The effect of fibrin glue on the intensity of colonic anastomosis in peritonitis: Experimental randomizedcontrolled trial on rats.

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Abstract:

Introduction: Anastomotic leakage after colon anastomosis is the most frequent and most feared complication with its highest mortality rate. Objectives: In this study, we aimed to expose the impact of performing fibrin glue on sutured colocolic anastomosis, in the presence of experimental peritonitis, on anastomosis safety. Material/Patients and Methods: In this experimental study, the rats were divided into two groups as Control Group (Group 1-3) and Experimental Group (Group 2-4). They were also divided as Clean Abdomen (Group 1-2) and Infected Abdomen (3-4). in order to generate peritonitis, Group 3 and 4 were given intraperitoneally 2 ml of E.coli (ATC 25227) and were waited for 12 hours. Full-thickness incisions were made on the proximal colon of both groups the control group's anastomoses were conducted only with sutures whereas in experimental group fibrin glue was applied over the sutures. the samples were taken on the 10th day the samples taken were first subjected to an anastomosis bursting pressure test followed by histopathological examinations and later a test to detect the level of hydroxyproline in the tissue. Results: Highest values for average levels of hydroxyproline in the tissues and anastomotic bursting pressures were detected when fibrin glue was applied on sutured anastomosis in a clean abdomen in the histopathological staging performed in line with Ehrlich-Hunt model, lowest values were detected during the presence of peritonitis. Conclusion: As a result, it has been established that the use of fibrin glue over sutured colocolic anastomosis, both in clean abdomen and in the presence of peritonitis, had increased anastomosis safety.