

# Rehabilitation of mandibular fracture with anterior teeth loss

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## ABSTRACT

We report here on rehabilitating a case with mandibular fracture and lower anterior teeth loss. Three double-staged implants were placed in the lower anterior region; in an attempt to rehabilitate the condition of five missing lower teeth, two natural teeth were prepared to act as natural abutments. Teeth implant-supported prosthesis was fabricated. Patient with a right mandibular fracture and loss of lower anterior missing teeth was successfully rehabilitated with teeth implant-supported prosthesis and titanium bony plates.

**Key words:** Mandibular fracture, titanium bone plates, two-staged implants, FP-3 prosthesis, oral rehabilitation

## INTRODUCTION

It is not uncommon to come across patients who have undergone trauma and had mandibular fractures with loss of one or several teeth. These patients often desire a “fixed” treatment rather than removable dentures, to feel normal and to overcome the psychological trauma they have been through. The management of such patients often needs careful evaluation, procedure and techniques, with implant-supported prosthesis being the best possible treatment modality. The purpose of this study was to restore a mandibular anterior arch with implant teeth-supported prosthesis in a patient with treated fractured mandible.

## CASE REPORT

A 60-year-old male patient visited the Outpatient Department of Prosthodontics, SPPGIDMS, Lucknow,

India. History of the patient revealed that he had trauma 2 years back with the right side mandibular body fracture and loss of lower anterior teeth. There was no relevant medical history. The fracture was treated with open reduction, with titanium plating on right side of body of the mandible. The post-surgical examination revealed adequate mouth opening, normal occlusion and no deviation. The region had healed completely and the surgical treatment seemed satisfactory. The lower anterior alveolar ridge had resorbed to a great extent. All other teeth present were with no caries, good periodontal health and good oral hygiene.

The patient was educated and informed about the limitations of his treatment. An orthopantomogram (OPG) revealed well-accepted titanium plates on lower right side of the mandibular body with missing 31, 32, 41, 42, 43. The remaining teeth showed good periodontal condition with no bone loss [Figure 1]. Intra oral periapical radiograph (IOPA) radiographs in relation to 31, 32, 41, 42, 43 revealed bone loss up to 3 mm compared to the adjacent remaining teeth. A diagnostic impression of both the maxillary and mandibular arches was made. A radiographic and surgical stent was fabricated for evaluation of the implants [Figure 2]. Although one implant each for every missing tooth was the treatment of choice, the surgical site precluded the same and hence, three double-staged implants of 3.3

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Figure 1: Preoperative view of the missing teeth after reduction of the fracture



Figure 2: Preparation of the surgical stent

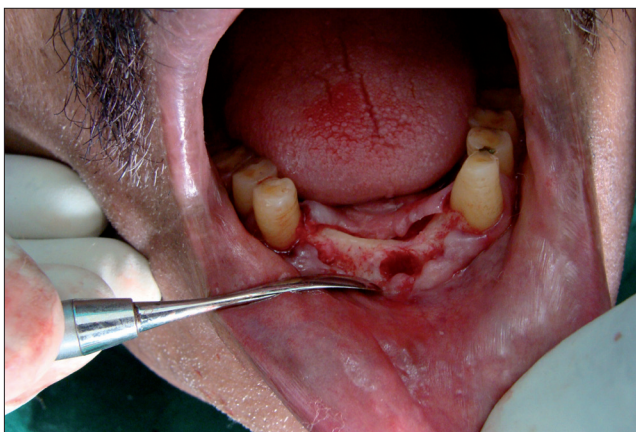


Figure 3: Raising the flap

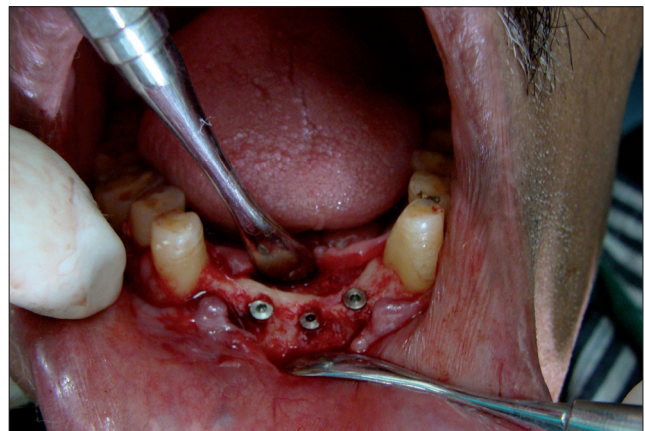


Figure 4: Placement of three implants in 31, 41, 42 regions at locations

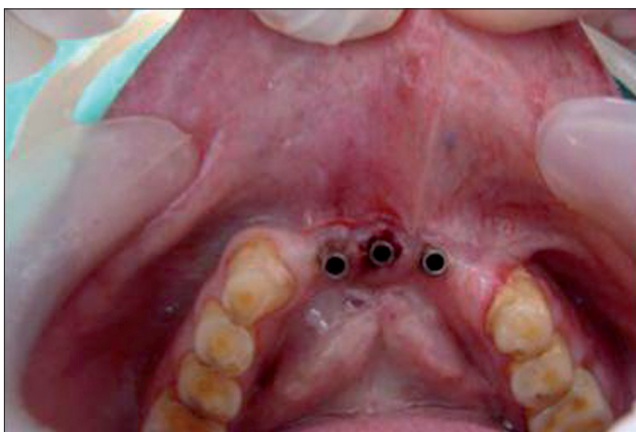


Figure 5: Placement of abutments



Figure 6: Metal coping trial

mm diameter and 15 mm length for 31, and 3.3 mm diameter and 13 mm length for 41 and 42 were placed under local anesthesia [Figures 3 and 4].

