MedCrave
Step into the World of Research
International Journal of Radiology & Radiation Therapy

Mini Review
Open Access
CrossMark

Conventional vs immediate dental implants: which is better?

Abstract

Dental implants are no exception and instant dental implant placement has turned out to be a widespread substitute to the orthodox implant placement procedure. About 92-100% success rates have been achieved among the immediate dental implants case. Facial plates play an important role for the placement of immediate implants. The facial plate can be either a full or a partial facial plate. The hindrances found in immediate implant placement like infections, reduced bone height and other disadvantages makes it imperative to place the implant 4-6 months later.

Keywords: implants, facial plates, peri-implant space, radiolucencies, grafts, resorption

Volume 6 Issue 2 - 2019

Saleem Mohammed,[1] Saleem Rayeesa,[2] Saleem Nawal,[3] Krishna Kumar Naveen,[4] Roshan Elias,[4] Yadav Karthik D[5]

[1]Department of Prosthodontics, KGF College of Dental Sciences, India
[2]Department of Conservative and Endodontics, KGF College of Dental Sciences, India
[3]Bachelor of Dental surgery, KGF College of Dental Sciences, India
[4]Department of Orthodontics, KGF College of Dental Sciences, India
[5]Department of Orthodontics, Department of oral medicine and radiology, KGF College of Dental Sciences, India

Correspondence: Karthik D Yadav, Master of Dental surgery, Department of oral medicine and radiology, KGF College of Dental Sciences, India, Email karthikyadavd@gmail.com

Received: February 23, 2019 | **Published:** April 02, 2019

Introduction

In today's fast paced life, everything is available instantaneously. Dental implants are no exception and instant dental implant placement has turned out to be a widespread substitute to the orthodox implant placement procedure. Traditionally, the healing period for the socket to heal before implant placement was recommended to be 6-12 months, but the trend has changed over the years.[1]

Over the period, investigators have suggested various schedules for implant placement like immediate (same day as extraction), early (4-8 weeks following extraction with soft tissue healing period) and the delayed schedule (12-16 weeks after extraction allowing partial bone healing).[2] About 92-100% success rates have been achieved among the immediate dental implants case, which is sufficiently supported by the literature when the proper case is selected.[3]

The main advantage of immediate implants over the conventional one is that the post-extraction ridge resorption is escaped while the height of the ridge is preserved, which serves as a bonus for the implants over the conventional ones. The literature study and research done over the years makes it somewhat clear that immediate implants along with socket grafting decreases horizontal bone loss.[3,4] Further studies have shown that socket grafting followed by conventional implant placement after healing shows promising similar outcomes.[5]

Imperative of the graft being placed only or in combination with an immediate implant, a vertical loss of almost 1mm can be anticipated.[6] Another factor which should be considered for an immediate placement is adequate bone for the implant, which if not present then it contraindicates the same with requirement for more complex procedures, which mends the bone making it more suitable with the position, angulation and depth for the implant.

Facial plate

Facial plates play an important role for the placement of immediate implants. The facial plate can be either a full or a partial facial plate. Herein, a full facial plate provides best conditions for immediate implant placement, whereas acceptable conditions are achieved with the partial facial plate. This can be overcome by guided bone regeneration with an extra care in soft tissue management which altogether increases the success rate of implants when the sockets with intact bony architecture are present. Esthetics are also found to be compromised when there are significant facial plate deficiencies, due to loss of hard and soft tissue which may expose the implant to the outside environment.[7]

Further, a width of 2mm of facial bone offers a higher success rate. This can be achieved in the molar regions, rather than the anterior regions where the facial plate thickness of 2 mm is not uniformly found. This makes the placement of graft an important factor in the anterior facial region, to ensure the uniform minimal width thickness.[6]

The peri-implant space

The minimum thickness between the implant and the facial plate affects the hard and soft tissue curative period circumscribing an immediate implant. Graft not only helps promote healing but also helps preserve horizontal bone measurements.

