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(57) Abstract :  
REALISTIC VISUALIZATION OF DENTAL IMPLANT PLACEMENT IN THE JAW BONE A method for the development of a Dental implant placement is a critical procedure in modern dentistry, offering patients a durable and aesthetically pleasing solution for missing teeth. To ensure the success of these procedures, it is imperative for dental professionals to have a comprehensive understanding of the intricate anatomy of the jaw bone and the precise placement of implants. This abstract explores the significance of realistic visualization techniques in dental implant surgery, focusing on the integration of advanced imaging technologies, computer-aided design, and 3D printing to enhance the accuracy and predictability of implant placement. Traditional two-dimensional radiographs have limitations in providing a comprehensive view of the patient's jaw bone, often resulting in suboptimal outcomes. Recent advancements in dental imaging, such as cone beam computed tomography (CBCT), have revolutionized the preoperative assessment by generating high-resolution three-dimensional representations of the jaw bone. These 3D images enable dental professionals to assess bone density, volume, and the precise location of vital structures, allowing for customized treatment plans and reducing the risk of complications. Moreover, computer-aided design (CAD) software has become an indispensable tool in dental implantology. Dentists and oral surgeons can virtually plan implant placement in a patient-specific manner, ensuring optimal positioning for functional and aesthetic results. Realistic visualization using CAD allows practitioners to account for factors such as bone quality, angulation, and available space, resulting in a personalized treatment plan tailored to each patient. The combination of advanced imaging and CAD has been further complemented by 3D printing technologies. Dental professionals can create physical guides and models based on their virtual plans, facilitating precise and minimally invasive implant surgery. These guides ensure that the implant is placed exactly as intended, minimizing errors and reducing postoperative complications. FIG.1

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