

Clinical outcome and bone healing of implants placed with high insertion torque: 12-month results from a multicenter controlled cohort study

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Abstract. This study evaluated the clinical outcome and the crestal bone resorption of implants placed with high insertion torque (up to 80 N cm). 102 patients were treated with 156 tapered implants. 42 implants (control group) presented insertion torque between 30 and 45 N cm (mean = 37.4 SD 8.2). 114 implants (experimental group) were placed with insertion torque between 50 and 80 N cm (mean = 74.8 SD 7.9). All implants were early loaded after 2 months. Peri-implant marginal bone levels were assessed immediately after surgery, and at 6- and 12-month follow up examinations. At the 12-month follow up all implants were clinically stable. After 12 months, patients in the experimental group lost an average of 0.41 mm (CI 95% 0.522; 0.263) of crestal bone compared with 0.45 mm (CI 95% 0.561; 0.286) for those in the control group. There were no significant differences between the two groups. No direct or inverse relationship was observed between the insertion torque values and crestal bone resorption. The results show that the use of high insertion torque (up to 80 N cm) did not prevent osseointegration and did not increase bone resorption around tapered implants early loaded up to 1 year after implant placement.

Keywords: bone resorption; insertion torque; underpreparation; pressure necrosis.

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