

## 3M<sup>SM</sup> Health Care Academy

# The power of four: Aesthetic treatment in the anterior area.

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**In aesthetic dentistry, the recommendation that all visible teeth be restored for optical integration often conflicts with the importance of preserving tooth structure and leaving healthy teeth untouched.**

**This tension, though, can be resolved through precise treatment planning and teamwork. A cosmetic dentistry team recently achieved a good result for a patient with spacing in the anterior region by placing four veneers on her maxillary incisors. To minimise veneer thickness, the tooth shade was controlled by bleaching the underlying tooth structure, rather than the enamel layer.**

**These measures delivered both aesthetics and functionality, without sacrificing large amounts of healthy tissue on more complex treatment.**

The number of patients presenting in Dubai's dental offices for an aesthetic improvement of their smiles is extraordinarily high. In the context of these cosmetic treatments, it is particularly important not to sacrifice large amounts of healthy tooth structure.

The principle of maximum preservation, however, conflicts with the general recommendation that, for the best possible results in terms of aesthetics, all teeth in the visible area should be restored.

The idea behind this approach is that it is always difficult to precisely reproduce the shade, translucency

and character of the adjacent natural teeth, especially when ceramic restorations are produced in the dental laboratory. The effort that goes with matching these restorations to the existing dentition is always an issue.

Despite these arguments for a more complex treatment, it is not advisable to opt for the all-anterior-teeth approach in every clinical situation. Provided that the maxillary canines and premolars are healthy and in a reasonably acceptable position to achieve good results, they should not be touched. Instead, precise treatment planning and teamwork with a skilled master

dental technician will enable the clinician to both preserve healthy tissues and achieve brilliant aesthetics, as shown below.

## Case example

A 35-year-old female presented at Dental Studio Dubai unhappy with her smile (Figs. 1 and 2). The periodontal tissues of this patient were healthy and the maxillary incisors did not show any sign of decay, but had unfavourable shapes and proportions leading to spacing in the anterior area.

The maxillary canines, which play a significant role as a guidance in functional movements, were healthy and in a position that ensured a mutually protected occlusion.

If this is the case, it is usually possible to obtain very good functional and aesthetic results by placing four veneers on the maxillary incisors only. The teeth might not be in golden proportion, but it is still feasible to achieve a harmony and balance in dental and facial aesthetics using this approach.



Figure 1: Initial situation with spacing in the anterior area.



Figure 2: Close-up view of the maxillary anterior teeth.

## Bleaching comes first

During the first appointment, the essential records were made, the tooth shade of the patient was determined and a face-bow transfer was carried out and sent to the laboratory for the creation of a wax-up.

In this planning phase, it was decided to bleach her teeth for ten days with 20 percent carbamide peroxide gel. In this way, it is possible to achieve a colour change without needing to add thickness to the veneers. This technique may also be used to adjust the shade of the canines. Planning this, however, it should be taken into account that natural incisors usually have a higher value than canines.

This means that even if the restored incisors are one shade lighter than the natural canines, a good optical integration will be obtained.

## Tooth preparation

After completion of the bleaching procedure, the wax-up was transferred into the patient's mouth with silicon keys (Fig. 3). The mock-up was not only used to assess the shape and proportions of the planned veneers, but also for tooth preparation (Fig. 4). This reduction through the mock-up using calibrated burs enables the clinician to control the depth of preparation and thus keep the preparation in the enamel of the teeth. Finally, the space created was checked with the silicone keys (Fig. 5).



**Figure 3:** Mock-up made of 3M™ Protemp™ 2 Temporization Material transferred into the mouth with the aid of a silicone key.



**Figure 4:** Tooth preparation through the mock-up using calibrated burs.

A very smooth surface of the teeth was achieved using the 3M™ Sof-Lex™ Diamond Polishing System (Fig. 6). The preparation margins were positioned at the level of the gingiva. The junctional epithelium was protected and adequate tissue management carried out using retraction cords (Fig. 7). Subsequently, an impression was taken and sent to the dental laboratory for production of the layered porcelain veneers using

the refractory die technique. The temporary restoration was made of Protemp™ 2 resin (Fig. 8) and placed after spot etching and without the use of a bonding agent.



**Figure 5:** Silicon keys used to check the amount of substance removed.



**Figure 6:** Smooth tooth surfaces after preparation and polishing.



**Figure 7:** Retraction of the soft tissue with retraction cords.





Figure 8: Temporary restoration in place.



Figure 10: Application of the universal adhesive.

## Cementation and outcome

Receiving the veneers from the laboratory, they were immediately tried in using 3M™ RelyX™ Try-In Paste. Their fit and the shade match obtained with the adjacent teeth was perfect, so that no adjustments were necessary. The teeth were isolated and then cleaned using the 3M™ CoJet™ System. Afterwards, an etching gel containing 35 percent phosphoric acid (3M™ Scotchbond™ Universal Etchant) was applied and rinsed off after 15 seconds (Fig. 9). Then, the bonding agent (3M™ Scotchbond™ Universal Adhesive) was applied to the teeth and rubbed in, but not polymerised (Fig. 10). For cementation, 3M™ RelyX™ Veneer Cement was used.

The final feldspathic porcelain veneers offer an excellent integration to the soft and hard tissues (Fig. 11). The aim of balancing dental and facial aesthetics was reached with the placement of four veneers.



Figure 11: Treatment result.

## Conclusion

The present case shows that in some clinical situations, it is absolutely sufficient to place four veneers in the anterior area to improve the dental and facial aesthetics of a patient. In order to minimise the thickness of the veneers, it is important to control the tooth shade via bleaching of the underlying tooth structure and not by altering the shade of the enamel layer. These measures ensure that an aesthetic result is obtained without the need of sacrificing large amounts of healthy tissue.

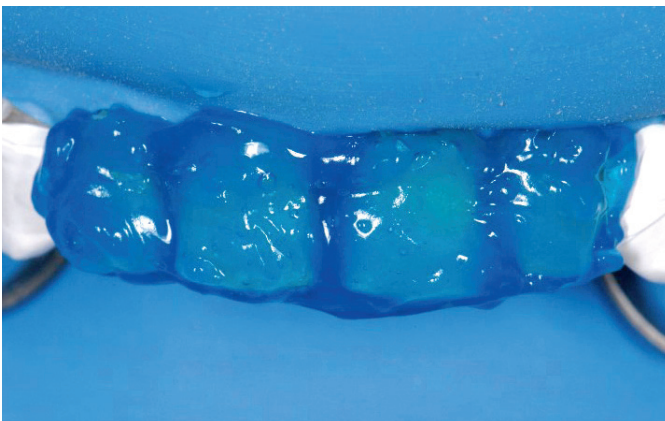


Figure 9: Etching of the isolated tooth surfaces.



## Dr Ajay Juneja, MDS

Dr Ajay Juneja completed his BDS in the year 1995. He then went on to do his MDS from the University of Mumbai which he then completed in the year 1998. From then on he worked as a Senior Resident at the Oral Health Sciences Center, PGIMER till 2001. He taught in a private college for a little more than a year. From 2002 he has been working as a Specialist Prosthodontist in Dubai. He completed a one years masters program at UCLA, USA in 2011 and passed with top honours. He has been a winner of 6 awards in the past 4 year, winning each year in different categories of Esthetic and Restorative Dentistry at the Middle East and North Africa Esthetic Dentistry (MENA) awards. He has lectured at various national and international conferences and is an opinion leader in the Middle East for some companies. He currently works at the Dental Studio in Dubai, which is one of the Leading Dental Centers of the World limiting his practice to restorative, implant and prosthetic dentistry.

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