CASE REPORT

Immediate ITI Implant in Management of Anterior Missing Tooth: A Case Report
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ABSTRACT
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. Recent developments in oral implantology involve the use of immediate implant placement technique that significantly reduces waiting time. 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 (Creugers et al., 2000). This 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 (Buser et al., 1997). The mechanism of osseointegration was well described (Davies, 1998). 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 (Schwartz-Arad and Chaushu, 1997). 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 43-year old male patient presented at the Colgate Australian Clinical Dental Research Center (CACDRC), Adelaide Dental Hospital for management of a fractured upper front tooth. The tooth was fractured a day before. History of chief concern revealed that the tooth was previously restored with a porcelain-bonded to metal crown (PBM). There was no history of pain or discomfort around the affected tooth. His medical history was clear. His previous dental history showed that he had received a lot of treatment before. General examination revealed that he was conscious and alert. On extra oral examination, there were no abnormalities observed. Extra oral examination showed that his oral cavity was in a good condition apart from the chief concern. Soft tissues were normal. Other hard tissues were sound although were heavily restored. His upper left central incisor was decoronated at the gingival level (Figure 1). The abutment teeth on both sides were restored with PBM supporting bridges.
Intra oral periapical radiograph (IOPA) showed favourable root length with approximately two (2) millimeters of the root was above the alveolar bone crest (Figure 2). The diagnosis was complex crown root fracture. There were several options discussed with the patient pertaining the management of the tooth. As agreed by the patient, the treatment of choice was immediate implant. Prior to implant placement, an acrylic partial denture was constructed as a temporary prosthesis. At the completion of the construction of an acrylic denture, an implant was inserted by a group of periodontists immediately after the extraction of the tooth (Figures 3 and 4). A 4.8 diameter screwed ITI® (International Team for Oral Implantology) implant with 12 mm length was used in the procedure (Figure 5). The implant surface was sandblasted large grit acid-etched (SLA) coated. The healing period was eight weeks. His part 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 glass ionomer luting cement (Ketac™ Cem Easymix, 3M ESPE-AG, Germany). 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 (Albrektsson et al., 1986; Buser et al., 1990). There was no problems reported and the patient was very pleased with the result.
Figure 3 Intra oral picture showing the extraction of tooth prior to implant placement

Figure 4 Intra oral picture showing SLA coated ITI implant ready for insertion

Figure 5 Intra oral peri-apical radiograph showing SLA coated ITI implant immediately after insertion

Figure 6 Intra oral picture showing PBM crown of 21 with good aesthetic.

DISCUSSION

Management of an anterior missing tooth can pose a challenge to practitioners. Several options are available with their own advantages and disadvantages (Chan and Tseng, 1994). 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. Conventional bridge was not an option as it would require replacement of existing bridges and the prospect of having a long bridge would compromise its prognosis. 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.

REFERENCES