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Assessment of Incidence of Various Complications in Patients Undergoing Prosthetic Rehabilitated of Missing Teeth with Dental Implants: An Observational Study

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ABSTRACT

Background: Currently, dental implants are widely accepted as a prosthetic treatment of completely or partially edentulous patients. However; differential failure rates have also been reported in patients undergoing dental implant procedures. Hence; we planned the present study to assess the incidence of various complications in patients undergoing prosthetic rehabilitated of missing teeth with dental implants.

Materials & methods: The present study included assessment of incidence of various complications in patients undergoing prosthetic rehabilitated of missing teeth with dental implants. A total of 200 patients were included in the present study over a time period of two years. Radiographic analysis was done in all the patients and treatment planning was done. Experienced prosthodontists carried the dental implant procedure in all the patients. All the patients were recalled for follow-up and records were maintained for assessing the post-treatment complications.

Results: Complications were found to be present in 7 percent of the patients. Among these complications, Mucositis, Peri-implantitis, Prosthetic teeth fracture, Prosthetic base fracture and Dental implant failure were the most common complications present.

Conclusion: Mucositis and Peri-implantitis are the most common complications due to food lodgment present in patients undergoing prosthetic rehabilitation of missing teeth by dental implants.

Keywords: Complications, Dental implants, Rehabilitation.

INTRODUCTION

The goal of modern dentistry is to restore the patient to normal function, speech, health and aesthetics, regardless of the atrophy, disease, or injury of the stomatognathic system. Responding to this ultimate goal, dental implants are an ideal option for people in good general oral health who have lost a tooth (or teeth) due to periodontal disease, an injury, or some other reasons.[1-3] Dental implants (considered as an artificial tooth root) are biocompatible metal anchors surgically positioned in the jaw bone (in other words, surgically traumatized bone) underneath the gums to support an artificial crown where natural teeth are missing.[4,5]

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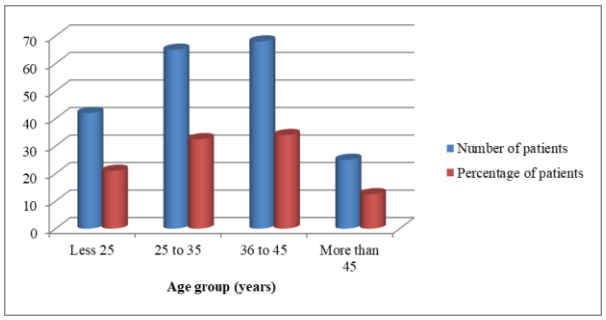
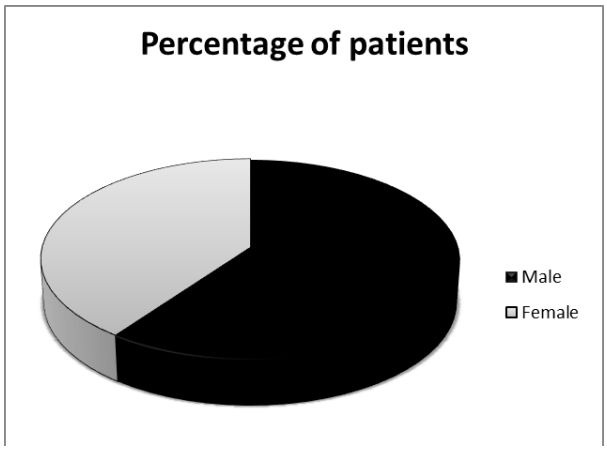


Graph 1: Age-wise distribution of patients.



Graph 2: Gender-wise distribution of patients.

Table 1: Distribution of patients according to number of dental implants.

Number of dental implants per patients	Number of patients	Percentage of patients
One	65	32.5
Two	52	26
Three	41	20.5
Four	22	11
More than four	20	10
Total	200	100

Currently, dental implants are widely accepted as a prosthetic treatment of completely or partially edentulous patients and studies have shown significant improvement in patients' attitudes toward their dental health after treatment with implant prostheses. However; differential failure rates have also been reported in patients undergoing dental implant procedures.[6-9] Hence; we planned the present study to assess the incidence of various complications in patients undergoing prosthetic rehabilitated of missing teeth with dental implants.

