Editorial

Is a Clinician Prepared to Include 3D Printing in Oral Rehabilitation?

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When a clinician is already used to applying some methods in their daily routine, it is hard to change the idea of those who are inflexible or out of date. That is why we need to keep ourselves updated with what has really come to facilitate our clinical life. Not everything will meet our needs, of course, but much of it is the result of several researches and represents improved versions of methods that we can consider incorporating into our oral rehabilitation cases. For example, the use of 3D printing for replacing teeth is already a reality in many countries.

The use of stereolithography, which is a 3D printing process that uses a UV laser to cure a liquid, photosensitive resin into solid objects layer by layer, is the most disseminated method used in dentistry. We can virtually draw and obtain, in minutes or hours, provisional or final restorations, denture bases and teeth, occlusal splints, models, digital waxing and others. Moreover, 3D printing is versatile because it can be used in oral rehabilitation in an analogic and/or totally in a digital workflow with precision and accuracy well-supported by the scientific literature.

The advantages can be attractive for the fabrication of prostheses through digital manufacturing compared to subtractive (CAD-CAM) and conventional methods, such as low cost of equipment and consumables because it does not involve the waste of materials, simultaneous manufacture of several objects, fewer clinical testing sessions and, consequently, less chance of error.

Like everything that is brand new and interesting, this topic has become a boom in current research. Researchers are seeking for precise information about the physical, mechanical and biological properties, such as, mechanical behavior of printed rehabilitations in the face of masticatory forces, color changing and surface roughness and topography, also the biofilm formation over their surface and biocompatibility with oral tissues.

Furthermore, nowadays, there is a research focus on developing and improving consumable materials by adding bioactive molecules with antimicrobial and biocompatible properties, reflecting the efforts and needs presented by clinicians to overcome limitations and spread the use of this technology.

Are we open to incorporating and giving a chance to 3D printing in our clinical life? I believe that there is already sufficient scientific evidence to support its use, and for what remains a limitation, the tendency is to move towards improvement.