



CASE STUDY

ALL ON SIX TECHNIQUE: A CASE REPORT

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ARTICLE INFO

Article History:

Received 23rd March, 2017
Received in revised form
13th April, 2017
Accepted 15th May, 2017
Published online 20th June, 2017

Key words:

Edentulous jaw,
Dental implants,
Implant placement.

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Citation: Dr. Tej Joshi, Dr. Ekta Rohra, Dr. Gaurang Mistry and Dr. Omkar Shetty, 2017. "All on six technique: A Case Report", *International Journal of Current Research*, 9, (06), 51992-51995.

ABSTRACT

The "All-on-Six" concept is based on the placement of six implants in the anterior part of fully edentulous jaws to support a provisional, fixed, and immediately loaded full-arch prosthesis. "All on six" concept of implants for supporting fixed prostheses can be considered a viable treatment modality resulting in a simple and less time consuming procedure, significantly less morbidity, decreased financial costs and a more comfortable postsurgical period for the patients.

INTRODUCTION

Current standards in implant dentistry are intended to provide prosthetic restorations with the finest esthetic and functional outcomes. Several parameters have been suggested to achieve gold standard results: adequate bone height, width and sagittal projection, adequate soft tissue quantity and quality, preservation of buccal sulcus and adequate papillae and gingival contour (Guerrero *et al.*, 2007). Solutions to inadequate ridge height include the use of short implants (Esposito *et al.*, 2006), vertical ridge augmentation procedures (Sorní *et al.*, 1999; Maestre-Ferrín *et al.*, 2009), or cantilever prostheses (Chaushu *et al.*, 2010). Although having a comparable short-term survival rate, some authors state that the long-term performance of short implants is less understood, especially in the posterior maxilla with lower bone density (Hashemi, 2010). Vertical augmentation procedures increase patient morbidity and the outcome is less predictable, mainly in the posterior mandible. Cantilever prostheses might incur higher rates of prosthetic complications such as abutment loosening, denture fracture and implant failure. Due to the less predictable long-term prognosis associated with the above mentioned procedures, the "All-on-Six" technique was proposed for the rehabilitation in edentulous jaws. The "All-on-Six" concept is based on the placement of implants in the anterior part of fully edentulous jaws to support a provisional, fixed, and immediately loaded full-arch prosthesis.

Combining tilted and straight implants for supporting fixed prostheses can be considered a viable treatment modality (Vega *et al.*, 2010) resulting in a more simple and less time consuming procedure, in significantly less morbidity, in decreased financial costs and a more comfortable postsurgical period for the patients (Peñarrocha Diago *et al.*, 2013).

Case Report

A 58-year-old lady, edentulous for a long period of time due to periodontal disease, was referred to the Department of Prosthodontics, D. Y. Patil School of Dentistry, Navi-Mumbai, India, requiring a fixed prosthetic rehabilitation in the lower jaw. Her past medical history was uneventful (Fig. 1). The panoramic radiograph revealed an advanced alveolar bone resorption, particularly in the mandible (Fig. 2).

The "All-on-Six" technique was scheduled to rehabilitate the lower jaw. Under local anesthesia, a full thickness crestal incision was performed from the right first molar region to the left first molar one. A midline releasing incision was carried out to facilitate flap reflection. All sites were prepared using the manufacturer's guidelines, under copious sterile saline irrigation. A control of a possible communication between implant sites was done before implant placement. A stent was fabricated for a prosthesis driven implant placement. The guiding holes were made in the stent according to the denture fabricated.

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Figure 1. Preoperative clinical view

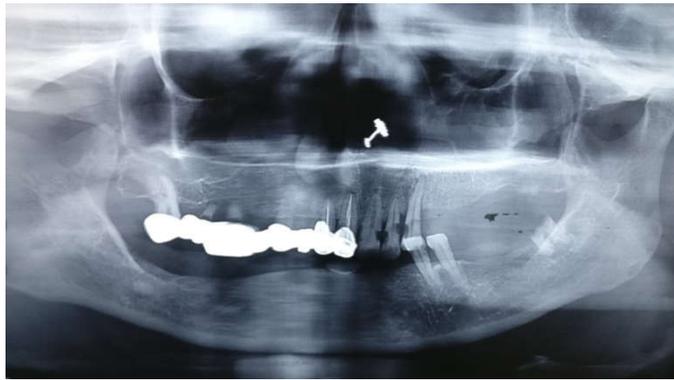


Figure 2. Preoperative panoramic radiograph



Figure 3. Stent For Prosthesis driven implant Placement



Figure 4. Flap raised on left side



Figure 5. Placement of the mandibular implants



Figure 6. Placement of straight Temporary multiunit abutments

The three implants noble active were placed in the molar and premolar areas on left side, and three noble active implants were placed in molar, premolar and canine areas on right side, following the diagonal of the rectangle (Fig. 6).



Figure 7. The Temporary prosthesis



Figure 8. 4 months Post Surgical OPG



Figure 9. Final Open Tray Impression using Floss, Pattern Resin and Poly-ether



Figure 10. Final Screw-Retained Prosthesis

After soft tissue management and closure, straight abutments were placed onto the implants (Fig. 6) and the multiunit impression copings were attached to the prosthetic abutments and splinted using wire-bars and low shrinkage autopolymerizing resin (Fig. 7) to ensure an accurate transfer without accidental displacement, when an impression was taken. One of the implants in 46 region was not loaded as the primary stability was less as compared to that of other implants.

The temporary, immediate loaded prosthesis was given to the patient. After 4 months of healing, the patient was recalled for evaluation and fabrication of definitive prosthesis. The temporary denture was loosened and removed. The implants

showed good osseointegration, and no sign on any crestal bone loss. So an Open tray impression was made and the impression was sent to the lab for fabrication of screw retained prosthesis. A semi adjustable articulator was used to fabricate the final ceramo-metal screw retained prosthesis.

Conclusion

The “All-on-6” treatment concept seems to be an alternative option for rehabilitating edentulous jaws compared with advanced surgical approaches without using removable prostheses. It is a cost-effective procedure, decreasing the treatment times, the morbidity and allowing a higher patient quality of life. Marginal bone loss around splinted implants to support full-arch fixed prosthesis doesn't significantly differ from normal implants in short and medium-term. Nevertheless, long-term results are required to verify this finding. Furthermore, platform switching, Morse taper connection and microstructured surface texture extended onto the implant shoulder as seen in noble active implants, seem to play a role in stabilizing the peri-implant bone.

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