CORRELATION BETWEEN OCCLUSAL FORCES, MARGINAL BONE LEVELS AND GINGIVAL STATUS AROUND IMPLANT RETAINED RESTORATIONS: A CLINICO - RADIOLOGICAL STUDY

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By

Dr. Swati Nagpal

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Dr. Sudhindra S. Kulkarni

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ABSTRACT

Background and Objectives:

Occlusal forces have been thought to be the major cause of bone loss around implant retained restorations. Its relationship with marginal bone levels has not researched widely due to wide variations in the study design. Thus the present study has been designed to measure the occlusal forces around the implant supported restorations and correlate them with marginal bone levels around them.

Materials and Method:

Fourteen patients with single implant supported restoration were recruited for the study and split mouth design was followed. Maximal occlusal forces were measured by using a device called as strain gauge with custom made acrylic jig at the time of cementation of final restoration, 6 months post cementation and 12 months post cementation. Radiographs were taken at the same time to assess the marginal bone levels at mesial and distal sides separately. The correlation between maximal occlusal forces and marginal bone levels was studied by SPSS software package.

Results:

There was no statistically significant difference between maximal occlusal forces at the time of cementation of final restoration, 6 months post cementation and 12 months post cementation. However, higher forces were always recorded with the use of acrylic jig. A statistically significant amount of bone loss was observed from the time of implant placement to the time of cementation of final restoration but the bone levels were stabilized after cementation of final restoration. No significant correlation

was seen between maximal occlusal forces and marginal bone levels at both mesial and distal sides, with and without the use of acrylic jig.

Interpretation and Conclusion:

Implant retained restorations can function as efficiently as natural tooth and can be an ultimate replacement for missing tooth and there is no correlation between maximal occlusal forces and marginal bone levels.

Key words: *Maximal occlusal forces, Marginal bone levels, Strain gauge, Custom made acrylic jig.*