Removal torque of titanium implant inserted in dog tibia with a bone defect [The removal torque of titanium implant inserted in dog tibia with a bone defect]

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The removal torque has been used for analysis of implant and their osseointegration. The aim of this research was to determine the removal torque of dental implants installed with fenestration-type bone defect. Six dogs with similar conditions of weight and height were selected for this research. We realized a surgical approach to the tibia and in place installed 3 dental implants with 5 mm-diameter circular bone defect in each implant. The bone defects were covered with absorbable membrane (collagen), non absorbable membrane (cellulose) and one (control) defect without coverage. The animals were euthanized at three weeks and at eight weeks when torque withdrawal of the implant was realized with a ratchet especially designed for this procedure. Data analyses was realized with Turkey test with statistical significance of $p<0.1$. We observed an increasing bone repair for the two periods of euthanasia; the control defect show minor level of reparation when compared to defect coverage for membrane. We realized the removal torque with increasing values of bone-implant union for two periods of euthanasia. No difference was observed in removal torque in either defect with or without membrane. Finally, we conclude that biological membrane and bone repair was not influenced in the removal torque of dental implants.

Bone regeneration

Osseointegration

Removal torque