Esthetic Single Tooth Replacement using Basal Implant

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ABSTRACT

Introduction: Basal implants are dental implants that employ the basal cortical portion of the jaw for implant retention. These implants are specially designed for gaining anchorage from basal cortical bone. Esthetically emerging profiles can also be achieved using basal implants for single and multiple teeth replacement immediately after the extraction.

Case Report: In the present case report - A 60 year old male reported with the chief complaint of fractured left upper back tooth which he wants to be removed and replaced. After careful examination and treatment planning immediate implant treatment was initiated. The tooth was extracted and the implant was placed into the extraction socket.

Conclusion: Basal implants are used for single and multiple teeth replacement.[1] They can be placed immediately into the extraction socket and also in the healed site.[2,3] These implants can be used as a better alternative for conventional implants to achieve good esthetics.

Keywords: Basal Implants, Esthetic Smile Correction, Emerging Profile, Gingival Esthetics, Single Tooth Replacement.

INTRODUCTION

Basal implants are replacement for conventional implants which requires crestal bone support for anchorage in patients with severe bone loss. These implants are specially designed for gaining anchorage from basal cortical bone.[3] They are one of the best options to avoid surgical procedures like ridge preservation/augmentation which is a must in conventional technique.[4,5] Basal implant is a better option for immediate loading when compared to the conventional implant which requires long duration for osseointegration. Esthetically emerging profiles can also be achieved using basal implants for single and multiple teeth replacement immediately after the extraction.[6] Originally, it was standard protocol to wait for a period of 6 to 8 months after tooth extraction, to place the dental implant. This was to allow for the healing of the alveolar bone. However this waiting period was a major disadvantage of this treatment modality. Subsequently, attempts were made to shorten this duration of waiting period.[7] Techniques such as early placement, immediate delayed placement and immediate placement were developed.

CASE REPORT

This was a 60 year old male reported with the chief complaint of fractured left upper back tooth which he wanted to be removed and replaced. On examination, lips were incompetent with intraoral findings of fractured tooth with secondary caries in 25 (Fig. 2), cervical abrasion in 14,15,16,22,23,24,34,35,44, ceramic crowns in relation to 17,26,27,36,37,45,46,47, poorly restored 14,15,48 with secondary caries in 48, amalgam restoration in 16,28,38. On radiographic examination, it was evident that 25 is root canal treated with the presence of secondary caries extending to the cervical ⅓ of the root (Fig. 1). Thus the treatment plan was decided - Extraction of root canal treated 25 & Immediate placement of Basal Implant into the extraction socket following all ceramic crown in 25.

The shade selection was done in reference to the adjacent tooth 24 prior to the extraction and the shade was noted as A2 using Vita classic shade guide. Extraction of root canal treated 25 done under local anesthesia followed by preparation of socket up to 2nd cortical bone and Implant placement of size 3.5*12 (01) done. Suturing was done using non absorbable black braided silk suture (Fig. 3). Dual stage impression taken with Heavy body hydrophilic Addition silicone and light body hydrophilic Addition silicone impression material. Bite registration was done using vinyl polysiloxane. Temporary crown was given in 25 using temporary crown material. Trail for the crown was done to check the accuracy of the shade, shape, size and bite.

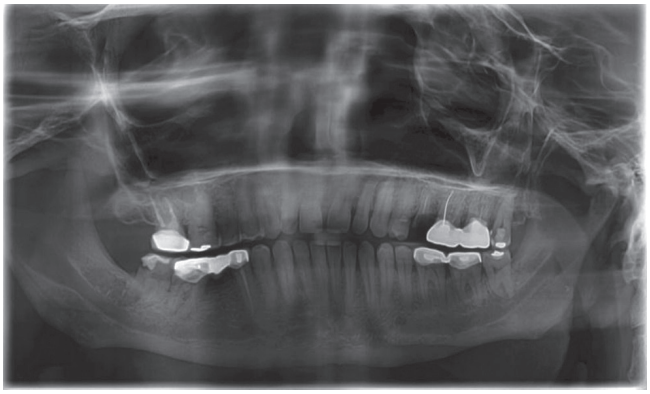

Figure-1: Pre Op OPG

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Figure-2: Fractured tooth

Figure-3: Implant placement

Figure-4: Crown placement

Figure-5: Post Op OPG

Figure-6: Review OPG

Corrections were noted and sent to the lab for final finishing & polishing. Permanent cementation of the crown in 25 was done using self-adhesive resin cement shade A2, 3 days after the placement of the basal implant (Fig. 4). Review checkup was done after a week and suture removal done. Follow up was done after 6 months and OPG was taken to check the implant stability and bone level in 25 which shows adequate bone support and intact crown with emerging profile (Fig. 5).

DISCUSSION

Dental esthetics has gained importance in the practice of modern dentistry. It influences to a large extent the social acceptance & well-being of the individual. Basal implants are used for single and multiple teeth replacement. They follow the protocol of osseofixation followed by secondary osseointegration.[8] They can be placed immediately into the extraction socket and also in the healed site for the replacement of single and multiple missing teeth.[9] Immediate loading of the basal implants can be done when they are placed in the dense cortical bone, as they attain primary stability there.[10] Since the prognosis of the fractured tooth was poor and the patient was willing to extract the tooth, the treatment plan was done accordingly. Root canal treated 25 was extracted and the basal implant was placed engaging the 2nd cortical bone and suturing was done on the labial aspect of the gingiva to obtain gingival esthetics. Temporary crown was given for the esthetic concern of the patient. The trial for the permanent crown was done, corrections were noted and after the final finishing and polishing the crown was cemented in 25 after 3 days of the placement of the implant. Review was done after a week and the suture was removed. After 6 months, OPG was taken (Fig. 6) and there was notable improvement in the bone healing around the basal implant and the emerging profile was well maintained in 25. Hence, basal implants can be used as a better alternative for conventional implants to achieve good esthetics.

CONCLUSION

Basal implants can be used to support single and multiple unit restorations in the upper and lower jaws. They can be placed in the extraction sockets and also in the healed bone. They are designed in such a way that allows placement in the bone which is deficient in height and width. The technique

of basal implantology solves all problems connected with conventional implantology.

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