



Editorial

The transformation of dentistry and digital innovation

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Dentistry, like all fields of medicine, has benefited from technological advances in recent decades, including digital technologies that have revolutionised the way we approach patient care. One of the most notable advances in odontology has been the widespread adoption of digital radiography, allowing for sharper and more detailed images of dental structures, and significantly reducing ionizing radiation exposure. Furthermore, the ease of storing and transferring digital images simplifies multidisciplinary work and communication with patients¹.

Another key aspect of the digital transformation in dentistry is the incorporation of 3D printing. This technology has facilitated the creation of accurate dental models, surgical guides and customized prosthetics with unprecedented precision. By speeding up manufacturing processes, improving the comfort and fit of prosthetics and implants, 3D printing has reshaped the patient experience and comfort in the dental office². In addition, odontology has also benefited from the exponential growth of digital communication. The ability to conduct

interconsultations and follow-ups via videoconferencing has become a valuable tool in dental emergencies or when patients have difficulty accessing the dental office. In addition to improving accessibility to dental care, digital media have contributed to patient education for the prevention and diagnosis of pathologies in the oral cavity.

Artificial intelligence and machine learning are also entering the dental field, where mathematical algorithms can help dentists identify patterns and predict potential community problems before they become serious situations³. Finite element analysis, for example, is a technique based on the principle of dividing a continuous object or structure into a large number of smaller, manageable elements; each of these elements is considered as an individual component with specific mechanical and geometrical properties. It is currently used to study phenomena such as dental biomechanics, masticatory function, long-term stability of dental implants, forces applied to teeth or oral structures, and temporomandibular joint function⁴. Moreover, in clinical settings, patient management and treatment planning can be considered as complex systems involving multiple interconnected factors; so, today efforts are being made to provide artificial intelligence tools and approaches to improve the efficiency and quality of dental care³.

It is important to consider that, although digital innovation in dentistry has brought many benefits, it is essential to address bioethical issues related to privacy and security of patient data. Therefore, the protection of personal and medical information must be a priority in the new digital environments. In conclusion, the transformation of dentistry driven by digital innovation is improving the quality of dental care, allowing treatments to be more accurate, efficient and comfortable for patients. Therefore, it is essential that dental professionals continue to update and adapt to the latest technologies; because the convergence of odontology and digital innovation is an exciting chapter in the history of dentistry that promises a brighter future for oral health.

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