Digital dentistry revolution: Should we ride the wave and where is it taking us?

Today, the digital revolution is changing the world, and dentistry is no exception. Clinicians have to rapidly assimilate these new technologies into their daily routine to keep up with these changes. However, many clinicians find themselves struggling to make the transition to a digital workflow.

In recent years, many technologies have been introduced on the market that allow the dental team to use new materials and devices in the production of dental restorations, in order to make dental care easier and faster and improve communication with patients and their dental team.

There are many areas of digital dentistry from which a general practitioner can benefit, and many more are being researched and constantly introduced. Among these, CAD/CAM technologies, intra-oral imaging, guided surgery (including design and fabrication of surgical guides), digital radiography, occlusal and temporomandibular joint analysis, and photography are only a few examples.

Today, CAD/CAM technologies have become part of our daily practice, allowing the dental team to effect prosthetic rehabilitation with an accuracy and precision previously difficult to obtain using well-established conventional protocols. Similarly, guided surgery has become increasingly popular owing to its ability to render improved diagnosis and facilitate planning, followed by higher transfer accuracy of the virtual plan to the patient’s mouth. Hence, it has undoubtedly been a major achievement to provide optimal 3-D implant positioning and higher patient satisfaction. CAD/CAM technologies and guided surgery allow full integration with other digital devices, such as intraoral scanners, to provide for accurate and faster patient-centered solutions. Digital impression taking is one of the most exciting new areas in dentistry for a wide range of procedures in prosthodontics, restorative dentistry and orthodontics.

Although there is no doubt about the potential and accuracy of established digital solutions, there is still a lack of evidence that recent digital technologies available on the market are superior to conventional protocols. Certainly, the evidence, by itself, does not determine the decision, but it can help support the patient care process. Evidence-based medicine has always required integration of three key components: research-based evidence, clinical expertise, and the patient’s values and preferences. The Journal of Oral Science & Rehabilitation publishes original research in the field of digital dental science, and the recommendation for further research is to conduct unbiased long-term randomized controlled trials aimed at making a fair comparison between a new treatment and the existing treatment to see which works best. Moreover, in spite of increasing demand for easier and faster dental treatments, and growing penetration of digital marketing in dentistry, the clinician’s experience, training and reasoning skills are needed in each field of new dentistry to accelerate the accumulation of the requisite knowledge and skills.

In conclusion, the digital dentistry revolution is changing the workflow and consequently changing operating procedures. Hence, clinicians should reason in this way, but not blindly ride the wave.

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