

# FULL MOUTH REHABILITATION IN A WORN OUT DENTITION WITH COLLAPSED BITE USING IMPLANTS- A CLINICAL REPORT

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## Abstract

Modern dentistry changed tremendously with implant surgery. For a successful implant therapy a proper diagnosis and treatment plans is required. Teeth loss may be due to physiological as well as pathological factors are common. The complete loss of teeth causes various problems like difficulty in mastication, improper phonetics, and unacceptable esthetics of patients. Implant supported prosthesis give the dentist an opportunity to restore normal function and esthetics. Successful osseointegration enables dentist and patient to accept a full arch dental prosthesis

**Keywords:** Implant supported fixed prosthesis, Metal Coping, Bisque trial

## Introduction

The objective of a dental prosthesis is the replacement of teeth and its associated tissues to restore form, function and esthetics. Oral rehabilitation of patients with fully or partially edentulous patients are always a challenge to the prosthodontist<sup>1</sup>. The dental implant is the most charming modern treatment modality in

dental practice because it fulfills the requirement of retention, stability, support, comfort, contour, and esthetic. The increased success rate of implant-supported prostheses has also increased the esthetic demands of patients.<sup>2</sup>

Advances in dental implant research, design and their clinical application have greatly changed dental care. Improved protocols in implant therapy over the last several decades have made implant supported restorations biologically and mechanically predictable. Full arch implant-supported restorations are increasingly popular, but many patients are not psychologically ready for the extractions and alveolectomy that is often required. The following case presentation demonstrates the combined use of dental implants and tooth supported fixed dental prostheses to restore the patient's esthetics and function.

## Case Report

A 56 year old female patient reported to Department of Prosthodontics, Government dental college, Trivandrum with a chief complain of an ill-fitted partial denture in both the arches. A completed case

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history was taken followed by a thorough intra oral examination. On intraoral examination, the patient had partially edentulous upper and lower arch. Teeth present were 11, 21, 15, 18, 28, 32,33,43,44. Attrition was present on 11,21,32,33,43,44. (Fig. 1) The natural teeth present were periodontally sound. No relevant medical history. Past dental history revealed the extraction of multiple teeth due to dental caries.

## Pre-operative analysis and treatment planning

The patient was advised for root canal treatment of natural teeth except 18 and 28. Patient was also advised for Orthopantomography (OPG) (Fig. 2) and Cone beam computer tomography

(CBCT) of the maxillary and mandibular arch. After evaluating the radiographs, it was concluded that there was a good amount of bone height, bone width, bone density, and adequate inter-arch space. Hence, the treatment plan was decided as an implant-supported fixed prosthesis.

## Surgical phase

Patient consent was taken prior to surgery. 2 stage surgical protocol was planned. Patient was instructed to have antibiotics prior to surgery.

After radiographic analysis of CBCT and OPG it was decided to place seven implant in the maxillary arch with 12, 14, 16,17, 22, 24 and 27 positions and four implants in the mandibular arch with 34, 36, 45, 47 and positions respectively. The



