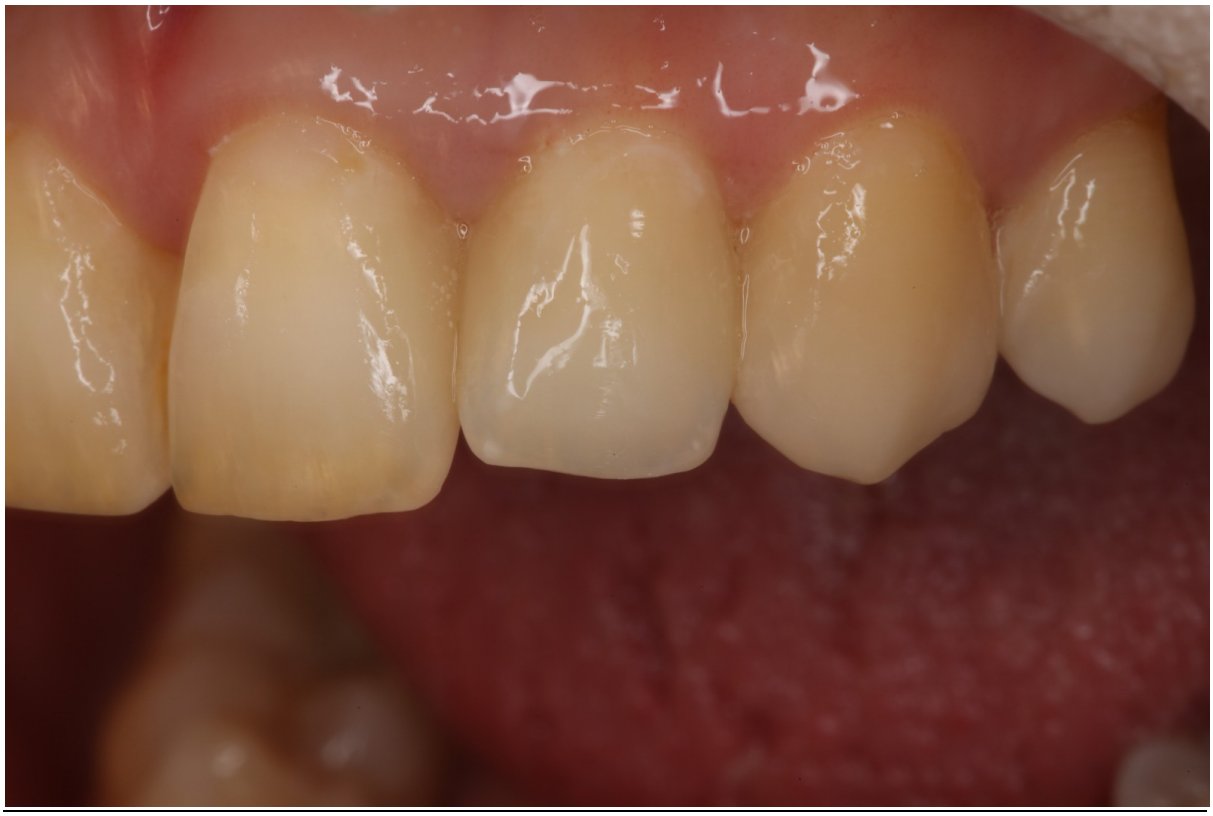


***Figure 7* – A one week review of the restorations – the gums have healed and the teeth have rehydrated enabling the restorations to blend in nicely.**



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Case 3

A 15-year-old patient attended alongside her mother for consultation. Upon assessment it was noted she had previously had an anterior root treatment (upper left lateral incisor). The root treatment was completed in 2017, however the patient's main complaint was the discolouration of the root treated anterior tooth. Clinical and radiographic assessment indicated an asymptomatic upper left lateral incisor with a good root filling – filled to length, well condensed, no voids and no signs of peri-apical pathology. She did however have a poor composite restoration infected by secondary caries on the root treated lateral incisor as shown in the image below.

Her occlusal assessment showed a mild anterior open bite and in lateral excursion she had group function (UL4, UL5, UL6, UL7) on left lateral excursion – the UL2 and UL3 were not in guidance. She had no non-working side contacts.

Due to her age and financial budget the mother and daughter did not want to explore referral for specialist tooth whitening and indirect restoration options and opted for a direct restoration.

Figure 1 **– pre-operative photo showing a carious, discoloured and disproportionate upper lateral incisor. A split dam technique was employed alongside retraction cord to isolate the tooth.**

