**ORIGINAL RESEARCH**

**IMMEDIATE IMPLANT PLACEMENT: A CASE REPORT**

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**ABSTRACT**

Dental implants have emerged to be a highly successful and predictable treatment modality for replacement of missing teeth. This paper reports the management of a fractured maxillary central incisor in a 23 year old male patient following road traffic accident with extraction followed by immediate implant placement.

Key words: Implant; Extraction; Immediate Implant

**Introduction**

The goal of modern dentistry is to restore the patient to normal function, contour, comfort aesthetics, speech and health.1-3 Edentulism is most often the result of repeated tooth extraction from combined pathological process and/ or dental trauma. Dental implants have emerged to be a highly successful and predictable treatment modality for replacement of missing teeth. Dental implants are the devices that are surgically inserted into the jaw bone to support a single prosthetic tooth and serve as abutments or as cosmetic replacements for missing teeth. Timing of implant placement following tooth removal may be important and this concept has challenged the original treatment protocol. The conventional delayed implant placement treatment protocol includes the time gap between the extraction of the tooth and implant placement surgery so as to allow the bone to remodel and heal completely before the implant placement. On the other hand, in immediate implant placement, dental implant is immediately placed into the extraction socket so as to take advantage of the healing potential of the bone. Rosenquist et al reported 93.5% survival rate of immediately placed implants for 5-year period. This paper reports the management of a fractured maxillary central incisor in a 23 year old male patient following road traffic accident with extraction followed by immediate implant placement.

**Case Report**

A 23 years old male patient reported to the Department Of Periodontology and Oral Implantology of Luxmi Bai Institute of Dental Sciences And Hospital, Patiala with the chief complaint of fractured upper central incisor and wanted the replacement of the same. He didnot present any relevant systemic and family history. His history of present illness revealed to 2 months when patient had a fall from the scooter and his tooth got fractured. After referral from a local dentist to this hospital, dental examination revealed that patient is having a good oral hygiene and a complete set of dentition except for fractured 21. Diagnostic casts were made and IOPA, RVG and OPG were taken so as to assess the implant size to be placed. Meticulous scaling and root planning was done. Blood examination revealed the normal hemogram. Informed consent was obtained after explaining the treatment protocol to the patient. Following local anesthesia, retained root was extracted atramatically with the help of periotoome so as to preserve the bone of the alveolus. Length of extracted root and width at cement enamel junction was measured with the digital vernier callipers. Pilot drill was used to establish the depth of implant recipient site. Then a series of drills were used sequentially so as to widen the osteotomy site. The implant was removed from the sterile package and delivered to the recipient site. Implant was driven to its final position with the help of ratchet. The flap margins were repositioned and sutured tension free. The patient was instructed to maintain the oral hygiene and recalled after 10 days for suture removal. He was prescribed antibiotics (azithromycin 500mg OD for 5 days) and Ibuprofen 400mg BD for 5 days. IOPA, RVG and OPG were taken on the same day.

**Discussion**

Placing an implant immediately or a short time after tooth extraction offer several advantages to the patient as well as for the clinicians.4 These include shorter treatment time, less bone resorption, fewer surgical sessions, earlier definition of implant position and perhaps, better opportunities for implant osseointegration because of healing potential of fresh extraction site. Therefore, this method of implant placement has become the procedure of choice.

Placement of an implant into fresh alveolus will usually result in a gap between the occlusal part of an implant and bone walls.5 To ensure entire osseointegration, synthetic bone substitutes, membranes or combination of these can be used to achieve bone formation in such defects. Although many animal studies have indicated that osseointegration of immediately placed implants in extraction sockets can be achieved without bone augmentation procedures, and with a success rate comparable to that of delayed implant placement.

Different authors6-8 conducted various experimental studies and concluded that osseointegration occurs after placement of implants into fresh extraction sockets.

Rosenquint et al,3 Grunder et al9 have reported successful treatment outcomes related to immediate implantation at chronically infected site. Nevertheless, it was concluded in a review of literature that infection associated with an extracted tooth contraindicates immediate implant placement.

The higher success rate of dental implants has changed the quality of life for many patients.10 Dentists have recognised the challenge of providing anterior tooth replacements is in preserving hard and soft tissue components that exist around natural teeth.
Conclusion
In conclusion, immediately placed dental implants into fresh extraction sockets has the advantage of reduced number of surgical procedures, overall treatment time, lessened bone resorption and thus, achieving optimal results. Immediately placed dental implants can serve as a predictable procedure with higher patient acceptance.

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References

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