IRIS AperTO

UNIVERSITÀ DEGLI STUDI DI TORINO

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Cleaning of surgical material with a gauze effectively reduces contamination during pelvic flexure enterotomy in horses.

Introduction

Pelvic flexure enterotomy is one of the most common procedure performed in abdominal surgery of the horse. In a survey on the method for pelvic flexure enterotomy closure employed by ECVS and ACVS Diplomates, resulted that 58.3% of surgeons adopt measures to reduce contamination during closure of enterotomies. The most popular measure resulted to be to start the second layer with a new suture strand, eventually associated with change of surgical gloves and even instruments. Our hypothesis is that cleaning the surgical material used for the first with a soaked gauze will significantly reduce its bacterial contamination, avoiding the time and money waste of changing it for the second layer. Aim of the present study is to compare the bacterial contamination of the surgical material cleaned or not with a wet swab in an ex-vivo pelvic flexure enterotomy model in horses.

Materials and methods

Pelvic flexure samples were harvested from 24 slaughtered horses at a local abattoir, then randomly assigned to two groups (F and C) of 12 specimens each. A 8-cm long incision was made on the antimesenteric site, and the luminal content emptied. In group F the enterotomy site was closed with a full thickness simple continuous pattern while in group C with a Cushing pattern. Each group was divided in 2 sub-group N and G. In sub-group N suture material were collected soon after the completion of the suture line. A sterile swab was passed on the on the surgical gloves and on the surgical instruments. In subgroup G a sterile gauze soaked with sterile saline was passed on the suture material, surgical gloves and instrument before collection.Then sterile swabs were collected as per group N. A new set of sterile instruments and gloves were used to perform the surgical procedure for each specimen.The samples were submitted for colture and optical density measurement. Normality of data was determined with the Shapiro-Wilk test. Data resulted not normally distributed, thus a nonparametric test (Kruskal-Wallis with Dunn post-test) was used for comparison. Significance was set for $P<0.05$.

Results

The optical density of the subgroup CG was significantly minor than subgroup CN (P=0.019).Optical density of the subgroup FG was significantly minor than subgroup FN (P =0.02) The difference between sub-groups FN and CN and between sub-groups FG and CG was not significant(P >0.999).

Discussion

Cleaning the suture material, instruments and gloves with a wet gauze significantly reduces the contamination after completion of the first layer of pelvic flexure enterotomy closure in horses. An inverting suture pattern in the first layer does not reduce the contamination of the suture material, instruments and surgical gloves compared to a full thickness pattern.