

Original Research

Assessment of peri implant Condition in periodontally compromised patients

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ABSTRACT:

Background: The process of peri-implantitis consists of peri-implant bone loss after inflammation of the peri-implant tissues, essentially associated with bacterial infection. The present study was conducted to assess peri-implant condition in periodontally compromised patients. **Materials & Methods:** The present study was conducted in the department of Prosthodontics. It comprised of 84 dental implants inserted in 68 patients of both genders. Patients were assessed for plaque index, mucositis, stability, peri-implantitis etc. **Results:** Out of 84 implants, 42 were healthy, 20 stable, 10 had signs of mucositis and 12 had peri-implantitis. The difference was significant ($P < 0.05$). The mean PPD in healthy was 4.2 mm, in stable implant patients was 5.5 mm, in mucositis patients was 5.3 mm and in peri-implantitis patients was 5.4 mm. The bone loss > 2 threads was seen in 4 stable, 6 mucositis and 7 peri-implantitis patients. There were 25 bleeding on probing sites in mucositis and 24 in peri-implantitis patients. **Conclusion:** Authors found implants placed in periodontally compromised patients had high percentage of mucositis and peri-implantitis.

Key words: Mucositis, peri-implantitis, Periodontitis.

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INTRODUCTION

Dental implants in the replacement of missing teeth have become the treatment of choice for most patients and even professionals, and due to technical and scientific advances, this treatment presents high long-term survival rates.¹ Despite this, dental implants may present with inflammatory diseases classified as peri-implant mucositis, when an inflamed mucosa is observed with no signs of bone loss, or peri-

implantitis, defined as the presence of inflammation in the mucosa, simultaneously with bone loss around the implant. Peri-implant mucositis may progress to peri-implantitis and even if the pathogenic mechanism was not yet clear, many similarities with periodontitis had already been recognized, such as the presence of known pathogens of periodontal disease.² The process of peri-implantitis consists of peri-implant bone loss after inflammation of the peri-

implant tissues, essentially associated with bacterial infection.³ In addition, factors such as systemic diseases, smoking, poor oral hygiene, occlusal overload, characteristics of the prosthetic crown, position, shape, surface and type of implant system may be involved with peri-implant bone loss. In this context, peri-implant bone loss is characterized as a consequence of the association of innumerable characteristic conditions. Therefore, clinical periodontal parameters such as bleeding on probing, suppuration, isolated regions of bone loss are not sufficient to characterize peri-implantitis.⁴ Peri-implant diseases are not evenly distributed among patients treated with dental implants, preferentially affect groups which patient profiles are at high risk for their establishment and development. The clinical and microbiological similarity between periodontal disease and peri-implantitis gave rise to

more research with dental implants installed in periodontally compromised patients.⁵ The present study was conducted to assess peri- implant condition in periodontally compromised patients.

MATERIALS & METHODS

The present study was conducted in the department of Prosthodontics. It comprised of 84 dental implants inserted in 68 patients of both genders. Ethical approval was obtained from institute prior to the study. All patients were informed regarding the study and written consent was obtained.

General information such as name, age etc. was recorded. A thorough oral examination was performed in all patients. Patients were assessed for plaque index, mucositis, stability, peri- implantitis etc. Results were statistically analyzed. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Gender	Male	Female
Number	38	30
Implants	48	36

Table I shows that there were 38 males (48 implants) and 30 females (36 implants).

Table II Implant classification for the presence of peri-implant diseases

Parameters	Number	P value
Health	42	0.01
Stability	20	
Mucositis	10	
Peri- implantitis	12	

Table II, graph I shows that out of 84 implants, 42 were healthy, 20 stable, 10 had signs of mucositis and 12 had peri- implantitis. The difference was significant (P< 0.05).

