Digital Partial Multifunctional Guide: One Guide for All; Surgery, Provisional, and Permanent Fixed Partial Dentures

Introduction; Prosthetically Driven Implant Dentistry (PDID) is described as the optimal approach for treating edentulous patients with implant-supported prostheses. This technical report aims to provide a step-by-step explanation of fabricating a partial multifunctional guide aiming to ensure correct implant positioning and reconstruction of the underlying tissues during osseointegration period leading to definitive prosthesis.

Case Description; A prosthetically guided approach was employed to a 60-year-old female patient with missing lower right molars in order to place two implants. The planning stage beginned with gathering patient data, including DICOM files from CBCT and STL files of the edentulous site. Virtual structures, mimicking the ideal anatomy for the rehabilitation area were created using laboratory planning software. These structures were designed with supporting cantilever placed on adjacent tooth occlusal surface, and chimneys were formed for prosthetic screw emergence. The structures were then modified and milled from PMMA discs matching the tooth color. The surgical guide assisted in accurate implant placement then minor modifications were made to convert the guide into an adhesive provisional restoration. In the second-stage surgery, the same guide/provisional served as a reference for implant locations and the creation of the provisional restoration, designing the emergence profile for the future restoration.

Discussion; PDID provides a more controlled approach to implant placement, reducing the potential for errors and deviations from the planned position. Digital partial multifunctional guide ensures precise implant placement considering the patient's unique anatomical and prosthetic requirements. The guide's material allows modification with composite resin, facilitating the creation of an ideal emergence profile also the definitive model that can be duplicated during the production of the final prosthesis. Described multifunctional guide may be a practical alternative to conventional overcosting guide methods.

Keywords; Surgical guide, digital dentistry, CAD/CAM