

Immediate Implant Vs Delayed Implant Placement- A Review of 100 Cases

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INTRODUCTION

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. The placement of a dental implant in an extraction socket at the time of extraction is known as immediate implant placement. Delayed implant placement signifies the placement of the implant in the healed extracted socket after a minimum of 5-6 months. 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⁽¹⁾. The advantages of immediate implant placement have been reported to include reductions in the number of surgical interventions and in the treatment time required^{2,3}.

After that several clinical studies and trials have been performed to confirm the reliability and advantages of immediate implant placement over the delayed implant placement. Recent idea goes by "why late when it can be done immediately". The advantage found in immediate implant placement in the extracted tooth socket is the patient need not wait for 4-6 months for the wound to heal and the bone to be formed for implant placement. Rather immediately the placement of endosteal root form implants in the sockets with or without bone grafts delivers successful and better results compared to

delayed placement of implants. The greatest advantage being minimal requirement of using bone drills since the extracted tooth socket is already in the shape of the tooth root and hence needs minimal preparation for the root form endosteal implants except using the drills apically to increase the length for better initial stability of the implants. Hence reduced trauma to bone prevents bone necrosis and promotes better and faster osteogenetic remodelling around the implant with an added advantage of the presence of periodontal cells and matrix which aids in the remodelling procedures. In this article the author will reviewed the results of 100 immediate placement.

Procedure

The patient should fulfill the following required criteria before undergoing treatment: (1) the patient should not have contraindications to treatment, such as systemic diseases (eg, diabetes), and should not consuming any prescription medications or recreational drugs; (2) the buccal and lingual plate of the extraction socket was present; (3) the teeth adjacent to the extraction socket were free of overhanging or insufficient restoration margins; (4) the patient should not use nicotine; and (5) the interradicular septum was wide and intact following the tooth extraction.

In our study 100 patient each for immediate placement and delayed placement of implant has been selected. Patients were prepared and under local anaesthesia the tooth is extracted keeping in mind to preserve the socket and

surrounding bone as much as possible and immediate placement of implant is done in the freshly extracted socket. And for delayed implant, implant placement has been done post extraction minimum period of 3-6 months. Grafts are placed

wherever it is required. Wound closure is done with 3-0 black silk suture. Postoperatively antibiotics and anti inflammatory drugs are given. Patients were routinely reviewed for 4 weeks, 6 weeks, 12 weeks, 24 weeks postoperatively.



Fig. 1: Immediate placement of implant



Fig. 2: Immediate placement of implant



Fig. 3: Delayed placement of implant



Fig. 4: Delayed placement of implant

DISCUSSION

In 1989, Lazzara placed implants at the time of tooth extraction in the extracted tooth socket⁽⁴⁾. Over the past few years several studies have been undertaken to prove the reliability and success of immediate implant placement⁵⁻⁷. Recent clinical and experimental studies have demonstrated that healing in post extraction sites is characterized by bone regeneration within the socket and external dimensional changes due to bone resorption and bone modelling. The extraction socket wound heals by the following stages namely osteophyllic, osteoconductive and osteoadaptive phases. One needs to know the indications and contraindications for immediate implant placement. Block and Kent, 1991 summarized 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 location of the mandibular neurovascular bundle, maxillary sinus and nasal cavity 5) Poor anatomical configuration of remaining bone. Becker et al found out 93.3% of 5 year success rate of immediately placed implants with insignificant amount of crestal bone loss when they were augmented with barrier membranes⁸⁻¹⁰. In case of delayed implant placements, 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 thereby bone height and width are reduced forcing the operator to compromise with the size and width of the delayed

implant to be placement. 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. The stability of the implant may be checked with resonance frequency analysis¹¹. 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 implant minimum 3mm apical to the extraction site and 3mm apical to the crestal bone¹²⁻¹⁵.

Studies have revealed that crestal bone loss is evident in both delayed and immediate implant placements. But in case of immediate implant placement the crestal bone loss was found to be less.

CONCLUSION

Immediate implant placement following tooth extraction has been found to be viable and predictable solution to tooth loss. Patients can now avail the immediate implant placement after extraction of the teeth in the socket immediately without any need to wait for few months for the socket to heal and the bone to be formed. This leads to quicker loading of the implants and restoring the lost teeth. One more advantage of immediate implant over delayed is the crestal bone loss was found to be minimal. Hence immediate placement of implant is better when compared to the delayed implant placement. In our sample study of 100 patients each for immediate and delayed implant placement, we found the immediate placement of implant is more promising.

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