PriMera Scientific Surgical
Research and Practice
Volume 4 Issue 2 August 2024
DOI: 10.56831/PSSRP-04-121
ISSN: 2836-0028

PriMera Scientific Publications

A Case of Immediate Implant loading using Natural Teeth as Provisional Restoration - A Case Report

Type: Case Presentation
Received: June 08, 2024
Published: July 25, 2024

Citation:
Kamal Ramjee Vaska., et al. "A Case of Immediate Implant loading using Natural Teeth as Provisional Restoration - A Case Report". PriMera Scientific Surgical Research and Practice 4.2 (2024): 18-23.

Kamal Ramjee Vaska[1]*, B Jhansi Reddy[2] and N Sri Gowri[3]

[1]*Ph.D scholar*

[2]*Undergraduate student*

[3]*Clinician*

***Corresponding Author:** Kamal Ramjee Vaska, Ph.D scholar.

Abstract

Modern techniques demonstrate positive esthetic outcomes for replacing a tooth in the esthetic zone by an immediate implant placement and provisionalization (IIPP). This case report presents a clinical case who underwent orthodontic treatment with retained deciduous canine and missing permanent canine. It was planned for extraction of retained deciduous tooth with an immediate implant placement and provosionalization using the extracted tooth.

Keywords: Implant; Provisionalisation; Natural Teeth; Pontic

Introduction

Dental implants are choice of permanent tooth replacement, and they have the highest success rate than other available permanent options. In current situation, the use of implant supported crowns and bridges has become a better technique and most followed method of restoring missing teeth [1, 2]. Traditional implant treatment advocates a three month waiting period following tooth extraction, and an additional three to six month load-free period to achieve Osseointegration and prosthesis delivery [3, 4].

Implant placement in fresh extraction sockets along with with appropriate guided bone regeneration is well documented [15, 16]. Animal and human studies have demonstrated attainment of osseointegration of implants following such therapy at a light microscopic level [17-20]. Immediate implant placement techniques report survival rates of 94 to 100% over a varying healing period of 3 months to 7 years [14].

The purpose of this case report is to present a clinical case of an immediate implant placement post-extraction with provosionalization where, in order to maintain the esthetics and preserve the soft tissue profile as close to natural as possible and to avoid 2nd stage surgery, the same extracted teeth was used for temporization along with abutment.

Case Presentation

A 25 year old male patient who was undergoing orthodontic treatment was advised to undergo extraction of deciduous retained canine. Clinical examination was done followed by a radiographic interpretation which revealed the presence of retained deciduous canine in the 4th quardrant and missing permanent canine beneath it (fig.1). The patient desired for a fixed and permanent replacement for extracted tooth which would be esthetically pleasing and long-lasting. On that account, immediate implant placement with immediate loading was planned. In order to maintain the esthetics and preserve the soft tissue profile as close to natural as possible temporization was done using extracted canine.

Figure 1: Pre Operative Showing Retained Deciduous Tooth.

Before the treatment, patient consent and a thorough history of all the medical conditions was taken systematically, and various medical tests were advised. The patient showed no medical history relevant to his chief complaint.

The cervical line was marked on the tooth using a carbon marker both on buccal and lingual sides prior to extraction. Extraction of the deciduous tooth was done in the manner so as to not to disfigure the tooth which was intended for provosionalization. Immediate implant was placed in the extraction socket achieving primary stability (fig.2). Abutment was placed over the fixture with sufficient collar height and trimmed for occlusal clearance extraorally using a lab micromotor. Once the abutment was trimmed, it was reseated. The abutment screw was hand tightened and the screw access channel was closed using teflon tape. In the present case, a part of the tooth was removed to create a space (fig.3, 4) in order to fit over the abutment, resin cement was flowed and placed on the abutment in the same angulation of teeth to match the cervical line with the gingival margin and cured to keep the tooth segment in place. Subsequently, the resin cement was gently flowed into the space surrounding the abutment both labially and lingually, until the soft tissue profile was filled and the cement cured. The screw access was opened removing the teflon, the abutment was unscrewed and the abutment along with teeth was retrieved. Following this, the excess cement was removed below the finish line, labially and lingually and highly polished to ensure minimal plaque accumulation. The abutment with natural teeth was reseated over the fixture with a torque of 20Ncm (fig.5). The soft tissue profile or *emergence* of natural tooth contour was well preserved and restored using the same natural teeth for better esthetics and time saving(fig.6).

Figure 2: Extraction Followed by Immediate Implant Placemnet.

Figure 3: Extracted Tooth with Abutment and Tooth.

Figure 4: Space Created in The Extracted Tooth.

Figure 5: Implant with Natural Tooth Provisionalisation irt 43.

Figure 6: Post Operative with Natural Tooth Provisionalisation irt 43.

Discussion

Many factors influence the decision to extract teeth and replace them with immediate implants. Treatment plan for above conditions doesn't end with extracting the required teeth but subsequently replacing the extracted teeth.

Implants have become a preferred approach in replacing missing teeth especially in cases where patients desire for a fixed and a permanent replacement [1]. Immediate implant placement postextraction has resulted in the initiation of prosthetic treatment in as little as 3 to 6 months, with the additional benefit of reducing alveolar bone resorption.