Table 2: Incidence of complications.

Number of dental implants per patients	Number of patients	Percentage of patients
Mucositis	5	2.5
Peri-implantitis	3	1.5
Prosthetic teeth fracture	1	0.5
Prosthetic base fracture	2	1
Dental implant failure	1	0.5
Others	2	1
Total	14	7

MATERIALS & METHODS

The present study was commenced in the department of prosthodontics and it included assessment of incidence of various complications in patients undergoing prosthetic rehabilitated of missing teeth with dental implants. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 200 patients were included in the present study over a time period of two years. Inclusion criteria:

- Patients undergoing prosthetic rehabilitation for missing teeth by dental implants,
- Patients with negative history of any systemic illness,
- Patients with negative history of any known drug allergy

Complete demographic and clinical details of all the patients were recorded through the means of self-administered questionnaire. Radiographic analysis was done in all the patients and treatment planning was done. Experienced prosthodontists carried the dental implant procedure in all the patients. All the patients were recalled for follow-up and records were maintained for assessing the post-treatment complications. All the results were assessed and analyzed by SPSS software.

RESULTS

In the present study, enrollment of a total of 200 patients was done were scheduled to undergo prosthetic rehabilitation for missing teeth by dental implants. Among these patients, 42 patients were less than 25 years of age as shown in **Graph 1**. 65 patients belonged to the age group of 25 to 35 years. 34 percent of the patients belonged to the age group of 36 to 45 years. There were 120 males and 80 females in the present study as shown in **Graph 2**. In 32.5 percent of the patients, single dental implant per patient was placed. In 26 percent and 20.5 percent of the patients, two and three dental implants were per patient were placed respectively as shown in **Table 1**. Complications were found to be present in 7 percent of the patients as shown in **Table 2**. Among these complications, Mucositis, Peri-implantitis, Prosthetic teeth fracture, Prosthetic base fracture and Dental implant failure were the most common complications present.

DISCUSSION

In the present study, enrollment of a total of 200 patients was done were scheduled to undergo prosthetic rehabilitation for missing teeth by dental implants. Among these patients, 42 patients were less than 25 years of age. 65 patients belonged to the age group of 25 to 35 years. 34 percent of the patients belonged to the age group of 36 to 45 years. There were 120 males and 80 females in the present study. Real-Osuna J et al assessed the main problems referred by the patients and observed by the professionals after the bucodental rehabilitation with an implant-supported hybrid prothesis. A retrospective study was carried out in which there were 43 patients included who were visited in the Department of Oral Surgery and Orofacial Implantology of University of Barcelona Dental School for one year. An oral rehabilitation with an implant-supported hybrid prosthesis was made to those patients. The following variables were registered: age, gender, number of inserted implants, type of implant and principal problems produced by the hybrid prosthesis. The rehabilitation with an implant supported hybrid prosthesis was only performed in 43 of 116 cases treated in one year (January, 2006 to January, 2007). They were 26 men and 17 women of ages between 37 and 74 years, being the rate age of 56,5 years. The main complication recorded was the mucositis, associated frequently with a difficulty to carry a correct oral hygiene and to an over extension of the tail of resin of the prosthesis. Other observed problems were the peri-implantitis, the break of the acrylic teeth and the loss of some of the prosthetic screws. The most frequent complication after the laying of an implant supported hybrid prosthesis was the mucositis, associated mainly with a prosthetic tail too long and to the consequent difficulty of carrying a correct oral hygiene. In spite of the high prevalence of observed complications, most of them were mild and resolved on subsequent visits.[10]

