IMMEDIATE PLACEMENT OF DENTAL IMPLANT ON FRESHLY EXTRACTED SOCKET: A CASE REPORT FROM B. P. KOIRALA INSTITUTE OF HEALTH SCIENCES, DHARAN

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ABSTRACT

Immediate placement of implants into the freshly extracted tooth sockets is viable and preferable option in many cases who have to wait for healing phase in traditional implant therapy. This has been a great boon for the implant dentistry. In this case a young lady who had unusual trauma to her upper front tooth had immediate implant placed on the same day of extraction and metal-ceramic crown restored her esthetics after about 4 months. With extensive treatment planning and execution of surgical and prosthetic phases of implant therapy, immediate placement of dental implant gives wonderful results.

KEY WORDS

Immediate implant, metal ceramic crown, immediate placement

INTRODUCTION

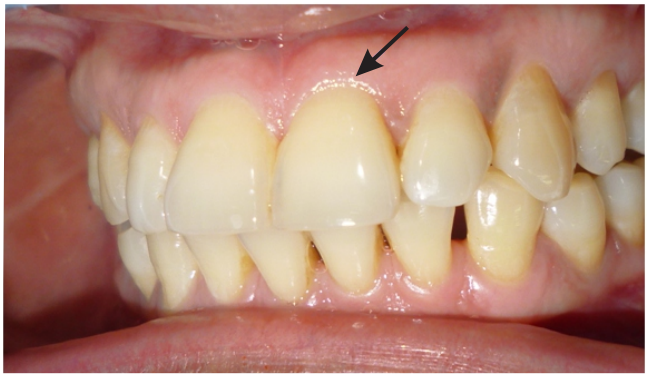
Tooth loss in anterior region that too in upper jaw, poses serious psychological problem to an individual. There is concern about the esthetics in the anterior part of mouth more often than not. Traditionally, the treatment of such situations was restoration or placement of tooth after extraction with 2 to 3 months bone remodeling time.[1] Implant therapy contributes many advantages like better esthetics, improved oral hygiene, osseous preservation and reduced future maintenance.[2] The emergence of immediate placement of implants into fresh sockets thus has both advantages of maintenance of esthetics immediately after extraction and giving patients most successful, quality treatment. There are many reports that show higher success rates of dental implants placed immediately after extraction.[3-5]

This case report describes placement of immediate implant in freshly extracted socket and restoration of missing tooth with metal ceramic restoration after osseo integration.

Case report

A 35-year-old female presented to Department of Prosthodontics, B.P. Koirala Institute of Health Sciences, Dharan after referral from a local clinic. She had a history of trauma to her teeth when she was holding a baby; (the baby's head striking to her front teeth). On visual examination nothing was significantly related to patient's concern (fig. 1) but with palpation the mobility of her upper left incisor was discernible. Consultation to Department of Endodontics and Periodontics was done and salvation of tooth was found to be discommodious. The orthopantomograph was taken, medical and medicinal history were obtained and all viable options for treatment were explained to the patient. With all factors taken into consideration, immediate placement of implant was decided.

Figure 1: Intra-oral examination, the arrow showing the tooth to be extracted



A-week long chlorhexidine digluconate mouthwash (0.12%) was prescribed and next appointment was fixed. Amoxicillin 1g was given one hour prior to surgery and tooth crown and root stump were taken out without excessive exploration (Figure 2, 3) under local anesthesia with lidocaine 2% in 1:100000 epinephrine.