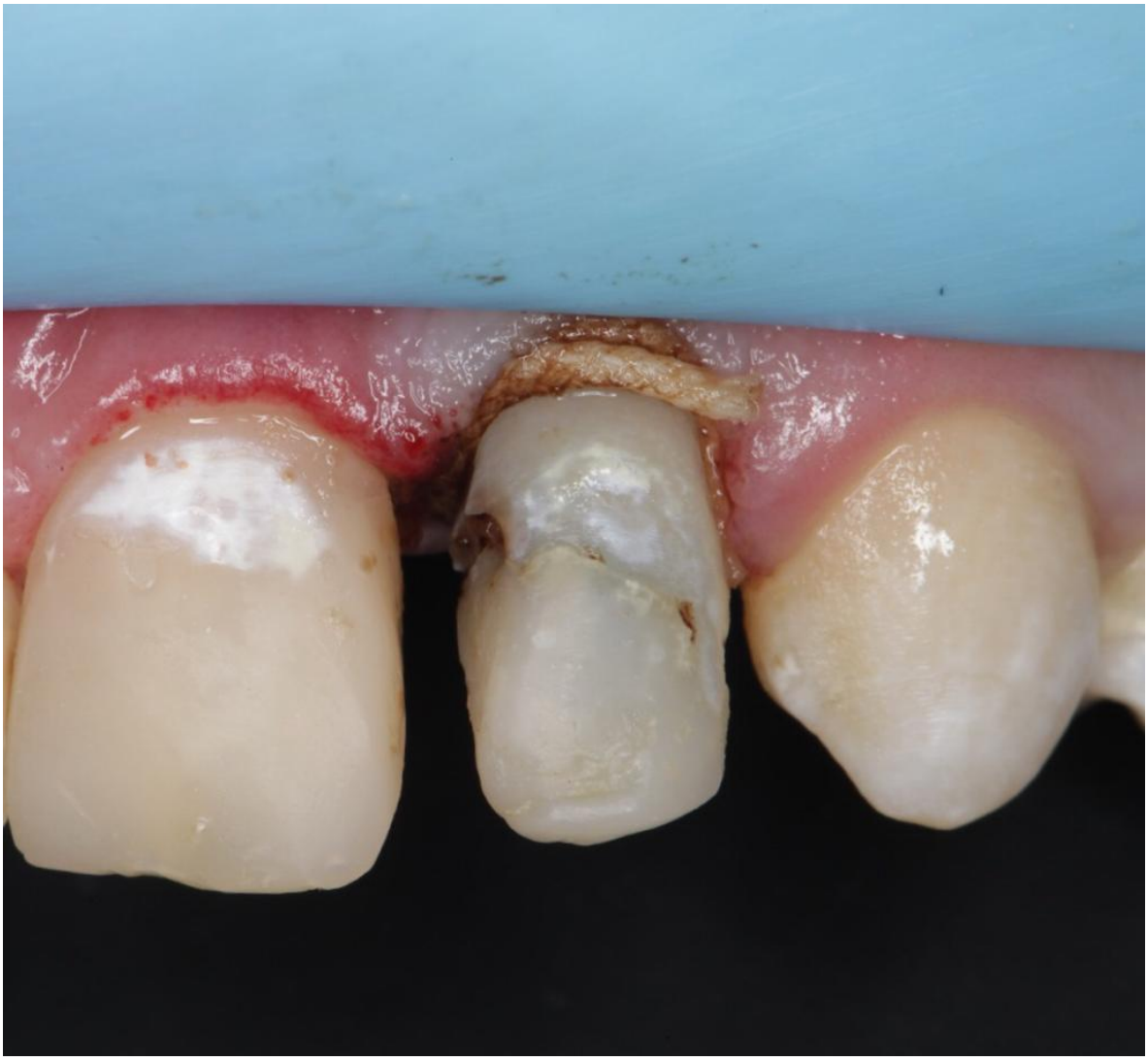

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Figure 2 **– the old restoration and caries were removed. As there is minimal tooth structure remaining extra care was taken during caries removal and cavity preparation. A caries-free EDJ was achieved, unsupported enamel was removed, and a short bevel was placed on the buccal margin using a medium-grit rugby ball bur (to expose more enamel rods for bonding and to achieve an invisible margin).**

