Graftless reconstructive solutions: Where Minimally Invasive Meets New Materials

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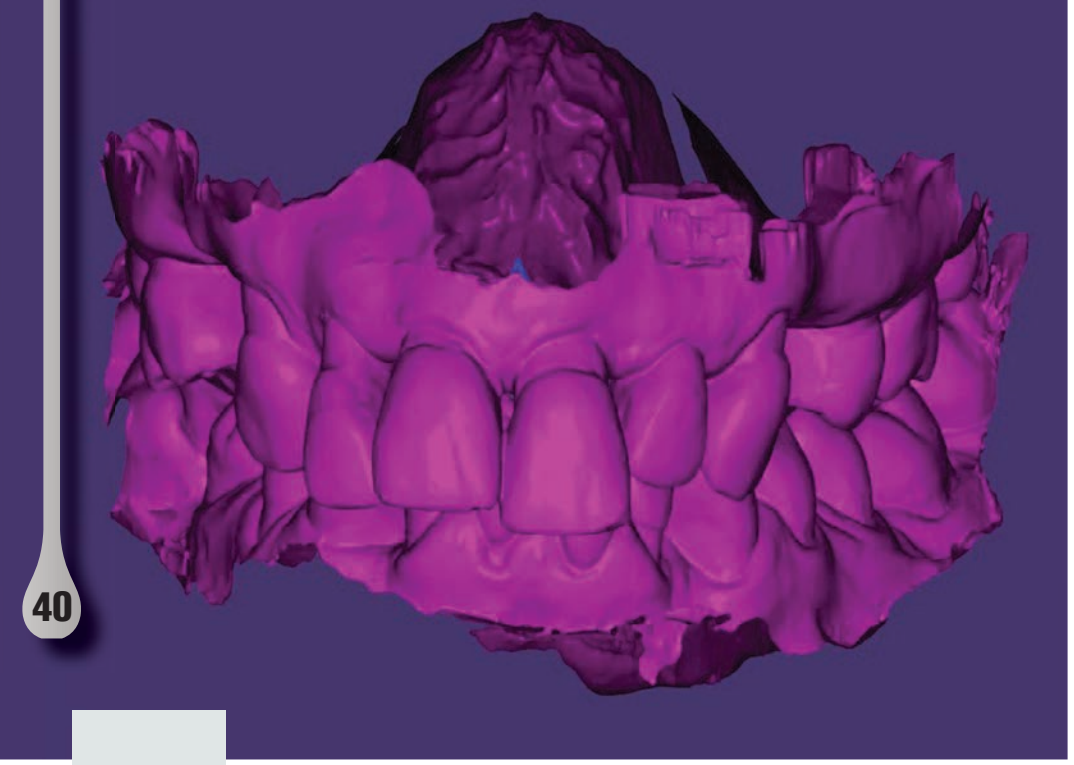

Fig. 1 — Collection of digital information during the first visit

In recent years, technological progress and advances in implantology research have paved the way for increasingly less invasive and more personalized treatment.

The ability to reliably schedule treatment that includes the benefit of immediate loading and alternative pre-prosthetic surgery techniques, today allows us to treat many patients predictably, comfortably and in less time.

We can provide predictable and personalized dentistry, in line with all other medical branches. What's making this possible is not only current surgical solutions ranging from short, ultra-short and zygomatic implants, it is digital technology and digital workflows that have been introduced to the field of dental prosthetics.

Digital prosthetics today includes the concepts: information flow, design and materials (Figs. 1 through 5).

The previsualization of a clinical case allows you to create prosthetically driven three-dimensional designs and to analyze the biomechanical, functional and esthetic components with the support of advanced software.

Modern algorithms enhance communication and the transfer of information from the clinic to the laboratory. Added to this is the remarkable step forward in the new materials industry, which render CAD/CAM processes both visionary and performance oriented.

The Zirconia on Zirconia protocol was created for the treatment of those "graftless" cases in which aesthetic and functional needs are combined with an idea of full digital workflow.

