Outcomes of Flapless Technique in Success of Dental Implants

ABSTRACT

Nowadays, the clinicians basically focused on patient-centered therapy either they prefer surgical or non-surgical methods of treatment. In implant dentistry, different type of surgical techniques and various biomaterials were introduced since 1970s. The well-documented correlation between flap elevation and bone loss resulted in the introduction of minimally invasive or flapless techniques, an approach that is gaining popularity in Implantology. The present case series of two cases using MIS implant highlighted the outcomes of flapless technique in oral rehabilitation.

KEYWORDS flapless technique, oral rehabilitation, MIS implant

INTRODUCTION

When dental implants are placed by raising a mucoperiosteal flap, there is an associated slight bone loss at the site. Scarring and other complications are of concern. In the esthetic zone these may lead to an unsatisfactory outcome. Placing implants by using a flapless or envelope incision may eliminate some of these concerns. Flapless implant placement can be performed by minimum incision\(^1,2\) perforation with the drill through the soft tissue\(^3\), computer guidance\(^4,5\) or soft tissue removal using a tissue punch\(^6,7\). The present case series highlighted the impact of flapless procedure in the success of dental implants.

CASE REPORTS

Case 1

A 65-year-old retired school teacher reported to the Department of Periodontology with chief complains of various missing teeth. He was very uncomfortable with artificial removable partial denture since 6 months. He was nonsmoker, systemically healthy and willing for dental implants. On examination, the missing teeth 44, 46 & 47, 36 & 37 was present with cervical abrasion in 44. Periodontal status of remaining teeth was good. Stone modal, radiographs like IOPA, OPG were carried out initially to screen the status of alveolar bone for placement of dental implants (Fig. 1). The other clinical parameters like width of attached gingiva and keratinised tissue were measured. After meticulous scaling and root planning the dentascan was done to evaluate the width and height of alveolar bone. Dentascan revealed the buccolingual, mesiodistal and coronoapical length of missing tooth. Finally, the five self-threaded MIS implant with diameter 3.2 × 13 mm, and 3.2 × 11.5 mm were planned for placement. Surgical guide and hematological analysis was done prior to implant surgery. On lower right side the flapless and the left side micro incision flap approached was used for placing the implants. Flapless implants were immediately attached with healing cap whereas the flapped implant was submersed (Fig. 2). Six months later the prosthetic abutment were placed (Fig. 3). After 2 weeks of stage II surgery in flapped implants the stone modal was prepared for the fabrication of prosthesis. Final porcelain fused metal crown were delivered. He is regularly coming for follow-up and satisfied with his treatment even after 18 months (Fig. 4).
Case 2

A 40-year-old male patient reported to the Department of Periodontology with chief complaints of replacing his missing tooth with best alternatives. On examination tooth 24 was missing, the periodontal condition of adjacent teeth was good. Radiological (Dentascan, OPG & IOP) analysis of missing tooth showed excellent bone for housing the implant (Fig. 5). After phase I therapy, stone model was prepared for surgical guide. MIS dental implant (4.2 × 13 mm self-threaded) was placed through flapless procedure with the help of surgical guide (Fig. 6).

Immediately, the healing cap was attached with dental implant. After 6 months, patient was recalled for next procedure. Healing cap was unscrewed from the implant and abutment was placed. Finally, the porcelain fused metal crown was fabricated. The patient is coming regularly at 3 months interval for maintenance (Fig. 7). After more than 18 months he is satisfied with the treatment.

**Fig. 1** Pre-operative view.

**Fig. 2** Three flapless implant at 44, 46 & 47 with healing cap.

**Fig. 3** Five prosthetic abutment at 44, 46, 47 & 36, 37.

**Fig. 4** Outcomes post 12 months.

**Fig. 5** Initial photograph showed optimal width and height of alveolar bone at 24 for placement of dental implant.

**Fig. 6** Flapless implant at 24 with healing cap.
Minimal invasive technique for dental implants

DISCUSSION

Flapless implant has several advantages like minimal trauma, little time for operative procedure, very less post-operative bleeding, uneventful post-operative healing and most importantly patient satisfaction with the treatment. In case 1, the patient was bearing removal partial denture since 6 months. He was not satisfied with that treatment and always complained in eating, chewing as well as speaking. On the basis of clinical and radiological evaluation of partially edentulous spaces, it was decided to place five MIS dental implants in their respective sites. In the site 44, 46 and 47 three 3.2 × 13 mm, 3.2 × 11.5 and 3.2 × 11.5 mm implants were placed by immediate perforation with the drill through the soft tissue as Backer et al. 2005 and Rao and Benzi 2007 whereas on the site 46 & 47 two implants with dimension 3.2 × 11.5 mm and 3.2 × 11.5 mm were introduced by minimal incision like Leong et al. 2007 and Sunitha et al. 2008. Both the techniques of minimal invasive approach (flapless) nowadays is gaining popularity in implant dentistry. Although the patient was very much pleased with both approaches but feels little discomfort in chewing with minimal incision technique especially in the first two weeks of post-operative healing.

In case 2 only one implant was used through immediate perforation with the drill. Post 18 months follow-up showed excellent healing with zero complain of any difficulty in eating, speaking and chewing (Fig. 8). Although flapless implant (through immediate perforation with the drill) procedure is very good treatment modality showed significant advantages over minimal incision approach for placement of dental implant, but it is blind procedure. So clinical case selection, clinical experience with large number of cases is required for final conclusion.

CONCLUSION

Minimally invasive surgical techniques have become an essential part of the dental armamentarium. The benefits of this approach are largely due to the reduced amount of tissue trauma necessary to place the dental implant.

REFERENCES