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Submitted

"Screw-vs cement-implant-retained restoration: an experimental study in the beagle. Part 2. Vascular Endothelial Growth Factor (VEGF) expression, inflammatory infiltrate, proliferative activity (MIB-1) and microvessel density (MVD) evaluation in peri-implant tissues"

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Abstract

Crestal bone loss has been reported to occur around dental implants. Even if the causes of this bone loss are not completely understood, the presence of a micro-gap between implant and abutment with a possible contamination of the internal portion of the implants has been suggested. Aim of this study was to see if there were differences in the Vascular Endothelial Growth Factor (VEGF) expression. Microvessel dentity (MVD), proliferative activity (MIB-1) and inflammatory infiltrate in the soft tissues around implants with screwed and cemented abutments. Sand-blasted and acid-etched implants were inserted in the mandible of 6 beagle dogs. Ten implants were inserted in each mandible. A total of 60 implants (30 with screwed abutments an 30 with cemented abutments) were used. After 12 months, all the bridges were removed and all autments were checked for mobility. The number of loosened screws in screwed abutments was 8 (27%), while no loosening was observed in cemented abutments. A gingival biopsy was performed in 8 implants with cemented abutments, in 8 implants with screwd abutments, and in 8 implants with unscrewed abutments. No statistically significant differences were found in the inflammatory infiltrate and in the proliferative activity between the different groups. No statistically significant difference was found in the MVD between screwed and cemented abutments (p=0.2111), while there was a statistically significant difference in MVD between screwed and unscrewed abutments (p=0.0277), and between cemented and unscrewed abutments (p=0.0431). In screwed and in cemented abutments a low intensity of VEGF was prevalent, while, on the contrary, in unscrewed abutments, a high intensity of VEGF was prevalent. These facts could, probably, be explained by the effects induced, in the abutments that underwent a screw loosening, by the presence of bacteria inside the hoolow portion of the implants or by enhanced reparative processes.

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Riassunto

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