International Journal of Medical and Health Research
ISSN: 2454-9142
www.medicalsciencejournal.com
Volume 4; Issue 8; August 2018; Page No. 161-163

Immediate implant placement in infected sites: A case report

Elias Boutros[1*], Mohamed Sabe-Alarab[2], Fawaz Jaber[3], Ali Kalthoum[4], Leen Sabe-Alarab[5], Saddeeqah Alraheme[6]

[1] Professor, PhD in Oral and Maxillofacial Surgery, Faculty of Dentistry, Al-Andalus University for Medical Sciences, Qadmous, Tartous, Syria

[2] Professor, PhD in Oral and Maxillofacial Surgery, Faculty of Dentistry, Hama University Hama, Hama, Syria

[3, 4] PhD Student in Oral and Maxillofacial Surgery, Faculty of Dentistry, Hama University Hama, Hama, Syria

[5, 6] Student, Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Al Andalus University Qadmous, Tartous, Syria

Abstract
Early restoration of the masticatory function, phonatory and aesthetics is some of the current goals of the therapy based on end osseous implants. Facing the classic protocols of implant insertion, which recommend a period of several months between extraction and implant placement. Alternatives have been developed and demonstrate that immediate implant placement after tooth extraction permits adequate osseointegration, even in those cases where there is a periapical disease. This article presents a case with immediate implant placement of a lateral incisors with prior periapical pathology. After 12-month follow-up, there were no mechanical or biological complications. The patient gave high satisfaction marks for the overall treatment, giving visual analogue scale score of nine. Immediate post-extraction implants have been arisen as an alternative to traditional implants on completely healed bone. Our main aim is to reduce treatment time and number of surgical procedures, along with other objectives such as reduced bone re-absorption and improved aesthetics.

Keywords: immediate implant, bone graft and periapical lesions

Introduction
Alveolar ridge resorption after tooth extraction may considerably reduce the residual bone volume and compromise the favorable positioning of implants required for optimal restoration [1-3].

Periradicular surgery, the immediate placement of an implant after tooth extraction has several advantages. It maintains the horizontal and vertical dimensions of the osseous tissues and keeps the implants at the same angulation as the pre-existing natural teeth. Despite these advantages, immediate implant placement is still not recommended in infected sites, because of the risk of microbial interference with osseointegration [2].

Several clinical studies have been carried out with implants placed immediately in periodontally infected sites in an attempt to overcome these limitations, and some good results were reported [4, 5].

Other clinical studies [4, 5] reported satisfactory results with implants placed immediately in periodontally infected sites. There are also several reports on the immediate placement of implants after the extraction of endodontic compromised teeth. Siegenthaler *et al*. [6] and Lindeboom *et al*. [7] found that the immediate placement of a dental implant in an extraction socket with a periradicular infection does not have a higher rate of complication than one placed in an uninfected site [8].

The aim of this article is to report the case of immediate placement of implants when used in the replacement of teeth with chronic periapical lesions.

Case Report
A 65-year-Female patient visited our oral surgery department at Hama University in April 2016. She had been suffering from pain anterior region of the maxilla for three weeks after clinical examination and panoramic imaging, we found periapical lesions around the upper lateral incisors (Figure 1-2).

Fig 1-2: Intraoral view of the tooth 12-22. Panoramic radiograph

The patient initiated with a daily dose of 1.5 g amoxicillin 4 days prior to the surgical procedure and maintained on it for 10 days.

The surgical procedure, a flap was raised under local anesthesia (2% mepivacaine.1:80000 adrenaline). The tooth extraction was performed with extreme care to preserve the alveolar bony integrity, and the sockets were carefully curetted to remove the remaining granulation tissue. Then preparation of the alveoli was carried out for implant placement an according to the recommendations of the manufacturer. Subsequently, a periodontal probe was used to explore the integrity of the bony walls and to measure the bone defect (Figure. 3)

Fig 3: Fenestration in the buccal surface that affect more than 50% of the surface of the implant

The peri-implant defect bone was grafted with bone graft (TCP) and covered with a resorbable membrane (Figs. 4 and 5) and the wound was closed in a routine fashion.

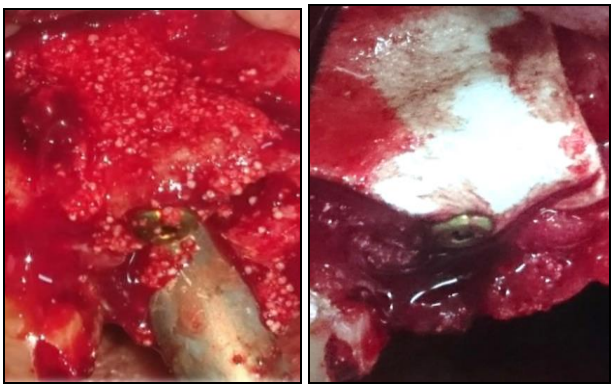

Fig 4-5: The peri-implant bone defect was grafted with bone graft (TCP) and covered with a resorbable membrane

Antibiotics, anti-inflammatory medication, and chlorhexidine mouthwash were prescribed during the postoperative period. Only for esthetics reason, a removable prosthesis was worn for the first 4 weeks. The temporary prosthesis was non–tissue bearing, had occlusal rests, and was relined with the soft lining material. Sutures were removed after 7 days.

Second-stage surgery was performed 6 months after the initial procedure (Figure. 6). A minimal incision was made at the crestal level to remove the cover screw of the implant and for placement of a healing abutment; the implants were manually tested for stability and impressions were taken using polyvinyl siloxane impression material†† and customized resin impression trays. Final prosthetic restorations were cemented, and patients were enrolled in an oral hygiene program with a recall visit every 3 months (Figure. 7-8)

Fig 6: Soft tissue healing after 6 months

Fig 7: Result of the treatment after 6 months of the placement of the restoration

Fig 8: Panoramic radiograph after 12 months

The final follow-up period was for 12 months. An implant was considered successful according to the absence of mobility and criteria as defined by Buser *et al* [9].

