

## Full Mouth Implant Reconstruction with Screw Retained Implant Prosthesis: A Case Report

Dr. Lipi bardia<sup>1</sup> & Dr. Nivedan K S<sup>2</sup>

<sup>1</sup>MDS (Prosthodontics), Senior Lecturer, Department of Prosthodontics, The Oxford Dental College, 45/1 Shree Vigneshwaranilaya, 5<sup>th</sup> Cross, Avani Shringeri Nagar, Bangalore 560076, Karnataka. India


<sup>2</sup>MDS (Prosthodontics), Senior Lecturer, Department of Prosthodontics, The Oxford Dental College 45/1 Shree Vigneshwaranilaya, 5<sup>th</sup> Cross, Avani Shringeri Nagar, Bangalore 560076, Karnataka. India

*Email : [drlipibardia03@gmail.com](mailto:drlipibardia03@gmail.com)*

### Abstract

Implant- supported prosthesis gives an opportunity to patients a normal healthy life for their functional and esthetic demands. 11 implants were placed using complete dentures as surgical guide and screw retained prosthesis given. The aim of this case study is to report full mouth rehabilitation with endosseous implants loaded following standard prosthetic procedure.

**Key words** – screw retained, verification jig

Access this Article Online	Quick Response Code: 
Website: <a href="http://heb-nic.in/jopd">http://heb-nic.in/jopd</a>	
Received on 08/04/2020	
Accepted on 29/04/2020 © HEB All rights reserved	

## **Introduction**

The goal of modern dentistry is to return patients to oral health in a predictable fashion. Complete edentulous patient may be unable to recover normal function, esthetics, comfort or speech with traditional removable prosthesis. Implant rehabilitation allows normal muscle function and maintains its dimension in a manner similar to healthy natural dentition. For successful prosthetic rehabilitation long term acceptable criteria should be established and the limiting factors should be established to minimize the occurrence of complications related to restoration, maintenance or patient management. Long span prostheses should preferably be screw retained for easier maintenance as it has been discussed in various literature that long span restorations have a higher risk of complications. The purpose of this study is to report a case of full mouth rehabilitation with screw retained implant following the standard procedure.

## **Case Report**

A 55- year old female came to our attention with complete dentures. She showed no systemic pathology. She was unhappy with the function and esthetics of her complete dentures prosthesis. A complete case history was recorded followed by thorough intraoral examination. After careful evaluation we decided for full mouth implant rehabilitation. The patient was educated and motivated regarding the same. Patient was advised to undergo routine blood investigation, full mouth radiography and cone beam computed tomography (CBCT) scan. Diagnostic impressions were recorded and casts were fabricated. Patient reported back with normal laboratory findings. Implant sites were selected based on CBCT scans. Complete dentures were used as preoperative surgical template, and the surgery was planned accordingly.

## **First stage surgery**

Patient consent was taken prior to the surgical procedure. Two stage surgeries were planned for the patient with the time interval so that proper healing should take place. Total eleven implants were placed for maxillary and mandible arch using complete dentures as surgical guide. Surgery was performed under local anesthesia and all sterilization protocols were followed prior to surgery. Preoperative medication was given. The implant size selected for maxillary and mandible according to the available bone quantity and quality as per the CBCT images. Surgical procedures conducted in the Department of Oral & Maxillofacial Surgery under the surgical protocol.

## **Second stage surgery**

Midcrestal incision was placed under local anesthesia and flaps were reflected. Covering screws were removed and replaced by healing abutments, and suturing was done. Patient was recalled after a week for suture removal and waited for two weeks for healing to take place.

**Prosthetic phase**

A conventional alginate impression is made and study models are cast. A rigid open custom tray is manufactured. Healing abutments were removed; appropriate impression copings are selected and fitted. These copings were splinted together intraorally to provide greater rigidity and possibly greater accuracy. The open tray is tried in, the impression copings should emerge level with the window. All the impression copings splinted with pattern resin and impression is taken in the open tray with a silicone impression material. Once the impression has set, the impression copings are unscrewed through the window on the tray and the impression is removed from mouth along with all impression copings in place. The healing abutment are replaced. Implant analogs were threaded to impression copings and master cast was fabricated for maxillary and mandibular arch. VDO of the patient remained unchanged. We used a compass for measuring two times the distance between the tip of nose and mandibular symphysis. The first time with the denture of patient and second time with verification jig. Verification jig was fabricated with the temporary cylinders and pattern resin on the cast, verified both clinically and radiographically for marginal discrepancy. With this jig, verification cast was made from impression copings assembly for the fabrication of Cobalt chromium framework and to verify fit prior to intraoral evaluation. Intraoral and radiographic evaluation of framework confirms proper fit. Ceramic buildup and bisque trail carried out. Definitive prosthesis inserted and screws were tightened. Modelling wax was used to cover the screw channels and further composite restoration done over screw access holes. An instruction to patient was given on how to use and maintain. The patient was recalled after a day and minor occlusal adjustments were done. Recall was scheduled biannually. The positive attitude of patient as well as her satisfaction with the treatment that addressed her chief complaints and desires contributed to a good prognosis.

**Conclusion**

Selection of case is the most important step in full mouth implant rehabilitation. Planning of prosthesis depends on different variables and factors as interarch space, design of FDPs, esthetic zone, retrievability. A comprehensive understanding of range of surgical and prosthetic steps is important and achieved by clinical experience.