It brings forth the possibility of exploiting the characteristics of the resistance and structural quality of zirconia in the construction of the

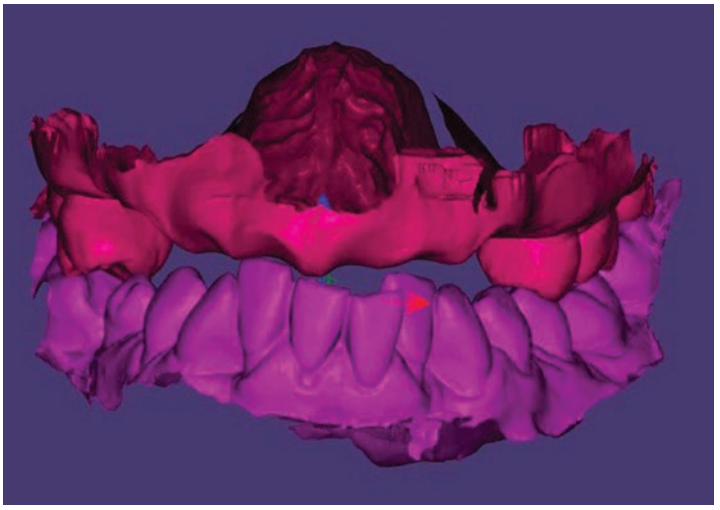

Fig. 2 — Reclamation in digital environment of the elements that will be extracted

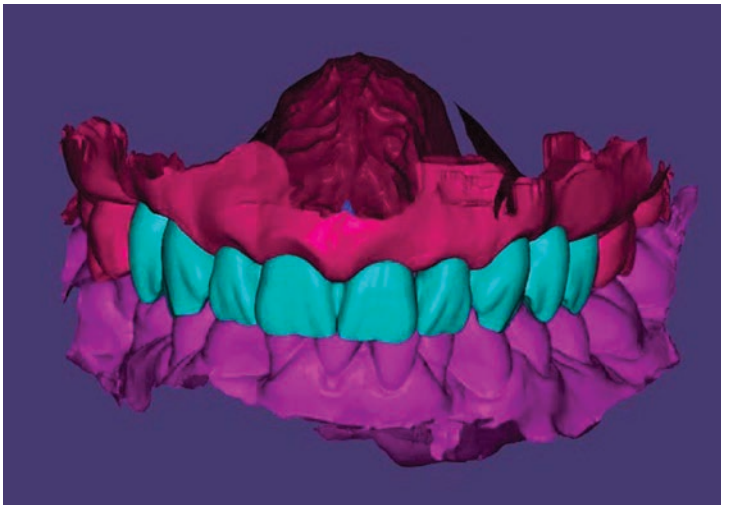

Fig. 3 — Idealization of the case through digital waxing

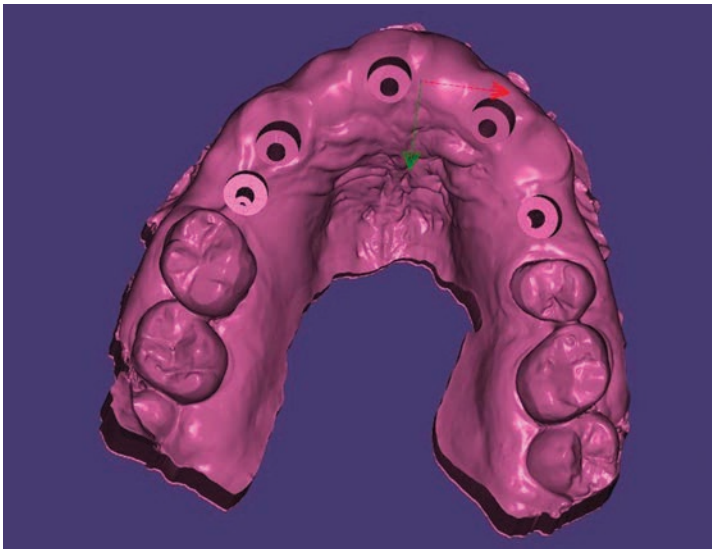

Fig. 4 — Implant model provided by the practice to the laboratory after prosthetically driven implant design

