(e) ISSN Online: 2321-9599
(p) ISSN Print: 2348-6805

SJIF (Impact factor) 2017= 6.261
Index Copernicus value = 80.90

ORIGINAL ARTICLE

Incidence of Complications and Success Rate of Dental Implants

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ABSTRACT:

Background: Subjects look for tooth substitutes once the tooth is lost with the chief goal that mastication and esthetics are not compromised. Simple choices in prosthodontics for substitution of a missing single tooth include the removable denture, partial and full bridgework, and tar reinforced bridges. The present study was conducted to determine the incidence of complications and success rate associated with dental implant placement. **Materials and methods:** The present study was conducted in the retrospective manner in the Department of dentistry during a period of 8 months. The study included subjects between 25- 55 years of age that consented for implant placement. Any complaints or discomfort reported by the subjects was recorded. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software. **Results:** The present study enrolled 45 subjects between the age group of 28-55 years. The mean age of the subjects was 34.86+/-2.65 years. There were 33.3% (n=15) cases of mucositis. There were 26.7% (n=12) cases of periimplantitis. There were 6.7%(n=3) cases of ulcer. There were 2.2% (n=1) cases of prosthetic base fracture. **Conclusion:** The major complications associated with implant placement in our study were mucositis and perimplantitis.

Key words: Implant, Mucositis, Periimplantitis

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This article may be cited as: Pal K. Incidence of Complications and Success Rate of Dental Implants. J Adv Med Dent Scie Res 2017;5(9):127-129.

INTRODUCTION

Understanding the pattern of tooth loss amongst the population is important to determine the quality of dental management to be provided and it varies geographically and socially amongst different nations.[1] Surveys have shown that dental caries and periodontal disorders are most frequent reason of visit behind tooth extraction. Subjects look for tooth substitutes once the tooth is lost with the chief goal that mastication and esthetics are not compromised.[2,3]Once a tooth is lost, an individual may look for its substitution with the goal that his/her capacity and style could be reestablished. [2,3]Resorption of the dental bone occurs after extraction that can hinder the placement of implant in various sites especially in the anterior region.[4] This especially occurs when the patient has been edentulous for a longer duration of time or in cases where bone loss has been due to trauma. Therefore in these cases it is necessary to perform bone grafting techniques prior to placement of implant. Simple choices in prosthodontics for substitution of a missing single tooth include the removable denture, partial and full bridgework, and tar reinforced bridges.[5,6] Surgical alterations can provide an area for elective anchorage for the dental implants in a region that thought to be critical. The present study was conducted to determine the incidence of complications and success rate associated with dental implant placement.

MATERIALS AND METHODS

The present study was conducted in the retrospective manner in the Department of dentistry during a period of 8 months. The study was approved by the institutional ethical committee and all the subjects were informed about the study during their follow up visits. A written consent was obtained from all in their vernacular language. The study included subjects between 25- 55 years of age that consented for implant placement. The demographic data about the subjects was obtained from the hospital records. Subjects belonging to ASA grade III and IV categories were excluded from the study. The implants placed in maxillary and mandibular posterior region were included in our study. All the subjects were closely followed at 7 days, 1month and 3 month interval. Any complaints or discomfort reported by the subjects was recorded. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software.

RESULTS

The present study enrolled 45 subjects between the age group of 28-55 years. The mean age of the subjects was 34.86+/-2.65 years. There were majority of females in the study group.

Table 1 shows the frequency of implants placed. Four implants were placed in 33.3% (n=15) subjects. Five implants were placed in 17.8% (n=8) subjects. Six implants were placed in 40% (n=18) subjects. Seven implants were placed in 4.4% (n=2) subjects. Eight implants were placed in 4.4% (n=2) subjects.

Table 2 shows the frequency of complications associated with implant placement. There were 33.3% (n=15) cases of mucositis. There were 26.7% (n=12) cases of periimplantitis. There were 6.7%(n=3) cases of ulcer. There were 2.2% (n=1) cases of prosthetic base fracture. There were 11.1% (n=5) cases of screw problems. There were 17.8% (n=8) cases of prosthesis fracture.

Table 1: Frequency of implants placed

Number of implants	Frequency of cases	Percentage
Four	15	33.3
Five	8	17.8
Six	18	40
Seven	2	4.4
Eight	2	4.4
Total	45	100

Table 2: Frequency of complications

Complications	Frequency	Percentage
Mucositis	15	33.3
Peri-implantitis	12	26.7
Difficulty in maintaining oral hygiene	11	24.4
Fracture of prosthesis	8	17.8
Screw problems	5	11.1
Ulcer	3	6.7
Prosthetic base fracture	1	2.2

DISCUSSION

There are a variety of methods and terminologies used in the literature for accidents and complications; therefore it calls for a descriptive criterion that can be universally used irrespective of the different single studies. Various studies have been focussed on thesurvival and complications of fixed partialdentures that are supported by dental implants. Survival rates up to 10 years have beenshown for both single unit and multiple unitimplant held fixed partial dentures.[7,8] With significant evidenceavailable, fixed implant supported dentures arecompletely characterised as a solid treatment with unifocal follow up duration and this does notmake them free of adverse events.[9,10] Nowadays dental implants are increasingly becoming a decision of trade for replacing teeth, but theproblems related to them are continuously increasingalong.[10] In our study, there were 33.3% (n=15) cases of mucositis. There were 26.7% (n=12) cases of periimplantitis. There were 6.7%(n=3) cases of ulcer. There were 2.2% (n=1) cases of prosthetic base fracture. There were 11.1% (n=5) cases of screw problems. There were 17.8% (n=8) cases of prosthesis fracture. Commonly associated complications associated with implant placement include fracture, infection, lack of osseointegration etc.Infections that occur during the first few postoperative day periodare characterized by edema, fluid and pain. All these signs are caused by bacterial contamination that occur during surgery either directly via accidental contact of implants with hands or indirectly from instruments. The risks of complications like this can be reduced by adopting the surgical aseptic.[11,12] This is advisable even by a retrospective study conducted by Scharf and Tarnow[13]who compared 273 implants that were inserted under "sterile" conditions and 113 implants that were inserted under "clean" conditions. The results indicated no significant differences in the rate of success between the two groups. Another complication that leads to implant failure is lack of osseointegration. Lack of osseointegration can be diagnosed during phase II of surgery when the implant is at loading stage. The main reasons for lack of osseointegration aredecreased healing capacity, early loading during osseointegration, technical faults during surgery like accidental contamination of the implants[14-16], and bone overheating while drilling for implant site preparation. The present study though evaluated the complications associated with implant placement but the late stage complications were not properly assessed as the follow up period was short. Also the number of patients was less.

CONCLUSION

Establishment of the esthetic and masticatory function of the patients is of chief concern while planning the rehabilitation of lost teeth. Dental implants have paved a new way for rehabilitation. Though implants are widely used but they are also not free of complications. The major complications associated with implant placement in our study were mucositis and perimplantitis.

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Source of support: Nil **Conflict of interest:** None declared