In Vitro Comparison of Three Suture Techniques for Anastomosis of the Small Intestine in the Horse

Luigi Auletta, DVM*; Francesco Lamagna, DVM; Valeria Uccello, DVM; Barbara Lamagna, DVM; and Maria Pia Pasolini, DVM

Anastomoses using a continuous Lembert single-layer (L.s.l.) pattern were faster to perform and resisted higher pressures than the Gambee (G.) and the Lembert double-layer (L.d.l.) pattern. The Lembert single-layer technique results in a larger stoma and produces fewer adhesions and should be the technique of choice in most cases. Authors’ address: Department of Veterinary Clinical Sciences, Surgery Section, Faculty of Veterinary Medicine, University of Studies of Napoli Federico II, Napoli, 80137 Italy; e-mail: luigi.auletta@yahoo.it. *Corresponding author. © 2011 AAEP.

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The small intestine of the horse can be affected by a variety of pathologies that require at least some form of bypass anastomosis. Many suture patterns have been used to minimize postoperative complications. Due to the critical condition of the patients undergoing colic surgery, it is imperative to execute the whole procedure in the shortest time. The purpose of the present study was to evaluate, in vitro, differences in time of execution and leakage pressure between the Lembert single layer (L.s.l.), Gambee (G.) and Lembert double layer (L.d.l.) suture patterns. The correlation among the time spent and the hemi-circumference of the anastomotic site was evaluated, as well. The small intestine from horses duly slaughtered was used. A flexible rubber hose was inserted in each end and fixed. Of the two tubes, one mounted on a sphygomanometer blower, the other one a pressure gauge. The loops were immersed in a basin filled with polyionic solution. Ambient air was blown in the intestine and the leakage was revealed by the presence of bubbles. At this point, the pressure was recorded. The time spent in the execution of the L.s.l. was significantly less than that spent for G. and L.d.l. The leakage pressure of L.s.l. was significantly higher than that recorded for G. and L.d.l. The evaluation of data collected shows that the continuous L.s.l. pattern takes less time in execution and resists to higher pressures. This pattern would also be desirable to the L.d.l. for the lesser amount of tissue inverted.