

Integration of **aesthetics** and **function** with composite resins

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Fig. 1

Fig. 2

Fig. 3

Careful integration of the different dental specialties is the basis of modern dentistry, especially when the treatment goal is an aesthetic and functional oral rehabilitation of the patient.^{1,2} Today, aesthetic oral rehabilitation integrates three basic concepts—bio-compatibility, mechanics and, of course, beauty—in order to preserve the anatomical structures of the stomatognathic system and to fulfil functional purposes. At the same time, utmost attention is paid to achieving aesthetic goals in accordance with the current trends in aesthetic dentistry and thus fulfilling the patients' expectations.³

With comprehensive oral rehabilitation as our main goal, utilisation of the different areas in dentistry becomes extremely important in order to establish a precise diagnosis, treatment plan and finally treatment. Orthodontics, for example, has clearly defined objectives, such as the establishment of a functional occlusion, the preservation of periodontal health and the achievement of a stable result within the boundaries given by physiology and dentofacial harmony.^{4,5} When the case is pre-

sented to the patient prior to any intervention, individual limitations of that particular case must be considered in order to avoid unreal expectations. The patient needs to have a clear idea of the treatment plan, realistic expectations with regard to the final result, and previous and posterior dental needs. Therefore, meticulous examination and good communication with the patient are of utmost importance.^{4,5}

There are a number of different cases in which the combination of orthodontics and restorative dentistry is advisable, such as Bolton's and vertical discrepancies, peg-shaped teeth, discrepancies in height and width, diastemas, agenesis, malformations, extrusions, intrusions, attrition, etc.⁶⁻⁸ Not solving the problems mentioned above might result in failure of the orthodontic therapy due to relapse, periodontal complications, occlusal instability or overall dissatisfaction.^{9,10} However, the careful planning and combination of aesthetics and orthodontic functionality in combination with the new restorative materials available today enable us to obtain harmonic results.^{2,11}



Fig. 4

Fig. 5

Fig. 6



Fig. 7



Fig. 8



Fig. 9

This article seeks to demonstrate the manner in which the goals of an orthodontic treatment were fulfilled in a clinical case. A multidisciplinary approach is indispensable for the achievement of the therapeutic goals of functionality and aesthetics, which are obtained thanks to modern direct restorative dentistry as part of a comprehensive treatment plan and followed by an aesthetic and functional execution of that plan.

Case report

The patient was unhappy with her dental aesthetics after completion of fixed orthodontic treatment. In addition, she did not like the appearance of her incisal edges, nor the texture or translucency of the incisal third of her central incisors (Figs. 1 & 2).

After gaining a clear understanding of the patient's expectations and having informed her of the therapeutic possibility of treating the case with composite resin, it was decided to make a diagnostic wax-up, elongating the height of the clinical crowns to correct the irregularities of the incisal edges. We then proceeded to take a pattern of the future restorations with putty polyvinyl siloxane (PVS). This pattern was then tried in to gain a better idea of the quantity of composite needed to restore the teeth (Fig. 3).

Following adequate cotton roll isolation, and after gaining complete cooperation from the patient, the adhesive protocol for the enamel was followed and restoration with composite resin AMARIS (VOCO) was decided upon. The first increment of restorative material was placed in the PVS pattern and seated with gentle pressure on the palatal aspect of the pattern. AMARIS Translucent was placed in such a way that all the palatal surfaces of the restoration were completed on teeth #11, 21 and 22. In order to restore the central incisors simultaneously, a partially thinned matrix (OptraMatrix, Ivoclar Vivadent) was lodged in the PVS pattern and each incisal edge was light-cured for 30 seconds (Figs. 4–6).

The pattern that rapidly gave us all the anatomic features of the lingual aspect was then removed to

continue stratifying the layers of this composite (AMARIS Opaque), seeking to insinuate the mamelons very slightly at the incisal third but close to the incisal edge itself, and at the same time spreading the composite onto the surface of the enamel, in order to hide the excessive translucent aspect that these teeth showed naturally (Fig. 6). In addition, we applied several brushstrokes of AMARIS Flow High Opaque (VOCO) in areas where it was necessary to hide the translucency, and at the same time it was useful for us to generate small areas of hypoplasia of enamel, resembling the natural characteristics of the lateral incisor.

Finally, the whole surface of the incisal edge and the facial surface were covered with AMARIS Translucent again. Thereafter, the whole restoration was brushed up and light-cured for 60 seconds. Next, the occlusion was adjusted and the composites finished (Figs. 7 & 8).

The patient was very pleased with the final result and was informed of the necessary appointments for follow-ups and maintenance, occlusion check-ups, as well as photographic monitoring. The accompanying photographs were taken three months post-operatively, the first one with dried teeth and the second in natural conditions during smile (Figs. 9 & 10).

Editorial note: A complete list of references is available from the publisher.

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