DIGITAL DENTISTRY: IS ALL THAT GLITTERS REALLY GOLD?

That we are in the middle of complex and inevitable transformation from an analogue to a digital world is beyond question, and this applies to dentistry as well.

We started with computers replacing hand-written patient notes, invoices and many other types of documentation. We went from photographic films to fully digital cameras with a whole gamut of tools for improving the quality of images (or even generate them from scratch). Next came the advent of digital radiography and cone-bean computed tomography, which has literally revolutionized the way we acquire essential information for proper diagnosis or surgical planning.

Dental labs too have been overtaken by the digital revolution, which has often (but not always) helped to improve the precision, quality, and speed of manufacture of customized dental products.

The subsequent step was the creation of software to assist clinicians in planning surgical interventions such as the placement of dental implants; together with 3D radiography, this has considerably improved treatment planning, enabling the rehabilitation of even patients with advanced jaw atrophies, avoiding or minimizing bone grafts.

Then the industry pushed dentists into using guided and, more recently, navigated surgery. My impression is that in this specific field, guided surgery works very well in the presence of residual dentition and good bone volumes, but is not so reliable in edentulous patients with atrophic bone. In other words, it is a great solution when we do not actually need one, but results are not so predictable in those situations where dentists could use some extra help.

Digital impression-taking was the following step. After a certain learning curve (an omnipresent feature in dentistry), it can work well in orthodontics, and it can be helpful when taking impressions for a single tooth crown or small fixed prostheses. However, when we require impressions for a cross-arch prosthesis supported by implants, conventional impressions are still more reliable.

Nowadays, we are searching for the digital holy grail: the fully digital workflow. Everything must be digital, otherwise you are seen as a dinosaur in the process of extinction. Many young or middle-aged dentists are burning through considerable amounts of time and money in the attempt to implement a fully digital workflow. However, as you will read in one article in this issue, this may not necessarily be a good idea: it does not always work, despite what companies, researchers and eminent colleagues claim.

My advice is, for clinical purposes, to use digital when it is convenient to do so, and its benefits are tangible and crystal-clear; otherwise, it is better to stick with the tried and tested, until technology is perfected to such a degree that it is possible to completely abandon the analogue era, before artificial intelligence replaces dentists entirely.

Enjoy reading, but stay critical!

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