Quest for the perfect restoration

CAD/CAM dental restorations were introduced nearly 30 years ago. It is beyond doubt that this introduction marked an extremely important milestone in our endeavour to achieve the perfect restoration.

Restoring damaged or missing teeth has always been a tough challenge, since ancient Egyptians until the present time. Rapid developments in the field of CAD/CAM systems in the last decade are bringing us ever closer to our goal. Currently, a digital workflow can be implemented with great confidence. Scanners, milling units and 3-D printers are becoming precise to the extent that results can be achieved almost to within the micron.

Although our restorations offer our patients a wide range of benefits, they do not come without disadvantages. More often than not, part of the remaining healthy tooth structure must be sacrificed to accommodate and retain the restoration. Furthermore, regardless of the method of fabrication, whether direct or indirect, the dental materials used usually exhibit dimensional and structural changes during the process, leading to an array of problems.

For perfect results, it is essential to standardise the procedures in fabricating a restoration. Manual fabrication involves numerous errors that are nothing but part of human nature. The human eyes and hands are not predictable in measuring and evaluating dimensions, angles, spaces, and all other calculations needed to achieve a satisfactory result. Computers are, beyond doubt, far superior to humans in determining such critical parameters.

Utilising now very advanced CAD software, we are able to come up with almost perfect restoration designs. CAM software is following suit. What we see on the screen is often what the milling unit or 3-D printer produces. It is the obligation of every one of us to join this fast-moving industry. We owe it to our patients, as well as to ourselves, to become acquainted with and put to use all available technology to offer the best possible treatment.

I believe that digital and CAD/CAM restorations are taking over in setting the standards for dental restorations. They are precise, predictable and much easier to produce. We are certainly coming closer to our goal. The perfect restoration appears to be just around the corner.

In this issue of the CAD/CAM magazine, you will find various clinical articles describing the use of CAD/CAM and 3-D technologies, from digital smile design to guided surgery.

I wish you a pleasant and informative read,

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