Widening horizons of technology

Technology has proven to be our greatest ally in advancing the expert care we offer our patients. Using all available virtual tools, greater levels of patient care can be accomplished, ultimately benefiting patients.

Good lab support is the backbone for defining success in prosthodontic practice. Technological advances in dentistry are at its pinnacle. The newest advent of rapid prototyping technology has opened up new perspectives for design and production in the field of Prosthodontics. In rapid prototyping, physical models are automatically constructed from computerized 3-dimensional data. Additive rapid prototyping and computer-aided design/computer-aided manufacturing (CAD/CAM) technologies are used to generate stereolithographic surgical guides and prefabricated interim prostheses to facilitate implant surgery and immediate loading, respectively. These technological advances can be comprehensively applied in implant rehabilitation, to optimize surgical and prosthodontic outcomes as well as patient comfort. Conventional fabrication technique for wax patterns are time and labor intensive. The cost of such a manual approach in terms of work hours and materials is relatively high in addition to accuracy, repeatability, and the limited number of units that can be fabricated with this technique.

The recent introduction of stereolithography for preparation of resin patterns has lead to considerable increase in precision, predictability, as well as saving of important work hours. The advantage of using stereolithography apparatus is the rapid pace at which the patterns can be created using CAD/CAM technology and its freedom of support to develop various designs. Disadvantage in high costs can be overcome by having a centralized service. The many benefits associated with CAD/CAM generated dental restorations include: the access to new, almost defect-free, industrially prefabricated and controlled materials; an increase in quality and reproducibility and also data storage commensurate with a standardized chain of production; an improvement in precision and planning; as well as an increase in efficiency. As a result of continual developments in computer hardware and software, new methods of production and new treatment concepts are to be expected, which will enable an additional reduction in costs. Dentists, who will be confronted with these techniques in the future, require certain basic knowledge if they are to benefit from these new procedures.

This newer technology used in prosthodontic lab will greatly benefit in improving the quality of restorations and also the shift will truly occur from art and skills of the technicians toward consistent and reliable results that are obtained by the use of technology.

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