



Advantages and limitation of CAD/CAM technology in surgical guides and implant frameworks

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Computer-aided design (CAD)- Computer-aided manufacturing(CAM) have been widely used in implant dentistry. CAD-CAM's several improvements have started to challenge the method of manufacturing implant-supported prostheses, abutments and crowns. Implant placement has been a challenging procedure. Free-handed placement is an error-prone, time-consuming, and complex procedure. Fortin et al Presented first computer-assisted implant surgery (CAIS) in 1995. Currently, CAD/CAM technology allows the construction of implant frameworks from different materials. This lecture will review properties, clinical outcomes, advantages and limitations of CAD-CAM technology in implant placement and surgery.

Guided implant surgery is assumed to be accurate, precise, having a lower complication rate, and reliable compared to free-handed implant surgery. Surgical guides could be indicated in limited mouth opening patients, tight interdental spaces, patients with exaggerated gag reflex, and distal implants. Several Studies have reported that the use of computer-assisted surgery improves the accuracy of implant placement. The use of CAD-CAM frameworks for implant-supported restorations had reported to have acceptable clinical outcomes. However, CAD-CAM had shown improved marginal fit over the conventional technique for fabricating single-unit frameworks. Also, performance of a CAD-CAM system relative to marginal adaptation is influenced by the restorative material High success rate has been reported for implant-supported in the literature.

CAD-CAM procedures have shown accurate outcomes in implant surgery placement. Even though advantages of guided-surgery, deviation of implant position from the planned position still occurs. However, improvements in digital dentistry are slowly overcoming these challenges.

Biography

Rata Rokhshad, a 6th year dental student at Tehran medical sciences, Islamic Azad University, Tehran, Iran. I have been working in a digital dental office and a digital dental lab. I have been researching in digital dentistry and CAD-CAM materials. I have published papers in dental journals. I have presented several poster presentation (AEEDC, Iranian prosthodontics, Digital Dentistry congress...) and oral lectures (EXCIDA) in different dental congress.



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