

Technology Assisted Reconstructive Surgery - A Case Report

James D*, Chakravarthy A and Muthusekhar MR

Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India

Introduction

Recent advancements in science and technology have resulted in important changes in the medical field. Three dimensional (3D) printing is a good example of such developments and has already achieved a considerable level of technical development in many industrial fields. Use of this innovative manufacturing technique is gradually expanding in the medical field. In clinics, application of 3D printing can be largely divided into diagnostic or treatment purposes.

The subperiosteal implant is framework 3D printed using surgical titanium, with a CT scan generated model avoiding the direct bone impression step. It is inserted directly on the bone, under the periosteum. The increased surface area of this custom design act and function much like a "snow shoe on snow" by dissipating the forces over a large area.

Case Report

Patient named Seema, aged 18 years had reported to the Department of Oral and Maxillofacial Surgery, Saveetha Dental College and Hospital, Chennai seeking prosthodontic rehabilitation in relation to 43, 44, 45, 46, and 47. Patient gives history of ameloblastoma in relation

to 46, 47, 48 region and resection of the same was done three years ago. On examination of CBCT, it was found that the inferior alveolar nerve was close to the alveolar crest making conventional implants unfeasible.

3D reconstruction of mandible was done and analyzed in mimic software. A customized subperiosteal implant was designed according to the patient's bone topography. Occlusal forces and stress factors on the implant were taken into consideration while designing. The design was 3D printed with titanium metal in Belgium. A 3D printed model of the mandible was made to check the adaptation of the implant. The implant was placed in the patient's mouth under GA.

Conclusion

In a place where conventional implant is not possible, customized subperiosteal implants provides a valuable solution as it avoids the need of an extra oral donor tissue/bone or the use of any allografts [1].

References

1. Moore DJ, Hansen PA (2004) A descriptive 18-year retrospective review of subperiosteal implants for patients with severely atrophied edentulous mandibles. *J Prosthet Dent* 92: 145-150.

*Corresponding author: James D, Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India, Tel: 044 2680 0050; E-mail: divyajames31@yahoo.com

Received February 14, 2017; Accepted March 06, 2017; Published March 31, 2017

Citation: James D, Chakravarthy A, Muthusekhar MR (2017) Technology Assisted Reconstructive Surgery - A Case Report. *Dent Implants Dentures* 2: 117. doi: [10.4172/2572-4835.1000117](https://doi.org/10.4172/2572-4835.1000117)

Copyright: © 2017 James D, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.