

Treatment of advanced acid erosion using chairside-layered composite

Ciaran Gillan BDS MJDF MSc (Rest Dent)



The incidence of Tooth Surface Loss (TSL) due to acid erosion is increasing in the general dental population. While identification of the disease at an early stage along with the implementation of preventative measures is the preferred method of treatment, all too often patients present with advanced TSL requiring treatment.

As the main issue is a loss of tooth structure it is important that it is treated in as conservative a manner as possible, not least because these patients frequently present at a young age and have many potential dental re-interventions ahead of them.

In the case shown, a 30-year male presented with advanced acid erosion localized to the anterior segment and perimolysis present on the first molars. The source of the erosion was identified as a high intake of carbonated drinks in his late teen's/early 20's, he has noticed no further deterioration in the past 5 years. His treatment aims were to; improve the appearance of his teeth for his wedding, protect them from further TSL, and decrease their sensitivity. Occlusal analysis revealed that the



Ciaran Gillan is an active member of the Irish Academy of Aesthetic Dentistry and takes referrals for the treatment of tooth wear. He also lectures on dental photography and is an opinion leader for Ivoclar

occlusal stops on his upper anterior teeth were still on enamel, meaning that he could be restored using the confirmative approach.



Buccal and palatal build-ups of direct composite restorations were chosen to replace the lost tooth structure, as this was the most conservative method available. This was especially relevant on the palatal surfaces with their localized lesions into dentine. An alternative method may have been to restore the palate with composite and construct indirect porcelain/composite veneers on the buccal surface.

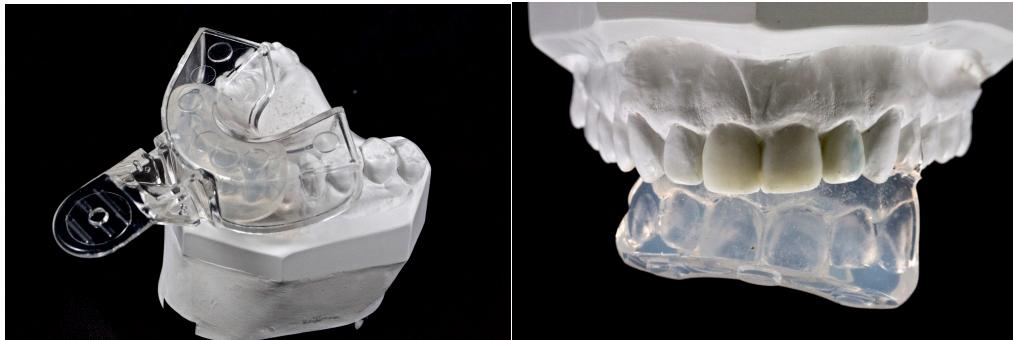
A wax up was constructed of the proposed changes in tooth shape; this was especially useful given the slight rotation of the teeth involved. This information was then transferred to the mouth using a silicone index and provisional crown material. Despite articulating the study models in a semi adjustable articulator there was a cant to the wax up, this was identified using the mock up and the wax up redone.



The new wax up was also transferred to the mouth allowing the patient to trial the changes for several days thus removing a degree of uncertainty over how he would accept the final restorations, as patients suffering from TSL can often find the increase in tooth length hard to adapt to, as they are used to seeing themselves with "small teeth". This is much better identified prior to construction of the final restorations.



To use the information gained from the wax up when constructing the final restorations putty indices were constructed to form the palate and give information on incisal length and bucco-lingual width. Using A2 enamel and A3 dentine shades from the Empress Direct system the body of the tooth was built up recreating the original anatomy of the tooth. The final layer of enamel was placed in one increment using a clear silicone index to replicate the wax up exactly.



By restoring his teeth in this manner we have covered and protected the exposed dentine surfaces of the teeth as well as improving their appearance in a highly conservative manner.

The papillae in the finished photos lack bulk, this is due to the fact that the photos were taken immediately after the final polishing where they had been compressed by wedges and would be expected to return to normal quickly.

In conclusion the use of modern dual layered composite systems can be used very effectively and aesthetically to repair the damage caused by acid erosion in a manner that does no further damage to the teeth.