Considering these parameters, the present case was planned where an immediate implant was placed following the extraction of deciduous tooth. Additionally, the soft tissue profile or *emergence* is preserved and restored by using the same deciduous natural tooth as provisional. The primary purpose of provisionalization was to avoid social embarrassment and to create an emergence profile as replacement was to be done in the esthetic zone.

The patient was followed up for 3 years at regular intervals before permanent crown was delivered. By employing immediate implant treatment protocol along with using the same extracted tooth for preparing provisional , advantages such as emergence profile, shorter operating period, improved aesthetics, immediate loading and faster healing were achieved which resulted in complete patient satisfaction.

Conclusions

The greatest advantage of employing immediate implant protocol is that it offers an enormous psychological benefit to the patients as tooth loss can be emotionally challenging to many. The related social embarrassment makes them more conscious to approach the dentist for a replacement. In such cases, immediate implant treatment is advisable as the patient's loss is simultaneously replaced with little or no need for additional surgery and a long-term functional and esthetic restoration can be completed in just a few months. Using the same extracted tooth for preparing an abutment acts by withdrawing the thought of normal functioning in society with a missing tooth or poor replacement as the extracted tooth takes its usual place post operatively.

References

1. Nakka C, Kollipara S and Ravalika KN. "Graftless solution for multiple unfavorably placed implants using dynamic abutment® solutions: A case report with a 3-year follow-up". J Indian Prosthodont Soc 20.3 (2020): 331-334.
2. Pjetursson BE., et al. "Comparison of survival and complication rates of tooth-supported fixed dental prostheses (FDPs) and implant-supported FDPs and single crowns (SCs)". Clin Oral Implants Res 18.Suppl 3 (2007): 97-113.
3. Albrektsson T., et al. "Osseointegrated titanium implants. Requirements for ensuring a long-lasting, direct bone-to-implant anchorage in man". Acta Orthop Scand 52 (1981): 155-170.
4. Branemark PI., et al. "Osseointegrated titanium fixtures in the treatment of edentulousness". Biomaterials 4 (1983): 25-28.
5. De Rouck T., et al. "Instant provisionalization of immediate single-tooth implants is essential to optimize esthetic treatment outcome". Clin Oral Implants Res 20 (2009): 566-570.
6. Kan JY., et al. "Facial gingival tissue stability following immediate placement and provisionalization of maxillary anterior single implants: A 2- to 8-year follow-up". Int J Oral Maxillofac Implants 26 (2011): 179-187.
7. Roe P., et al. "Horizontal and vertical dimensional changes of peri-implant facial bone following immediate placement and provisionalization of maxillary anterior single implants: A 1-year cone beam computed tomography study". Int J Oral Maxillofac Implants 27 (2012): 393-400.
8. Chen ST, Wilson TG Jr and Ha¨mmerle CH. "Immediate or early placement of implants following tooth extraction: Review of biologic basis, clinical procedures, and outcomes". Int J Oral Maxillofac Implants 19 (2004): 12-25.
9. Gelb DA. "Immediate implant surgery: Three-year retrospective evaluation of 50 consecutive cases". Int J Oral Maxillofac Implants 8 (1993): 388-399.
10. Grunder U. "Stability of the mucosal topography around single-tooth implants and adjacent teeth: 1-year results". Int J Periodontics Restorative Dent 20 (2000): 11-17.
11. Priest G. "Predictability of soft tissue form around single-tooth implant restorations". Int J Periodontics Restorative Dent 23 (2003): 19-27.
12. Kan JY, Rungcharassaeng K and Lozada J. "Immediate placement and provisionalization of maxillary anterior single implants: 1-year prospective study". Int J Oral Maxillofac Implants 18 (2003): 31-39.
13. Lindeboom JA, Tjiook Y and Kroon FH. "Immediate placement of implants in periapical infected sites: A prospective randomized study in 50 patients". Oral Surg Oral Med Oral Pathol Oral Radiol Endod 101 (2006): 705-710.
14. Fugazzotto PA. "Implant placement in maxillary first premolar fresh extraction sockets: description of technique and report of preliminary results". J Periodontol 73 (2002): 669-674.
15. Lazzara RJ. "Immediate implant placement into extraction sites: surgical and restorative advantages". Int J Periodontics Restorative Dent 9 (1989): 332-343.

16. Fugazzotto PA. "Immediate implant placement and GBR in humans: a case report and histologic evaluation". Int J Periodontics Restorative Dent 19 (1999): 457-463.
17. Bhola M, Neely AL and Kolhatkar S. "Immediate implant placement: clinical decisions, advantages, and disadvantages". Journal of Prosthodontics: Implant, Esthetic and Reconstructive Dentistry 17.7 (2008): 576-81.
18. Becker W., et al. "Bone formation at dehisced dental implant sites treated with implant augmentation material: a pilot study in dogs". Int J Periodontics Restorative Dent 10 (1990): 92-101.
19. Becker W., et al. "Guided tissue regeneration for implants placed into extraction sockets: a study in dogs". J Periodontol 62 (1991): 703-709.
20. Dahlin C., et al. "Generation of new bone around titanium implants using a membrane technique: an experimental study in rabbits". Int J Oral Maxillofac Implants 4 (1989): 19-25.
21. Kunal ravjee and Ravalika. "A case of immediate implant placement and provisionalization with natural teeth. A 3 year follow up". WSPR 11 (2022).