

CIRUGÍA

LIGATIE® – CREATING LIGATURES WITH AN ABSORBABLE CABLE TIE, A NEW MEDICAL DEVICE

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Small animals, Clinical sciences

Comunicación

Objectives of the study

In most surgical procedures tissue is ligated in order to obtain haemostasis. In some situations the tissue to be ligated is not easily accessed. That is one reason a complication, the occurrence of intra- and postoperative bleedings due to poorly secured ligatures.

This project concerns the creation of a safe and reliable ligature by use of an absorbable cable tie, a new medical device. We hypothesised that a cable tie might make the surgery easier for both patient and surgeon and lessen the risk for complications such as ligature slip-off. The aim of this study was to test the mechanical function of this medical device in living tissue.

Material and Methods

A cable tie specially designed for surgery was created. The locking head contains a self-locking mechanism, design details allows the device to fully close to loop end-diameter of zero, which enhances better tissue grip and creates a double ligature. Chosen absorbable material was polydioxanone and method of manufacturing was inject-moulding.

The first version was created using two different batches of polydioxanone with different inherent viscosity. An anesthetized pig that had been used for trauma surgery was used for the test. Cable ties from the separate batches were used for creating ligatures in order to perform bilateral ovariectomy and nephrectomy.

Results

1. Four satisfying ligatures were created, at the ovarian pedicles and on the kidney arteries. Haemostasis was obtained and the device was securely locked into the tissue. When in place, the LigaTie® could be tightened and secured with one hand and the device had a satisfying tissue grip. The devices from the different batches were different in stiffness, handling and ability to fully close.

Conclusions

The first test of LigaTie® (Double ligature, zero loop diameter) in living tissue yielded fully satisfying ligatures which had good tissue grip. Mechanical properties are affected by the polymers inherent viscosity. This pilot test indicates that this

medical device can be used as an alternative in soft tissue surgery. Long term tests are needed for evaluation of long-term safety.

Bibliografía

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