

Severely angled implant with custom abutment and a screw retained prosthesis: A case report

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Abstract

Edentulousness is one of the human disabilities. Dental implants have increased the quality of life as it restores both function and aesthetics. Due to anatomic challenges, implants can be placed with inclinations and angled abutments can be used. This article presents a case report of management of mandibular anterior missing tooth with the placement of angled implant using custom abutment along with screw retained prosthesis.

Keywords: Dental implant, Surgery, Custom abutment, Fixed prosthesis.

Introduction

With the introduction of dental implant in dentistry, it has become the choice of treatment in both completely and partially edentulous patients. Implant is considered as best option for missing teeth replacement as it fulfills function and restoration both. Although various studies have indicated promising results due to both operator and patient related factors.¹ There are lots of anatomical factors which can lead to obstruction in ideal implant placement.² To overcome this problem, implants can be placed at different angles and custom abutments may be used.³

Case Report

A 44 year old male patient was reported to the Department of Prosthodontics with a chief complaint of loss of lower front tooth (Fig. 1). Medical history was taken but nothing was abnormally detected. On intraoral examination patient had missing right mandibular central incisor. The reason for tooth loss is localized periodontitis.

Patient has no history of wearing any prosthesis in the missing teeth area. Patient was willing for fixed prosthesis to replace missing lower tooth to fulfil both masticatory function and aesthetics.

Clinical and Radiographic evaluation showed inadequate labial bone (Fig. 2). Routine blood investigations were done. Implant 3.3 X 10 mm (Biotech implant) was selected. Mental nerve block was given on the right side. Mid crestal incision was given with releasing incision and full thickness flap was raised and underlying bone was inspected. An osteotomy was performed using lance drill in the edentulous span. A 2.0mm diameter drill was used to make the initial osteotomy till a depth of 10 mm. Subsequent drilling was done till diameter of 3.2 mm and implant insertion done in the osteotomy site with torque ratchet till the insertion torque of 40Ncm was achieved. Suturing was done using 3-0 silk suture.

Antibiotic and anti-inflammatory drugs were prescribed and post operative instructions were given. Patient was recalled after one week for suture removal. He was recalled after 3 months. An IOPA x-ray was taken to evaluate osseointegration (Fig. 3). Second stage surgery was performed, cover screw was removed and healing screw placed (Fig. 4). After two weeks, healing screw was removed and close tray impression transfer coping was screwed into the implant. Impression was made using single stage putty wash technique. Custom angulated abutment was fabricated on the cast. Metal ceramic prosthesis was fabricated on abutment (Fig. 5). Patient was recalled after three days. Healing screw was removed and prosthesis was screwed using ratchet till the torque of 35Ncm. Hole is closed with composite resin. Patient was satisfied and happy with this prosthesis (Fig. 6).



Fig. 1: Preoperative view



Fig. 2: Preoperative orthopantograph



Fig. 3: Postoperative IOPA X-ray



Fig. 4: Second stage surgery



Fig. 5: Final prosthesis



Fig. 6: Post-operative view

Discussion

In this case report, tilted implant with custom angulated abutment was used to overcome the problem of deficient bone at implant site. Prefabricated angled implant was not suitable to correct the angulation of implant. Therefore custom made angled implant was planned.⁴ Interdental space was more; hence prosthesis with two teeth was planned. Many finite elements and clinical studies have resulted that there is very less difference in success rates and bone stress between axillary placed and tilted implants. Tilted implants require use of angled abutments to maintain function and aesthetics.⁵

Conclusion

Placement of dental implant in mandibular anterior region needs planning, surgical skills of operator. This case report showed all steps for implant placement and fabrication of prosthesis for improving the appearance of patient. Therefore bone grafting has been avoided in this case.

Source of Funding

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Conflict of Interest

None.

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