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## ORIGINAL ARTICLE

### Assessment of Prosthetic Complications of Dental Implants- A Clinical Study

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#### ABSTRACT:

**Background:** The present study was conducted to assess prosthetic complications of dental implants. **Materials & Methods:** The present retrospective study was conducted on 74 patients who received dental implants in last 5 years of both genders. Complications arising from prosthetic portion of dental implants were recorded. **Results:** Out of 74 patients, males were 31 and females were 43. In males, 68 and in females 80 dental implants were placed. Complication was porcelain veneer fracture in 12, decementation of crown in 3, crown remakes in 4 and open proximal contact in 4. The difference was significant ( $P < 0.05$ ). **Conclusion:** Authors found that common complication was porcelain veneer fracture, decementation of crown, crown remakes and open proximal contact.

**Key words:** Dental implant, Porcelain, Veneer.

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#### INTRODUCTION

The use of dental implants is now a widely accepted treatment modality for fully and partially edentulous patients.<sup>1</sup> The success of this approach is rooted in the inherent ability of some dental materials, titanium in particular, to osseointegrate, thereby creating direct bone-to-implant contact. Further improvements toward the successful osseointegration of dental implants have involved modifications to both surface topography and surface chemistry.<sup>2</sup>

Although osseointegrated implants are routinely used for the rehabilitation of partially or totally edentulous patients, presenting high long-term survival rates; biological and technical complications may result in implant failure and loss. Implant failures have been reported in frequencies varying from 1% up to 22%.<sup>3</sup> Factors affecting implant failure are diverse and are related to patient systemic status, age and social habits, implant macro-/micro-design and surface chemical composition, implant position, bone quality, and surgical technique.<sup>4</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. Therefore, the use of dental implants reveals that about 100,000-300,000 dental implants are placed per year, which approximates the numbers of artificial hip and knee joints placed per year.<sup>5</sup> The present study was conducted to assess prosthetic complications of dental implants.

#### MATERIALS & METHODS

The present retrospective study was conducted in the department of Prosthodontics. It comprised of 74 patients who received dental implants in last 5 years of both genders. They were informed regarding the study and written consent was obtained. Ethical clearance from ethical committee was taken prior to the study.

Data such as name, age, gender etc. was recorded. Complications arising from prosthetic portion of dental implants were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

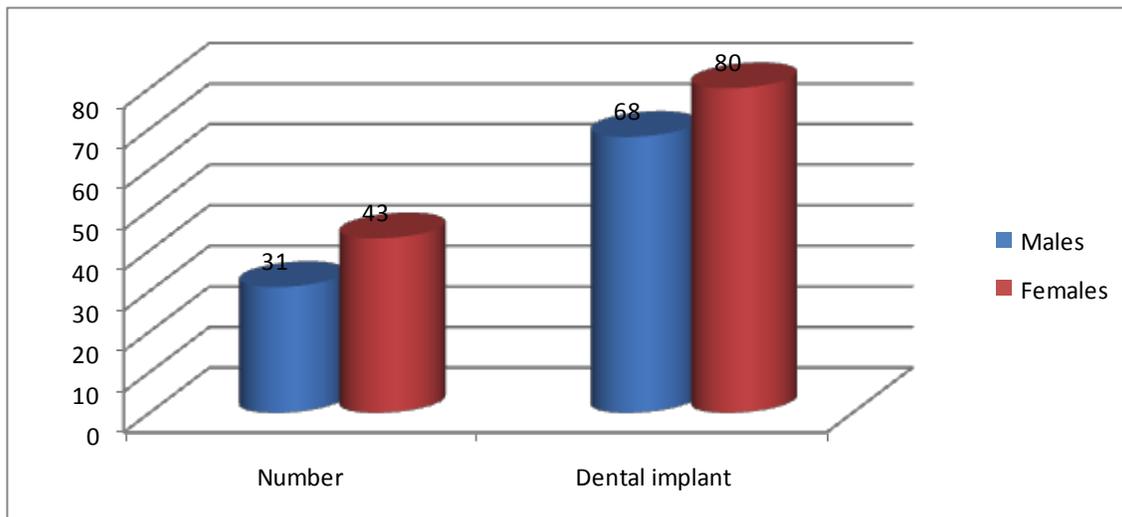
**RESULTS**

**Table I Distribution of patients**

Gender	Males	Females
Number	31	43
Dental implant	68	80

Table I shows that out of 74 patients, males were 31 and females were 43. In males, 68 and in females 80 dental implants were placed.

