



Immediate Implant Placement In Mandibular Anterior Region: A Safe Zone

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Abstract

Traumatic experience for the patient is the loss of tooth in the esthetic area leading them to suffer real or perceived detrimental effects of it. The most cost-effective and long-term solution for replacement of missing teeth is dental implant which give high average life expectancy, sense of security and well-being. Nowadays early loading after extraction followed by immediate implant placement has become more common as this procedure include fewer surgical interventions, reduction in overall treatment time, loss of soft and hard tissue reduced along with psychological satisfaction of the patient. This case report describes the procedure for immediate implant placement with immediate loading of implants in mandibular anterior region as a safe zone.

Keywords: Early loading, esthetic rehabilitation, immediate implants, immediate loading

Introduction

To maintain proper mastication, digestion, phonation, appearance, and psychological well-being, oral health and oral health care are very important. Loss of one or more teeth due to any reason may adversely affect the oral health with the most serious consequence for the patient. Variety of reasons causes tooth loss which includes dental diseases (e.g., caries or periodontal disease), congenital absence, trauma, or mechanical failure. Some secondary or concomitantly to various systemic diseases such as cancer,¹ cardiovascular disease,² diabetes mellitus, and osteoporosis may also lead to tooth loss.³ Hence, it is important to maintain overall health.

Patients may suffer from real or perceived detrimental effects due to tooth loss leading to psychological effects range from minimal to neuroticism and also contributes to loss of confidence, avoidance of laughing in public, reluctance to form close relationship, especially when

anterior teeth are missing following the loss of one or more teeth.⁴

For implant placement conventional procedure involves extraction of offending tooth, wait for 2-4 months for socket to heal, insertion of implant and again for integration of implant with surrounding bone wait for 3-6 months. Then another surgery is necessary to expose the implant and to place a prosthetic abutment.⁵ As a result, the patient had to wait up to 8-12 months for a lost tooth to be replaced. Due to all of these shortcomings, placing the implant immediately after extraction of tooth followed by immediate loading of implant with prosthesis were developed to substantially shorten the entire treatment.⁶

The present case report discuss about the implant placement in the mandibular anterior teeth which is the safe zone followed by extraction with preservation of soft and hard tissue architecture

Case File

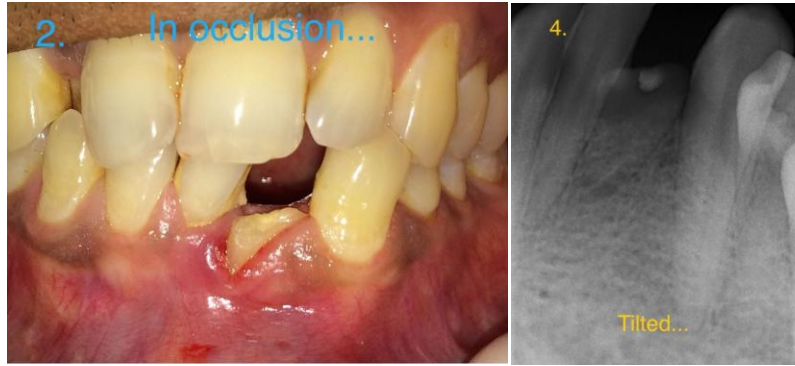


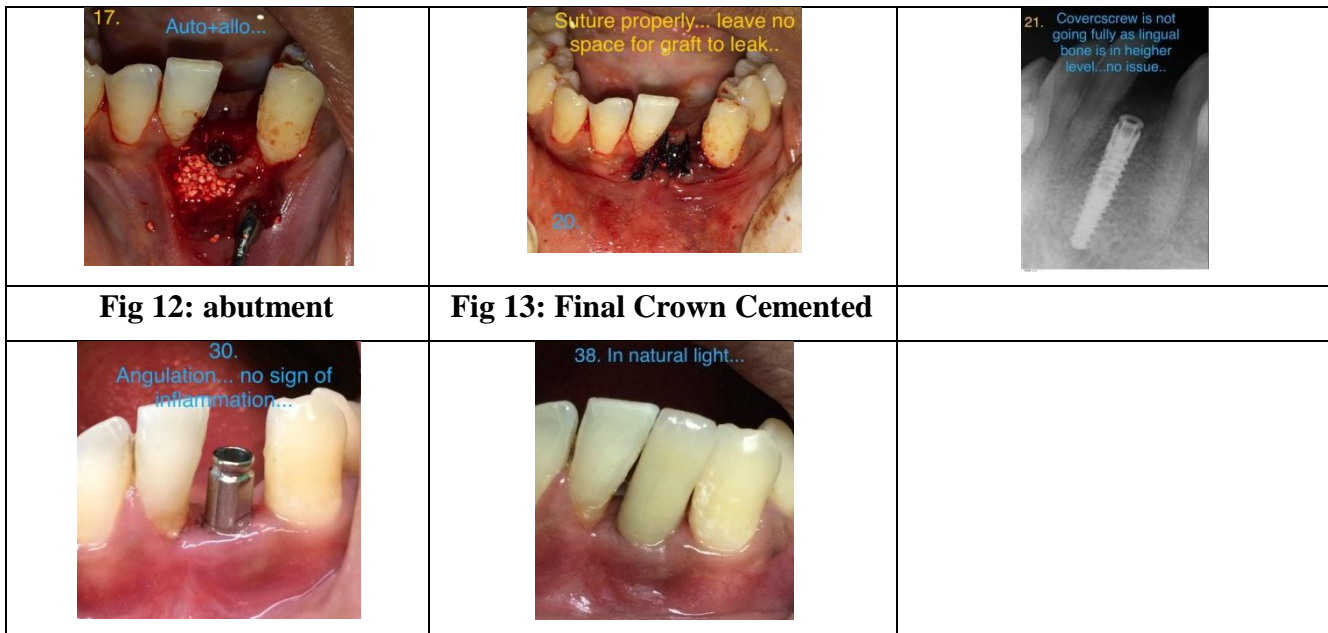
Fig 1:a,b: Pre – Operative Pic & IOPA 21 Root Stumps



Fig 2 : Clinical photograph showing [equine bone graft (Bio-Gen®)].

