The role of biological adhesive and suture material on rabbit hepatic injury.

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Abstract:

PURPOSE: To evaluate the performance of fibrin adhesive and absorbable suture thread in the repairing of hepatic injures in rabbits.

METHODS: New Zealand albino rabbits (n=16), males and females, from 5 to 6 months old, average weight of 2500 g, were distributed randomly in Group A (n-8) - biological adhesive and Group B (n=8) - suture thread. After anesthesia with acepromazine (1mg/Kg), ketamine (50mg/Kg) and fentanyl EV (0,5ml/Kg), it was performed a supra-umbilical median laparotomy, the median hepatic lobe was isolated and subjected to severe standardized incision. In the group B the incision edges were sutured with simple 4-0 catgut, in separated stitches. It was evaluated the total time of the procedure, the hemostasis time and hemorrhage volume. In the 21st post-operative day it was evaluated the presence of adherences and signs of infection in the abdominal cavity, and it was followed by the resection of the median hepatic lobe for the histological evaluation.

RESULTS: The calculated mean and standard deviation showed that the procedure time, hemostasis time and bleeding amount were significantly smaller in the group of animals subjected to the use of fibrin adhesive. The surgical abdominal incision was significantly more extensive in the animals of the suture group (average of 6,8 cm) in relation to the adhesive group (average of 3,8), as well as the number of occurrences of abscesses. The adherence of the intestinal ansas to the sutured incision (group B) occurred in five cases and the major omentum adhesion occurred in all

animals. In the group A (adhesive) it occurred adherences of the major omentum in three cases. The microscopy of the hepatic incision repaired with the use of fibrin showed that the inflammatory infection is less intense, not associated with the formulation of secretion in the abscesses, and therefore has a more favorable later cicatricial aspect than a conventional suture with surgical thread.

CONCLUSION: In agreement with other biomedical literature works, the fibrin adhesive is a viable option for the performance of hemostasis in a animal model (rabbit) with severe hepatic injury.