



CASE STUDY

IMMEDIATE IMPLANT PLACEMENT WITH A PRE-EXISTING PERIAPICAL LESION

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ABSTRACT

The purpose of the present case report is to illustrate the possibility of inserting immediate implants into the fresh extraction socket in the infected site with the presence of a pre-existing periapical lesion. The case report : A 50-year-old man, presented with a periapical lesion developed on the labial side of right maxilla. The radiograph showed a radiolucent image in the periapical region of 11 12. Extraction and implantation including bone grafting to substitute 11 and 12 had been performed in two appointments. One Implant (13mm length × 3.7mm in diameter ADIN implants) was inserted apically through the cyst cavity. Three months later, the second surgery phase (healing screw insertion) had been followed, and no sign of alternation of radiography and clinical indication were seen after 18 months. This report showed that the placement of immediate implants in presence of a pre-existing infected lesion may not be a necessary contraindication on if appropriate clinical procedures like antibiotic administration, meticulous cleaning, and alveolar debridement are performed before implant surgical procedure. Immediate placement of implants for replacement of teeth with the pre-existing infected lesion is a predictable treatment and can be indicated for replacing teeth lost. Both implants were successfully osseointegrated, and the lesion were healed, follow up of 2 years done (CLINICAL CASE 16, Postextraction Implant Placement, Immediate Loading, Osteotomy, Reduction Guide; Vanessa Montoya-Salazara *et al.*, 2014).

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INTRODUCTION

The use of immediate implants in patients with teeth lost due to the infected site is now an established practice (Juan-Carlos Álvarez-Camino *et al.*, 2013). In this case, two implants were placed into the pre-existing cysts where the sites were in a history of a pre-existing infection in maxilla. Sometimes the infection is active, so that the possibility exists for the long-term infections that can negatively impact the prognosis of the implants. In the previous literature, the fresh-socket implants were contraindicated with a pre-existing inflammation due to the risk of microbial interference in the healing process (Juan-Carlos Álvarez-Camino *et al.*, 2013; Vanessa Montoya *et al.*, 2014). Placement of dental implants for replacing missing teeth is a well-established treatment option. According to the original protocol, it was state of the art to wait several months after tooth extraction before placement of the implants to allow alveolar bone healing. Along with the recommended load-free period of 3–6 months to ensure osseointegration of the implants, a long treatment period was an obvious drawback of this treatment modality. This protocol has been challenged the last decades by reducing the time between extraction of a tooth

and placing and / or loading of the implant. Various classifications have been suggested for the timing between tooth extraction and implant placement (Ole T. Jensen *et al.*, 2015). This can make it difficult to compare the outcome of previous studies. In a recent systematic review, an implant placed in a fresh extraction socket was denoted an immediate implant. An implant placed in an extraction socket within 8 weeks after tooth extraction was called immediate-delayed and later placed implants were called delayed implants (Ole T. Jensen *et al.*, 2015; Altintas *et al.*, 2015; Vanessa Montoya-Salazara *et al.*, 2014).

Presentation of Case

Patient systemically healthy, were extensively evaluated with regard to clinical signs, implant treatment, and postoperative complications. Case report: A 50-year-old man, non-smoker in good health condition with presence of non vital tooth and the site of a pre-existing infected lesion, which developed 1cm × 1cm radiolucent image on the radiograph, and an alveolar crest resorption on 12 tooth of maxilla came to dept of omfs meghna institute of dental sciences. The chief complaint was dull pain in the upper right incisor since 1 month. Radiographic examinations confirmed the presence of the horizontal bone loss and size 1cm × 1cm circumscribed radioslucent image

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Figure 1. Pre OP OPG



Figure 2. Clinical intra oral picture of patient



Figure 3. Extraction socket



Figure 4. Extracted tooth



Figure 5. Symphysis



Figure 6. Immediate implant placement



Figure 7. After 4 months of implant placement



Figure 8. Post OP OPG after 2 years

developed on the periapical portion on the 11, 12, mesial surface of 13 of maxilla. Extraction of 11 and 12 was done followed by the root canal treatment of 13 in a single sitting. The informed consent was taken from the patient before treatment. Prior to surgery, a medical consultation and thorough explanation of possible risks to patients had been done. One hour before the surgical procedure, the patient received a prophylactic antibiotic dose of 1gm amoxicillin and mouth rinsing with chlorhexidine 0.2% for 2 minutes (Michael Block *et al.*, 2004).