**References**

1. Lindquist LW, Carlsson GE, Jemt T. A prospective 15- year follow-up study of mandibular fixed prostheses supported by osseointegrated implants: Clinical results and marginal bone loss. *Clin Oral Implants Res* 1996; 7:329.
2. Lemmerman KJ, Lemmerman NE. Osseointegrated dental implants in private practice: A long-term case series study. *J Periodontol* 2005; 76:310.
3. Peñarrocha-Diago MA, Maestre-Ferrín L. Immediate versus nonimmediate placement of implants for fullarch fixed restorations: a preliminary study. *J Oral Maxillofac Surg* 2011 Jan; 69(1):154-9.
4. Bodine RL. Prosthodontic essentials and an evaluation of the mandibular subperiosteal implant denture. *J Amer Dent Assoc (1939)* 1955; 51(6):654-64.
5. Garefis PN. Full mouth reconstruction with dental implants. *J Oral Implantol* 1979; 8(4):563-73.
6. Kaptein ML, De Putter C, De Lange GL, Blijdorp PA. A clinical evaluation of 76 implant-supported superstructures in the composite grafted maxilla. *J Oral Rehab* 1999; 26(8):619-623.
7. Fischer K, Stenberg T. Three-year data from a randomized, controlled study of early loading of singlestage dental implants supporting maxillary full-arch prostheses. *Int J Oral Maxillo Implants* 2006; 21(2):245-52.
8. Kaptein ML, De Putter C, De Lange GL, Blijdorp PA. A clinical evaluation of 76 implant-supported superstructures in the composite grafted maxilla. *J Oral Rehab* 1999; 26(8):619-23.
9. Sullivan DY, Sherwood RL, Porter SS. Long-term performance of Osseotite implants: a 6-year clinical followup. *Compend Contin Edu Dent* 2001; 22(4):326-8, 30, 32-4.
10. Ferrigno N, Laureti M, Fanali S, Grippaudo G. Alongterm follow-up study of non-submerged ITI implants in the treatment of totally edentulous jaws. Part I: Ten-year life table analysis of a prospective multicenter study with 1286 implants. *Clinical Oral Implants Research* 2002; 13(3):260-73.
11. el-Charkawi H. The use of precision attachments in a lower full-arch rehabilitation with osseointegrated implants - a clinical report. *Egyptian Dent J* 1994; 40(4):919- 922.
12. Kramer A, Weber H, Benzing U. Implant and prosthetic treatment of the edentulous maxilla using a barsupported prosthesis. *Int J Oral & Maxillo Implants* 1992; 7(2):251-5.
13. Lee H, So JS, Hochstedler JL, Ercoli C. The accuracy of implant impressions: a systematic review. *J Prosthet Dent* 2008; 100: 285-291.
14. Gargari M, Gloria F, Cappello A, Ottria L. Strength of zirconia fixed partial dentures: review of the literature. *ORAL & Implantology Vol. III (No. 4 ) - 2010 October December, 15- 24.*

**Diagrams**



Figure 1 : Preoperative maxillary and mandibular arch



Figure 2 : Complete dentures as surgical guide



Figure 3 : Incision and Flap reflection

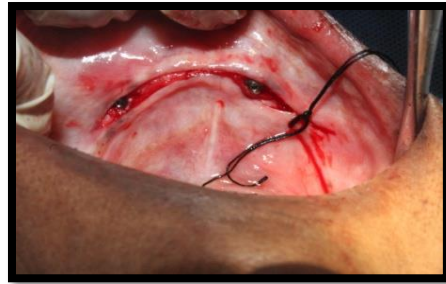


Figure 4 : Implant placed



Figure 5 : Maxillary - Impression copings splinted



Figure 6 : Mandible - Impression copings splinted



Figure 7 : Maxillary implant impression



Figure 8 : Mandible implant impression

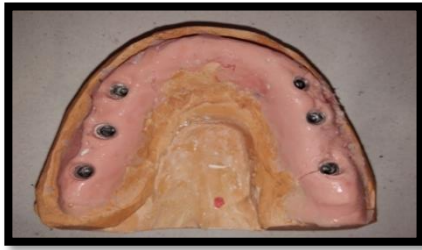


Figure 9 : Maxillary cast with implant analogs



Figure 10 : Mandibular cast with implant analogs



Figure 11 : Maxillary verification jig



Figure 12 : Maxillary verification jig



Figure 13 : Maxillary metal try in



Figure 14 : Mandibular metal try in

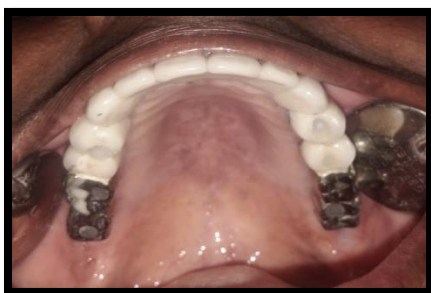


Figure 15 : Final screw retained maxillary prosthesis



Figure 16 : Final screw retained mandibular prosthesis



Figure 17 : Screw retained prosthesis – occlusal view

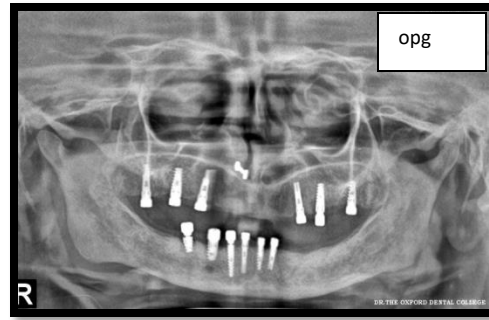


Figure 18 : Final OPG with all implants



Figure 19 : Post operative picture of patient