Figure 2: The extraction socket immediately after atraumatic extraction

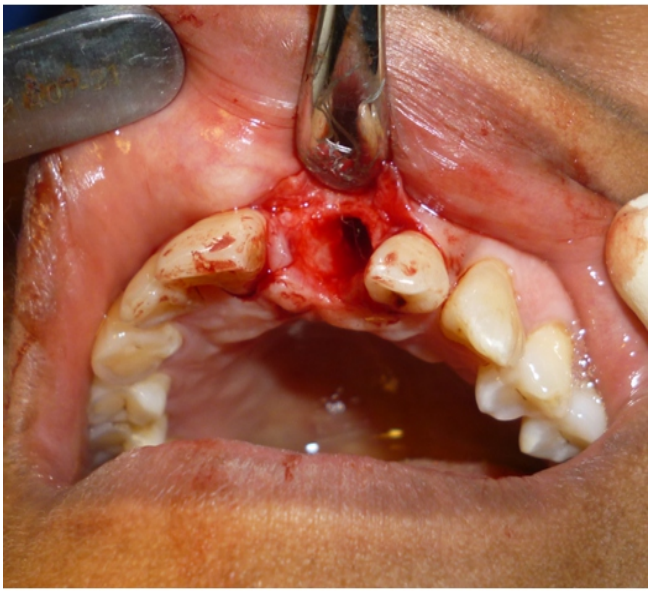
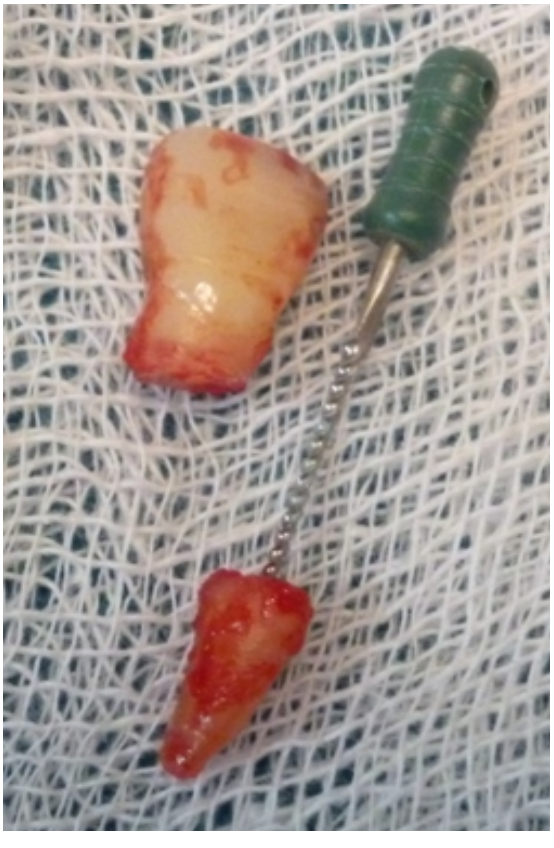


Figure 3: Extracted fragments of tooth



Use of periotomes and endo file was done and extreme care was instilled to avoid trauma to labial cortical plate. Following minor osteotomy palatal to extraction socket an implant 4.2 x 13 mm (Adin dental implants system ltd.) was placed which had an initial stability (Figure 4), an orthopanto-mograph confirmed its location and status (Figure 5). Immediate provisionalization was done so that patient did not have to be toothless for the period of osseointegration.

Figure 4: Implant was screwed and the flaps closed with silk suture

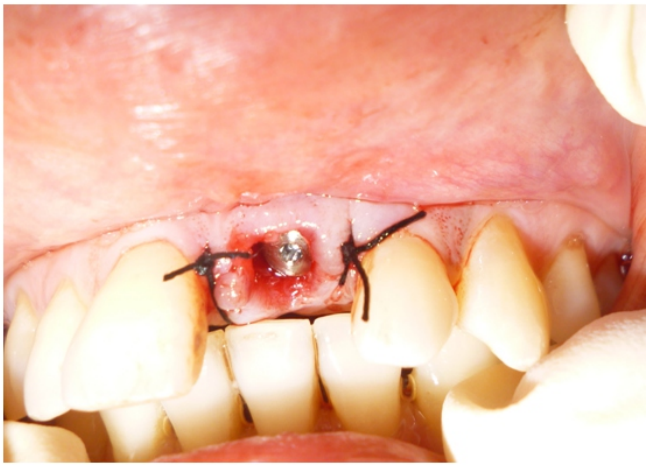
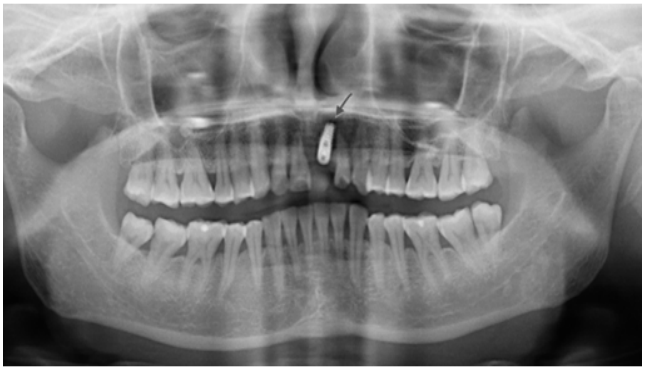


Figure 5: Orthopantomograph showing implant (arrow)

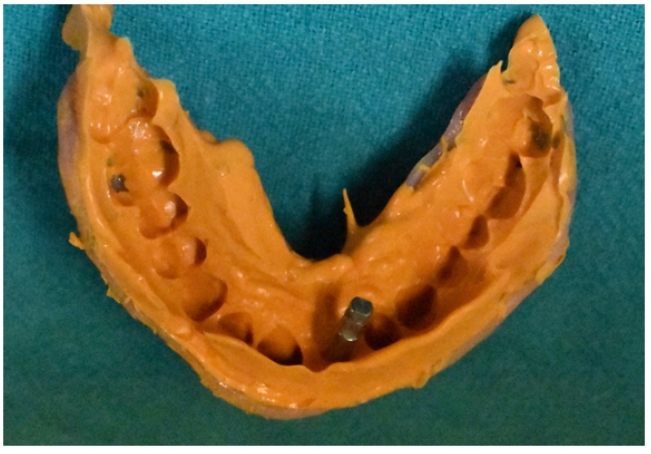


After about 4 months, uncovery surgery was performed and healing abutment was placed. It was modified to receive a temporary crown (Figure 6) for 2 weeks during which time gingiva was formed in better margins.