Graph I Implant classification for the presence of peri-implant diseases

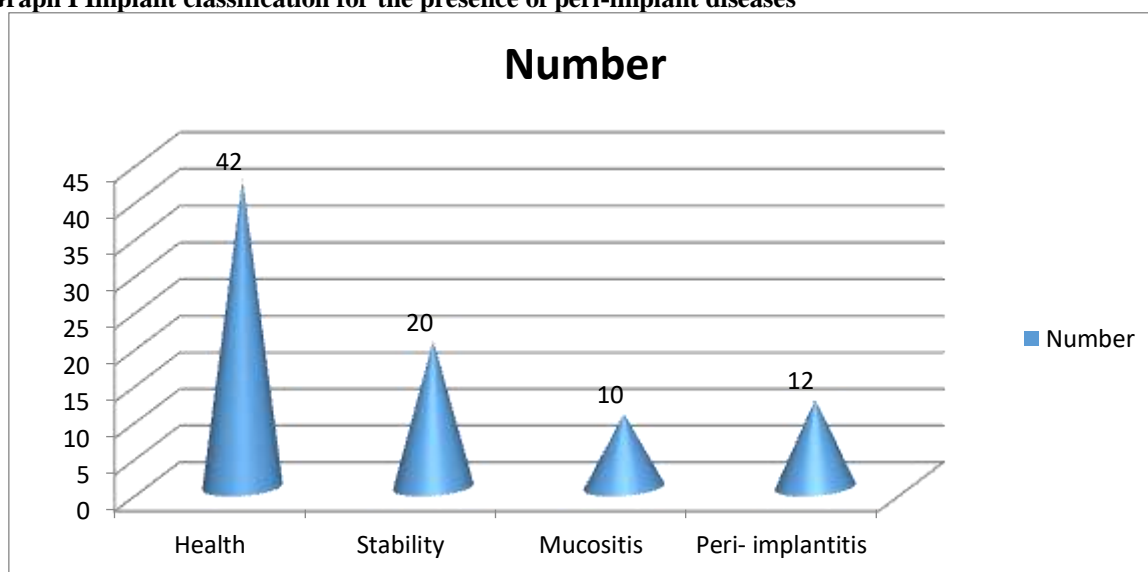


Table II Assessment of periodontal status related to the implants classification

Parameters	PPD (mean, mm)	BL > 2 threads	BOP sites
Health (42)	4.2	-	-
Stability (20)	5.5	4	-
Mucositis (10)	5.3	6	25
Peri- implantitis (12)	5.4	7	24

Table III shows that mean PPD in healthy was 4.2 mm, in stable implant patients was 5.5 mm, in mucositis patients was 5.3 mm and in peri- implantitis patients was 5.4 mm. The bone loss > 2 threads was seen in 4 stable, 6 mucositis and 7 peri- implantitis patients. There were 25 bleeding on probing sites in mucositis and 24 in peri- implantitis patients.

DISCUSSION

The management of missing teeth is nowadays no longer considered a complicated procedure. In the last few decades, there has been transition in the field of dentistry.⁶ With the change in trend from removable partial denture (RPD) to fixed partial denture (FPD) to dental implants, the advancement has led successful treatment.⁷ Dental implants have brought revolution, with replacing few teeth to several. Dental implants have gained importance in past few years. It has become the choice for the patients as well as for the dentist.

The susceptibility of individuals to the periodontal disease process is probably a determinant factor.⁸ A greater degree of peri-implant bone loss in periodontally compromised patients in comparison with those who were periodontally healthy has been found and suggested increased susceptibility of these patients, seeing that the majority of individuals diagnosed with advanced or aggressive periodontitis continued to have this condition when they were submitted to implant placement therapy. However, this hypothesis did not necessarily apply to the milder forms of periodontitis. Nevertheless, the lack of control of the factors common to periodontitis and peri-implantitis and the diversity of studies with varied methodologies limited the ability to extract conclusive information.⁹ The present study was conducted to assess peri- implant condition in periodontally compromised patients.

In this study, there were 38 males (48 implants) and 30 females (36 implants). Out of 84 implants, 42 were healthy, 20 stable, 10 had signs of mucositis and 12 had peri- implantitis. The difference was significant ($P < 0.05$). Lopes et al¹⁰ conducted a study in which 58 implants were evaluated, clinically and radiographically, installed in seven patients. The total of 58 implants were classified: 11 (18.9%) as healthy and 12 (20.7%) as clinically stable. The other 35 implants (60.4%) had some type of peri-implant inflammation, 20 of them (34.5%) were diagnosed with peri-implant mucositis and 15 (25.9%) with peri-implantitis. Among the variables studied, the results showed statistically significant differences for implant location ($P = 0.001$) and GBI ($P = 0.03$). Most of the maxillary implants (85.7%) were classified for some type of peri-implant disease. For the implants which resulted in Score 1 for GBI, most of them (75.0%)

were also classified for some type of peri-implant disease.

We found that mean PPD in healthy was 4.2 mm, in stable implant patients was 5.5 mm, in mucositis patients was 5.3 mm and in peri- implantitis patients was 5.4 mm. The bone loss > 2 threads was seen in 4 stable, 6 mucositis and 7 peri- implantitis patients. There were 25 bleeding on probing sites in mucositis and 24 in peri- implantitis patients. Marrone et al¹¹ observed a prevalence of 23% for peri-implantitis, a result closer to that found in the present study. For the authors, this difference occurred in the group of total edentulous patients, with a history of periodontal disease. The authors believe that periodontal pathogens may persist for a long time in the oral cavity, even in edentulous individuals with a history of periodontal disease and when they lose their teeth they prone to neglect oral hygiene measures due to lack of motivation, favoring the inadequate control of plaque, which may also influence the development of peri-implant diseases.

Karoussis et al¹² the patients were classified in the same way as in the present study, that is, those who had lost at least one dental element due to periodontal diseases and compared them with periodontally healthy patients. The result found in the group of periodontally compromised patients was 28.6% of implants diagnosed with peri-implantitis, a result like that of the present study, which found 25.9%. The results found for periodontally healthy individuals were 5.8% of implants diagnosed as such.

The limitation of the study is small sample size, short follow up and assessment of limited parameters.

CONCLUSION

Authors found implants placed in periodontally compromised patients had high percentage of mucositis and peri- implantitis.

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