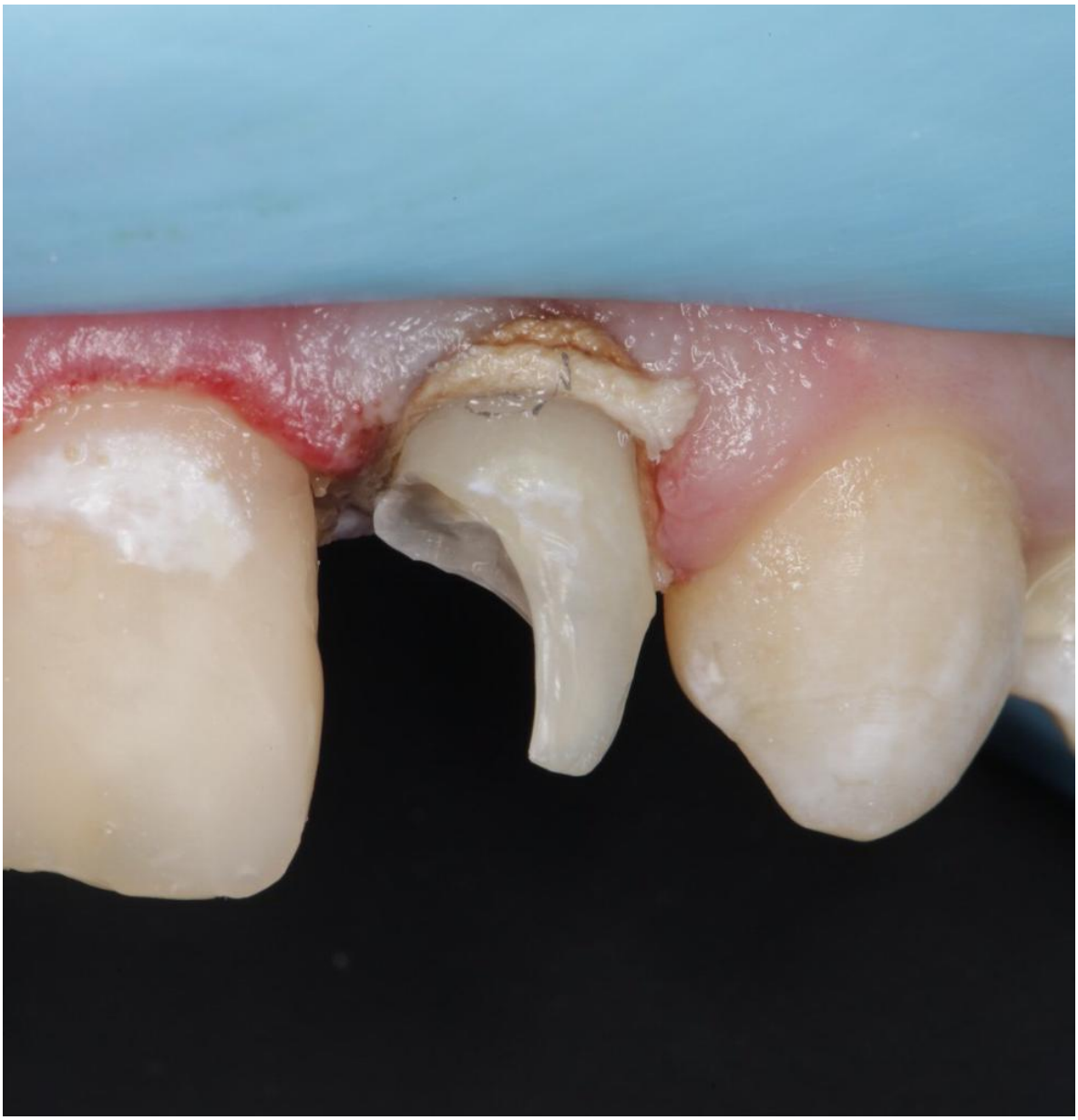

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Figure 3 **– free hand technique was used to build the new restoration. A mylar strip was placed palatally, enabling a palatal wall to be built. Shade A2 composite (AristoChem)**

