[Therapy of splenic injuries by freezing and fibrin gluing. Animal experiment study]. [German]

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Abstract:

The goal of this investigation was to improve the reliability of intraoperative and postoperative hemostasis and to observe the healing process after using a combined technique of tissue freezing followed by the application of collagen fleece and fibrin glue for the treatment of splenic ruptures. Grade II lesions were inflicted on the spleens of 15 swine. The bleeding wounds were frozen for 1 min at -60 degrees C using a cryosurgical device. Immediately afterwards the frozen lesions were covered with fibrin glue and collagen fleece and kept under slight compression. In every case complete hemostasis was achieved intraoperatively. The spleens of three animals each time were collected for gross and microscopic examination after 2 days and 1, 2, 5, and 6 weeks. A visceroperitoneal adhesion was observed in only one spleen, U-shaped viscerovisceral adhesions in five spleens. Superficial coagulation necroses could be detected microscopically only after 2 days and 1 week. Organization of the wounds, indicated by granulation tissue which contained siderophages, started in the 2nd week. There was distinct formation of collagen fibers after 5 and 6 weeks; only a residue of the collagen fleece was visible and the surplus fibrin glue was encapsulated. With this combined technique complete and safe hemostasis and a good subsequent healing process was achieved.