In the present study, in 32.5 percent of the patients, single dental implant per patient was placed. In 26 percent and 20.5 percent of the patients, two and three dental implants were per patient were placed respectively. Complications were found to be present in 7 percent of the patients. Among these complications, Mucositis, Peri-implantitis, Prosthetic teeth fracture, Prosthetic base fracture and Dental implant failure were the most common complications present. Gallucci GO et al evaluated the survival rate, success rate and primary complications associated with mandibular fixed implant-supported rehabilitations with distal cantilevers over 5 years of function. In this prospective multi-center trial, 45 fully edentulous patients were treated with implant-supported mandibular hybrid prostheses with distal extension cantilevers. Data were collected at numerous time points, including but not limited to: implant placement, abutment placement, final prosthesis delivery, 3 months and 5 years post-loading. Biological, implant and prosthetic parameters defining survival and success were evaluated for each implant including: sulcus bleeding ndex (SBI) at four sites per implant, width of facial and lingual keratinized gingiva (mm), peri-implant mucosal level (mid-facial from the top of the implant collar, measured in mm), modified plaque index (MPI) at four sites per implant, mobility and peri-implant radiolucency. A total of 237 implants in 45 completely edentulous patients were included in the study. In each patient, four to six implants were placed to support hybrid prostheses with distal cantilevers. Cantilevers ranged in length from 6 to 21 mm, with an average length of 15.6 mm. The ages of the patients ranged from 34 to 78 with a

mean age of 59.5 years. The survival rate of implants was 100% (237/237) and for prostheses 95.5% (43/45). The overall treatment success rate was calculated as 86.7% (39/45). Of the six patients that have not met the criteria for success, two patients required replacement of the entire prosthesis and four patients presented >four complications events. Fixed implant-supported rehabilitation with distal cantilever resulted in a reliable treatment modality over the 5-year observation period.[11]

CONCLUSION

Under the light of above obtained data, the authors conclude that Mucositis and Peri-implantitis are the most common complications present due to food lodgment in patients undergoing prosthetic rehabilitation of missing teeth by dental implants. However; further studies are recommended.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Giray B, Akça K, Ýplikçiođlu H, Akça E. Two-year follow-up of a patient with oligodontia treated with implant- and tooth-supported fixed partial dentures: A case report. Int. J. Oral Maxillofac. Implants. 2003;18:905–911.

2. Long M, Rack HJ. Review: Titanium alloys in total joint replacement – a materials science perspective. Biomaterials. 1998;19:1621–1639.

3. Nallaswamy VD, Karthikeyan R, Vinaya B. New Delhi, India: Jaypee Brothers Medical Publishing Lt; 2003. Textbook of Prosthodontics; pp. 720–30.

4. Brånemark PI, Zarb GA, Albrektsson T. Tissue-Integrated Prostheses; Osseointegration in Clinical Dentistry. Quintessence; Chicago, IL, USA: 1985. pp. 175–186.

5. Stillman N, Douglass CW. Developing market for dental implants. J. Am. Dent. Assoc. 1993;124:51–56.

6. Grogono AL, Lancaster DM, Finger IM. Dental implants: A survey of patients' attitudes. J Prosthet Dent. 1989;62:573–6.

7. Omar R, Tashkandi E, Abduljabbar T, Abdullah MA, Akeel RF. Sentiments expressed in relation to tooth loss: A qualitative study among edentulous Saudis. Int J Prosthodont. 2003;16:515–20.

8. Fiske J, Davis DM, Frances C, Gelbier S. The emotional effects of tooth loss in edentulous people. Br Dent J. 1998;184:90–3.

9. Quran F, Clifford T, Cooper C, Lamey PJ. Influence of psychological factors on the acceptance of complete dentures. Gerodontology. 2001;18:35–40.

10. Real-Osuna J, Almendros-Marqués N, Gay-Escoda C. Prevalence of complications after the oral rehabilitation with implant-supported hybrid prostheses. Medicina Oral, Patología Oral y CirugíaBucal. 2012;17(1):e116-e121.

11. Gallucci GO1, Doughtie CB, Hwang JW, Fiorellini JP, Weber HP. Five-year results of fixed implant-supported rehabilitations with distal cantilevers for the edentulous mandible. Clin Oral Implants Res. 2009 Jun;20(6):601-7. doi: 10.1111/j.1600-0501.2008.01699.x. Epub 2009 Mar 11.