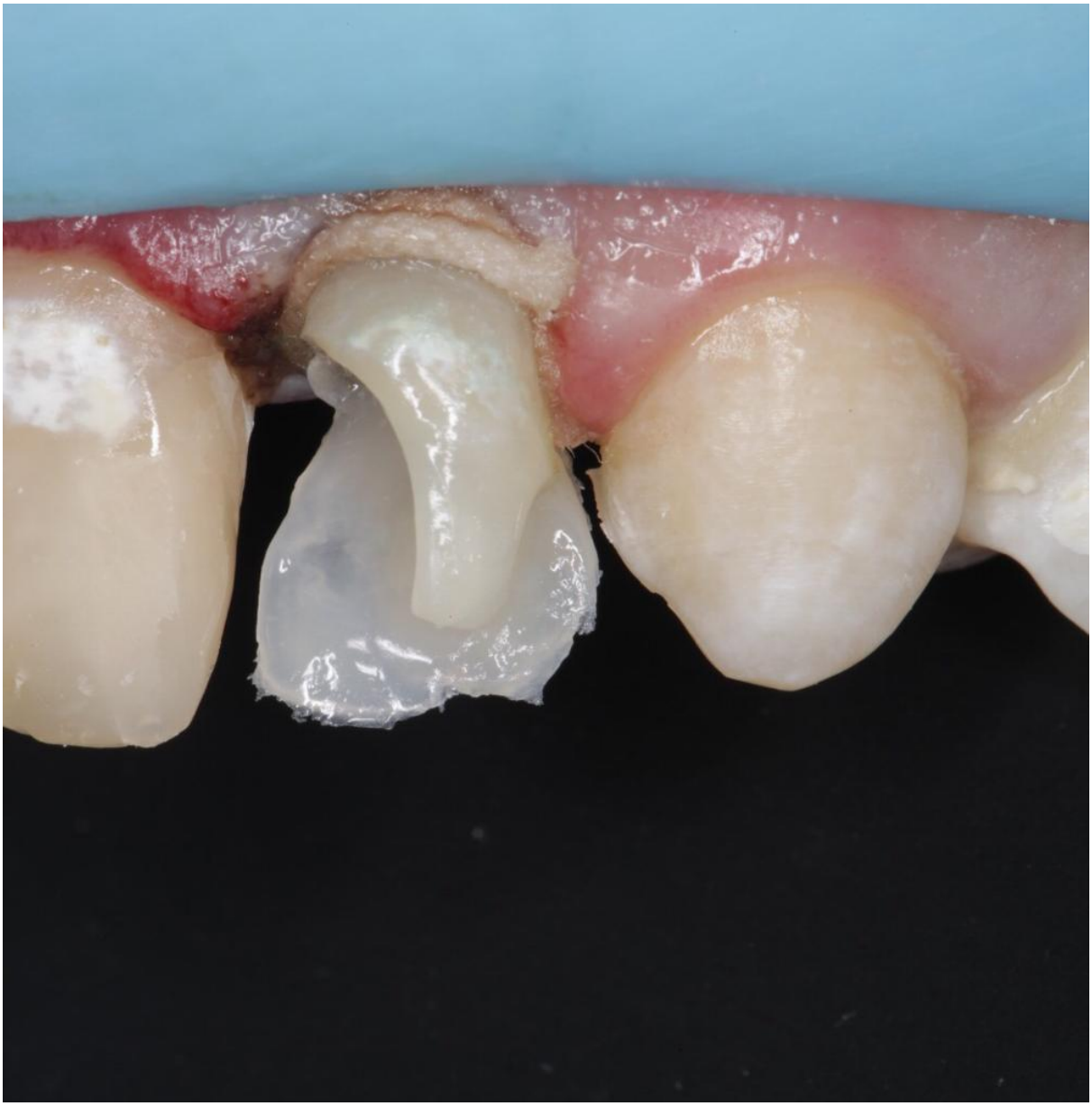

***Figure 4* – A tor VM sectional matrix was used to build the proximal walls.**

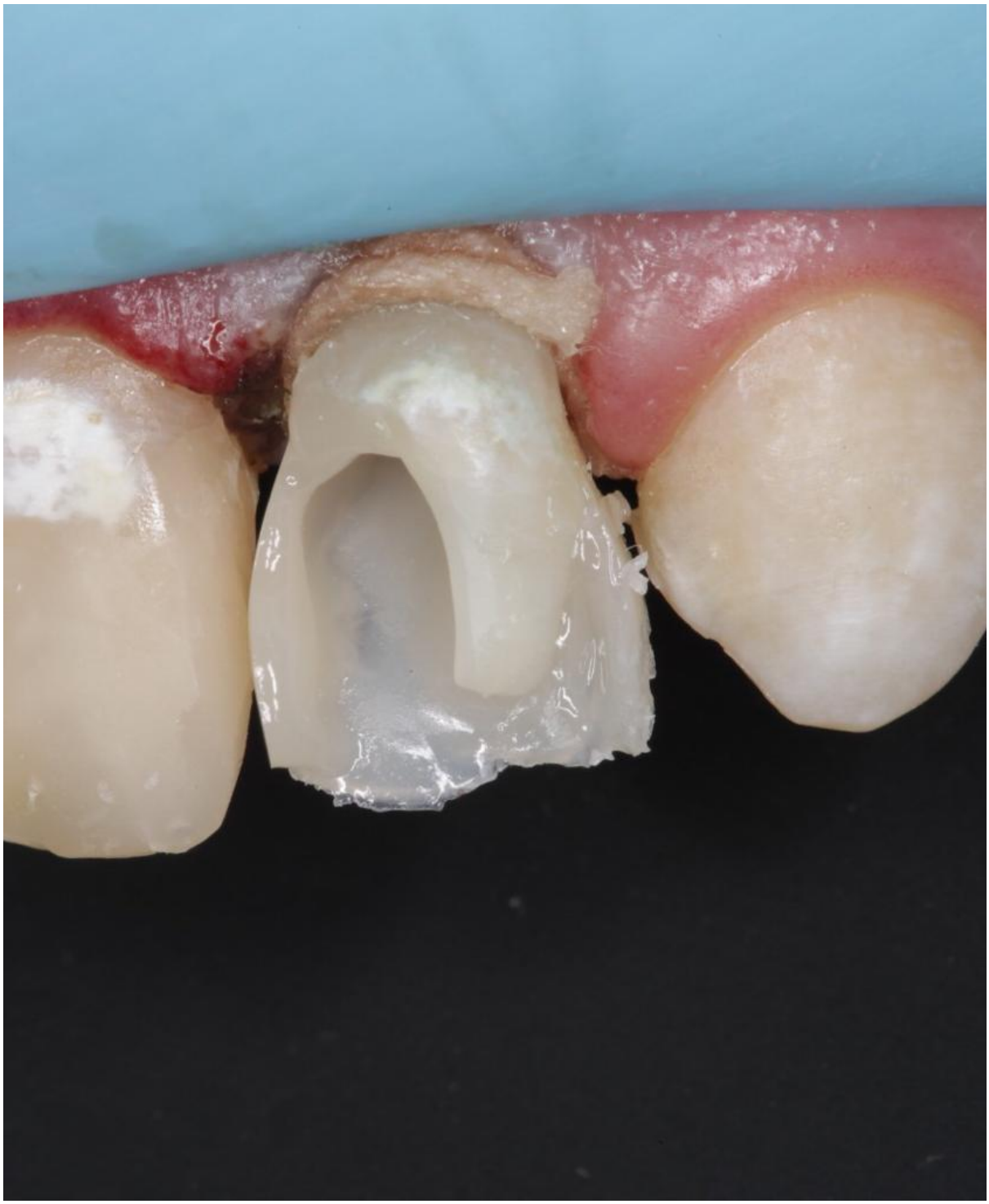

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***Figure 5* – Composite was placed on the buccal surface and compacted using a micro-brush and flat plastic instrument.**

