

## Original Research

### A retrospective study of assessment of dental implant failure

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#### ABSTRACT:

**Background:** Dental implants are one of the most successful treatment choices for edentulous areas. The present study was conducted to assess dental implant failures. **Materials & Methods:** 78 patients who received 104 dental implants were included. Type of failure was recorded. **Results:** 48 males had 60 and 30 females had 44 dental implants. Common reason for dental implant failures was peri-implantitis in 4, mucositis in 2, screw fracture in 1, crown fracture in 1 and prosthetic base fracture in 2 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** Common reason for dental implant failures was peri-implantitis, mucositis, screw fracture and crown fracture.

**Key words:** crown fracture, dental implant, peri-implantitis

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#### INTRODUCTION

Dental implants are one of the most successful treatment choices for edentulous areas. The surgical and rehabilitation phases of dental implant surgery are greatly affected by the history and clinical examination of the patient. Surgical procedure for dental implant requires minimal trauma and circumvent excessive bleeding and stress.<sup>1</sup> Moreover, a patient requiring dental implant has a number of fears such as fear of pain during the procedure. For the reduction of pain to minimally possible, it is required to properly manage the anxiousness of the patient regarding minimal to moderate stress. From the follow up studies conducted over 10 years, it has been reported that in healthy patients the success rate of dental implants is 90 to 95%.<sup>2</sup>

However, complications are unavoidable. Therefore, a consideration should also be given to complications associated with dental implant surgery.<sup>3</sup> Haemorrhages, implant fracture, loss of bone are certain commonly seen reasons that lead to implant failure. Paraesthesia or anaesthesia are also seen with some cases.<sup>4</sup> Dental implants failure can be early failures, those that occur from weeks to few months

after placement caused by factors that interfere with normal healing process or by an altered healing response and late failures, those that arise from pathologic processes that involve a previously osteo-integrated implant.<sup>5</sup> The present study was conducted to assess dental implant failures.

#### MATERIALS & METHODS

The present retrospective study was conducted among 78 patients who received 104 dental implants of both genders. All cases were informed regarding the study and their consent was obtained

Data such as name, age, gender etc. was recorded. The inability of dental implant to survive at its location or exposed threads of implants at follow up visit was determined as parameters for implant failure. The evaluation of number of exposed threads of implants was done using clinical and radiographic data from the records. Results thus obtained were analyzed statistically. P value less than 0.05 was considered significant.

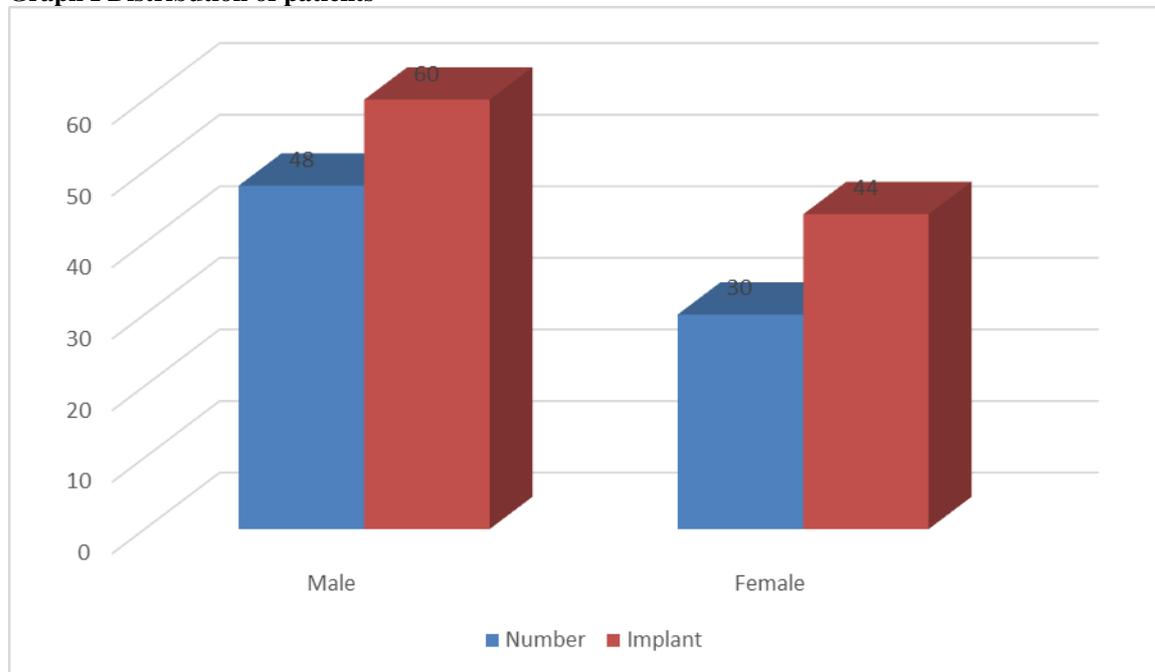
**RESULTS**

**Table I Distribution of patients**

Gender	Number	Implant
Male	48	60
Female	30	44

Table I, graph I shows that 48 males had 60 and 30 females had 44 dental implants.

