

## Immediate Placement of Implant - A Case Report

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DOI: <http://dx.doi.org/10.13005/bpj/718>

(Received: July 25, 2015; accepted: September 10, 2015)

### ABSTRACT

Immediate placement of implant has been an acceptable procedure for at least two decades. The advantages of immediate implant placement have been reported to include reductions in the number of surgical interventions and in the treatment time required. Immediate implant placement following tooth extraction in appropriately selected cases has been considered the optimal procedure for the following reasons: the natural healing process are mobilized to the maximum, no bone resorption has taken place yet, drilling is reduced, a number of surgical stages are eliminated, design and construction of prosthesis is simplified, and positive psychological effect on the patient.

**Key words:** Immediate placement, Traumatic, Micromovements

### INTRODUCITON

Implant by definition "means any object or material, such as an alloplastic substance or other tissue, which is partial or completely inserted into the body for therapeutic, diagnostic, prosthetic, or experimental purpose. In 1965 Branemark placed the first endosteal titanium implant successfully into healed tooth socket. The protocol of placing implants was into the healed teeth sockets until 1989 when Lazzara placed implants at the time of tooth extraction. Since the first report of the placement of a dental implant into a fresh extraction socket<sup>(1)</sup>, there has been increasing interest in this technique for implant treatment<sup>2,3</sup>. The advantages of immediate implant placement have been reported to include reductions in the number of surgical interventions and in the treatment time required<sup>4,5</sup>. It has also been suggested that ideal orientation of the implant<sup>6,7</sup>, preservation of the bone at the extraction site<sup>8,9,10</sup>, and optimal soft tissue esthetics may be achieved. Immediate implant placement

following tooth extraction in appropriately selected cases has been considered the optimal procedure for the following reasons: the natural healing process are mobilized to the maximum, no bone resorption has taken place yet, drilling is reduced, a number of surgical stages are eliminated, design and construction of prosthesis is simplified, and positive psychological effect on the patient<sup>11,12</sup>. Mandibular posterior teeth is a common site for implant placement because of early loss of molars. And placing implant in the posterior tooth has been challenging as it is multirooted and there is discrepancy between implant size and socket<sup>13,14</sup>.

### Case report

The patient (35 yr old, non smoker) visited the Department of oral and maxillofacial surgery with a chief complaint of pain in the upper and Lower back tooth region. Possible treatment modalities have been discussed with the patient. The patient agreed with immediate extraction and placement

of the implant of the teeth. The patient fulfilled the following required criteria before undergoing treatment: (A) the patient had no contraindications to treatment, such as systemic diseases (eg, diabetes), and he was not consuming any prescription medications or recreational drugs; (B) the buccal and lingual plate of the extraction socket was present; (C) the teeth adjacent to the extraction socket were free of overhanging or insufficient restoration margins; (D) the patient did not use nicotine; and (E) the interradicular septum was wide



**Fig. 1: Pre operative**



**Fig. 3: Pre operative**

### DISCUSSION

One needs to know the indications and contraindications for immediate implant placement. Block and Kent, 1991 summarized(1) the indications as 1) Traumatic loss of teeth with a small amount of bone loss 2) Tooth lost because of gross decay without purulent exudates or cellulitis 3) Inability to complete endodontic therapy 4) Presence of severe periodontal bone loss without purulent exudates 5) adequate soft tissue health to obtain primary wound closure. The contraindications are 1) Presence of purulent exudates at the time of extraction 2) Adjacent soft tissue cellulitis and granulation tissue 3) Lack of an adequate bone apical to the socket 4) Adverse

and intact following the tooth extraction. Patients were prepared and under local anaesthesia with adrenaline (1:200,000) teeth were extracted with care to preserve the socket and surrounding bone as much as possible followed by immediate endosteal root form implant placement in the extracted socket. The complete wound closure was done by 3-0 black silk sutures. Post operative antibiotics and antiinflammatory drugs were administered.



**Fig. 2: Post operative**



**Fig. 4: Post operative**

location of the mandibular neurovascular bundle, maxillary sinus and nasal cavity 5) Poor anatomical configuration of remaining bone.

A main factor determining the success of immediate placement is the initial stability of the implant. The extraction site must be evaluated to see whether it is suitable for immediate implant placement. Micromovements between implant and surrounding bone should be avoided to allow successful healing to occur. The immediate implant placement needs very minimal preparation since the extracted tooth socket preserves the anatomy of the tooth root which mimics the root form implants. The initial stability should be gained by placing the the implant

minimum 3mm apical to the extraction site and 3mm apical to the crestal bone<sup>15-18</sup>. Literature reveals that the stages of extraction socket wound healing involves the osteophyllic, osteoconductive and the osteoadaptive stages. The maximum blood supply for the cortical bone is from the periosteal blood supply. Misch and Judy,2000 found out that if the buccal or facial cortical plate is lost during extraction it leads to reduced bone height and thickness for implant placement after the socket heals. Khalid S. Hassan and Adel S. Alagl , 2011 summed up that following an extraction, there is a 25% decrease in the width of the alveolar bone during the first year, and an average 4mm decrease in height during the first year following multiple extractions (Carlson & Persson,1967) and Misch (1999) have observed a 40%-60% decrease in alveolar bone width after the first two to three years post extraction, and Christensen (1996) reports an annual resorption rate of at least 0.5% to 1% during the remainder for the rest of a Patient's life<sup>(19)</sup>. Several studies revealed that immediate implant placement after tooth extraction helped preserving the alveolar bone height and width with reduced marginal bone loss<sup>20</sup>.

## CONCLUSION

Immediate implant placement following tooth extraction has been found to be viable and predictable solution to tooth loss. Immediate placement of implant has minimally invasive surgical technique, less time taking procedure and minimum post extraction complications are the advantages of this procedure. To be successful, implant placement should only be attempted if there is complete resolution of local infection, and if there is enough bone for placement of an appropriately sized implant, in the ideal restorative position, and with primary implant stability. Implant placement can be adversely affected by infection in the implantation site, lack of soft-tissue closure, flap dehiscence, thin tissue types, and incongruity between the implant shape and the socket. In this case immediate placement of implant has a positive outcome. Postoperative healing was excellent and no crestal bone loss was present. Hence it can be concluded that immediate implant placement is the most advantageous rather than delayed implant placement.

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