

CASE REPORT

Immediate Implant in Management of Anterior Missing Tooth

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Abstract

Immediate implant placement after extraction has become a favored treatment protocol with many clinicians worldwide. There are many advantages to this protocol, amongst them; shortened treatment time, placement of the implant in sound bone that constitutes the socket wall, placement trajectory guidance by the socket and preservation of bone volume. This case report describes the management of an anterior missing tooth using immediate implant. The result was good, which further validate the use of this technique for suitable patient management.

Key words: *Implant, Anterior Missing Teeth, Oral Rehabilitation*

INTRODUCTION

The replacement of missing teeth with implant borne restorations has become a treatment modality accepted by the scientific community for fully and partially edentulous patients.¹ The breakthrough in oral rehabilitation was initiated by the discovery that dental implants, made of commercially pure titanium, can achieve anchorage in the jaw bone with direct bone-to-implant contact. This functional ankylosis is often referred to as osseointegration, and was first described by the two research groups of Branemark and Schroeder.² The mechanism of osseointegration was well described by Davies.³ The original Branemark protocol requires implant to be inserted 4-6 months prior to loading. This long treatment period that involves the wearing of a temporary prosthesis may be of great inconvenience, and is sometimes the reason for not choosing implant-supported restorations at all. During the course of the years, many developments have taken place that reduces the waiting period before loading any successfully integrated implants. One of the

developments was the introduction of immediate implant insertion following tooth extraction.⁴ This technique was made possible due to developments in implant surface. This case report highlighted the use of immediate implant in the management of an anterior missing tooth.

CASE REPORT

A 30 year old male patient presented at Kamineni Institute of Dental Sciences, Narketpally, Nalgonda, with a history of trauma to upper anterior teeth a day before. On clinical examination, tooth no: 11 showed mobility. There was no history of pain or discomfort around the affected tooth. The mobile tooth was splinted labially and was sent for radiograph. Clinical and radiographical image revealed a fracture of the crown few millimeters below cemento-enamel junction (CEJ) which was a complex crown – root fracture (Figure 1 & 2). His medical history was normal. General examination revealed that he was conscious and alert. Oral examination, showed no abnormalities. Intra oral examination showed that his oral cavity was

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in a good condition apart from the chief concern. Soft tissues were normal. Other hard tissues were sound. The diagnosis was complex crown root fracture.

There were several options discussed with the patient regarding the management of the tooth. As agreed by the patient, the treatment selected was immediate implant. An implant was inserted immediately after atraumatic extraction of the tooth using periostomes (Figure 3). A 5.3 diameter screwed Uniti® implant with 15 mm length was used in the procedure (Figure 4). After implant placement, an acrylic denture was constructed using patients crown as pontic for temporary prosthesis (Figure 5).

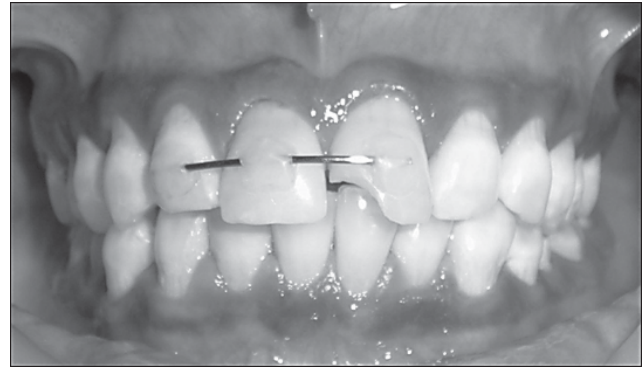
The healing period was twelve weeks. His partial upper denture was adjusted so that no undue load was placed on the implant during the healing period. Following the healing period, a porcelain-bonded to metal (PBM) crown

(Figure 6) was constructed and cemented with intermediate restorative material (Dentsply international). Follow up was done three monthly. At the one-year recall, the implant and the crown were in good condition. Success was determined by the criteria established in the literature.^{5,6} There was no problems reported and the patient was very pleased with the result.

DISCUSSION

Management of an anterior missing tooth can pose a challenge to practitioners. Several options are available with their own advantages and disadvantages.⁷ In this case report, post and core crown would require endodontic treatment followed by orthodontic root extrusion. This will incur expensive cost and longer treatment schedule. Crown lengthening was not indicated because it will lead to disharmony of the gingival contour in relation with adjacent teeth. The choice of immediate versus conventional implant was because of several advantages. An immediate implant reduces the number of surgery needed for the treatment and thus discomfort to patient. Its waiting time is also reduced. These are beneficial to patients and practitioners. In term of biological cost, inserting an

implant does not require preparation of adjacent teeth. In the long term this is good as it reduces the possibility of pulpal damage. Therefore, an immediate implant is a viable alternative in the management of missing anterior teeth.



Figures 1: Pre-op clinical presentation



Figure 2: Pre-op radiographical image

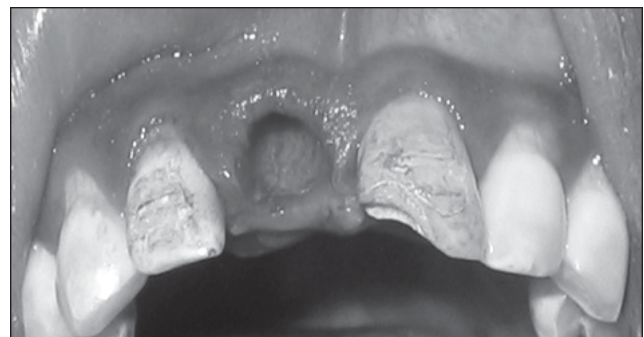


Figure 3: Atraumatic extraction using periostomes



Figure 4: Implant placement



Figure 5: Provisional prosthesis



Figure 6: Final Implant with ceramic crown

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