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### Abstract

The most challenging area in implantology is placement of implants in maxillary anterior region where missing teeth are to be replaced for esthetic demands. Loss of teeth in these areas causes bone resorption and collapse of gingival architecture, hence leading to aesthetic compromise and inadequate bone for implant placement. Paradigm shift in treatment protocol helps us to answer such aesthetic concerns. Placement of implants immediately into fresh extraction socket reduces the treatment time and cost, preserves the gingival architecture and increases the confidence of the patient. Here, a case report has been presented in which immediate extraction is done in maxillary anterior region followed by placement and early loading of an implant.

**Key Words** Atraumatic extraction, fresh extraction socket, immediate implant, early loading and gingival architecture

## INTRODUCTION

Loss of tooth in the anterior aesthetic zone is a traumatic experience with or without compromise in phonetics. Hence, in the aesthetic zone implant supported single tooth replacement is one of the most challenging situations confronting the clinician.<sup>1</sup>

Implant dentistry has come a long way from scepticism to being accepted as best modality to treat complete and partial edentulism. In the last two decades a great deal of activity in the field has occurred with the development of better material and newer techniques that have resulted in the clinical performance of implants. The advent of immediate implants and immediate loading protocol has, however, proved to be an interesting point in dentistry.<sup>2</sup>

Two to three months of healing period is required for the consolidation of extraction socket after which implant can be placed. Taking into account the prosthetic treatment, patients frequently are required to wait for six months to one year, for replacement of a lost tooth.<sup>3</sup>

Attempts to shorten the overall length of treatment period have focussed on approaches like immediate implant placement in fresh extraction site, and immediate implant placement with immediate or early loading.<sup>4,6</sup>

The concept of immediate loading has recently become popular due to less trauma, decrease in hard and soft tissue loss, restoring better function and esthetics, reduction in overall treatment time, increase in patients acceptance with an added psychological benefit.<sup>1</sup> In this case report, the harmony of soft and hard tissue was preserved by immediate implant placement and early temporization in anterior maxilla.

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## CASE REPORT

A 30 year old male patient reported to the Department of Prosthodontics, Haldia Institute of Dental Sciences and Research, Haldia, with the chief complaint of mobility of previously restored upper front tooth (Fig-1&2). On examination the maxillary right central incisor was found to be restored with post core and crown, which was failing and mobility of entire coronal portion was noticed.

Pre-treatment diagnostic casts were made and an intra-oral peri-apical radiograph was taken to aid in formulating a treatment plan.

Clinical examination show edanacrylicjacket crown on loosened metal custom post and core with

unfavourable prognosis of the said tooth. The patient was given a detailed explanation concerning the present state. The various treatment modalities including fixed partial denture as well as implant supported prosthesis were explained to him. The patient was very conscious about his aesthetics and was very keen for earliest possible restoration of his maxillary right central incisor. He opted for the implant supported prosthesis. Written consent was taken.

Treatment planning involved removal of mobile crown with post and core along with the retained root followed by immediate implant placement and immediate provisional restoration which was out of occlusion (both centric and eccentric).



Fig : 1



Fig : 2

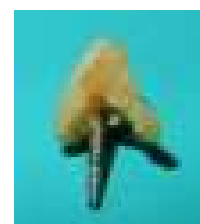


Fig : 3



Fig : 4



Fig : 5



Fig : 6



Fig : 7



Fig : 7



Fig : 8



Fig : 9



Fig : 10



Fig : 11

## PROCEDURE

The overlying failed prosthesis (fig- 3&4) was removed followed by atraumatic extraction of the mutilated tooth root (Fig-5 & 6). The tooth root guided us in selecting the dimensions of the implant to be placed into the extraction socket. The resulting extraction socket was evaluated for osseous defects and thoroughly debrided. All the four walls of the socket were found intact. After sequential drilling an implant (ADIN Touareg-S; 5mm diameter and 13mm length) was placed into the socket following the immediate placement protocol (Fig-7). Anchorage was primarily obtained from the palatal wall. Bone grafting was not done as the jumping distance was less than 2mm. To retain the desired gingival contour, composite build up was done on a prepared abutment with light cured composite resin. Thus a provisional composite restoration was fabricated, answering the patient's immediate esthetic demands (Fig-8). The provisional restoration was made free from occlusion in both centric and eccentric positions. Postoperative radiographs were taken (Fig-9).

After eight weeks when a proper gingival architecture was achieved, an impression was made (Fig-10 & 11). A definitive porcelain fused to metal crown was fabricated and cemented in place (Fig-12). Patient was highly satisfied with the treatment results.

## DISCUSSION

Immediate implants placed in fresh extraction sockets are a proven and predictable treatment modality which has helped solve issues with regard to bone quality, quantity and esthetics and also treatment time, as opposed to delayed implant placement. Immediate implant placement, however, requires careful case selection and extraction of the

tooth. Achieving good primary stability is the key factor in the success of immediate implants. Studies with patient satisfaction clearly indicate that a substantial number of patients were highly satisfied with immediate implant-supported prosthesis over fixed bridges and soft tissue supported prosthesis. As research avenues span newer surgical techniques and material, our constant endeavour as clinicians is to provide our patients with predictable, functional and aesthetically sound treatment.

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