

Assessment of Cases of Peri- Implantitis- A Clinical Study

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ABSTRACT

Background: The present study was conducted to evaluate peri- implantitis around dental implants. **Methods:** The present retrospective study was conducted on 60 patients of both genders with 90 dental implants. Pocket depth (PD) around the implant and around the teeth adjacent to the implant was calculated. Gingival recession (GR) was calculated. Clinical attachment loss (CAL) was calculated by adding GR and PD. Intraoral periapical radiographs (IOPAR) were taken to evaluate peri- implantitis. **Results:** Out of 60 patients, males were 35 and females were 25. In 35 males, 45 dental implant and in 25 females, 45 dental implants were present. The mean probing depth (PD) around implant was 4.26 ± 1.20 and adjacent teeth was 3.40 ± 1.32 . The difference was significant (P- 0.01). Gingival recession (GR) around implants was 0.56 ± 0.98 and adjacent teeth was 0.86 ± 1.35 (P- 0.02). Clinical attachment loss (CAL) found to be 4.26 ± 1.32 around implant, 4.03 ± 1.32 around adjacent teeth. The difference was non- significant (P- 0.07). **Conclusion:** Periodontal diseases affect the outcome of dental implant treatment. Thus periodontal status should be healthy especially in the region adjacent to implant site.

Keywords: Implant, Periodontal health, Peri- implantitis

INTRODUCTION

Dental implant therapy has revolutionized the field of dentistry. The long term survival rate of dental implants have been well documented in the literature.^[1] The survival rate of 95% in 5 years has been considered successful treatment. The maintenance of peri-implant bone tissue is essential for the long-term success of dental implants.^[2] The most widely used parameters for measuring outcomes in implant dentistry are related to the implant, the peri-implant soft tissue, and the prosthesis, besides the subjective assessment of the patient. These parameters are related to the tissue stability, which influences the progression of marginal bone loss (MBL) around healthy implants.^[3]

However, failure rates are still there. Complication of dental implants are fracture of prosthetic part, fracture of implant, peri- implantitis etc.^[4] Among all, peri- implantitis which is inflammation around dental implant is common occurring lesion. General health of the patient plays an important role which decides outcome of the therapy. Diabetes, hypertension, smoking etc. are risk

factors for peri- implantitis. Oral health status determines the survival of dental implant. It has been observed that in patients with periodontitis, there are more chances of peri- implantitis.^[5]

The criteria to define success in implant dentistry are under constant debate, but the achievement and maintenance of osseointegration are recognized as crucial factors, and MBL is therefore a key consideration.^[6] The present study was conducted to evaluate cases of peri- implantitis.

MATERIALS AND METHODS

The present retrospective study was conducted in the department of Prosthodontics. It comprised of 60 patients of both genders with 90 dental implants. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained from the institutional ethical committee.

Data such as name, age, gender etc. was recorded. A thorough clinical examination was done. Pocket depth (PD) around the implant and around the teeth adjacent to the implant was calculated. Gingival recession (GR) was calculated. Clinical attachment loss (CAL) was calculated by adding GR and PD. Intraoral periapical radiographs (IOPAR) were taken to evaluate peri- implantitis. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

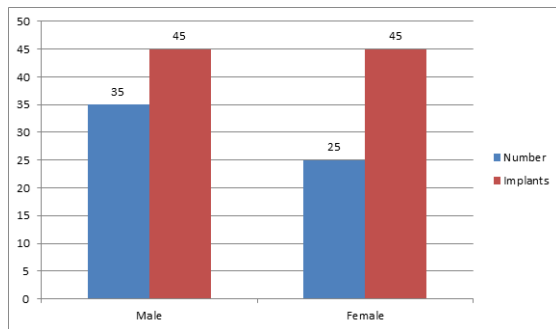
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Table 1: Distribution of patients

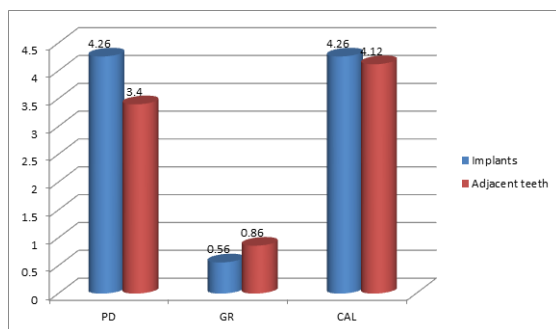
Gender	Males	Females
Number	35	25
Implants	45	45

[Table 1] shows that out of 60 patients, males were 35 and females were 25. In 35 males, 45 dental implant and in 25 females, 45 dental implants were present.

