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CAE – COMPUTER AIDED ESTHETICS

In most esthetic dentistry cases, a re-design of the shape and contour of the respective teeth is required. In conventional treatment procedures, this is accomplished by means of a wax up. Once approved by the patient, the wax-up represents the basis for all the working steps that are carried out in the course of the treatment. To provide patients with a restoration whose appearance is very close to that originally defined in the treatment plan is crucial to treatment success. Especially as far as the design is concerned, nearly all the steps involved are performed by means of computers today. There is not a single car in the world that is created without the help of computer-aided design (CAD) programs. Therefore, we should also take esthetic dentistry to the next level by no longer fabricating physical wax-ups but creating them in digital form on computers instead.

The first step involves the digitization of the jaws. This can be done by means of the models or directly in the oral cavity. Additionally, a bite registration is made. The result is a three-dimensional digital image, which can be displayed on a computer screen. This offers a lot of advantages: Design databases can be utilized to achieve quick and case-related results. Functional movements can be simulated. Prior to the digital-to-material conversion, ideas can be discussed with the patient by displaying the three-dimensional images on a computer screen. Following tooth preparation, the new situation will be scanned again and matched with the data of the case already stored in the computer. The digital wax-up can then be used for the design of the final restoration. The modern, highly esthetic all-ceramic materials available today even allow full-contour restorations to be milled, which only need to be stained and glazed. In challenging cases, a slight cut-back can be performed to optimize the result.

All in all, this is a completely new way of achieving highly esthetic outcomes in the management of restoration cases. It allows the predictability of results to be increased in a very cost-effective way.