Experimental animal studies of the stability of colon anastomoses after supplementary fibrin glue sealing. [German]

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Abstract:

Sutures of the colon can be insufficient or leaking. This leads in some cases to a peritonitis or sepsis sometimes with lethal outcome. Therefore experiments in animals were performed to investigate the effect of additional applied biogenic glue. Especially in the beginning of the wound healing, at the 4th postoperative day, the firmness could be improved by fibrin glue. The bursting pressure of fibrin glue sealed colon sutures was 94 mmHg, whereas only 66 mmHg was observed in the control group. This additional firmness remains over the whole observation time of 3 weeks. An intensified proliferation of the connective tissue is responsible for this observation which could be substantiated by histological investigations and by measuring the thickness of the scar. If biogenic glue is used in animals it can have the consequence that the recipient reacts with the production of antibodies, since the components of the glue are proteins from different species. Investigations of the serum of animals which had been treated with fibrin glue revealed in a part of them precipitating antibodies against fibrinogen. With regard to this observation a second application of biogenic glue must be done with the necessary precaution.