Figures Of The Case File:

<p>Fig: 3 Atraumatic Extraction</p>	<p>Fig: 4 extracted root stumps 21</p>	<p>Fig: 5 curettage of sockets</p>
<p>Fig: 6 Alignment Checking And Guide For Implants</p>	<p>Fig: 7 Guide For Implants Placement</p>	<p>Fig: 8 Implants Placement</p>
<p>Fig: 9 Bone Graft Placement</p>	<p>Fig: 10 Suturing</p>	<p>Fig: 11 Post Op After 3 Months</p>



A 33 year old female patient reported in the Outpatient Department of Periodontics, Chandra Dental College and Hospital, Safedabad, Barabanki, U.P. (India) with chief complaint of replacement of missing teeth (root stumps in 21) in mandibular anterior region & wants its replacement by dental implants and fixed prosthesis . After evaluating all the investigations, the result showed controlled blood pressure, had adequate sugar level and hemoglobin level. The patient was given a detailed explanation concerning the present state, alternative treatment plans and proposed procedures.

Treatment with placement of implants in the mandibular anterior region 21 together with extraction of root stumps and immediate implant placement was planned (Fig 1 a) . Pre-surgical implant planning was performed by using RVG scan to(Fig 1 b) evaluate the height, width and density of bone. The patient was premedicated with amoxicillin 500 mg, antibacterial rinse (CHG 0.12%) and an NSAIDS, all starting 1 hour prior to surgery. The patients was scrubbed and draped according to the regular surgical procedure. Lidocaine anesthesia with adrenaline (1:1800000) was injected at the site of implant placement to decrease intraoperative bleeding. After that, extraction of root stumps done and the sockets were debrided with curettes irrigation done with povidine iodine done. (Fig: 3,4,5). After that mucosal flap was reflected on buccal aspect and lingual side, the flap elongation done with periosteal

release incision with 11 no. BP blade. Afterwards drilling and insertion of implant was done(Fig: 6 To 12). The space between the implants was filled with equine bone graft (Bio-Gen®) (Fig 2) and suturing done. Primary closure was performed for all implants using 3/0 SILK suture and sterile gauze was placed. The patient was given postoperative instructions and kept under observation 30 minutes after the operation. Intraoral examination 30 minutes after the procedure showed no bleeding in surgical site. The gauze was exchanged, and a radiograph was taken post operatively to evaluate the angulation and position of all implants. Patient was discharged to be seen in 1 week. An antibiotic was prescribed (amoxicillin 500 mg, 3 times/day) for the next 10 days, and Analgesic (diclofenac) were to be taken only as required and chlorhexidine digluconate 0.12 %. The patient was instructed to maintain good oral hygiene.

Discussion

In the modern era, replacing missing teeth especially when anterior teeth are missing, immediate implant concept is gaining popularity. Krump and Barnett reported that placement of dental implants at the time of extraction has high success rates.⁷ Evidence has shown advantages of immediate implant placement over delayed implant insertion, which includes placing implants in fresh extraction sites thereby minimizing the need for angled abutments, have favorable osseointegration, preventing atrophy of the

alveolar ridge thereby preventing recession of the mucosal and gingival tissues, contaminants of extraction socket are kept away by placing immediate implants, elimination of primary healing of the soft tissues and regeneration of the osseous structure, immediate restorations can be provided. Elias and Sheiham carried out a review of available literature and found that, in general, patients rated esthetics above function in their priority for replacement of tooth and replacement of missing anterior tooth than posterior tooth is more preferred.⁸

Though immediately placed and immediate loading implants are more predictable and successful than before⁹ but not every immediate implant patient can show desired result. Various treatment consideration has to be taken as the procedure requires more chair-side time at the time of implant placement for both the restorative dentist and the patient, careful screening and selection of patient, screw-shaped implants, rough implant surface and minimum implant length of 10 mm, adequate bone quality (D2 or D3 bone), avoidance of lateral forces and adequate primary stability.¹⁰ The most important factor in immediate loading is primary stability.

Attard and Zarb carried out a review and concluded that as long as history of marginal periodontitis is avoided, the success of early loading implants may not be compromised by placement in fresh extraction sockets¹¹ while Quirynen *et al.* concluded that when combining immediate implant insertion with immediate loading it resulted insignificantly higher implant failure.¹² Ferrara *et al.* conducted a study they found satisfactory esthetic and functional results from patient's point of view which was combining immediate placement and early loading of 33 implants.¹³

In present scenario after completion of treatment patient was very satisfied with the outcome of treatment and got excellent esthetic rehabilitation.

Post Operative Checkup

2 weeks after surgery, patient return for a quick follow-up examination. They also make their appointment to have the permanent restoration fabricated after 3 to 4 months.

Conclusion

To fulfill both functional and esthetic requirements implant therapy must to be considered as a primary treatment modality. Immediate placement of endosseous implants into extraction sockets aim to reduce the process of alveolar bone resorption and treatment time, hence it is known to achieve a high success rate of between 94 and 100 %, compared to the delayed placement. The present report described the satisfactory rehabilitation of an lower anterior tooth region with multiple implants on which a provisional restoration was placed immediately after the surgery.

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