Abstract

Objectives: Dental implants are functionally ankylosed with direct contact to the bone. An accurate implant impression is necessary to generate an accurate definitive restoration. Digital implant impressions have shown promising results.1,3

Methods: A 44-year-old female presented to the ECU School of Dental Medicine pre-doctoral clinic seeking restorations on non-parallel implants at sites #28 and 30. Scan bodies were scanned to allow for a digital design proposal. The digital design was approved and fabricated using subtractive manufacturing.

Results: The milled metal framework was assessed to ensure proper fit clinically and radiographically.

Conclusion: Digital implant scanning proved to be accurate, efficient and economic.

Introduction

Dental implants are functionally ankylosed with direct contact to the bone, with no mobility that characterizes the periodontal ligaments of natural teeth. Therefore, any misfit at the implant-abutment interface will contribute to mechanical complications. The clinical fit of an implant prosthesis at the implant-abutment junction is directly dependent on the accuracy of impression technique and cast fabrication. Hence, an accurate implant impression is necessary to generate an accurate definitive prosthesis. Splinted implant impressions were recommended when implants are to be connected to record the relationship of adjacent implants. However, digital implant impressions have shown promising results.1,3,4

Methods

A 44-year-old female presented to the ECU School of Dental Medicine pre-doctoral clinic seeking restorations on non-parallel implants at sites #28 and 30. Scan bodies were placed and scanned to allow for a digital design proposal. Digital design enabled accurate visualization and orientation of the screw access. Additionally, it allowed for a more efficient workflow while providing the accurate fit of the prosthesis that is required for an implant FPD. The digital design proposal produced by CARES dental software, was sent to Straumann milling facility for subtractive manufacturing of the restoration.

Results

The milled metal framework was tried in the patient’s mouth. The restoration was assessed to ensure proper fit of the metal framework with bitewing radiographs and confirmed passive full seating of the restoration using Sheffield test. The prosthesis was returned to the lab for porcelain stacking and returned for final delivery.

Conclusion

Based on this clinical report confirming previous literature,1,2 the digital implant scan system used to scan implants equal in accuracy as conventional impressions and can be used as an alternative to splinted impressions for partially edentulous patients.3 However, digital workflow proved to be more efficient, allowed data storage, sharing and is more economical eliminating the need for impression material use.1,2,4

References