ABSTRACT.

Objectives. Bacterial penetration along the implant-abutment interface as a consequence of abutment screw loosening has been reported in a number of recent studies. The aim of this in vitro study was to investigate the influence of repeated tightening of the abutment screw on leakage of Streptococcus mutans along the interface between implants and pre-machined abutments.

Materials and Methods. Twenty pre-machined abutments with a plastic sleeve were used. The abutment screws were tightened to 32 N cm in group 1 (n=10 - control) and to 32 N cm, loosened and re-tightened with the same torque twice in group 2 (n=10). The assemblies were completely immersed in 5 ml of Tryptic Soy Broth medium inoculated with S. mutans and incubated for 14 days. After this period, contamination of the implant internal threaded chamber was evaluated using the DNA Checkerboard method.

Results. Microorganisms were found on the internal surfaces of both groups evaluated. However, bacterial counts in group 2 were significantly higher than that in the control group (P<0.05).

Conclusion. These results suggest that bacterial leakage between implants and abutments occurs even under unloaded conditions and at a higher intensity when the abutment screw is tightened and loosened repeatedly.

Influence of repeated screw tightening on bacterial leakage along the implant-abutment interface.

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