

Global Clinical Case Contest 2019-2020



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Introduction to the case

A 48 year old male attended the clinic concerned about his teeth. His main concern was to improve the appearance of his smile and to prevent and /or minimise future wear of his teeth which had already suffered from tooth surface loss due to dietary and parafunctional habits. Medically, he was fit and well with no known allergies nor medications and he had no known acid reflux issues. A high level of self motivation to improve his smile made him keen to improve his diet and oral hygiene and change previous habits. He was an excellent candidate for treatment.

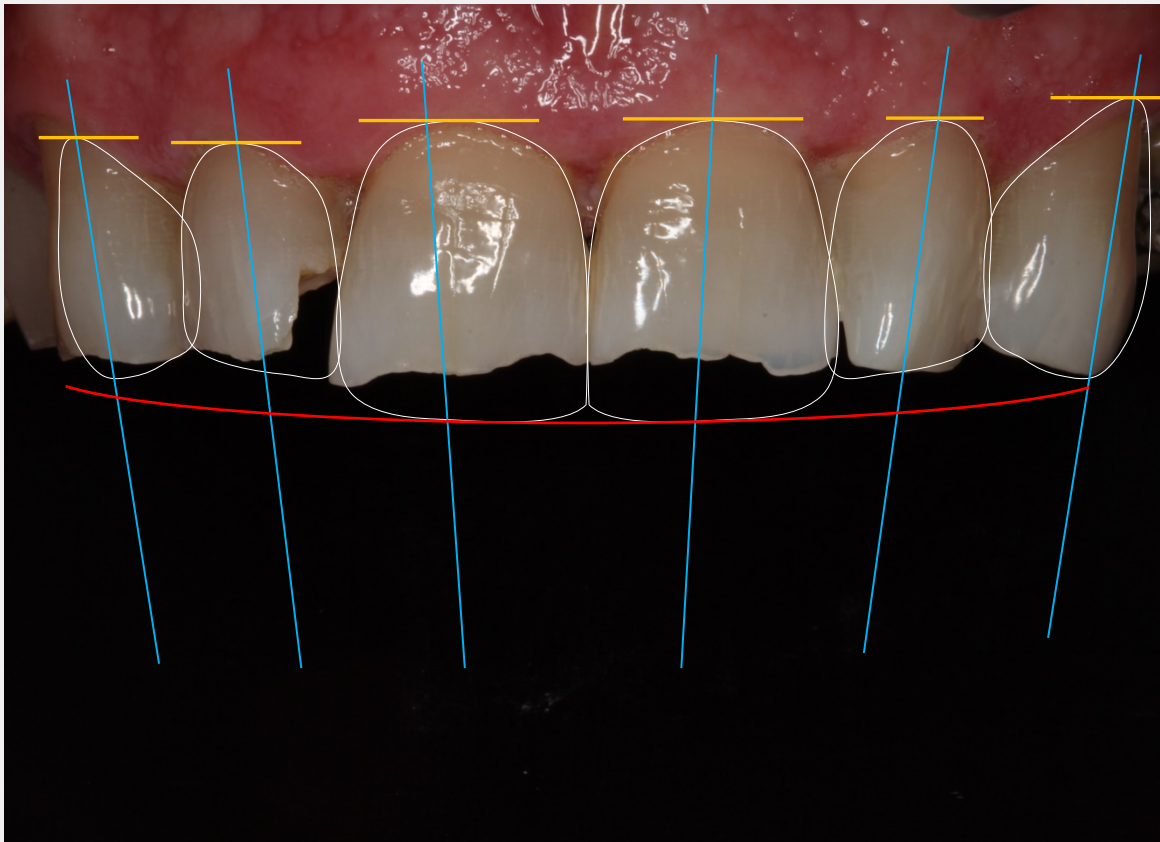


This photo was taken at the patient's very first appointment. It shows the patients smile line, with significantly worn and discoloured dentition. The patient required a lot of encouragement to smile as he was very embarrassed to show his teeth.



Post operative view of the patient's smile showing the change in tooth form and colour. The new smile gave increased confidence and the smile line was higher than the initial presentation because of this.

Treatment steps



Step 1
Following a 3 week course of tooth whitening using 10% carbamide peroxide, a digital smile mock-up was made according to the principles of smile design. A "square" tooth form was chosen for this pt's new smile using the Leon Williams classification as a guide line.



Step 2
Ceram x Duo Composite buttons from Dentsply were placed on the anterior teeth to accurately determine which shade of composite to use for the build ups. The teeth were kept hydrated throughout for accurate shade determination.



Step 3
The upper anterior teeth were isolated using rubber dam. Floss ligatures were used to invert the dam into the gingival sulcus to achieve optimum isolation devoid of any contamination.



Step 4
Using a silicone stent made from a diagnostic wax up, Shade E1 and D2 Ceram X Duo composites from Dentsply were placed to build up the tooth structures. The enamel shade was used to build up the palatal and interproximal walls. The dentin shade was used for the body of the tooth.



Step 5
At the final finishing and polishing visit a split dam technique was used to protect the soft tissues from accidental trauma. The mamelons and line angles incorporated into the restorations were smoothed using the cone shaped finishing bur from the Enhance polishing kit from Dentsply.



Step 6
A coarse grit diamond bur was used to simulate tertiary anatomy and perikymata lines on the teeth.



Step 7
This was the end result at the end of the finishing and polishing appointment, slight gingival irritation above the UL1 from the polishing procedure.



Step 8
A side profile photo (using soft lighting) of the patient's new smile following the final polish using the Dentsply Enhance Pogo polishing system.

Material and Method

The aesthetic result was carefully planned from the outset. The use of digital smile analysis and diagnostic wax up based on well known and predictable principles of smile design facilitated the delivery of highly aesthetic results which met the patient's expectations. The teeth were cleaned with a rubber cup and pumice before being etched with 37% phosphoric acid etch. Optibond FL prime and bond were applied to the teeth according to manufacturers instructions. A combination of shade E1 and D2 Ceramx X Duo composites were used to mimic natural tooth form. The final polishing was performed using the Enhance Pogo finishing and polishing system.

Discussion and Conclusion

Opting to restore this patient's smile using direct restorative techniques was demanding. Some clinicians may have opted to treat this case via the indirect route, which although may be an appropriate option in the future, it would not have been ideal as the first line of treatment given the patient's history of bruxism and erosive dietary habits. Using conservative and minimally invasive adhesive techniques, a well executed and highly aesthetic result was delivered to the patient which restored both form and function to the patient's dentition.

