

**Single stage Immediate Implant placement in fresh extraction socket using bone graft and platelet rich fibrin**

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**Abstract**

Earlier it was seen that after tooth extraction, the socket was allowed to heal 6-12 months prior to implant placement. During this healing phase it was noticed that there was continuous reduction in buccolingual / labiolingual lingual dimensions of the alveolar ridge sometimes making it unsuitable for conventional implant placement. This results in additional requirement of procedure for site augmentation and making patient to wait for additional few more months. This was very frustrating for the patient as the overall treatment time is prolonged. Immediate implant comes as an alternative treatment option. Immediately after extraction of tooth,

the implant was placed, and along the healing of the socket there is also integration of implant with the bone resulting decreased treatment time as well as preserving the remaining bone and soft tissue. This case report shows a technique in which implant is placed single staged in fresh extraction socket immediately after tooth extraction along with bone graft and platelet rich fibrin.

**Introduction**

The first reported case of immediate implant was in 1978 by Schultz<sup>1</sup>. Implant placement into fresh extraction sockets has become increasingly routine, and surgical protocols have been modified, with a shift from the belief that total bone regeneration in the socket was thought to

be required before implant placement to the common opinion that the best bone-preserving method is “immediate implant placement”. The implant is anchored to a small part of the socket and primarily to the sub apical alveolar bone, providing satisfactory initial implant stability<sup>2</sup>. The advantages of immediate implant placement include: reductions in the number of surgical interventions<sup>3</sup>, reduction in treatment time required<sup>4</sup>, ideal orientation of the implant and preservation of the alveolar bone at the extraction site<sup>5-8</sup>, maintenance of ideal soft tissue contours<sup>9</sup>, and improvement in the patients psychological outlook for dental treatment.

Remodelling of the alveolar crest after extraction follows a pattern, with resorption and reshaping of the alveolar crest<sup>10-12</sup>. This marginal resorption is, of course, time dependent: the longer the healing time, the greater the resorption. To maintain bone height and achieve more rapid rehabilitation, immediate placement of implants in connection with extraction is commonly practiced today.

### Case Report

A 28 year old male patient presented with a history of root stumps in the left lower back jaw region (Fig.1) and requested for an immediate solution. Clinical and radiological evaluation revealed adequate alveolar bone beyond the apex of root stumps, absence of periapical pathology. So it was decided to extract and place an implant immediately to avail the benefits like preservation of bone and emergence profile. Blood investigations prescribed to the patient to rule out any underlying systemic diseases.

Patient was prescribed prophylactic antibiotics with the combination of amoxicillin 250mg and dicloxacillin 250mg combination with lactobacillus sporogenes, Metronidazole 400 mg, and Aceclofenac 100 mg+paracetamol 325 mg+ serratiopeptidase 15mg 2 days prior implant surgery. Patient was also advised for 0.12%

chlorhexidine mouth wash rinses along with other medications. On the day of surgery, induction of local anesthesia was carried out using lignocaine with adrenaline. As preservation of alveolar bone is key to success of immediate implants, extraction of tooth has to be atraumatic, so using periostomes and small periosteal elevators, the fragment was luxated without excessive enlargement of the socket, the tooth fragment was slowly luxated and pulled out of the socket (Fig.2).The sockets were debrided with curettes and a Adin Toureg-S internal hex implant was planned (5 × 13 mm). Primary stability was achieved by wrenching the implant into the bone beyond the apex of the socket and a gingival former is placed (Fig.3). As soon as the implant is placed inside the extraction socket, a 10 ml syringe is used to withdraw venous blood. Tornequett is used to tighten the arm and the venous blood is withdrawn and dispense in glass tube. As soon as it is dispensed, lid is placed over the open end of the tube and kept inside the centrifuge machine. Another glass tube with 10 ml of distil water is used to counter balance the tube. The centrifuge machine is rotated over 3000 rpm for 10-12 minutes. Tissue forceps was used to extract PRF from the tube. Nova Bone Perio-glass bone graft along with prf was packed between the implant and labial socket wall. Interrupted sutures were placed (Fig.4) and post operative instructions were given to the patient. Patient was advised to continue same medication for 5 more days and was asked to report after 1 week. The sutures were removed on 7<sup>th</sup> day (Fig.5). The patient was recalled after 4 months for the prosthetic procedures and was given porcelain fused to metal crown over the implant. The patient was recalled for follow up after one year. The clinical and radiographic appearances at 1 years showed healthy soft tissue, osseointegration and maintenance of bone around the implant (Figs.6).



Fig.1: Preoperative intraoral view



Fig.4: Sutures to stabilize the membrane



Fig. 2: Extraction of root

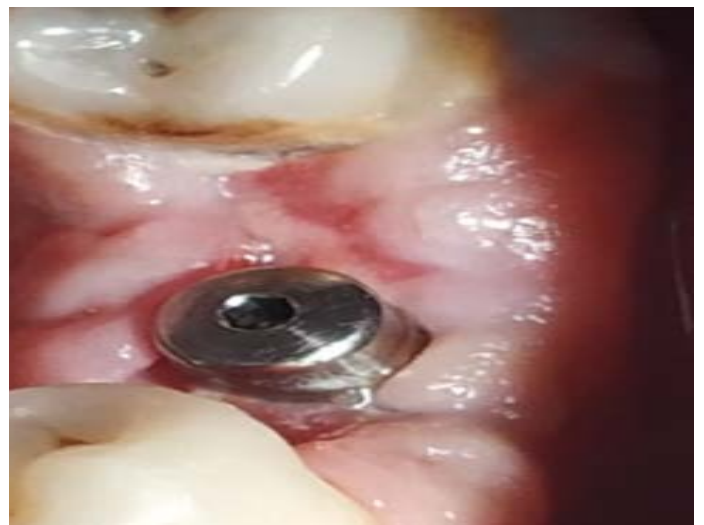


Fig.5: Healing on 7<sup>th</sup> day of suture removal

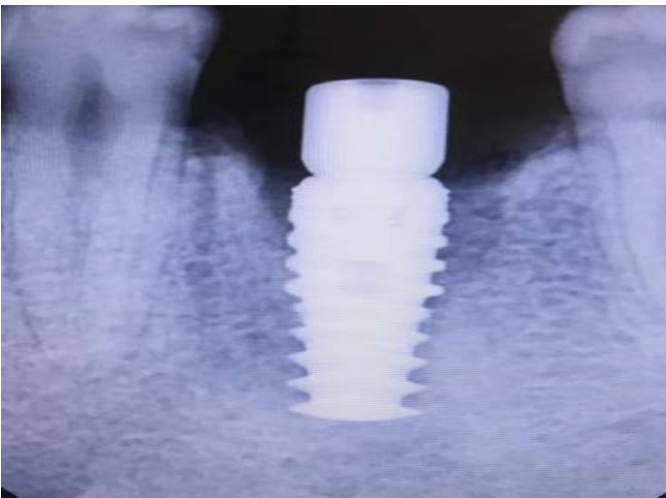


Fig.3: Immediate post-operative RVG



Fig.6: One year follow up & bone graft

## Conclusion

This case report showed that immediate implant placement in fresh extraction socket using bone graft along with platelet rich fibrin to fill the horizontal defect dimension between the implant surface and alveolar bone in a single stage non-submerged surgical technique provides clinically and radiographically good results in a 1-year perspective.

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