EVALUATION OF MICROBIAL COLONIZATION OF IMPLANT SITES - A CLINICO MICROBIOLOGICAL STUDY.

By

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ABSTRACT

Background and Objectives: Information on bacterial colonization of implant sites from the time of insertion till the end of follow up is not very well documented. The aim of the present study was to assess the early colonization on titanium implants after placement and throughout the first 24 post-surgical weeks and to compare whether the microbiota at the adjacent teeth, edentulous ridge and the implant sites is similar or different, which would determine whether the flora around natural teeth influences the implant surface colonization.

Material and methods: This prospective, longitudinal study involved a total of 20 patients who received a total of 26 dental implants for replacement of missing teeth. Clinical parameters recorded were modified plaque index, modified gingival index, bleeding on probing and probing pocket depths. Submucosal/subgingival plaque samples from implant sites and adjacent teeth were collected and analyzed by using aerobic and anaerobic culturing techniques. All the parameters were collected at surgery, at 2nd stage, impression stage, cementation stage, 1 week, 1 month, 3 months and 6 months respectively.

Results: All the implants integrated and all the patients completed the study. The B.O.P was more at implants than natural teeth sites. The radiographic evaluation revealed that 3 sites lost 0.5mm of bone at 6 months which was not significant.

A total of 20 species were isolated which included *Streptococcus, Staphylococcus, A.actinomycetemcomitans, P.gingivalis, P.intermedia* and *T.denticola* amongst others. There was also an increase in the CFU counts both at natural teeth and implant sites at various time intervals which was statistically significant when compared to baseline values.

Conclusion: Within the limits of this study, (i) The bacterial flora around implants and natural teeth is similar. (ii) A large number of bacterial species were detected at clinically healthy peri-implant sites.

Key Words: biofilm, bacteria, colonization, dental implants, colony forming units (CFU).