

# Sealing of gastrointestinal anastomoses with a fibrin glue-coated collagen patch: A safety study.

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## **Abstract:**

Sealing of anastomoses has previously been tested with several methods, including sealing with liquid fibrin glue. Sealing with a collagen patch coated with fibrin glue components has never been systematically examined. The aim of the present study was to determine the safety of sealing gastrointestinal anastomoses with a collagen patch coated with fibrin glue. The study is a prospective, experimental animal study comparing sealed and unsealed gastrointestinal anastomoses. Laparotomy was performed in 11 pigs under general anesthesia. In each pig two anastomoses were performed on the small intestine. One of the anastomoses was sealed with a collagen patch coated with fibrin glue components (TachoSil™). The other anastomosis contained no sealing. The pigs were observed for 1 to 6 weeks. The observation period was followed by in vivo examination under general anesthesia and included observation for anastomotic leakage, signs of present or former peritonitis, abscess, adhesions to the anastomoses, and signs of intestinal obstruction. In addition, the anastomotic diameter was measured with barium and radiography. Finally, bursting pressure was measured in each segment. After the pigs were sacrificed, the bowel segments were microscopically examined. There were no differences between the sealed and the unsealed anastomoses with respect to abdominal pathology, in vivo bursting pressure, or degree of stenosis. The collagen fleeces were in situ in all anastomoses. Microscopically, we found no difference in healing or signs of infection.