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Immediate placement of Implant in Fresh Extraction Socket: A Case Report

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Abstract : *Loss of tooth in the aesthetic zone is a traumatic experience with or without compromise in phonetics. Implant placement in anterior region has most aesthetic challenges in implant dentistry because tooth loss leads to bone resorption and collapse of gingival architecture, which leads to aesthetic compromise and inadequate bone for implant placement. Immediate implant placement is time saving, possibly with one surgical intervention required, although allowing maximal preservation of peri-implant tissues. Clinical and radiographic examination revealed width and extent of the tooth for selecting implant size and design. Due to less trauma, reduction in overall treatment time, decrease in hard and soft tissue resorption, increase in patients acceptance, along with better function, aesthetics and has psychological benefits. In this case report, harmony of hard and soft tissue was preserved by immediate placement of implant in fresh extraction socket.*

Keywords : *Esthetics, Extraction of teeth, Function, Healing of the extraction socket, Immediate Implant, phonetics.*

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I. Introduction

Immediately after implantation without waiting for the healing period has gained popularity due to less tissue trauma, reduced discomfort, high patient acceptance and better function and aesthetics (4,12,13). Shortening the overall treatment period and minimizing the number of surgical interventions. Most advanced way to replace missing teeth is dental implant which is designed to replicate the natural tooth root and crown of the natural tooth. The procedure preserves the gingival mucosa and bone with no damage to adjacent teeth. Conventional procedure for implant placement involves extraction of offending tooth, waiting 2-4 months for extraction socket to heal, insertion of implant and again waiting for 3-6 months for integration of implant with surrounding bone; after this procedure, another surgery is necessary to expose the implant and to place a prosthetic abutment. Taking into consideration the prosthetic treatment, the patient had to wait upto 8-12 months for a lost tooth to be replaced (5). Because of these shortcomings related to conventional technique, strategies were developed to substantially shorten the entire treatment by placement of implant immediately after extraction of tooth and maintain the hard and soft tissue harmony(6). The purpose of implant dentistry is to provide a realistic treatment alternative for patients with tooth loss and reducing the number of surgical procedures (1-7). Advantages provided by implant supported by prosthesis as compared to the other conventional treatment options are improved esthetics , improved hygiene accessibility, osseous preservations and reduced future maintenance (8). "Gold standard" aimed at shortening the treatment period and by reducing the surgical procedure (9 & 10). New protocol have been developed which implants are placed at time of extraction of tooth, known as immediate implants. Timing of implant placement following tooth removal may be important and this concept has challenged original treatment protocol.

II. Contra Indication

In the case of socket-implant diameter discrepancies in excess of 5-mm, which would leave most of the implant without bone contact, prior bone regeneration and delayed implantation may be considered (6). Avoid teeth with labial bony dehiscence or fenestration defects; insufficient bone apically to ensure primary stability of the implant; systemic factors that may impair healing (e.g., smoking); large bulbous root morphology, interproximal bone loss (esthetic zone), active periodontitis The existence of an acute periapical inflammatory process constitutes an absolute contraindication to immediate implantation (7,8).

III. Case Report

A 21 years old male came to the department of bvp dental college,Pune with an allied history of road traffic accident 5 years ago with a history of fractured upper right anterior teeth. Following which there was no history of convulsions , loss of consciousness, event amnesia , vomiting. He had a positive history of oral bleed for which primary treatment was given at the time of incident. Patient had come with a chief complain of unaesthetic appearance. Intra oral and extra oral examination was performed. Radiograph investigation i.e. CBCT was done.Patients pre op photographs were taken for record purpose. He was made to sit down on the dental chair painting and draping was done for the patient and the region of tooth no 11 12 was locally anesthetized by lignocaine and adrenaline.Both the teeth were extracted atraumatically with the help of luxators After which the teeth sizes were measured with scale and devider for

11: mesio-distal width- 7 mm
Length- 12mm
12:mesio-distal width- 5mm
Length- 12mm
Then the implant size for both the teeth were decided as:
11: 5.8 X 10.5 mm
12: 4.6 X 10.5 mm

Drilling was initiated with pilot drill and final drill used for 11 was 5.4 drill and 12 was 4.1 drill. After the completion of the drilling the implants were placed with the help of torque wrench and hex screw and a torque of 30 ° was achieved and the cover screws were placed. A tight suture was placed and post op radiograph was taken and post op instructions and medications were given to the patient.

IV. Figures

FIG 1: Pre operative OPG.

FIG 2: Extraction of 11 and 12

FIG 3: Extraction socket with 11 and 12.

FIG 4: Immediate implant placement done with 11 5.8 x 10.5 size used

FIG 5: Immediate implant placement done with 12 4.6 x 10.5 size used.

FIG 6: Post operative Intra Oral Radiograph taken immediately after the placement of implants.

