

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

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Implant placement has been a renowned treatment for replacing and restoring missing teeth in recent past. Delayed implant placement signifies the placement of the implant in the healed extracted socket after a minimum of 5-6 months. In this recent world where everything is happening fast and time is something which everyone tries to utilise properly, the patients also want the treatment results immediately instead of waiting for long time. In 1989, it was Lazzara who introduced the technique of immediate implant placement by placing implants at the time of tooth extraction in the extracted tooth socket. In recent years several studies and advancements have been made regarding immediate implant placements. The greatest advantages of immediate implant placements are they need minimum bone drilling, result in reduced crestal bone loss surrounding the implant and last but not least the patients need not wait for 4-6 months for the implants to be placed. In this article a small sample of 100 patients were treated with immediate implant placement and their results, advantages and disadvantages compared to delayed implant placement were recorded.

Key words: Impant, tooth, review.

Implant placement has been a renowned treatment for replacing and restoring missing teeth in recent past. In 1965 Branemark placed the first endosteal titanium implant successfully. He placed the implant in edentulous ridge of the patient. Delayed implant placement signifies the placement of the implant in the healed extracted socket after a minimum of 5-6 months. In 1989, it was Lazzara who placed implants at the time of tooth extraction in the extracted tooth socket. 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 greatest 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. Another most important advantage of the placement of the immediate implants over delayed implant placement is that the crestal bone loss surrounding the implant is less in case of immediate implant placement. In this article author has reviewed the results of immediate implant placement in the

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extracted teeth sockets of 100 patients.

Procedure

The patient fulfilled the following required criteria before undergoing treatment: (1) the patient had no contraindications to treatment, such as systemic diseases (eg, diabetes), and he was 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 did not use nicotine; and (5) the interradicular septum was wide and intact following the tooth extraction.

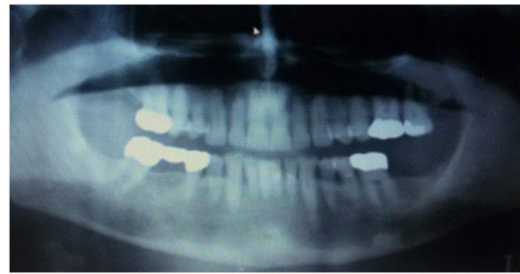
Patients were prepared and under local anaesthesia with adrenaline (1:200,000) hopeless

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 sockets with autogenous bone grafts wherever necessary. The autogenous bone grafts were obtained from the interradicular septal bone or the interdental bone or the buccal cortical plate by chisel and mellet. The complete wound closure was done by 3-0 black silk sutures.

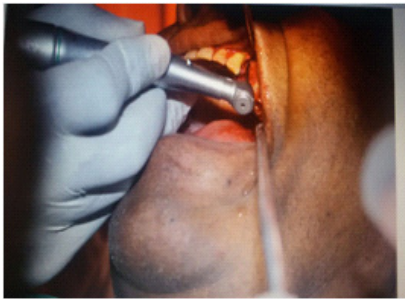
Post operative antibiotics and anti-inflammatory drugs were administered. The patients were routinely reviewed with postoperative radiographs which were compared to the preoperative radiographs to assess the amount of crestal bone loss.



Preoperative



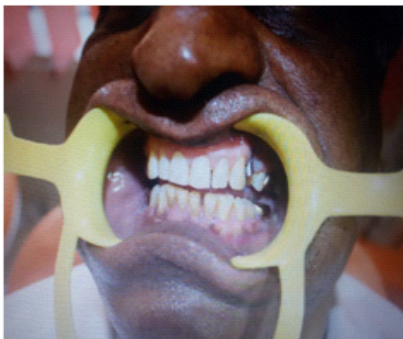
OPG



Drilling



Postoperative OPG



Abutment placement



Crown fixation

DISCUSSION

All the patients were reviewed after 3-4 months with postoperative radiographs. The result found was negligible or no crestal bone loss surrounding the implants. The restoration procedures were completed after 3 months in case of mandible and after 6 months in case of maxilla.

In 1989, Lazzara placed implants at the time of tooth extraction in the extracted tooth socket¹. Over the past few years several studies have been undertaken to prove the reliability and success of immediate implant placement². Recent clinical and experimental studies have demonstrated that healing in postextraction sites is characterized by bone regeneration within the socket and external dimensional changes due to bone resorption and bone modeling. The extraction socket wound heals by the following stages namely osteophyllic, osteoconductive and osteoadaptive phases. Alongside wound healing osseointegration takes place with the implant surface. 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 membranes.^(6,7,8) 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. In a similar prospective study, Covani and coworkers reported a mean loss in facial crestal bone height of 0.8 mm after 6 months of submerged healing following immediate implant placement in 20 patients. 38 implant sites included maxillary and mandibular anterior and premolar sites. 38% of the sites showed no change, 47% had between 0 mm and 1 mm of loss, and 15% had between 1 and 2 mm of loss but this amount of bone loss can be considered insignificant when compared to the bone loss after extraction of teeth without any immediate implant placement.

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 bone⁹⁻¹². 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 analysis¹³. Several publications have been there regarding the need of barrier membranes or bone grafts in the extraction sockets during placement of the immediate implants¹⁴⁻¹⁹. 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. The immediate implant placements with bone grafts to cover the gap between the socket walls and the implants showed better results with minimal crestal bone loss. Several methods of bone grafts were used but authors choice of bone grafts used in the above mentioned cases was autogenous bone grafts obtained from patient's interradicular septal bone, interdental bone and buccal cortical plate. The reason for choosing autogenous bone grafts was autogenous bone grafts have osteogenic as well as osteoinductive properties as well as it is obtained from patients own body and economic and reliable. The results were satisfactory with insignificant amount of crestal bone loss surrounding the implants.

CONCLUSION

In this modern world of busy and fast moving social life everything is needed to be fast forwarded. 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. Along with this advantage the crestal bone loss was found to be minimal in case of immediate implant placements with autogenous bone grafts. Hence according to author immediate implant placement is a better choice when compared to the delayed implant placement provided the indications for immediate implant placement are fulfilled. In our small sample study of 100 patients, we found the results of

immediate implant placement more promising.

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