

# CRC18: Restoration with Implant-Supported Maxillary Overdenture and Implant-Assisted Mandibular RPD Using Double-Scanning Method and Rapid-Prototyping Technique

laboratory procedures more efficient with less possibility of errors.

DOI: 10.4103/0972-4052.244674

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**Introduction:** This case report describes simultaneous fabrication of implant-supported OD for fully edentulous maxilla and implant-assisted RPD for unilateral edentulous mandible using double scanning method and 3D printing technology to achieve cost effectiveness and simplified laboratory work.

**Case Description:** A 67-year-old male patient with fractured denture had requested to make new maxillary and mandibular dentures using minimal number of implants. The patient was fully edentulous in maxilla with deficient volume at pre-maxilla region and remaining teeth were only mandibular right canine and 1<sup>st</sup> premolar. For the treatment plan, four-implant supported overdenture with bar in maxilla and two natural tooth and two implant-assisted RPD were selected.

**Discussion:** To achieve an exact fabrication procedure, this case study suggests a digital technology assisted laboratory procedures using double scanning method, 3-D design and 3-D printing technology. The definitive casts, along with the interim dentures, were digitalized using an optical scanner, and the bars and frameworks were casted using 3-D printed interim bars after they were designed virtually in 3-D design software. Both implant-supported maxillary OD and implant-assisted mandibular RPD were designed and fabricated simultaneously. The patient was satisfied with aesthetics and function of the prosthesis.

**Conclusion:** In this study, the application of the double scanning method and rapid prototyping technique in fabrication of Hader bar and metal framework for implant-supported bar OD and implant-assisted RPD showed an acceptable result. In addition, those method made the