Literature review of the research carried out over the years showed that spontaneous healing devoid of regenerative materials in gaps <2mm,[5] and also grafting is suggested to elude the bone resorption.[8] It has also been shown that immediate implant show more soft tissue recession in comparison to the conventional implant due to dimensional changes in socket healing.[9] Recession is more commonly

found in thin gingival biotypes than the thick type over the time period of a year with 2 phases, first seen in the initial 6 months followed by pronounced changes later.[7,10]

Gingival recession with bone loss receding is more commonly seen when implants are placed more facially especially in immediate implants than the conventional form.[6] Whenever the implant engages the apical or furcal bone or the surrounding walls, the primary stability for the implant is achieved. Also, we should remember that not in all cases can the implant engage the apical bone due to anatomical variations in the individual.

Mandibular canal and mental foramen in the posterior mandible poses a challenge to the treating physician and care should be taken to avoid the same with a safe zone of 2mm, which can be achieved with the use of a CBCT scan.[11]

In case of infected teeth, wherein acute periapical infection is an absolute contraindication for an immediate implant placement, chronically infected teeth do not interfere much with the healing of immediate implants when accomplished cautiously, reducing the chances of peri-implantitis and implant failure.[12–15] Careful debridement, antimicrobial irrigation and the routine systemic antibiotics help accomplish the same.[16,17]

The existence of periapical radiolucencies in the neighboring teeth increases the chances of immediate implant failure; hence any periapical radiolucency should be investigated before proceeding with the treatment protocol of the implants.[14]

Similarly in periodontal disease conditions, active periodontitis is also a contraindication for the immediate implant placement as the risk of peri-implantitis in periodontitis involves the same microorganisms as in periodontitis. Further, failure to clear infections can contribute to compromised results.[18]

The fact that the supra-crestal soft tissue does not get attached to the implants and their components in the identical way that it does to natural teeth, makes the loss of the proximal bone a matter of concern. Structural backing for the papillae sandwiched between teeth and implants is delivered by the tooth and not the implant.[7,19,20] Proximal regeneration of lost facial bone becomes more difficult.[21] Hence it is imperative to evaluate the periodontal condition of teeth panned for extraction and the teeth next to the immediate socket.

Immediate loading

Conventional implant loading has a waiting period of 3-6 months after extraction, whereas immediate loading occurs at the phase of the implant placement. Cross-arch stabilization or the vouch for the reinstatement be open of any contact in centric, lateral excursive and protrusive movements, should be followed in the protocol during implant loading procedure.[10,22]

Conclusion

Immediate implant placement can be successful with socket grafting trailed by consequent implant placement. However the hindrances found in immediate implant placement like infections, reduced bone height and other disadvantages makes it imperative to place the implant 4-6 months later. Immediate implants have the advantages like reduced number of surgeries and the time required for the treatment to be accomplished.

Sources of support

Nil.

Acknowledgments

None.

Conflicts of interest

The author declares that there is no conflicts of interest.