Figure 6: Temporary crown cemented to modified healing abutment

In next appointment transfer coping was attached to implant body and closed tray impression was made (Figure 7). The implant analog was attached to impression and cast was obtained on which abutment was attached.

Figure 7: Impression made after attachment of transfer coping to the implant body, after removal of impression, implant analog was attached to coping.



The final prosthesis was fabricated after laboratory adjustment of abutment (Figure 8) outside mouth. This reduced chair time as well as rendered the comfort to the patient. The prosthesis was cement retained (Figure 9). The patient was advised to review the implant annually and also to maintain adequate oral hygiene.

Figure 8: The prosthesis along with abutment in dental cast

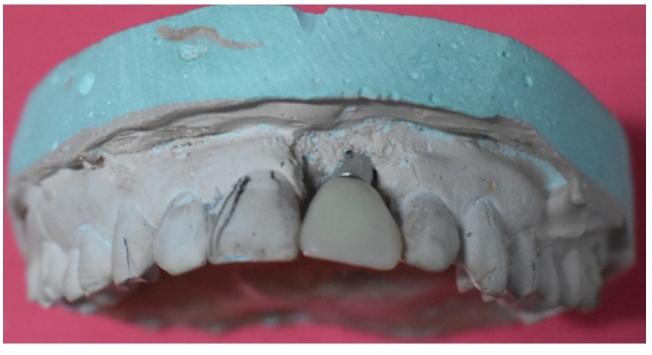
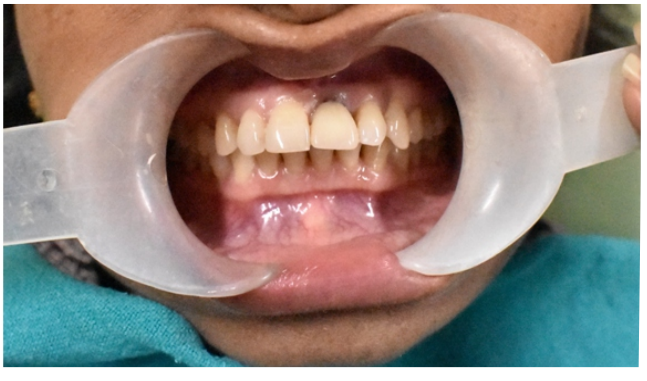


Figure 9: Crown cemented with luting cement



Discussion

Immediate implant placement possesses advantages of bone preservation and has a better success rate in anterior maxillary region.[3] However, periapical pathology can be contraindications for placing the implants without regression of the lesions.[6,7] Some authors claim success even in such conditions with proper debridement and care.[8-11] Thus immediate implant placement has less contraindications in modern era of dentistry.

Immediate temporization gives a huge relief to the patient. Although in our context it is not always customary to use fiber-reinforced composite, it is one of the best materials to be bonded on the adjacent teeth as a provisional restoration.[12] In our patient we had to rely on acrylic removable partial denture fabricated prior to extraction, which was made after trimming out the tooth from the dental cast.

There are different modalities of treatment in patients who have to undergo extraction. Immediate placement of implant and temporization is preferred if there is no need of extensive surgery or periodontal modification procedures.[13] Post extraction bone loss can be thus avoided with implant placement on the same day of extraction.[4] Some cases where ridge is deficient, ridge expansion during extraction is recommended.[14] In our case, it wasn't necessitated based on radiographic findings.

There are some issues regarding esthetic emergence of crown in the final restoration because the optimal position of implant placement in well-healed socket differs from immediate placement. The use of template to place the implant in such precise position can compromise the esthetics and initial stability thus ridge expansion is to be utilized.[15]

CONCLUSIONS

The quality of life can be improved with higher success rate of dental implants for many patients who have to undergo tooth extraction due to unavoidable reasons. A viable and predictable solution in such circumstances may be immediate implant placement. With this protocol there is reduced number of surgical appointments, prevention of bone resorption and preservation of soft tissue architecture. However, like in any other cases meticulous execution of surgical and prosthetic treatment after proper case planning are keys for the success.

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CONFLICT OF INTEREST

None

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