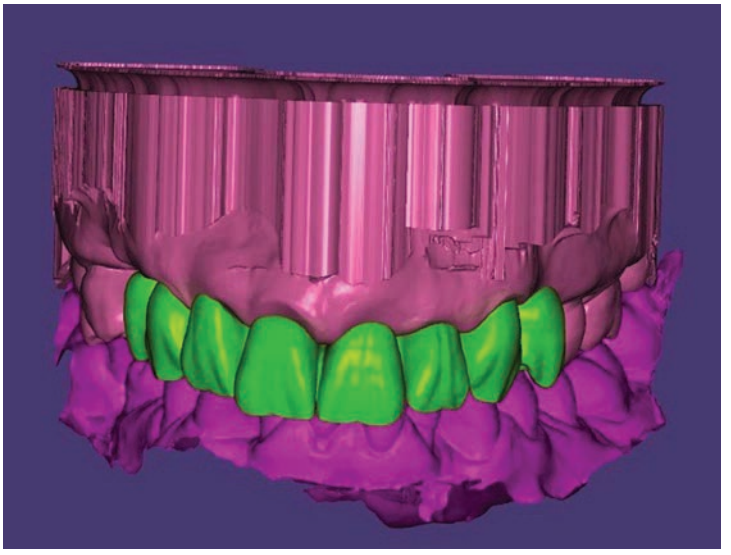

Fig. 5 — Temporary restoration design for immediate loading

Fig. 6 — Realization of the high-tenacity zirconia primary structure and high-translucency zirconia anatomical structure

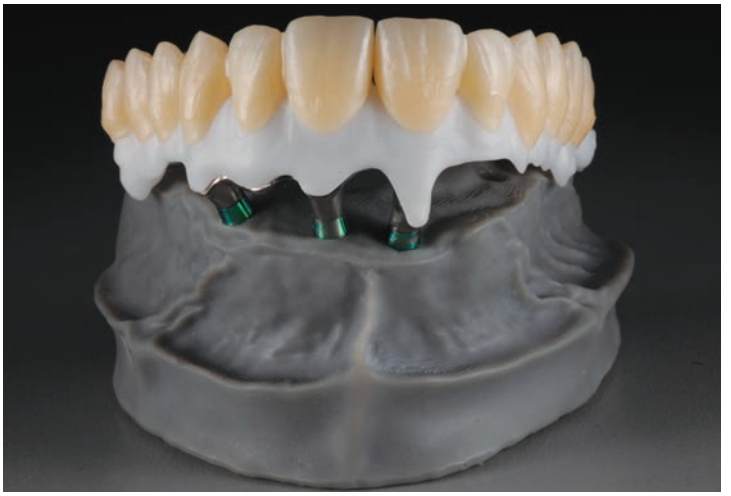

Fig. 7 — Fusion of the structural component to the anatomical component using ceramic means

primary substructure and the harmonious integration of zirconia made aesthetic parts that exhibit a lower coefficient of resistance (Fig. 6).

The union of the two phases through an entirely ceramic workflow allows us to exploit the best performance of the materials and the monolithic concept (Fig. 7).

The monolithic idea means that the replication, the transfer of aesthetic and functional information and the maintenance of the integration is guaranteed by the provisional phase in the definitive devices.

The orderly matching of "phases" in digital work allows us to solve cases of extreme atrophy, to recover important inter-arch relationships resulting from marked resorption and to compensate for orthopedic volume and new anatomy.

Fig. 8 — The stratification of the orthopedic component

Fig. 9

Fig. 10

Fig. 11

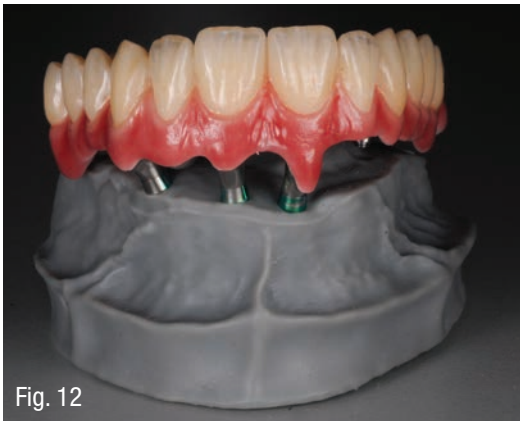

Fig. 12

Figs. 9 to 12 — Finalization of the prosthetic restoration

Fig. 13 — Rehabilitation within the oral cavity

With this protocol we enter the new world of "volume dentistry", in which the prosthetic is integrated in a complex system of spaces, encumbrances, neutral zones and tissue support.

This innovative method is dependent on the quality of the clinical-laboratory communication and makes zirconia an excellent material candidate for complex implant rehabilitations (Figs. 8 to 13). SM