

# IMMEDIATE PLACEMENT OF IMPLANTS AFTER EXTRACTION OF ROOT STUMPS IN THE MANDIBULAR POSTERIOR TEETH. – A CASE REPORT

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**Abstract:** - Preservation of alveolar bone volume following tooth extraction facilitates subsequent placement of dental implants and leads to an improved aesthetic and functional prosthodontic result. Wound healing in an extraction socket is characterized by resorption of alveolar bone, which may result in restorative complications. Immediate implant placement into fresh extraction socket reduces the treatment time, cost, preserves the gingival aesthetics and increases patient comfort.

**INTRODUCTION:** - According to the traditional protocols 3-4 months of healing period is required for the consolidation of extraction socket. Taking this into account, patients are generally required to wait up to 1 year for prosthetic rehabilitation.<sup>[5]</sup> There are five stages of wound healing following extraction of teeth :- Clot formation after extraction of tooth is considered as First stage, clot replaced by granulation tissue in four to five days is regarded as second stage. The third stage takes place fourteen to sixteen days post extraction, this stage replaces the previously formed granulation tissue by connective tissue, fourth stage shows evidence of osteoid calcification which starts from the base and side of the sockets and then proceeds towards the centre of the socket. Six weeks post extraction the socket becomes almost filled with bony trabeculae. Complete epithelial closure is a substantiation of Fifth stage taking place around thirty days after extraction of teeth. Bone fills the sockets by sixteen weeks post extraction.<sup>[7]</sup>

Apart from reduced number of surgical visit immediate implant placement in fresh extraction socket prevents post extraction bone resorption.<sup>[7]</sup>

Placement of implants must be in an ideal position so that one achieves maximum comfort, function and aesthetics. Immediate implantation of posterior single rooted teeth will have bone engaged to the implant on most of its sides leaving a small gap at the coronal portion, but after extraction of a multi rooted tooth the gap in the bone is extensive. Placement of an implant in an ideal restorative position in such cases of multi rooted tooth is often sought with complications so the osteotomy must be done in the inter-radicular area.<sup>[9]</sup>

This article presents clinical cases of immediate implant placement in freshly extracted single rooted and multi-rooted tooth socket of mandibular posterior teeth region.

**CLINICAL REPORT:** - A male patient, aged 58 years, reported to the Department of Prosthodontics at Institute of Dental Sciences, Bhubaneswar, with the chief complaint of decayed tooth in lower left back teeth region.

A clinical evaluation revealed grossly decayed carious second premolar (35) and first molar (36) in the lower left back mandibular tooth region (Fig. No.1). An orthopantomograph was advised (Fig. No.2), which revealed failed endodontically treated second premolar and first molar tooth. Immediate placement of two root form implants after extraction was decided as the treatment plan. Equinox myriad plus implants of size 3.8×13mm was chosen for left mandibular second premolar region (35) and 4.5×13mm size implant was chosen for left mandibular first molar region (36).

Atraumatic extraction was done of the following two teeth (Fig. No.3,4) and sequential osteotomy was done in the mandibular second premolar tooth region by pilot drill (2.0mm diameter) followed by 2.3mm drill and 3.8mm drill was done up to the length of 13mm mark. The same osteotomy procedure was followed for the mandibular first molar region on the interdental bone but the osteotomy drill was done up to a diameter of 4.5mm drill & the length of 13mm mark. Parallelism of the osteotomy sites were checked & after confirming the parallelism, Equinox Myriad Plus implants were placed in the mandibular second premolar region (3.8×13mm) and first molar region (4.5×13mm) (Fig. No. 5) with the insertion torque of 20Ncm. Radiographic confirmation was done (Fig. No.- 6) & cover screws were inserted following which Hydroxyapatite bone grafts were placed sutured (Fig. No.-7).

3 months later radiographs were taken to check for the Osseo-integration of implants (Fig. No. - 8). Cover screws were then removed following which gingival formers were placed respectively and then sutured (Fig. No. - 9). After 10 days impression was taken in close tray technique. Cement retained and screw retained Zirconia crowns were fabricated and were cemented on the respective treatment (Fig. No. - 10, 11). Patient follow up was done after 3 days and 7 days.

**DISCUSSION:-** Immediate implant placement is most often indicated when extraction of the tooth is through trauma, root fracture, root resorption, root perforation, unfavourable crown-root ratio, and intact bone walls of the socket.<sup>[7]</sup> Immediate implant placement offers numerous potential advantages to the patient and clinician. In such scenario the number of surgical visit and time of treatment is reduced as compared to conventional method of tooth extraction and regeneration followed by implant placement at the second surgical visit 4 to 6 months after regenerative therapy. In this condition the implant is placed into extraction socket. By insisting that the implant can be placed in an ideal prosthetic position, potential concerns regarding force distribution and patient plaque control efforts are addressed.<sup>[8]</sup>

The alveolar bone is assessed critically for its ability to stabilize an impact of the appropriate dimension in the desired prosthetic position.<sup>[8]</sup>

The inserted implant must demonstrate primary stability if it is to be left in place. The primary stability is confirmed easily at the time of insertion of cover screw. If the implant turns with gentle pressure of cover screw insertion, it must be removed.<sup>[5]</sup>

**CONCLUSION:-** This case report demonstrates that immediate implantation to fresh extraction socket in the posterior region is an alternative, predictable surgical treatment plan in replacement of missing teeth having better prognosis.

When performed in conjunction with appropriate regenerative therapy, this treatment modality demonstrates a high level of predictability with regard to implant stability at the time of abutment connection and implant function.

FIGURES:-



Fig. No. 1:- Pre operative photograph. Root stumps of mandibular left second premolar and first molar present.



Fig. No. 2 :- Pre – operative Orthopantomograph



Fig. No. 3:- Atraumatic extraction done of mandibular left second premolar and first molar.



Fig. No. 4:- Extracted root stumps of mandibular left second premolar and first molar.



Fig. No. 5:- Equinox myriad plus implants placed.



Fig. No. 6:- Radiographic confirmation done with Radio Visio Graph.



Fig. no. 7:- Flaps approximated and interrupted sutures were placed.



Fig. no. 8:- Radiographic confirmation for osseointegration.



Fig. no. 9:- Healing cap placed. Suture placed.



Fig. no. 10:- Zirconia Crowns placed.



Fig. no. 11:- Zirconia Crowns placed.

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