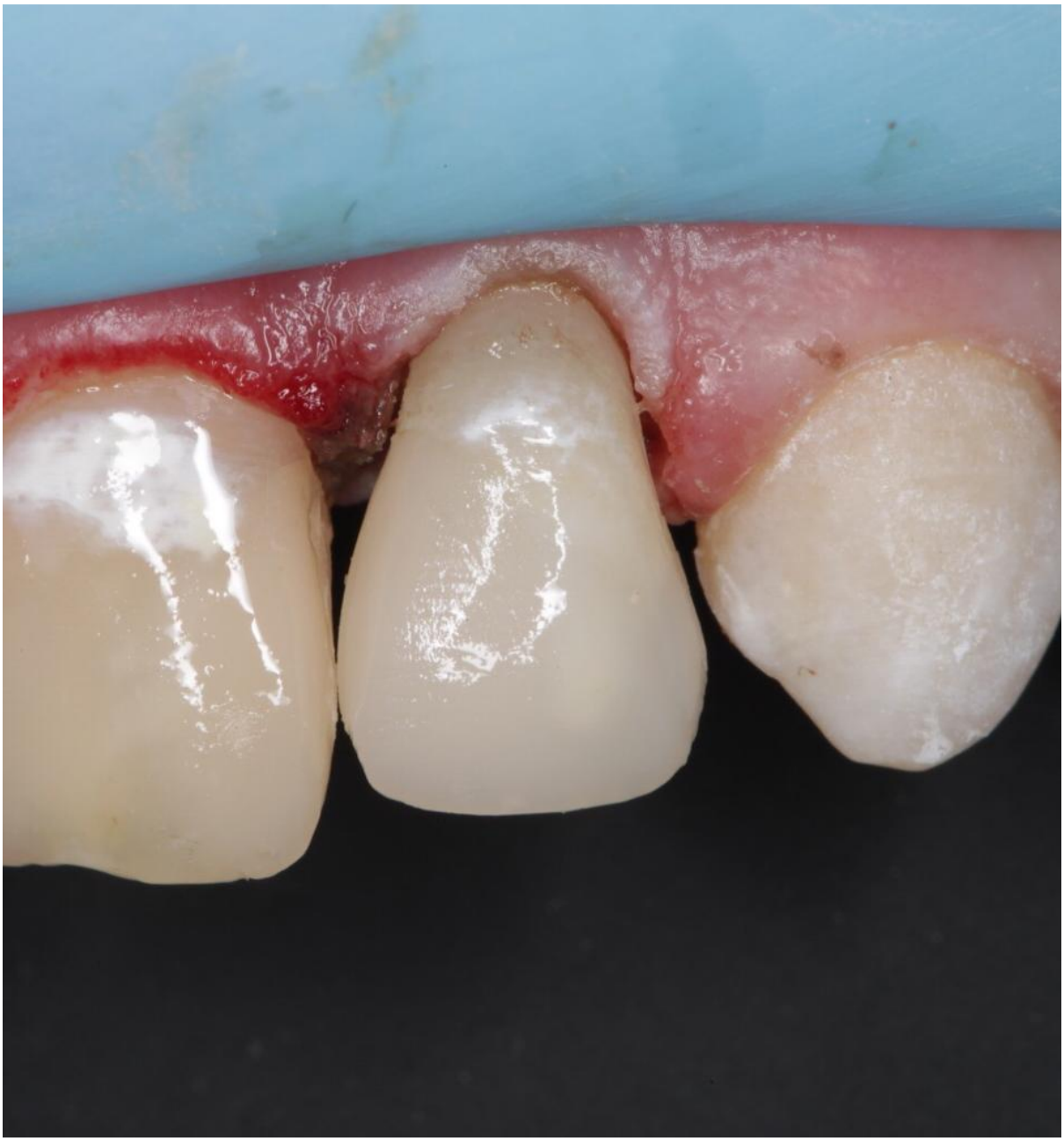

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Figure 6 & Figure 7 **– Finishing and polishing was completed using a long tapered yellow fine diamond bur, red and orange soft flex discs and the Kerr polishing Occlubrush.**

