# Effect of fibrin sealant on perianastomotic tumor growth in an experimental model of colorectal cancer surgery.

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## Abstract:

Viable intraluminal tumor cells can penetrate a clinically intact rodent colonic anastomosis and give rise to perianastomotic tumor growth. The aim of this study was to determine whether transanastomotic cell migration can be prevented by fibrin-based tissue sealant. Following distal colonic transection and reanastomosis with 5/0 silk sutures, Fischer F344 rats were randomly allocated to three experimental groups. In Group A, a circumferential ring of tissue sealant was placed around the serosal surface of the anastomosis; in Group B, sealant was limited to 50 percent of the anastomotic circumference; and, in Group C, no sealant was applied. All rats then had 10(5) Mtln3 carcinoma cells injected into the proximal colonic lumen via a rectal catheter. The incidence of perianastomotic tumor at 21 days was significantly lower in Group A (3 of 14 animals) than in Group B (11 of 16 rats) (P = 0.012; Fisher's exact test) or Group C (10 of 14 rats; P = 0.011). A further experiment demonstrated that sealant did not protect the anastomosis when tumor cells were instilled directly into the peritoneal cavity. A topical carcinocidal action therefore appears unlikely, but our results suggest that a circumferential anastomotic ring of fibrin sealant forms an effective mechanical barrier preventing intraluminal tumor cells from reaching the peritoneal cavity.