**Figure 1: Distribution of patients****Table II Periodontal & peri- implant status**

Parameters (Mean± S.D)	Implants	Adjacent teeth	P value
PD	4.26± 1.20	3.40± 1.32	0.01
GR	0.56± 0.98	0.86± 1.35	0.02
CAL	4.26± 1.32	4.12± 1.26	0.07

[Table 2, Figure 2] shows that mean probing depth (PD) around implant was 4.26 ± 1.20 and adjacent teeth was 3.40 ± 1.32 . The difference was significant (P- 0.01). Gingival recession (GR) around implants was 0.56 ± 0.98 and adjacent teeth was 0.86 ± 1.35 (P- 0.02). Clinical attachment loss (CAL) found to be 4.26 ± 1.32 around implant, 4.03 ± 1.32 around adjacent teeth. The difference was non- significant (P- 0.07).

**Figure 2: Periodontal & peri- implant status**

DISCUSSION

Initial placement of a dental prosthesis is rarely the end of treatment. It may be just the beginning of a potentially traumatic life span for the teeth and associated oral structures.^[7] Likewise, the cost of a newly placed prosthesis may only be the start of an ongoing financial investment. The ultimate goal of

restorative dentistry is preservation of the teeth and surrounding oral structures. Marginal bone loss is known to be influenced by multiple phenomena, but some key questions remain unanswered.^[8] Numerous studies have addressed this issue in recent years, clarifying some aspects and leading to improvements in implant design and protocols that have minimized this initial MBL.^[9] The present study was conducted to evaluate cases of peri-implantitis.

In this study, out of 60 patients, males were 35 and females were 25. In 35 males, 45 dental implant and in 25 females, 45 dental implants were present. All patients had chronic periodontitis. In all patients, periodontal status (PD, GR and CAL) was evaluated following standardized parameters.

Safii et al,^[10] in their study ninety-nine patients treated with 116 implants and 112 single-tooth implant prostheses in a prosthodontic practice were examined between 1988 and 1998. Three implants failed over a 10-year period, for a survival rate of 97.4%. Complications included the loss of 2 implant crowns, screw loosening, broken screws, cement washout, margin exposure, and porcelain fracture. Of 196 teeth adjacent to edentulous spaces, 156 (79.6%) were intact or minimally restored. Only 3 of these teeth were restored as part of initial prosthodontic therapy. Over the ensuing 10 years, only 1 tooth required a replacement restoration, and 1 tooth was extracted. Results of this patient evaluation demonstrated that implant survival over a 10- year period was favorable, with minimal prosthetic complications. Furthermore, teeth adjacent to single-tooth implants exhibited an extremely low complication rate.

In present study, we evaluated PD, GR and CAL around dental implants, adjacent teeth to implant in patients with periodontitis. We found that CAL was higher in patients with peri- implantitis than those without it. The mean probing depth (PD) around implant was 4.26 ± 1.20 and adjacent teeth was 3.40 ± 1.32 . The difference was significant (P- 0.01). Gingival recession (GR) around implants was 0.56 ± 0.98 and adjacent teeth was 0.86 ± 1.35 (P- 0.02). Clinical attachment loss (CAL) found to be 4.26 ± 1.32 around implant, 4.03 ± 1.32 around adjacent teeth. The risk of peri- implantitis is more in patient with periodontal diseases than those with healthy periodontium. Similarly, PD and CAL were significantly higher in adjacent teeth group I as compared to group II.

Wang et al,^[11] conducted a cross- sectional study on Chinese patients to evaluate the relation between peri- implant conditions and periodontal conditions and found that 58% of patients with 120 dental implants had more peri- implantitis with modified gingival index score >3 . They concluded that periodontal health adversely affects the implant health in patient.

Fardal et al,^[12] found that five hundred and eight implants were placed in the posterior maxilla in 208 patients. MBL was radiographically analyzed in three time frames (5 months post-surgery and at 6 and 18 months post-loading). Marginal bone loss rates were significantly affected by BLT, connection type, bone substratum, and smoking. Bone loss rates at 18 months were associated with initial bone loss rates: 96% of implants with an MBL of >2 mm at 18 months had lost 0.44 mm or more at 6 months post loading.

CONCLUSION

Periodontal diseases affect the outcome of dental implant treatment. Thus periodontal status should be healthy especially in the region adjacent to implant site.

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