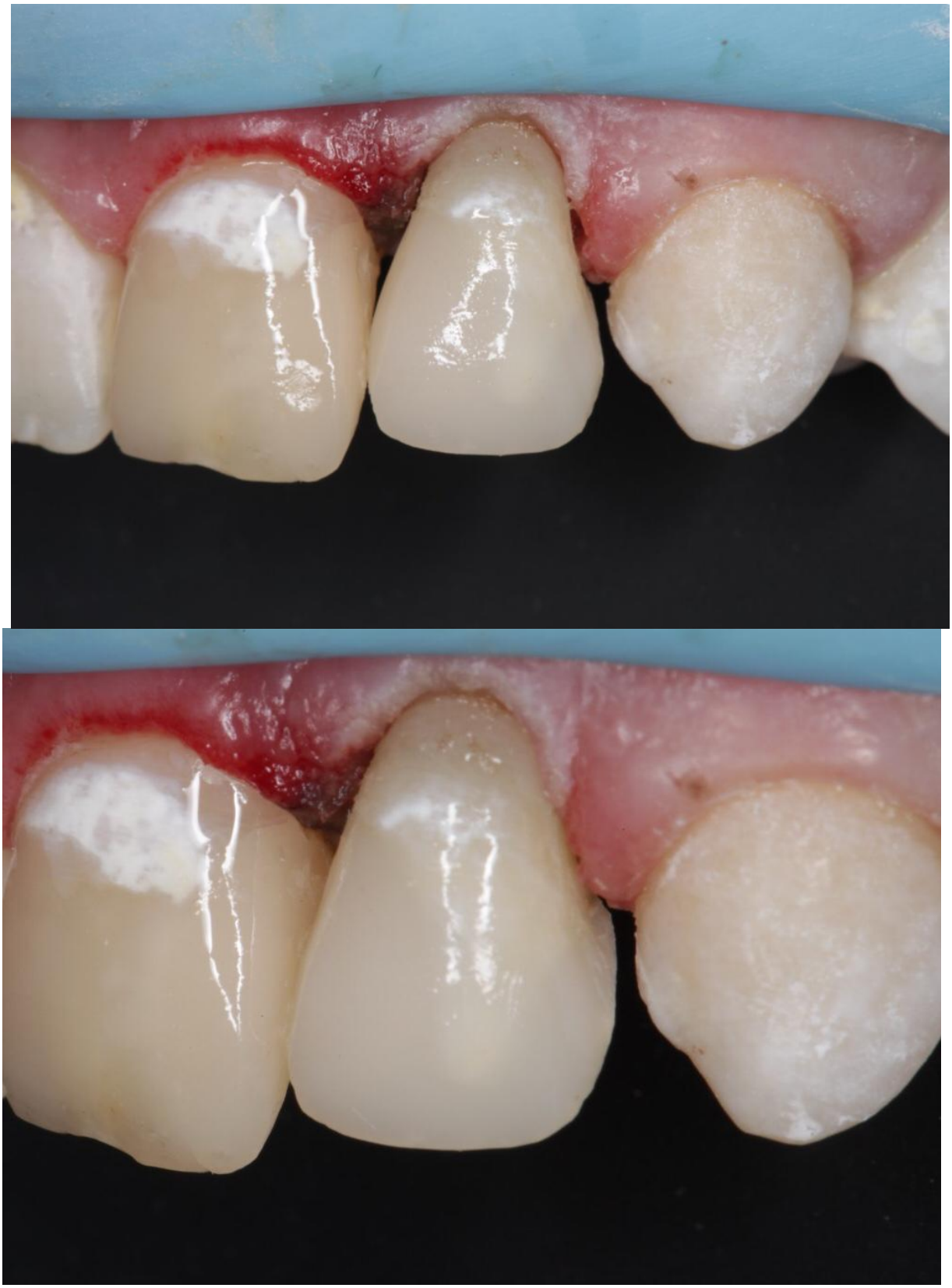
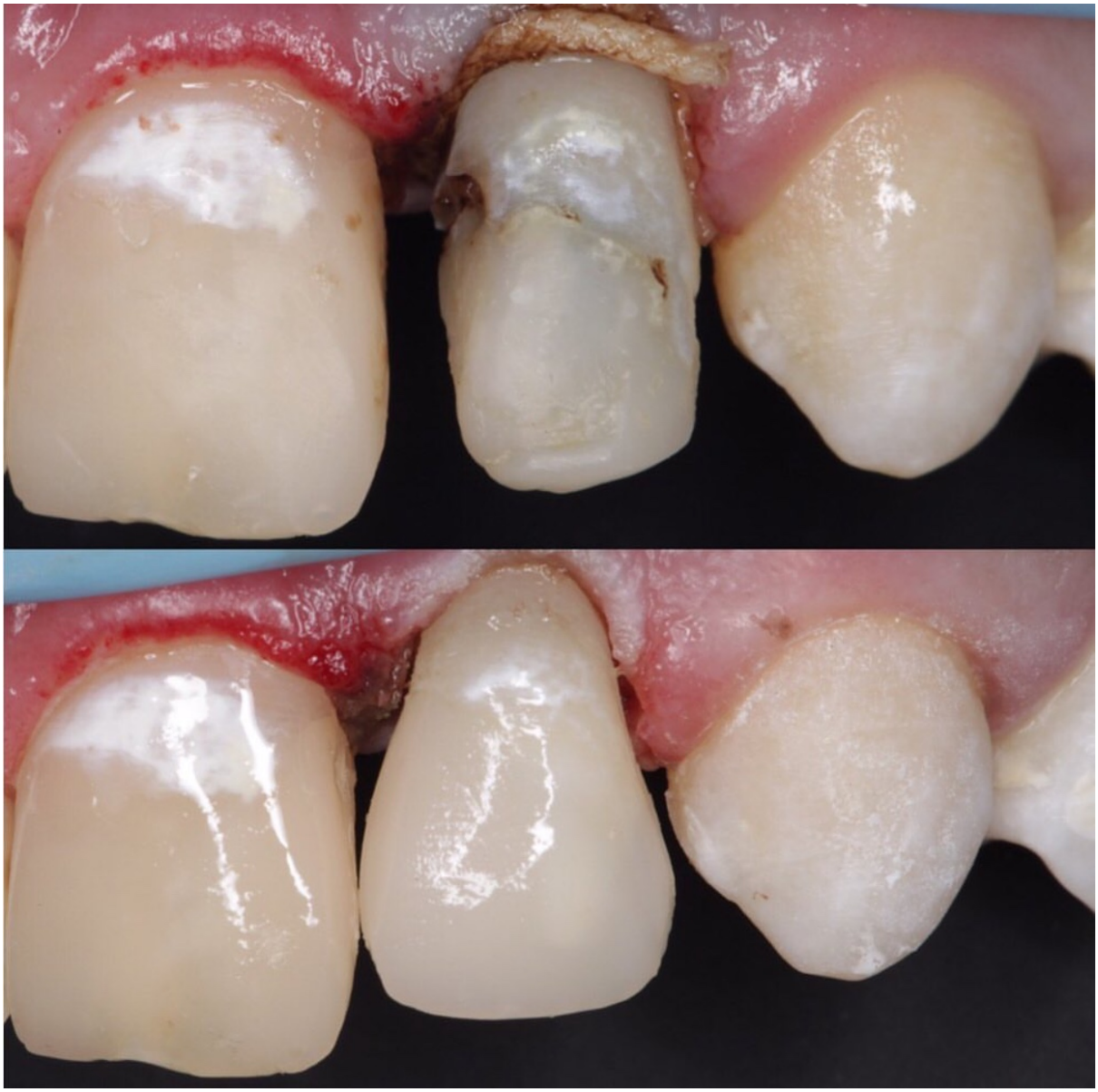


