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Case Report

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IMMEDIATE IMPLANT PLACEMENT IN FRESH MANDIBULAR MOLAR EXTRACTION SOCKET: 1-YEAR RESULTS. A CASE REPORT

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ABSTRACT

The placement of a dental implant in an extraction socket at the time of extraction is known as immediate implant placement whereas delayed placement of implant signifies the implant placement in edentulous areas where healing has completed with new bone formation after the loss of tooth/teeth. In this case report, we present the results of an immediate implant placement in a fresh extraction socket of a mandibular molar with simultaneous placement of graft material. Clinical findings acquired after 1 year of implant placement demonstrated a stable peri-implant situation and confirmed a satisfactory treatment result.

KEYWORDS: Immediate implant; Mandibular molar; extraction socket.

INTRODUCTION

The goal of modern dentistry is to restore patients‟ teeth to normal contour, function, comfort, aesthetics, speech and health. Dental implants have changed the face of the restorative procedures in dentistry; they provide a realistic treatment alternative for rehabilitation of patients with lost teeth.[1]

The success of an implant-supported restoration is related to the quality of the prosthetic restoration as well as its integration into the surrounding tissues. Immediate implantation after extraction is a commonly accepted and advantageous technique. But if certain fundamental principles are not respected, it can cause significant damage, sometimes irreversible.[2]

In this case report, we present the results of an immediate implant placement in a fresh extraction socket of a mandibular molar with simultaneous placement of graft material. Clinical findings acquired after 1 year of implant placement demonstrated a stable peri-implant situation and confirmed a satisfactory treatment result.

CASE REPORT

A 30 year old male patient reported to the department with the chief complaint of difficulty in chewing due to grossly decayed tooth in the lower left region. Clinical examination revealed root stump in relation to 36 with no associated pain or inflammation. Past medical history was not significant. Radiographic examination revealed root stump in relation to 36. On the basis of clinical and radiographic findings (figure 1.1, 1.2 and 2), bone mapping was done. The calculated mesiodistal distance was 14 mm, and the buccallingual distance was 9 mm. A definite treatment plan was made and explained to patient.

Figure 1.1 & 1. 2 : Pre-operative view.

Figure 2: Pre-operative OPG.

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.

Briefly, an intrasulcular incision extending to the adjacent teeth was made, and a full-thickness flap was elevated. Vertical releasing incisions were made. After elevating the flap, the 2 roots were removed carefully to preserve all remaining interradicular bone. The socket was curetted carefully and irrigated with sterile saline solution. A dental implant of width 4.8 mm and length 12 mm was placed into the interradicular bone, the size of the implant was determined by the bone mapping done prior.

To prepare the implant bed, initial drill was done mesial of the interradicular bone. This was followed by deep drilling along the implant axial line to allow the implant to have adequate bone contact at the distal site. The implant was placed 3 mm into the solid mandibular bone apical to the extraction site. After placement of the implant, a primary stability was achieved (figure 3.1 and 3.2). The socket was covered with a graft material (figure 4).

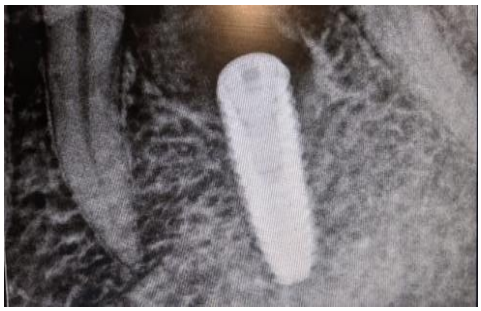

Figure 3.1 & 3.2: Implant placement (Clinical and Radiographic view).

Figure 4: Socket covered with graft material.

The flap was repositioned and was sutured into place with interrupted sutures. The patient was administered an analgesic (100 mgdiclofenac, once daily for 4 days) and a systemic antibiotic (600 mg clindamycin, once daily for 6 days); furthermore, he was advised to rinse with a 0.1% chlorhexidine digluconate solution twice daily for 5 weeks. The patient was instructed to begin taking the medication 1 day before surgery.

After surgery had been performed, the sutures were left for 1 week. Postoperative follow-up visits were made. This was then followed by delayed loading (figure 5 and 6). The written informed consent form was signed by his parents for treatment and further publication of the case.

Figure 5 & 6: Delayed loading.

DISCUSSION

The original protocol of a dental implant placement requires a period of 6 months following extraction, to allow for healing of the extraction socket. Several studies have revealed that during this waiting period, there is a definitive postextraction resorption of bone, which will adversely affect the availability of bone for implant placement. To reduce this problem of bone loss, implants have been placed immediately into fresh extraction sockets. In 1989, Lazzara first reported immediate implant placement at an extraction socket. The success of dental implant treatment of partially and fully edentulous patients has been documented extensively.[3,4]

To achieve excellence when placing immediate implants, there are 5 keys aspects to consider during the decision making process, to help prevent blunders that can lead to difficult situations are: (I) the presence of a buccal plate, (II) primary stability, (III) implant design, (IV) filling of the gap between the buccal plate and the implant, and (V) tissue biotype

The extraction site must be evaluated to see whether it is suitable for immediate implant placement. Furthermore, during surgery, any doubts will dictate secondary implant placement after the extraction site has healed. Micromovements between the implant and the surrounding bone should be avoided to allow successful healing to occur. Advantages of immediate implant placement includes avoidance of additional surgery, it shortens the treatment time, decreases the period of edentulism, preserves hard and soft tissues and provides psychological benefits. Disadvantage being risk for higher implant failure, unpredictable hard and soft tissue faliures, difficult implant stability and bone graft and membrane are often needed.

In the present case report, the interradicular septum of the mandibular molar extraction socket were used to anchor the implant. Furthermore, the implant was inserted 3 mm apical to the socket. The positive outcome of the treatment may have been due to the insertion of the implant 3 mm into the mandibular bone and to the adequate implant-bone contact that occurred in the interradicular septum area. Therefore, sufficient height and width of the interradicular septum should be considered serious selection criteria for this treatment modality.[5,6]

Existing data suggest that atraumatic tooth extraction is necessary to preserve the maximum existing bone and showed successful results.

In the presented case report, the long term success of an implant immediately placed in the extraction socket of a molar is not demonstrated. Additional studies with a larger sample size are necessary to confirm these findings.

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