**Graph I Distribution of patients**

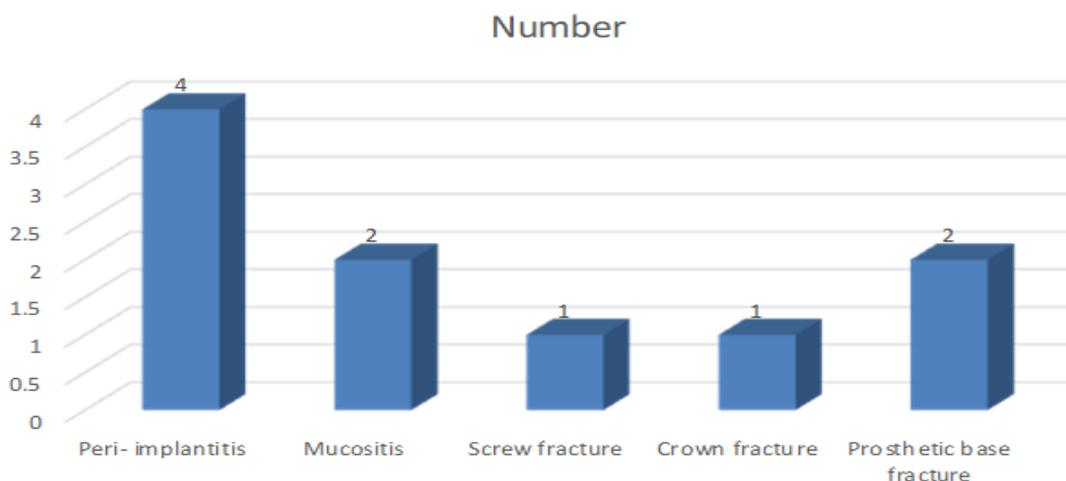


**Table II Assessment of dental implant failures**

Failure	Number	P value
Peri- implantitis	4	0.01
Mucositis	2	
Screw fracture	1	
Crown fracture	1	
Prosthetic base fracture	2	

Table II, graph II shows that common reason for dental implant failures was peri- implantitis in 4, mucositis in 2, screw fracture in 1, crown fracture in 1 and prosthetic base fracture in 2 cases. The difference was significant ( $P < 0.05$ ).

**Graph II Assessment of dental implant failures**



## DISCUSSION

Tooth loss is very common and it can happen as a result of disease and trauma; therefore, the use of dental implants to provide support for replacement of missing teeth has a long and multifaceted history.<sup>6</sup> Statistics provided by the American Association of Oral and Maxillofacial Surgeons show that 69% of adults ages 35 to 44 have lost at least one permanent tooth to an accident, gum disease, a failed root canal or tooth decay. Furthermore, by age 74, 26% of adults have lost all of their permanent teeth.<sup>7</sup> Therefore, the use of dental implants reveals that about 100,000-300,000 dental implants are placed per year. The type of dental treatment is mainly dependent on the pattern of teeth loss and it varies geographically and gender wise.<sup>8</sup> Dental caries and periodontal disease are the most frequent reasons for the dental visit. After the loss of the tooth, the people may look out for substitutes that can re-establish their form and function. The replacement should be both esthetic and functionally correct. Various choices for the replacement of missing teeth include removable partial dentures, fixed partial dentures, crowns and bridges.<sup>9</sup> The present study was conducted to assess dental implant failures.

In present study, 48 males had 60 and 30 females had 44 dental implants. Verma et al<sup>10</sup> study group consisted of medically compromised patients whereas control group consisted of normal healthy patients. A total of 50 patients participated in the study. 25 patients belonged to study group and the other 25 patients belonged to control group. The number of failed dental implants in study group was 3 and was 1 in control group. Extraction of dental implant was done for 5 teeth in study group and 6 implants in control group. On comparing the results were statistically significant for failed dental implants.

We found that common reason for dental implant failures was peri-implantitis in 4, mucositis in 2, screw fracture in 1, crown fracture in 1 and prosthetic base fracture in 2 cases. Bhagat et al<sup>11</sup> the study included a total of 40 subjects. The data was obtained from the records of the institute. The dental implants were placed by single experienced surgeon so that the surgeon's effect on the rate of complications is minimised. The mean age of the study was 28.34±4.33 years. The study involved 27 males and 13 females. There were 32.5% (n=13) patients in whom 4 implants were placed. In 20% subjects 5 implants were placed. Mucositis were seen in 20% (n=12) subjects. Peri implantitis was seen in 22.5% (n=9) subjects. There were 20% subjects with poor oral hygiene. Crown fracture was seen in 20% (n=8) subjects.

Singh et al<sup>12</sup> included a total of 100 patients. 50 patients belonged to the study group, while the remaining 50 belonged to the control group. In the control group, dental implant failure occurred in a single patient while in the study group, dental implant failure occurred in 3 patients. Removal of dental

implants occurred in 10 patients of control group; while it was done in 9 patients of the study group.

## CONCLUSION

Authors found that common reason for dental implant failures was peri-implantitis, mucositis, screw fracture and crown fracture.

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