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Dental Science

"PLACEMENT OF DENTAL IMPLANTS FOR RESTORATION OF OCCLUSAL HORMONY - A CASE REPORT"

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ABSTRACT Implants are now routinely considered treatment option in the treatment of partial or complete edentulism. The main objective of using dental implants for replacement of missing tooth is the preservation of alveolar bone. The dental implant is positioned into the alveolar bone to provide an adequate anchor for the prosthetic device. The basic principle in implant dentistry is that implants are used as replacement for the natural roots. The placement of the implant within tooth position, both in mesiodistal & buccolingual dimensions, is of prime importance. Harmonious relationship of teeth, jaw, occlusion & temporomandibular joint contribute to the health of periodontium. This article describes the procedure for immediate as well as conventional implant placement in the lower left anterior and posterior region of the jaw for the treatment of partial edentulism.

KEYWORDS : Dental implant, partial edentulism, immediate & conventional implant placement

Introduction:
Since the evolution of the implant, it has been opted as the most preferable and reliable method for functional and esthetic rehabilitation. The loss of teeth in an individual can lead to improper mastication, digestion, phonation and it may also affect the appearance of the patient leading to the psychological trauma to the patient. The traditional method of implant placement takes almost 1 year, which is quite a lengthy waiting period for the patients. To shorten this time period, immediate implant placement in fresh extraction site has been considered promising and also has several advantages such as less surgical trauma, reduction in overall treatment time, decrease in hard & soft tissue resoption, increase in patient's acceptance, along with better function, esthetics & has a psychological benefit also.[1,2]

Case report: A 64 years old patient reported to the ***Ambulgekar Dental Clinic, Aurangabad*** with the chief complaint of missing front & back teeth of left region of lower jaw.

On examination, it was observed that patient has grade II mobility with tooth no.41, 42, 31 & 32 with missing 33, 34, 35 & 36 (Fig. 1). Patient wanted fixed prosthesis for the same. Patient was advised CBCT Scan before starting his treatment (Fig. 2). After thorough discussion with the patient, it was decided that patient has to undergo extraction with 31,32,41,42 (due to poor prognosis) (Fig. 3) & immediate 2 implant placement for the same. 2 conventional implants were placed in the 35 & 37 region. Hence, extraction of the teeth 31,32,41,42 was followed by placement of implants in the 41,32,35,37 region.(Fig.4)

Surgical steps: The surgical armamentarium consists of: Dental implant surgical kit, Physiodispenser & rotary handpiece. Following factors were considered while placing implants: Vertical positioning of the implant in bone, buccolingual positioning of the implant in bone, mesiodistal placement of the implant in bone & angle of the implant. Once the implants were placed in the desired positions & the cover screws were placed, the flaps were closed with interrupted sutures to seal the edges of the gingival tissues.

Post-operative care: After surgical procedure, antibiotics & anti-inflammatory were started immediately to prevent the infection. Patient was asked to apply icepacks extra orally & intermittently for next 24 hours. Chlorhexidine gluconate mouth rinse was prescribed twice daily for 1 week. Initially for few days, patient was kept on semisolid diet. The sutures were removed after 1 week.

Discussion: The placement of immediate implants is a decent treatment option for the immediate esthetic and functional rehabilitation. To achieve the same determined goal, extensive planning is required to achieve the final result. There are mainly three factors which play the key role in determining of the esthetic outcome and success of the implant. These are: tooth position and shape, form and biotype of the periodontium and position of osseous crest[3].The success rate of the dental implants is largely dependent on the survival and osseointegration of the interface besides the esthetic, clinical, and radiographical success. In clinical situations, patient perception, esthetics hold the key of success while in reality, the implant alveolar bone level, and soft tissue changes are the key to the measure of success[4].

Immediate implant placement & early loading may be a good treatment option in the loss of anterior teeth[5]. Its success rate in mandible is 90-100%[6]. The implant placement is most commonly indicated when tooth extraction is due to trauma, endodontic lesion, root fracture, root resorption, unfavorable crown to root ratio (not due to periodontal loss) & alveolar bone is still intact[7]. In this case report, primary stability was achieved because the implant diameter closely matches the socket dimension. Wound healing studies have demonstrated that early osteoid formation begins after 7 days & mineralization commences at 21 days. Hence, implant loading after 2-3 weeks turned into a feasible protocol[8]. (Fig. 5)

Conclusion: Implants are being used extensively these days for the replacement of the missing teeth. In the modern era, the ultimate goal of the treatment is shifting to minimum invasive treatment and minimum time period. The immediate implant fulfills both the criteria's as it aims to reduce the process of alveolar bone resorption and treatment time. Hence, these implants are considered as a promising treatment options with higher success rate.

FIG. 1

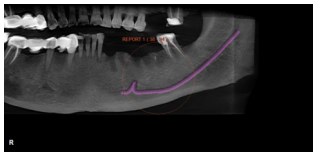

FIG. 2

FIG. 3

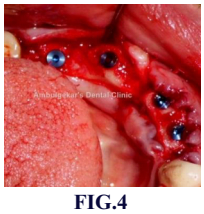

FIG.4

FIG. 5

LENGENDS OF FIGURES:

1- Pre – operative view
2- Extraction of 31,32,41,42
3- CBCT report
4- Immediate implant placement + cover screw with 41 & 32 region & Conventional implant placement + cover screw with 35 & 37 region
5- Final prosthesis (Facial view)

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