CASE REPORT

Rehabilitation of Anterior and Posterior edentulous area with minimally invasive flapless implant surgery: A clinical report

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Abstract

Dental implant placement without raising a flap offers many advantages over conventional implant placements. Minimally invasive procedures could reduce anxiety and pain associated with implant surgery. This in turn can have a beneficial effect on the treatment acceptance rate. Two cases of flapless implant placement have been reported in this article.
Two patients were selected for minimally invasive flapless procedure. The first patient was rehabilitated in the Posterior edentulous area and the second patient was rehabilitated in the anterior edentulous area.
Minimally invasive flapless procedures caused the patients to experience a decrease in both the pain intensity and time period over which the pain was experienced.
Minimally invasive flapless technique can cause minimum postoperative discomfort to the patient. Minimal bleeding, zero sutures, reduced anxiety and as well as pain during the procedures make the patient acceptable and lead to comfortable postoperative phase.

Key words: Implants, Minimally invasive, Flapless surgery, implants

Introduction

Placement of implants with a minimally invasive flapless approach has the potential to minimize crestal bone loss, soft tissue inflammation, and probing depth adjacent to implants and to minimize surgical time (1). The phenomenon of Osseo integration has been established as a predictable means to replace missing teeth. Nowadays, clinicians are looking beyond successful Osseo integration of dental implants to achieve proper esthetics and function that mimic natural dentition, with implants becoming integral part of dental practice, there is need for rapid but minimal invasive and conservative techniques to insert and resort implants.
With many dental practitioners reluctant to raise and suture flaps, a flapless technique can cause minimum postoperative discomfort to the patient. The flapless technique for inserting root form implants is effective in achieving these goals (2). A square thread design in implants has been shown to have a substantially greater functional surface area with significantly more bone to implant contact and great reverse torque measurements when compared to V- shaped and reverse buttress thread designs (3). It has also been shown that a square thread is designed for load transmission whereas V-thread forms are intended for connecting two components (4)

Clinical Report
Case 1
A 28-year-old man came for replacement of missing lower left first molar with a history of one year of extraction. Treatment options were discussed and he was not keen on not involving his adjacent teeth as in a bridge-prosthesis and agreed for placement of an implant-supported crown. A flapless approach for implant insertion was decided. Intra oral examinations revealed adequate alveolar bone and radiographs

were taken to gauge the height of bone for implant placement, it was decided to insert a root form implant [5mm/12mm]. Infiltration anaesthesia was administered and the exact location for insertion of implant was predetermined with the help of radiographs, study models and marked on the implant site. A 5mm tissue punch was used to excise a circular piece of soft tissue in the first molar over the ridge. (Figure. 1)

Fig. 1: Tissue punch on first molar

Implant site was prepared using conventional drilling sequences and care was taken to ensure insertion of the implant (Figure.2).

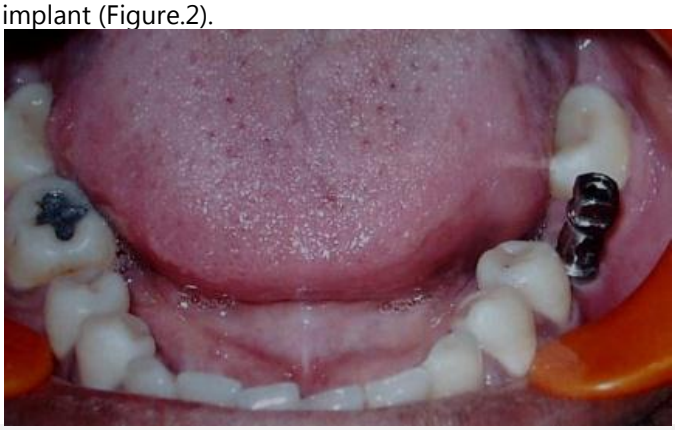

Fig. 2: Insertion of the Implant

Radiographs were taken to analyze the angulation and length (Figure.3). The patient was instructed to exercise caution on the implant site for three months to allow successful Osseo-integration.

Fig. 3: Orthopantomograph showing the placement of the Implant

Case 2

A 25-year-old man came for replacement of missing maxillary right central incisor with a history of two years of extraction. He was wearing transitional partial denture and was embarrassed with it. A definitive implant treatment was suggested due to large edentulous space in the missing incisor region and a flapless implant loading was planned with a focus on esthetics. Intra oral examinations revealed adequate alveolar bone and radiographs were taken to gauge the height of bone for implant placement; it was decided to insert a root form implant [4mm/15mm]. Infiltration anesthesia was administered and 4mm tissue punch was used to excise a circular piece of soft tissue over the edentulous ridge (Figure. 4).

Fig. 4: Tissue punch on the incisor

Implant site was prepared using conventional drilling sequences and care was taken to ensure parallel insertion of the implant (Figure. 5)

Fig. 5: Insertion of the Implant

Radiographs were taken to analyze the angulations and length (Figure. 6)

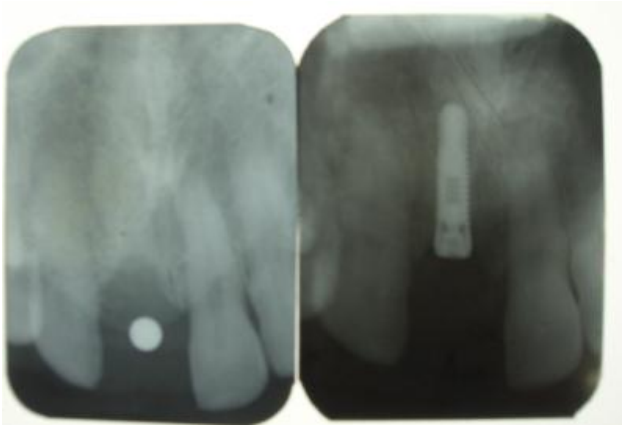

Fig. 6: Periapical radiograph showing the placement of the Implant

Summary and conclusion

The implants inserted through flapless technique helps maintain continuous and healthy blood supply to bone. Minimal bleeding, zero sutures, reduced anxiety and pain during the procedures make the patient acceptable and lead to comfortable postoperative phase. A study for implant placement compared between flapless surgical procedures versus an open flap procedures was done. Results showed 20% patients with flapless procedure experienced no pain compared with 43% patient feeling pain in conventional method. Also patients who underwent flapless surgery took fewer pain tablets (5). A flapless procedure caused patients to experience a decrease in both the pain intensity and time period over which the pain was experienced. However the flapless technique needs good clinical knowledge, skills and experience of anatomy, physiology and healing patterns of alveolar bone.

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