References

1. Adell R, Lekholm U, Rockler B, et al. A 15–year study of osseointegrated implants in the treatment of the edentulous jaw. *Int J Oral Surg*. 1981;10(6):387–416.
2. Hammerle CH, Chen ST, Wilson TG. Consensus statements and recommended clinical procedures regarding the placement of implants in extraction sockets. *Int J Oral Maxillofac Implants*. 2004;19:26–28.
3. Chen ST, Darby IB, Reynolds EC, et al. Immediate implant placement post extraction without flap elevation. *Journal of Periodontology*. 2009;80(1):163–172.
4. Covani U, Bortolaia C, Barone A, et al. Bucco–lingual crestal bone changes after immediate and delayed implant placement. *J Periodontol*. 2004;75(12):1605–1612.
5. Paolantonio M, Dolci M, Scarano A, et al. Immediate implantation in fresh extraction sockets. A controlled clinical and histological study in man. *J Periodontol*. 2001;72(11):1560–1571.
6. Chen ST, Darby IB, Reynolds EC. A prospective clinical study of non□ submerged immediate implants: clinical outcomes and esthetic results. *Clin Oral Implants Res*. 2007;18(5):552–562.
7. Kois JC. Predictable single tooth peri–implant esthetics: five diagnostic keys. *Compend Contin Educ Dent*. 2001;22(3):199–206.
8. Rosenbach D. Gap management around immediate implants: a review of the literature and its application in clinical practice. *Dentaltown*. 2014;9:44–49.
9. Lindeboom JAH, Tjiook Y, Kroon FHM. 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(6):705–710.
10. Lang NP, Pun L, Lau KY, et al. A systematic review on survival and success rates of implants placed immediately into fresh extraction sockets after at least 1 year. *Clin Oral Implants Res*. 2012;23(5):39–66.
11. Greenstein G, Cavallaro J, Romanos G, et al. Clinical recommendations for avoiding and managing surgical complications associated with implant dentistry: a review. *J Periodontol*. 23008;79(8):1317–1329.
12. Quirynen M, Vogels R, Alsaadi G, et al. Predisposing conditions for retrograde peri-implantitis, and treatment suggestions. *Clin Oral Implants Res*. 2005;16(5):599–608.
13. Novaes AB, Vidigal JGM, Novaes AB, et al. Immediate implants placed into infected sites: a histo–morphometric study in dogs. *Int J Oral Maxillofac Implants*. 1998;13(3)::422–427.
14. Bell CL, Diehl D, Bell BM, et al. The immediate placement of dental implants into extraction sites with periapical lesions: a retrospective chart review. *J Oral Maxillofac Surg*. 2011;69(6):1623–1627.
15. Crespi R, Cappare P, Gherlone E. Fresh–socket implants in periapical infected sites in humans. *J Periodontol*. 2010;81(3):378–383.
16. Waasdorp JA, Evian CI, Mandracchia M. Immediate placement of implants into infected sites: a systematic review of the literature. *J Periodontol*. 2010;81(6):801–808.
17. Chrcanovic BR, Martins MD, Wennerberg A. Immediate placement of implants into infected sites: a systematic review. *Clin Implant Dent Relat Res*. 2015;17(1):e1–16.

Citation: Mohammed S, Rayeesa S, Nawal S, et al. Conventional vs immediate dental implants: which is better? *Int J Radiol Radiat Ther.* 2019;6(2):70–72. DOI: 10.15406/ijrrt.2019.06.00220

18. Mombelli A, van Oosten MA, Schurch E Jr., et al. The microbiota associated with successful or failing osseointegrated titanium implants. *Oral Microbiol Immunol*. 1987;2(4):145–151.

19. Grunder U. Stability of the mucosal topography around single–tooth implants and adjacent teeth: 1–year results. *Int J Periodontics Restorative Dent*. 2000;20(1):11–17.

20. Tarnow D, Elian N, Fletcher P, et al. Vertical distance from the crest of bone to the height of the interproximal papilla between adjacent implants. *J Periodontol*. 2003;74(12):1785–1788.

21. Kan JYK, Rungcharassaeng K, Sclar A, et al. Effects of the facial osseous defect morphology on gingival dynamics after immediate tooth replacement and guided bone regeneration: 1–year results. *J Oral Maxillofac Surg*. 2007;65(7):13–19.

22. Cavallaro J, Greenstein G. Immediate dental implant placement: technique, part 2. *Dent Today*. 2014;33(2):94–96.

Citation: Mohammed S, Rayeesa S, Nawal S, et al. Conventional vs immediate dental implants: which is better? *Int J Radiol Radiat Ther.* 2019;6(2):70–72. DOI: 10.15406/ijrrt.2019.06.00220