

## **SNAKE VENOM DERIVED FRIBRIN GLUE AS AN INDUCER OF TENDINEOUS HEALING IN DOGS. HISTOPATHOLOGICAL AND BIOMECHANICAL STUDY**

**Thesis:** G. C. Ferraro submitted this dissertation for her Masters in Veterinary Medicine (Animal Pathology) at the School of Agrarian and Veterinary Sciences, São Paulo State University, UNESP, Jaboticabal, São Paulo, Brazil, 2003.

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**Abstract:** The aim of this study was to evaluate the clinical conditions of tendineous sliding, cellular kinetics of inflammatory and healing process, and strength in regeneration of the digital deep flexor tendon in dog thoracic limb, using snake venom and buffalo fibrinogen derived fibrin glue instead of conventional tenorrhaphy. Tendons of 30 limbs were partially sectioned for fibrin glue application. Tendon biopsies were performed 7, 15, and 30 days after surgery for anatomopathological and biomechanical studies. The results showed 71.7% of tendons with stump retraction and 21.7% moderate to excessive adherence, which affected sliding. There was a significant difference in number of inflammatory cells at all studied times ( $P < 0.05$ ), and maximum inflammatory infiltration was at 15 days. Histopathology showed typical tendon inflammatory process 7, 15, and 30 days after surgery, with a lower inflammation level in the acute phase, which made healing maturation phase easier. Biomechanical evaluation of tendon healing showed progressive resistance to maximum traction strength and permanent deformations, and demonstrated satisfactory rigidity and resilience at 15 days compared to the other two analyzed times. Therefore, snake venom derived fibrin glue can be used as an alternative substance in tenorrhaphies of complete ruptures or as a substitute for dog tendon partial ruptures.

**KEY WORDS:** Dog, fibrin glue, mechanical properties, snake venom, tendon, tissue regeneration

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