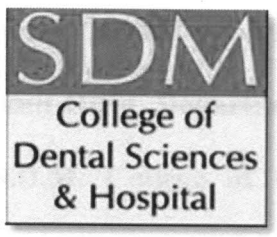
EVALUATION OF PERCEPTION BY OSSEOINTEGRATED DENTAL IMPLANTS SUPPORTING A FIXED PROSTHESIS – A CLINICAL STUDY



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ABSTRACT

Background and Objectives: The extraction of teeth results in loss of periodontal receptors which are essential for oral sensory functions. Osseointegrated implants have also shown to transmit a certain sensibility termed as osseoperception. The purpose of this study was to determine the active tactile perception of osseointegrated dental implants supporting a fixed prosthesis in comparison to natural teeth and to assess changes in the perception by the dental implants in function.

Materials & Method: Forty subjects (40-50 years) were included in this split – mouth clinical trial. The subjects were divided into 4 groups (n = 10) as follows: Group I – subjects with recently cemented implant supported fixed prosthesis opposing natural teeth; Group II - subjects with recently cemented implant supported fixed prosthesis in both arches; Group III - subjects with implant supported fixed prosthesis opposing natural teeth in function since ≥ 6 months; Group IV - subjects with implant supported fixed prosthesis in both arches and in function since ≥ 6 months. Articulating papers of 8 μ, 12 μ, 40 μ, 60 μ and 100 μ thickness were placed inter - occlusally in the posterior region in a pre-determined random order of true and false insertions. The subjects' ability to perceive the presence/ absence of the test papers, was recorded for every insertion. The perception for a particular paper was considered as positive if it could be detected for ≥ 50% of the true insertions. The evaluation was performed immediately after cementation, 1 week, 3 months and 6 months post cementation for Groups I and II and at recall visit for Groups III and IV.

Results: All subjects with implant supported prostheses perceived a certain thickness of articulating paper. The minimum inter – occlusal thickness perceived by the implants in Group I at 6 months was similar to the controls whereas it was significantly higher

than the controls in Groups II, III and IV. There was a significant decrease in the minimum inter – occlusal thickness perceived by the implants in Group I and II subjects over a period of 6 months ($p<0.05$).

Conclusion: The active tactile perception by osseointegrated dental implants in function was nearing the perception by natural teeth in subjects with implants opposing natural teeth whereas it was significantly weaker in subjects with implant supported prostheses in both arches. There was progressive improvement in the active tactile perception by implant supported prostheses during the follow-up period in recently restored subjects.

Key words: dental implants, fixed prosthesis, active tactile perception, minimum inter-occlusal thickness