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ORIGINAL RESEARCH

Analysis of prosthetic complications of dental implants in 135 patients: An observational study

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ABSTRACT:

Background: Dental implants provide a predictable, effective, and reliable means for tooth replacements. Recognition of risk factors can reduce the failure rate and increase the predictability of dental implant treatment. Hence; under the light of above mentioned data, the present study was undertaken for assessing the prosthetic complications of dental implant therapy. **Materials & methods:** Analysis of a total of 135 patients was done. Only those patients were included who underwent prosthetic rehabilitation by dental implant procedures for missing mandibular first molar. Complete clinical and radiographic evaluation was done in all the patients. All the implant procedures were carried out under the hands of skilled and experienced implantologists. Patients were put on regular follow-up visits for assessing the outcome. Incidence of dental implant complications and its type was recorded separately. **Results:** Prosthetic complications were found to be present in 19 patients (14.07 percent). Attachment fracture and abutment screw loosening were found to be present in 26.32 and 36.84 percent of the patients. Round bar fracture and fracture retention clip were found to be present in 15.79 percent and 21.05 percent of the patients. **Conclusion:** prosthetic complications comprises of a wide spectrum of problems among patients undergoing dental implant procedures. Early recognition is necessary for decreasing the severity and increasing the prognosis.

Key words: Dental implants, Prosthetic complications

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INTRODUCTION

Dental implants provide a predictable, effective, and reliable means for tooth replacements. Additionally, dental implants provide completely edentulous and partial edentulous patients the function and esthetics they had with natural dentition. It enables patients to regain normal masticatory function, esthetics, speech, smile, and deglutition. In patients with orofacial pain, it may resolve painful symptoms as well as improve facial esthetics and appearance.¹⁻³

Failure of endosseous dental implants may occur prior to occlusal loading with a prosthetic superstructure or later after loading. Based on chronological criteria, the biological failures can be classified into "early failures" (due to unsuccessful osseointegration, indicating impaired bone healing) and "late failures" (due to loss of osseointegration). Several factors may be associated with early implant failure such as smoking, implant characteristics, infection, and insufficient bone quality/quantity. Recognition of risk factors can reduce

the failure rate and increase the predictability of dental implant treatment.⁴⁻⁶ Hence; under the light of above mentioned data, the present study was undertaken for assessing the prosthetic complications of dental implant therapy.

MATERIALS & METHODS

The present study was conducted in the department of prosthodontics and it included assessment of the prosthetic complication of dental implant therapy. Analysis of a total of 135 patients was done. Only those patients were included who underwent prosthetic rehabilitation by dental implant procedures for missing mandibular first molar. Complete clinical and radiographic evaluation was done in all the patients. All the implant procedures were carried out under the hands of skilled and experienced implantologists. Patients were put on regular follow-up visits for assessing the outcome. Incidence of dental implant complications and its type was recorded separately. All the results were recorded

and were analysed by SPSS software. Chi- square test was used for analysing the level of significance.

RESULTS

In the present study, a total of 135 patients who underwent dental implant procedures were enrolled. Mean age of the patients was found to be 43.8 years. 43.70 percent of the patients belonged to the age group of 30 to 50 years. 52.59 percent of the patients were males while the remaining were females.

In the present study, prosthetic complications were found to be present in 19 patients (14.07 percent). Attachment fracture and abutment screw loosening were found to be present in 26.32 and 36.84 percent of the patients. Round bar fracture and fracture retention clip were found to be present in 15.79 percent and 21.05 percent of the patients.

Table 1: Age and gender-wise distribution

Parameter		Number of patients	Percentage of patients
Age group (years)	Less than 30	49	36.30
	30 to 50	59	43.70
	More than 50	27	20
Gender	Males	71	52.59
	Females	64	47.41

Table 2: Incidence of prosthetic complications

Parameter	Incidence of prosthetic complications
Number of patients	19
Percentage of patients	14.07

Table 3: Prosthetic complication

Prosthetic complications	Number of patients	Percentage of patients
Attachment fractures	5	26.32
Abutment screw loosening	7	36.84
Round bar fracture	3	15.79
Fractured retention clip	4	21.05
Total	19	100

DISCUSSION

Endosseous dental implants are successfully used to replace the missing teeth. Despite the predictability of success of dental implants, a small group of patients may experience implant failure. Success of dental implants depends on the site of implant placement, the patient’s conditions, surgeon’s experience, the precision of surgical technique, and type of implants.⁷ Implant placement in severely atrophic jaws is especially challenging because of the poor quality and quantity of the future implant bed. Restoring the oral functions and esthetics in these patients becomes a challenge and requires major bone grafting or artificial gingival tissue. Bone grafting is usually required before placing dental implants. However, horizontal bone augmentation procedures are often difficult and offer an unpredictable result. Furthermore, in patients with

chronic periodontitis with multiple endo-periodontal lesions, the remaining infection often prevents simultaneous tooth extractions and bone grafting or immediate placement of implants.^{8, 9} Hence; under the light of above mentioned data, the present study was undertaken for assessing the prosthetic complications of dental implant therapy.

