EVALUATION OF A TITANIUM SURFACE TREATED WITH DOUBLE ACID ATTACK AND HYDROXYAPATITE NANOCRYSTALS AND ITS RELATION WITH VITAMIN D DEFICIENCY
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The role of vitamin D in osteoimmunology has been investigated, mainly related to osseointegration in dental implants. In addition to the systemic phenomena, the surface characteristics of the implants can influence the behavior of the cells in terms of cell adhesion, proliferation, and differentiation. Thus, different surface treatments have been developed with the purpose of accelerating the new bone formation and reduce the period of implant integration in the bone. The objective of the present study was to evaluate the influence of two types of surface treatments of dental implants in rabbits with vitamin D deficiency in osseointegration. Two groups of rabbits were selected, group 1 (G1) with normal serum levels (> 29 ?g/L) and vitamin D deficient group 2 (G2) (< 20 ?g/L), promoted by a restricted diet. Two implants were placed on the distal and medial surfaces of the rabbits' tibia, one with a double acid-etched surface (DE), and the other with deposition of hydroxyapatite nanocrystals on the surface treated with double acid etching (Nano). The implants were installed with a torque of 13 Ncm for both groups and, after 7 and 30 days, the removal torques were measured with a digital torque wrench. Data were tabulated and submitted to statistical analysis using a significance level of 5%. The mean values of removal torque obtained after 7 days were higher for the Nano, when compared to the DE, in both evaluated conditions (p < 0.05), for G1 of 6.2 and 19.1 Ncm, and for G2 of 13.3 and 19.5 Ncm, respectively for the surfaces DE and Nano. No significant differences were observed after 30 days of evaluation (p > 0.05). The results of the present study evidenced that the Nano surface promoted increasing on removal torque, and may be useful in situations of vitamin D deficiency.