***Figure 8* – Before vs After**



Reflections for case 3

Being a foundation dentist in an NHS practice meant materials and time were limited. For instance, I feel a better outcome could have been achieved in this case by using a diagnostic wax up for further control during placing of the composite and using separate dentine and enamel shades. Upon discussion with colleagues some mentioned a fibre post could have been useful here also.

I had booked the patient in for bonding to the mesial of the upper left canine to close the contact, as we all agreed it would look disproportional if the lateral was so wide mesio-distally. However, the patient failed to attend the second appointment for mesial edge bonding.

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Case 4

An 18-year-old patient presented with failing anterior composite restorations – the patient was unhappy with the rough composite on the upper right central incisor and mentioned the upper left central incisor composite had fractured 1 day before the appointment.

Figure 1 **– clamp-less rubber dam isolation canine to canine. Note the incisal overlap resulting in an asymmetrical midline.**

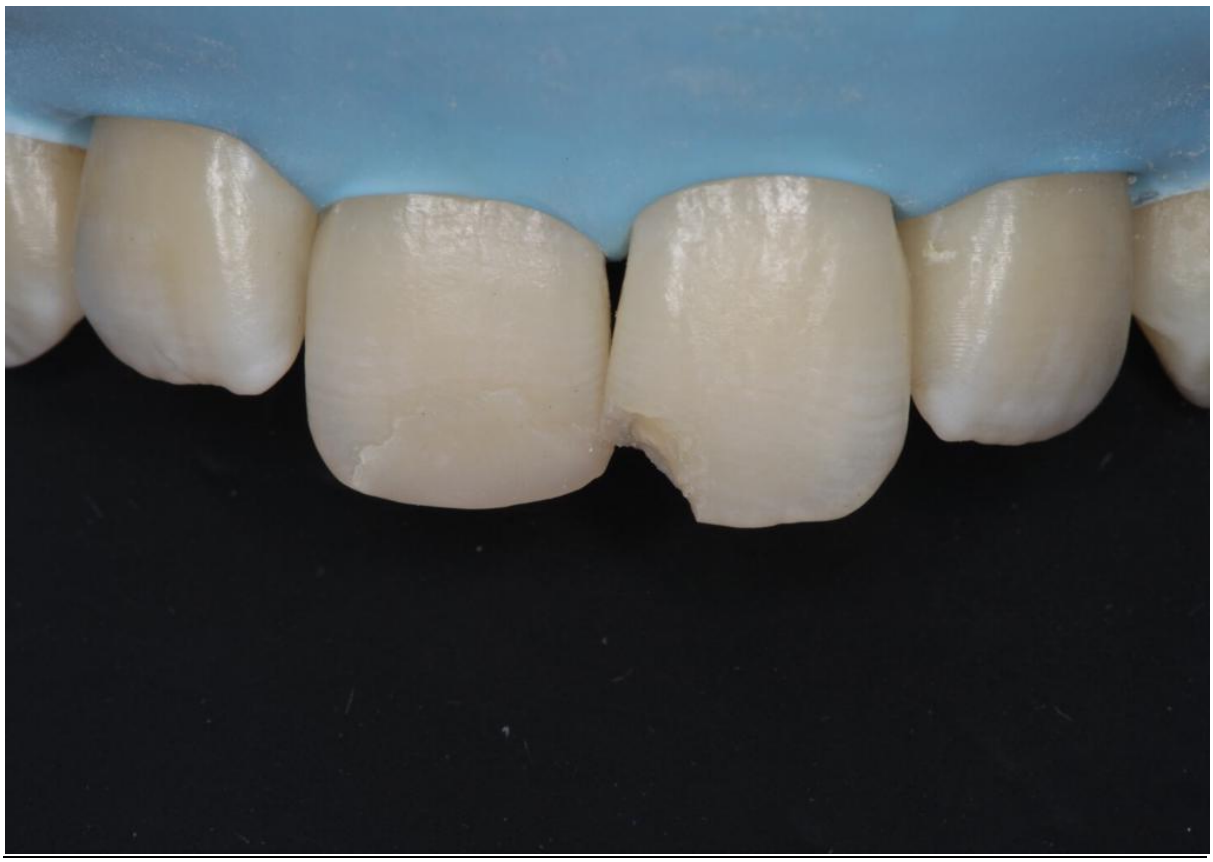

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Figure 2 **– the old composite restorations were removed; the class IV cavities were bevelled using a long-tapered diamond (red stripe) and soft flex disc to ensure smooth cavity margins. To achieve an aesthetic result (invisible margin) and to expose more enamel rods for a stronger bond a short bevel on the buccal surface was done.**

This case was completed free-hand using the mylar strip palatally to build the palatal wall.

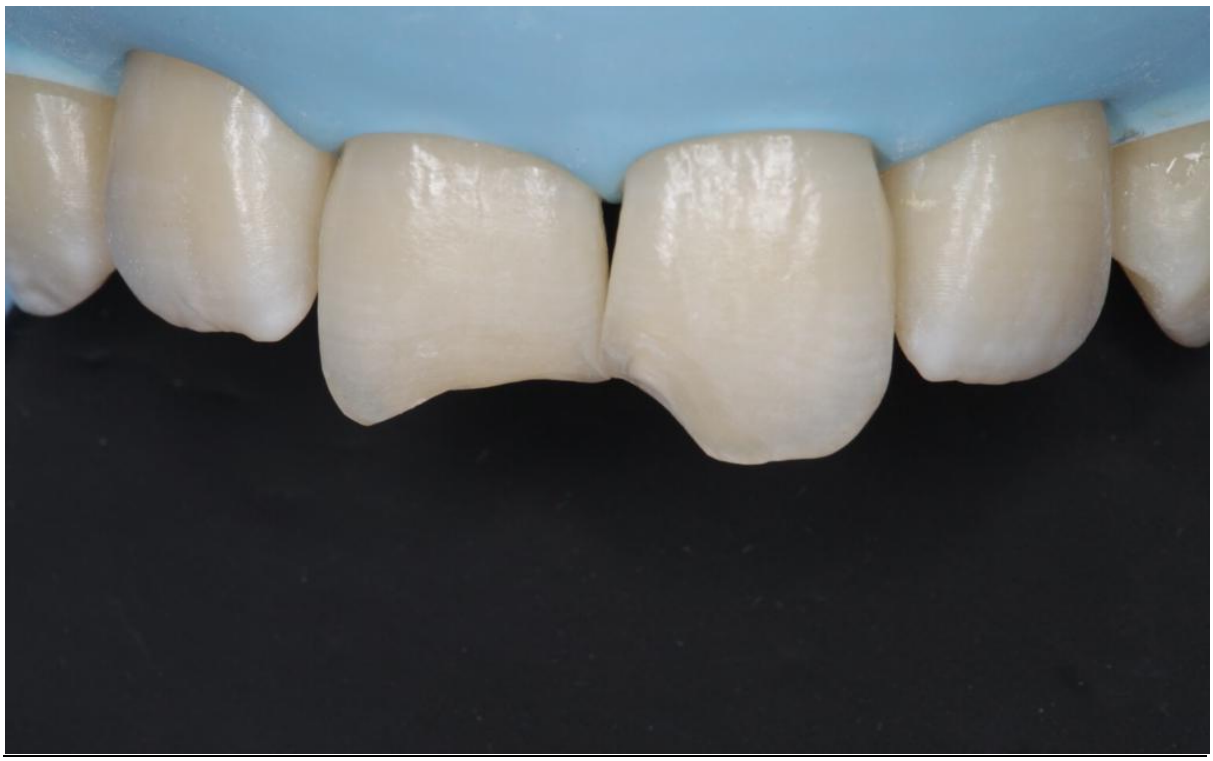

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Figure 3 **– Immediate post-operative photo, rubber dam removed hence the teeth look dehydrated. Gross finishing and polishing was done using a red soft-flex disc and white polishing fan. The patient was to return 1 week later to have final polishing completed although failed to attend this appointment.**