The patient was put in antibiotics and analgesics for 5 days. After every aspect of the surgical region was found satisfactory, the patient was recalled after 3 months for the second stage of surgery. IOPA radiographs in

the region revealed optimum osseointegration of the implants with the surrounding bone. Gingival formers were placed on the implant sites and patient was recalled after 15 days. Straight, prefabricated abutments were placed on the implants (UniTi) [Figure 5].<sup>[1]</sup>

44 and 33 were selected as additional natural teeth abutments for FP-3 type of prosthesis [Figure 6].



Figure 7: Placement of FP-3 prosthesis (with gingival porcelain)

The prosthesis was fabricated along with gingival (pink) porcelain to simulate the gingiva. Postinsertion visit by the patient showed good soft tissue response and optimum esthetics and functional rehabilitation [Figures 7 and 8].

## DISCUSSION

Two titanium plates on the right side of the body of mandible restored the occlusion to a normal group function with favorable opposing occlusion apart from reducing the fracture. Three titanium implants were placed in the lower anterior region 31, 41, 42 as opposed to the preferred five implants, for each tooth, due to inadequacies in the surgical site. To replace the five missing teeth, two natural teeth, each on distal side of edentulous region, were prepared (44 and 33). Implant to tooth-supported bridge in relation to 31, 32, 33 and 41, 42, 43, 44 was fabricated keeping in mind that the use of natural teeth as abutment in combination with dental implant for support of fixed dental prosthesis can be endorsed in certain situations and used as a reliable therapy.<sup>[2,3]</sup> The tooth implant-supported prosthesis has been reported to be an equally predictable treatment as the completely implant-supported prosthesis, concerning implant survival and loss of marginal bone.<sup>[4,5]</sup> Splinting teeth with implants for implant-supported fixed prosthesis have not been shown to affect the long-term outcome in comparison to free standing implants.<sup>[6]</sup> Treatments with periodontally healthy teeth and implants splinted together in rigid one piece superstructure, with short edentulous span, have been reported to show excellent long-term follow-up results.<sup>[7]</sup>

Hence, a prosthesis with a short span in relation to 41, 42, 43, 44 and 31, 32, 33 with 33, 43 as natural abutment and 32, 43 as pontic was splinted to the implants with rigid connectors which prevented failure due to intrusion of natural teeth.<sup>[8]</sup>

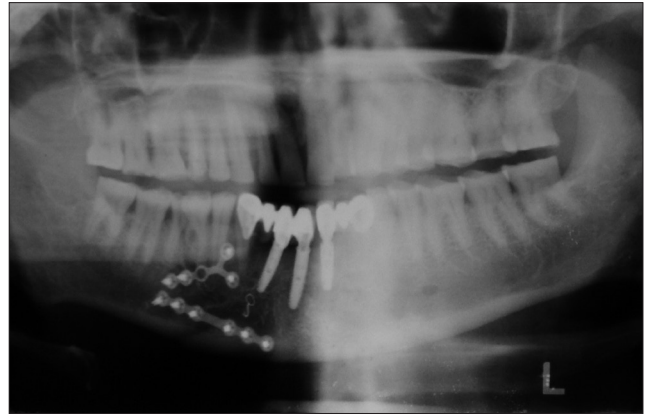


Figure 8: Postoperative OPG showing titanium plates and implant tooth-supported prosthesis

## CONCLUSION

Rehabilitation of fractured mandible coupled with loss of mandibular anterior teeth requires a multidisciplinary approach. The present report depicts such an approach with natural teeth and implant in relation to 31, 32, 33, 41, 42, 43, 44. High satisfaction was registered by the patient for oral function, esthetics, speech and prosthesis adaptation.

## REFERENCES

1. Carl EM. Contemporary Implant Dentistry. 3<sup>rd</sup> ed. Elsevier Publication Saint Louis Missouri, Mosby 2008 261-265.
2. Kronström M, Trulsson M, Söderfeldt B. Patient evaluation of treatment with fixed prosthesis supported by implants or a combination of teeth and implants. *J Prosthodontics* 2004;13:160-5.
3. Lindh T. Should we extract teeth to avoid tooth-implant combinations. *J Oral Rehabilitation* 2008;35:44-54.
4. Nickenig HJ, Spiekermann H, Wichmann M, Andreas SK, Eitner S. Survival and complication rates of combined tooth implant supported FPD. *Int J Prosthodont* 2008;21:131-7.
5. Lindh T, Dahlgren S, Kjell G. Tooth implant supported fixed prosthesis - Retrospective multicentre study. *Int J Prosthodont* 2001;4:321-8.
6. Hosny M, Duyck J, Steenberghe VD. Within subject comparison between connected and non connected tooth to implant fixed partial prosthesis upto 14 years follow up study. *Int J Prosthodont*; 2000; 13:340-6.
7. Kindberg H, Gunne J, Kronstrom. Tooth and implant supported prosthesis: Retrospective clinical follow upto 8 years. *Int J Prosthodontics* 2001;14:575-81.
8. Greenstein G, Cavallaro J, Smith R, Tarnow D. Connecting teeth to implants: A critical review of literatures and presentation of practical guidelines. *Compendium* 2009;30:7.

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