Discussion

The primary objective of implants is to restore the function and esthetics. In order to reduce the bone resorption and to maintain the esthetics, immediate placement is the treatment option which has been put forward by several authors and is widely used. However, placement into the extraction site with periapical lesion is still a questionnaire and many studies are being conducted on.

Casap *et al*. [10] conducted a study in which 30 implants were immediately placed into debrided infected sites in 20 patients and obtained 97.6 % success rate. One implant failed immediately after restoration.

Fabbro *et al*. [11] referred satisfactory excellent clinical results after immediate placement of implants following extraction along with PRGFs.

In a study by Lindeboom *et al*. whose purpose was to determine the clinical success factors of implant placement in alveolus with chronic periapical infection, registered survival values, stability, gingival aesthetics and radiographic bone loss. Allocated into tow; one of immediate implants in infected extraction alveolus and the other of implants in alveoli where they had previously been infection. Survival value of 92% of immediate implants were obtained and no significant differences were found in terms of stability, gingival aesthetics and radiographic bone loss [7].

Schwartz-Arad and Chaushu [12, 13] in their literature review on immediate implants described survival rates, for the same groups, of 93.9% to 100%. At the same year, in a retrospective study of 7 years of follow-up obtained a success rate of 95%. Subsequently, Chaushu *et al*. [14] in a clinical study comparing immediate versus non-immediate implantation obtained a success rate for the former of 82.4 percent, and for non-immediate implants 100%. Perry *et al*. [15] in a 5-year retrospective evaluation, which compared immediate implants with non- immediate implants obtained survival rates of 90.03 percent and 90.04 percent respectively. This technique is supported by literature with high survival rates reported by

Becker *et al*. [16] (97.2% percent), Wagenberg and Froum [17] (96% percent).

References

1. Bartee BK. Extraction site reconstruction for alveolar ridge preservation. Part 1: Rationale and materials selection. J Oral Implantol. 2001, 27:187.
2. Quirynen M, Gijbels F, Jacobs R. An infected jawbone site compromising successful osseointegration. Periodontol. 2003; 33129-44.
3. Kan JY, Shiotsu G, Rungcharassaeng K, *et al*. Maintaining and attenuating periodontal tissues for aesthetic implant placement. J Oral Implantol. 2000; 26:35.
4. Marcaccini AM, Novaes AB Jr, Souza SL, Taba M Jr, Grisi MF. Immediate placement of implants into periodontally infected sites in dogs. Part 2: A fluorescence microscopy study. Int. J Oral Maxillofac Implants. 2003; 18:812-9.
5. Tehemar S, Hanes P, Sharawy M. Enhancement of osseointegration of implants placed into extraction sockets of healthy and periodontally diseased teeth by using graft material, an ePTFE membrane, or a combination. Clin Implant Dent Relat Res. 2003; 5:193-211.
6. Siegenthaler DW, Jung RE, Holderegger C, Roos M, Hammerle CH. Replacement of teeth exhibiting periapical pathology by immediate implants: A prospective, controlled clinical trial. Clin. Oral Implants Res. 2007; 18:727-737.
7. Lindeboom JA, Tjiook Y, Kroon FH. Immediate placement of implants in periapical infected sites: A prospective randomized study in 50 patients. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2006; 101:705-710.
8. Novaes AB Jr, Vidigal Ju´nior GM, Novaes AB, Grisi MF, Polloni S, Rosa A. Immediate implants placed into infected sites: A histomorphometric study in dogs. Int. J Oral Maxillofac Implants. 1998; 13:422-427.
9. Buser D, Weber HP, Lang NP. Tissue integration of nonsubmerged implants. 1-year results of a prospective study with 100 ITI hollow-cylinder and hollow-screw implants. Clin Oral Implants Res. 1990; 1:33-40.
10. Casap N, Zeltser C, *et al*. Immediate placement of dental implants into debrided infected dentoalveolar sockets. J Oral Maxillofac Surg. 2007; 65:384-392. doi: 10.1016/j.jo ms.2006.02.031
11. Fabbro M, Boggian C, Taschieri S. Immediate implant placement into fresh extraction sites with chronic periapical pathologic features combined with plasma rich in growth factors: preliminary results of single-cohort study. J Oral Maxillofac Surg. 2009; 67:2476-2484. doi: 10.1016/j.joms.2009.04.063.
12. Schwartz-Arad D, Chaushu G. The ways and wherefores of immediate placement of implants into fresh extraction sites: a literature review. J Periodontol. 1997; 68:915-23.
13. Schwartz-Arad D, Chaushu G. Immediate implant placement: A procedure without incisions. J Periodontol. 1998; 69:743-50.
14. Chaushu G, Chaushu E, Tzohar A, Dayan E. Immediate loading of single-tooth implants: Immediate versus nonimmediate implantation. A clinical report. Int. J Oral Maxillofac Implants. 2001; 16:267-72.
15. Perry J, Lenchewski E. Clinical performance and 5-year retrospective evaluation of Frialit-2 implants. Int. J Oral Maxillofac Implants. 2004; 19:887-91.
16. Becker W, Sennerby L, Bedrossian E, Becker BE, Lucchini JP. Implant stability measurements for implants placed at the time of extraction: a cohort, prospective clinical trial. J Periodontal. 2005; 76:391-7.
17. Wagenberg B, Froum SJ. A retrospective study of 1925 consecutively placed immediate implants from 1988 to 2004. Int. J Oral Maxillofac Implants. 2006; 2:71-80.