Surgical procedure

The main objective of this protocol is to ensure the lack of pathology when placing the implant, and at the same time, to optimize the availability of soft and hard tissues for primary healing and probable lateral bone augmentation. Under all aseptic precautions in the operation theatre, local anesthesia with adrenaline 1:80000 was given. Surgical access was gained on the anterior peri-apical lesion of the infected site by means of an rhomboid incision. The incision was extended from mesial of 11 to mesial of 13. A full thickness flap was carefully elevated and a dark-blue circumscribed lesion was exposed. Thorough curettage was done to remove the lining. A second access was gained at the apical level, allowing the meticulous debridement of the surgical chamber for elimination of the periapical lesion and of the infected tissues in combination with peripheral osteotomy of the alveolus (Carl E. Misch *et al.*, 2008; Vanessa Montoya-Salazara *et al.*, 2014; Roberto Villa *et al.*, 2007). Following with the placement of implants in the site of numbers 11, 12. We advocated a 2-stage surgical protocol for load free and submerged healing to ensure predictable osseointegration (Zaid H. Baqain *et al.*, 2012; Roberto Villa *et al.*, 2007). One implant was inserted on 11, 12 tooth of maxilla: (size 3.7 with diameter \times 13mm length, ADIN implants Dentis) for implantation with two-stage. Following the visual orientation of IOPA, OPG for apical sitting of the implant was evaluated. The fixtures of early implant were anchored apically to alveolar socket in native bone and achieved the primary stability of the implant (Fawad Javeda *et al.*, 2010; Ozkan Dilek *et al.*, 2008). The residual apical bone of 3 to 5mm in a vertical dimension was required. The implant was inserted by placing implant shoulder 1mm under the crestal bone providing the physiological ridge alterations after extraction, and was anchored to the lingual/labial cortical plate of the post-extraction site. So, in the presence of large sockets that preclude the involvement of apical native bone, it may be preferable to defer implant placement.

Autograft harvested from the symphysis region of mandible and placed at the surgical site. GTR membrane was used to stabilize the graft and prevent peri implant alveolar defects, the flap repositioned and sutured (CLINICAL CASE 16, Postextraction Implant Placement, Immediate Loading, Osteotomy, Reduction Guide). The site was covered with the gauze pack and advised ice application for the day or two. Postsurgical antibiotics for 7 days, and chlorhexidine were followed for 2 weeks. The patient was shown how to perform a roll-stroke brushing technique and was motivated to control oral hygiene. The patient did not report specific symptoms and showed no adverse clinical signs. Sutures were removed on 7th day of IIP and surgery healing was satisfactory (Carl E. Misch *et al.*, 2008; Vanessa Montoya-Salazara *et al.*, 2014; Surgical protocols for early implant placement in post-extraction sockets: a systematic review, 2011). The second surgery phase

(healing screw insertion) had been done after four months of IIP (Judith A. Porter *et al.*, 2005; Altintas *et al.*, 2015; Cassetta *et al.*, 2015).

Conclusion

We conclude that the case presented successful results by placing immediate implants into the infected site. Immediate placement of implants for replacement of teeth with pre-existing infected cysts is a predictable treatment and can be indicated for replacing teeth lost due to the pre-existing infected lesion (Carl E. Misch *et al.*, 2008). Immediate placement of implants have shown major advantages along with a good share of successful osseointegration in the pre existing infected site. The protocol of meticulous debridement of the infected lesion tissues in combination with peripheral osteotomy of the bone cysts should be followed. Future studies, preferably randomized, prospective longitudinal studies, are certainly needed before this approach can be widely used.

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