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The concept of computer assisted implantology: The accuracy outcomes!

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Introduction: Implantology has made a huge progress in recent years, not only through the development of implants (design, surface finish, connections) but even more, thanks to CAD/CAM. But how the concept of CAI allows a surgical-prosthetic therapeutic approach different from a so-called "conventional"?

Aim: This study was conducted to evaluate the accuracy of computer assisted implantology.

Materials & Methods: Coupled the CEREC system to CBCT allows three dimensional acquisition type CBST. Secondly, we have to take an optical impression by using camera with coating by dioxyde titane, consequently a virtual three dimensional model is done. We used CEREC software to plan our prosthetic with superposition data from the CBCT and CEREC.

Result & Discussion: CEREC system coupling to CBCT helps to determine the implant site, but also the choice of type of implant, the design and positioning in 3D. The prosthetic project is modeled virtually (digital wax up) and the surgical guide is designed by CAD thus the temporary prosthetic is designed before surgery. The optical impression makes the maximum reduction of dependence materials like less impression materials, less steps, no disinfection and shipping. Errors in the acquisition and processing of radiological images was on average less than 0.5 mm and mistakes when performing the surgical guide were generally around 0.1 to 0.2 mm for the guides made by CAM. Apical deviation of the position of the implant between the virtual planning and actually obtained implant position was ranging between 0.6 mm and 1.2 mm. Of course this method has its limits such as: high cost.

Conclusion: The concepts have evolved and today CAI seems to be emerging as a sub discipline through the many contributions and interest it conveys: it could well sign the evolution of a new era.

Biography

Zenati has completed her PhD from Algeria University and Post-doctoral studies from Algeria University School of Medicine. She has done many courses, conferences and communications. She is an Assistant Professor in Prosthodontics and Occlusodontics.

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