V. Discussion

The loss of a tooth can be emotionally difficult, especially when it is in the esthetic zone. The opportunity to achieve better and faster functional results and a predictable treatment strategy with a very high rate of success has popularized the concept of "Immediate implants". The concept of immediate dental implants, although is more predictable than before,(6, 10) but it is associated with the risk of greater crestal bone loss around the healing implants. The immediate implant was speculated to interfere with the ability of necrotic bone (created by the surgical trauma) to be replaced by newly formed bone(15). Hence successful implants with greater than 5-mm soft tissue pockets may be more often a result of immediate implant. The non-functional immediate transitional restoration provided in the above case reduces the biomechanical risk of overload. The threaded fixture was chosen as it is reported to have an increased functional area at bone-to- implant interface. Ideally, the bone density should be D1, D2, or D3 so the strength, bone contact, and modulus of elasticity are great enough to accept the initial load(16). The use of computerized tomography for bone assessments, modifications in implant design and progressive loading time span are crucial for long term function(6,14, 17). The majority of clinical reports, nonetheless reveal similar survival rates between immediately loaded and two-stage unloaded healing approaches(18).

VI. Conclusion

Immediate implant placement requires very careful selection and high surgical skill levels if esthetic outcomes are to be achieved.

References

[1]. Schwartz-Arad D, Chaushu G (1997) The ways and wherefores of immediate placement of implants into fresh extraction sites: A literature review. J Periodontol 68: 915-923.

[2]. Den Hartog L, Slater JJ, Vissink A, Meijer HJ, Raghoebar GM (2008) Treatment outcome of immediate, early and conventional single tooth implants in the aesthetic zone: a systemic review to survival, bone level, soft tissue, aesthetics and patient satisfaction. J Clin Periodontol 35: 1073-1086.

[3]. Schwartz-Arad D, Chaushu G (1997) Placement of implants into fresh extraction sites: 4 to 7 years retrospective evaluation of 95 implants. J Periodontol 68: 1110-1116.

[4]. Lops D, Mosca D, Müller A, Rossi A, Rozza R, et al. (2011) Management of peri-implant soft tissues between tooth and adjacent immediate implant placed into fresh extraction single socket: a one-year prospective study on two different types of implant-abutment connection design. Minerva Stomatol 60: 403-415.

[5]. Guida L, Iezzi G, Annunziata M, Salierno A, Iuorio G, et al. (2008) Immediate placement and loading of dental implants: A human histological case report. J Periodontol 79: 575-581.

[6]. Buser D, Chen ST, Weber HP, Belser UC (2008) Early implant placement following single tooth extraction in the esthetic zone: biological rationale and surgical procedures. Int J Periodontics Restorative Dent 28: 441-451.

[7]. William Becker (2006) Immediate implant placement; Treatment planning and surgical steps for successful outcome. Br Dent J 201: 199-205.

[8]. Kahnberg KE (2009) Immediate implant placement in fresh extraction sockets. A Clinical report. Int J Oral Maxillofac Implants 24: 282-288.

[9]. Tortamano P, Camargo LO, Bello-Silva MS, Kanashiro LH (2010) Immediate placement and restoration in the esthetic zone: A prospective study of 18 months follow-up. Int J Oral Maxillofac Implants 25: 345-350.

[10]. Schwartz-Arad D, Laviv A, Levin L (2007) Survival of immediately provisionalised dental implants placed immediately into fresh extraction sockets. J Periodontal 78: 219-223.

[11]. Paolantonio M, Dolci M, Scarano A, d'Archivio D, di Placido G (2001) Immediate implantation into fresh extraction sockets: A controlled clinical and histological study in man. J Periodontal 72: 1560-1571.

[12]. Hämmerle CH, Chen ST, Wilson TG Jr (2004) Consensus statement regarding placement of implants in extraction sockets. Int J Oral Maxillofac Implants 19: 26-29.

[13]. Grunder U, Polizzi G, Goené R, Hatano N, Henry P (1999) A 3 year prospective multicentre study follow-up report on the immediate and delayed placements of implants. Int J Oral Maxillofac Implant 14: 210-216.

[14]. Schropp L, Kostopoulos L, Wenzel A (2003) Bone healing following immediate and delayed implant placement of titanium implants into extraction sockets: Prospective clinical study. Int J Oral Maxillofac Implants 18: 189-199.

[15]. Barzilay I, Graser GN, Iranpour B, Proskin HM (1996) Immediate implantation of pure titanium into an extraction socket of Macaca fascicularis. Part I: Clinical and radiographic assessment. Int J Oral Maxillofac Implants 11: 299-310.

[16]. Barzilay I, Graser GN, Iranpour B, Natiella JR (1991) Immediate implantation of pure titanium into an extraction socket: Re-port of a pilot procedure. Int J Oral Maxillofac Implants 6: 277-284.

[17]. Barzilay I, Graser GN, Iranpour B, Natiella JR, Proskin HM (1996) Immediate implantation of pure titanium implants into extraction sockets of Macaca fascicularis. Part II: Histologic observations. Int J Oral Maxillofac Implants 11: 489-497.

[18]. Schropp L, Isidor F (2008) Timing of implant placement relative to tooth extraction. J Oral Rehabil 35: 33-43.

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