In the present study, a total of 135 patients who underwent dental implant procedures were enrolled. Mean age of the patients was found to be 43.8 years. 43.70 percent of the patients belonged to the age group of 30 to 50 years. 52.59 percent of the patients were males while the remaining were females. Ülkü SZ et al evaluated clinical prosthetic values and complications that occurred during 4-year follow-up in implant-supported restorations. This retrospective study included 40 patients who received oral rehabilitation with an implant-supported prosthesis. A total of 162 implants were placed: 99 in the maxilla and 63 in the mandible. The prosthetic and surgical data were recorded. Data including prosthetic complications and implant loss were recorded and statistically analyzed using Cox proportional hazard regression analysis. In total, 159 implants (98.14%) survived, 3 implants (1.86%) failed, and 100% of the protheses were successful. There were 62 dental implants used as abutments for removable dentures and 97 for fixed dentures. The most frequent prosthetic complications after placement of an implant-supported prosthesis were loss of retention, mucositis, abutment screw loosening, and fracture. Patient satisfaction after prosthesis use was also evaluated, showing that satisfaction was systematically increased. To minimize the frequency of complications, protocols must be established from diagnosis to the completion of treatment and follow-up of implant-supported protheses, especially in terms of adequate technical steps and careful radiographic evaluation of the components.⁹

In the present study, prosthetic complications were found to be present in 19 patients (14.07 percent). Attachment fracture and abutment screw loosening were found to be present in 26.32 and 36.84 percent of the patients. Round bar fracture and fracture retention clip were found to be present in 15.79 percent and 21.05 percent of the patients. Goodacre BJ et al presented recent data regarding prosthetic complications with implant protheses and crowns as well as compare this data with data presented in a 2003 publication. An electronic Medline (PubMed) with MeSH terms search was performed, focussing on clinical studies that reported data on prosthetic complications associated with implant fixed complete dentures, implant overdentures, implant fixed partial dentures, and implant single crowns. There were nine prosthetic complications reported with implant fixed complete dentures, 17 with implant overdentures, four with implant fixed partial dentures, and six with implant single crowns. The greatest number of complications and the largest incidence of percentages occurred with implant overdentures. The lowest incidence percentages were recorded for implant single crowns. These findings are in agreement with the previous 2003 publication.

Implant overdentures are associated with more complications than implant fixed complete dentures, implant fixed partial dentures, and implant single crowns. The lowest incidence of complications was reported with implant single crowns. The most common complication reported with implant fixed complete dentures was denture tooth fracture. The most common complication associated with implant overdentures was the need for adjustments. Porcelain veneer fracture/chipping was the most common complication identified in the studies of implant fixed partial dentures. The most common complication reported with implant single crowns was abutment screw loosening.¹⁰

CONCLUSION

Under the light of above mentioned data, the authors conclude that prosthetic complications comprises of a wide spectrum of problems among patients undergoing dental implant procedures. Early recognition is necessary for decreasing the severity and increasing the prognosis.

REFERENCES

1. Karabuda C, Yaltırık M, Bayraktar M. A clinical comparison of prosthetic complications of implant-supported overdentures with different attachment systems. *Implant Dentistry*. 2008;17(1):74–79.
2. Gervais MJ, Wilson PR. A rationale retrievability of fixed implant-supported prostheses: A complication-based analysis. *Int J Prosthodont*. 2007;20:13–24.
3. Abduo J, Bennani V, Waddell N, et al. Assessing the fit of implant fixed prostheses: A critical review. *Int J Oral Maxillofac Implants*. 2010;25(3):506–15.
4. Froum SJ. In: *Dental implant complications: Etiology, prevention and treatment*. Arıkan F, Günbay T, Kazazoğlu E, translators and editors; Goodacre CJ, Kattadiyil MT, editors. İstanbul: Express Bookstore; 2013. pp. 1–6, pp. 110–17, pp. 119–26, pp. 172–95.
5. Çetiner S, Zor F. The critical factors effecting the success of dental implants. *The Journal of Gazi University Faculty of Dentistry*. 2007;24(1):51–56.
6. Pişkin B, Gökçe HS, Avsever H, et al. Prosthetic complications in implant supported fixed prosthesis. A four year multi-center retrospective analysis. *The Journal of Istanbul University Faculty of Dentistry*. 2010;44(2):75–80.
7. Berglundh T, Persson L, Klinge B. A systematic review of the incidence of biological and technical complications in implant dentistry reported in prospective longitudinal studies of at least 5 years. *J Clin Periodontol*. 2002;29(3):197–212.
8. Baqain ZH, Moqbel WY, Sawair FA. Early dental implant failure: Risk factors. *Br J Oral Maxillofac Surg*. 50(3):239–43. 201.
9. Ülkü SZ, Acun Kaya F, Uysal E, Gulsun B. Clinical Evaluation of Complications in Implant-Supported Dentures: A 4-Year Retrospective Study. *Med Sci Monit*. 2017;23:6137–6143.
10. Goodacre BJ, Goodacre SE, Goodacre CJ. Prosthetic complications with implant prostheses (2001-2017). *Eur J Oral Implantol*. 2018;11 Suppl 1:S27-S36.