**Table II Distribution of patients**

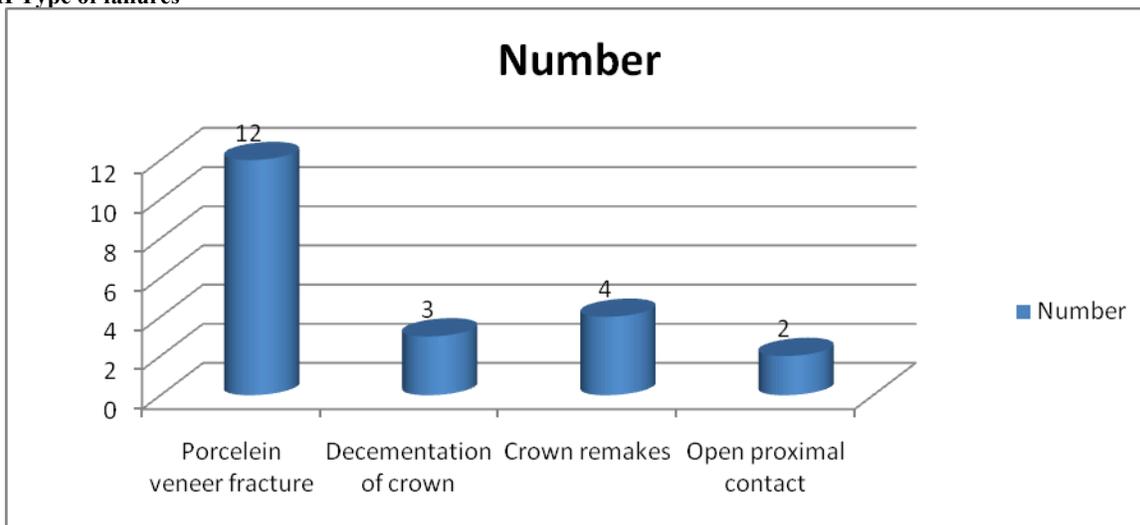


**Table II Type of failures**

Failures	Number	P value
Porcelain veneer fracture	12	0.02
Decementation of crown	3	
Crown remakes	4	
Open proximal contact	2	

Table II, graph II shows that complication was porcelain veneer fracture in 12, decementation of crown in 3, crown remakes in 4 and open proximal contact in 4. The difference was significant ( $P < 0.05$ ).

**Graph II Type of failures**



**DISCUSSION**

Different implant designs and procedures are being introduced constantly as Implantology continues to evolve. These new products have been subject to varying levels of research and development and clinical documentation with the implications that some materials or procedures may prove to be less reliable or safe in routine use.<sup>6</sup> Since clinicians are bound by ethical and medicolegal responsibilities, the onus is very much on the treating dentist to select the most appropriate procedure or material depending on individual circumstances. In accordance with the current training standards guidance by the GDC, clinicians must ensure that the treatment they offer and undertake must be evidence based and patient-centered.<sup>7</sup> The present study was conducted to assess prosthetic complications of dental implants.

In present study, out of 74 patients, males were 31 and females were 43. In males, 68 and in females 80 dental implants were placed. Goodacre et al<sup>8</sup> in their study, the following types of complications and their incidences were reported for single crowns: abutment screw loosening (both screw and cement-retained crowns): 262 of 7,648 crowns (3%), implant fracture: 13 of 438 implants (3%), porcelain veneer fracture/chipping: 177 of 7,245 crowns (2%), loss of retention (decementation of cemented crowns): 161 of 7,683 crowns (2%), open proximal contacts: 94 of 4,846 crowns (2%), crown remakes: 38 of 5,471 crowns (0.7%).

We found that complication was porcelain veneer fracture in 12, decementation of crown in 3, crown remakes in 4 and open proximal contact in 4. Manor et al<sup>9</sup> consisted of 117 patients that had a history of major medical illness while the control group consisted of 103 patients that did not reveal any history of existing medical conditions. In the study group, designated as group A, out of 117 patients, 57 were females, and 60 were males. In the control group, designated as group B, out of 103 patients, 48 were females, and 55 were males. Group A had 331 implants intact and in the healthy condition which amounted for 83.37% implant success. However, the group had 66 failed implants amounting to 16.63%. Group B had 287 implants intact and in the healthy condition which amounted for 89.96% implant success. However, the group had 32 failed implants amounting to 10.04%.

Failures in implants can be divided into early failure and late failure according to failure time. First, early failure is one that failed osseointegration within several weeks or several months. It was due to bone necrosis, surgical trauma, bacterial infection, inadequate initial stability and early occlusal loading. Late failure is failure that turns up after functional loading of several period of time. It takes place because of infection and excessive loading. There are many difficulties to figure out the cause of implant success and failure because it is affected by many various factors. Lindquist et al<sup>10</sup> found that out of 600 implants placed in bone with type I quality, 1 showed failure. Out of 1050 implants placed in bone with type II quality, 50 showed failure. Out of 500

implants placed in bone with type III quality, 30 showed failure. Out of 200 implants placed in bone with type IV quality, 5 showed failure.

## CONCLUSION

Authors found that common complication was porcelain veneer fracture, decementation of crown, crown remakes and open proximal contact.

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