In aesthetic dentistry, it is essential not only that the patient’s beautiful smile be restored, but also that the restoration be last- ing. The advances in adhesive technology have encouraged clinicians to use composite resin for the replacement of missing tooth structure. Modern den- tistry offers a wide array of differ- ent materials, techniques and procedure options to satisfy pa- tients’ needs.

In mimicking the shade of teeth, dentists attempt to restore what is missing in a natural way. In order to achieve successful treat- ment outcomes, we needed materi- als that are similar in their light- reflective qualities to the missing tooth structure, that is, the replace- ment of dentin with a dentin substitute and of enamel with an enamel substitute. This article describes how the various materi- als can be used to achieve highly aesthetic restorations in the ante- rior and posterior dentition.

Clinical case

An 18-year-old female patient presented with toothache, multiple carious lesions and discoloration in the anterior and posterior teeth (Figs. 1 & 2). She had undergone numerous dental procedures in the past and had a history of or- thodontic treatment, in which her mandibular first premolar teeth were extracted. The primary goal was to relieve the patient’s pain. Therefore, several teeth had to be endodontically treated. After- wards, the old posterior PFM crowns were removed and replaced with all-ceramic crowns (IPS e.max Lithium Disilicate, Ivoclar Vivadent). In addition, the various lesions in the posterior region were restored with a direct resin restorative (IPS Empress Direct, Ivoclar Vivadent).

After successfully completing treatment in the posterior teeth, we focused on the reconstruction of the anterior teeth. Having con- sidered all the various restorative options, we opted for direct resto- rative treatment with composite resin veneers.

Veneers made from composite resin

Veneers were made using local anesthesia, carious tissue was excavated with high-speed dia- mond burs and slow-speed round burs. A flame-shaped diamond bur and coarse finishing discs were used to prepare the fine details in the cervical area and on the labial surface of the teeth. On the labial surface, we reduced only 0.8 to 1 mm to preserve as much natural enamel as possible. A short bevel was prepared at the amelodentinum junction in the cervical region and also at the area of the proximal cavities (Class II preparation).

Subsequently, the prepared sur- faces were thoroughly rinsed with water. As there were Class III cavities, we completed these restorations first (Fig. 3), followed by shade selection. Then, direct veneering with IPS Empress Direct composite material was performed. For this purpose, the prepared maxil- lary central incisors were etched with 57% phosphoric acid gel (Total Etch, Ivoclar Vivadent) for 15 seconds (Fig. 4). Neighbouring teeth surfaces were protected by covering them with Tellon tape.

After etching, the teeth were rinsed with water and dried; tak- ing care not to dry them to the point of desiccation. Subsequently, the total-etch adhesive ExciTE F was applied using the VivPent (both Ivoclar Vivadent) and brushed into the enamel and dentine surfaces for ten seconds (Fig. 5). A gentle stream of air was used to disperse the excess into a thin layer. Then the adhesive was light-cured for ten seconds with the Low Power 12-fluted carbide and diamond finishing burs. The Astropol and Astrobrush finishing and polish- ing systems (both Ivoclar Viva- dent) were used to impart a high lustre while maintaining the pre- viously created surface texture and anatomy (Fig. 10). Astro- brush was used at a low speed without pressure to achieve a high-gloss finish.

Conclusion

Aesthetic restorative dentistry strives to reproduce the natural anatomy, translucency and char- acteristics of natural dentition. In the clinical case presented, in- terdisciplinary procedures along with the proper selection of ma- terials helped the clinician to achieve the desired result. The combination of a direct adhesive technique in the anterior region (IPS Empress Direct) and an in- direct technique in the posterior region (IPS e.max Lithium Disili- cate) allowed the creation of long- lasting and natural-looking resto- rations. The patient was extremely happy with her new, beautiful smile (Figs. 11–14).

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Fig. 1: Frontal view of the initial situation showing various lesions, labial and proximal caries, as well as enamel hypoplasia. — Fig. 2: Initial situation: the posterior teeth required treatment and the nodules had been prosthetically restored. After completing the treatment in the posterior region, the anterior teeth were restored. — Fig. 3: After caries removal, the Class III cavities in the anterior region were restored with IPS Empress Direct. — Fig. 4... and the teeth were conditioned to prepare them for direct veneering. — Fig. 5: ExciTE F adhesive was applied with the VivPent. — Fig. 6: Try-in of the putty matrix and placement of the first IPS Empress Direct increment. — Fig. 7: Layer of IPS Empress Direct Dentin A2 was applied to the cervical area, extending it to the middle of the incisal third. — Fig. 8: A translucent composite shade was placed between the dentinal lobes in the incisal third area. — Fig. 9: The entire surface was covered with an enamel substitute. — Fig. 10: The highly aesthetic appearance of the veneers after polishing. — Fig. 11: Occlusal view of the final result: the affected teeth in the posterior region were restored using an indirect technique, while for the restoration of the maxillary and mandibular anterior teeth, IPS Empress Direct composite resin was used. — Fig. 12: The situation after completion of the treatment in the anterior region. — Fig. 13: The patient’s happy smile.