Fig-1-Preop intra oral and extra oral

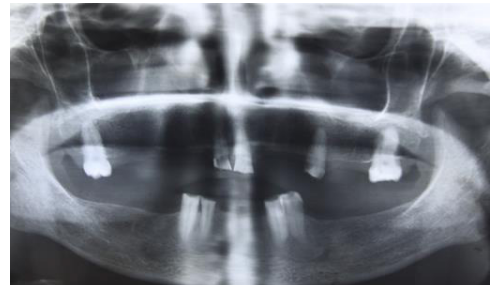


Fig-2-Pre op OPG

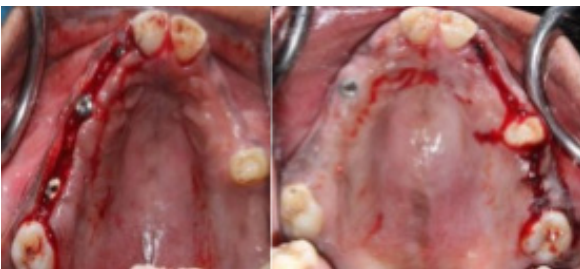


Fig-3-implant placed on maxilla



Fig-4-implant placed on mandible



Fig-5-post op OPG



Fig-6,open tray impression on maxilla and on mandible



Fig-7-Bite registration along with jig

surgical procedure was planned in two phases. In the first phase of treatment, the surgical placement of seven maxillary implants of dimensions 3.5×13 mm, 3.5×13mm, 4.2×11.5mm, 3.5×13mm, 3.75×11.5mm, 4.2×11.5 mm respectively (Fig. 3) and for mandibular arch, surgical placement of four mandibular implants of dimension 3.5×10mm, 3.75×8,3.5×10mm, 3.75×8mm respectively (Fig. 4) were planned. Mucoperiosteal flap was elevated all over the maxilla, Implants were placed followed

by placement of the cover screws and suturing was done. Postoperative care include administration with antibiotics, analgesics, and mouthwash. Maintenance of oral hygiene and ice pack if needed was suggested. Similar procedure was followed for mandibular arch and suturing was carried out. A post operative OPG was advised (Fig.5). After 4 months, patient was recalled and postoperative OPG was made and checked



Fig-8-face bow transfer



Fig-9-metal trial



10a-final cementation, 10b-right working side view, 10c-left working side view



10d-right balancing side view, 10e-left balancing side view, 10f-anterior guidance with posterior disclusion



Post operative view of the patient



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for proper osseointegration. After confirming osseointegration, flap was elevated and cover screws were removed and healing abutment was placed and waited for three weeks for healing to take place.

## Prosthetic phase

After the three weeks of second-stage surgery, the steps for definite prosthesis were commenced, healing abutments were removed. Since the patient had a collapsed bite, it was decided to raise the vertical dimension 3-4mm by measuring the actual values of vertical dimension at rest and vertical dimension of occlusion of the patient. A customised jig was made based on the vertical dimension and patient was asked to wear it for 1 month. Patient was recalled after 1 month. An open-tray impression technique was selected for impression and copings were attached (Fig.6). The prepared acrylic custom tray was marked according to the impression coping and the tray was adjusted for the proper placement with impression copings intraorally. Addition silicon was used in putty and light-body consistency in a single step. Once the material set impressions copings were incorporated into impressions and screw was unscrewed and impressions were carefully removed in the single stroke to prevent the distortion. Abutment jig trial was done. A bite registration (Fig.7) and face bow transfer (Fig.8) were done and mounted on a semiadjustable articulator. Metal trial was carried out (Fig.9), followed by bisque trial and occlusal corrections were done. The final prosthesis were cemented with minor adjustments (Fig.10). Group function occlusion was planned for the prosthesis. Post-operative instructions were given to the patient and the patient was kept under regular follow up.

## Discussion

Proper diagnosis and treatment planning is key to any successful mouth rehabilitation. Implant Full-mouth rehabilitation is also designated as implant complete mouth rehabilitation. Successful implant treatment involves osseointegration of implants

that are placed in ideal positions for the fabrication of a dental prosthesis. Surgical placement of dental implants is a well-documented treatment for edentulism<sup>7</sup>. Treatment success rates are high and postoperative complications were relatively modest in implant supported fixed partial denture. It not only provides good satisfaction on patient's behalf, but also increased psychological confidence and social activity than with conventional overdentures.

With all modifications in the techniques, the primary need for the prosthesis is to produce a passive fit for the fixed implant prosthesis and arguably one of the most technically important phases in implant dentistry.

## Conclusion

Implants have become treatment of choice in many, if not most situations when missing teeth require replacement. Appropriate diagnosis and treatment plan are required for a successful full mouth rehabilitation. Careful integration and sequencing of the different areas of treatment need to enhance the final result.

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