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A Comparative Evaluation of Influence of Implant Micro-Thread Design on Crestal Bone Loss

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ABSTRACT

Aims: To evaluate and compare the effect of the coronal thread size on the marginal bone loss around the fixtures, in two implant systems- ARDS and DENTIUM with threads to the top of fixture.

Settings and Design: Both implant systems are subdivided into two groups: one with a macro-thread (ARDS Smart and DENTIUM SuperLine) to the top of the fixture and the other with a micro-thread (ARDS Classic and DENTIUM NR Line) to the top of the fixture

Methods and Material: The implants were placed in single partially edentulous areas of posterior mandible in 60 patients. Bone loss around each implant was analysed after 1 year of functional loading.

Statistical analysis used: Mann Whitney U test

Results: The mean marginal bone loss for ARDS Classic(Group A), at 6months and 12months time intervals was 0.55±0.15 and 0.84±0.13 mm respectively; and it was 0.74±0.14 and 1.03±0.16 mm respectively for ARDS Smart(Group B) implants. The mean marginal bone loss for DENTIUM NR Line(Group C) at 6months and 12months time intervals was respectively 0.29±0.12mm and 0.53±0.16mm; for DENTIUM SuperLine(Group D) it was 0.25±0.11 and 0.47±0.10mm respectively. $P<0.05$ was considered as a level of significance.

Conclusions: There was no significant difference in marginal bone loss levels in Group C & D implants (Dentium NR Line and SuperLine and) i.e. micro- and macro- threaded implants after 1 year of loading. There was a significant difference in levels of marginal bone loss in case of Group A and B implants (ARDS Classic and Smart).

Key-words: Implant, ARDS Smart and Classic, DENTIUM SuperLine and NR Line, micro-thread, macro-thread, crestal bone loss

Key Messages: The implant thread geometry affects the distribution of stress forces around the implant. The addition of threads or micro threads up to the crestal module of an implant may positively contribute to BIC and to the preservation of marginal bone.

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