

# **A comparative experimental study of the effects of topical fibrin glue and epidermal growth factor on the phases of colon anastomosis healing process.**

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## **Abstract:**

**Background.** The aim of this experimental study was to investigate whether covering the colonic anastomoses with fibrin glue and combined fibrin glue and epidermal growth factor can protect the healing of colon from dehiscence. **Methods.** Ninety Wistar rats were randomly divided into three groups. In the control group, after the resection of the middle transverse colon, an end to end single layer running sutured anastomosis was performed. In the second and third group, anastomosis protection was performed with extraluminal application of fibrin glue (coating) and combined fibrin glue and epidermal growth factor. The bursting pressure and hydroxyproline content were recorded. **Results.** The bursting pressures were significantly lower in the control group than in the other groups ( $p < 0.001$ ). There was no statistically significant difference in the median pressures in fibrin glue only and fibrin glue plus epidermal growth factor groups ( $p > 0.05$ ). There were significant differences in hydroxyproline values between controls and fibrin glue or combined fibrin glue and epidermal growth factor groups. The difference between fibrin glue plus EGF group and fibrin glue only group was statistically significant (to the advantage of the former) only on postoperative day XIII ( $p < 0.05$ ). **Conclusions.** The results demonstrate that local protective measures in colonic anastomosis yield better results; the application of fibrin glue and combined fibrin glue and epidermal growth factor demonstrated similar results.