Intraoperative coating of tumor surface using fibrin glue as a prophylaxis for cancer cell detachment. [Japanese]

Authors: Takagi T., Ito T., Shimomura K., Takemura M., Touma A., Fujiyama J., Sakakura C., Otsuji E., Hagiwara A., Yamagishi H.

Publication Date: 2001

Abstract:

With the aim of preventing cancer cells from becoming detached and spreading into the abdominal cavity by operative procedures during surgical resection of cancer infiltrating into gastrointestinal serosa, the exposed area of the serosa in mice was coated with fibrin glue, a biological tissue adhesive, prior to resection. We then determined whether the coating could reduce the detachment and spread of cancer cells during the surgical procedure, and thus be capable of inhibiting the occurrence of peritonitis carcinomatosa. In vitro experiments demonstrated that the fibrin glue uniformly and strongly coated the exposed area of cancer, and furthermore, that the presence of fibrin glue coating significantly reduced the number of cancer cells which became detached. As a result of using this glue, the number of deaths due to peritonitis carcinomatosa among assay mice was significantly decreased. It is therefore considered that coating the exposed area of cancer with fibrin glue inhibits cancer cells from being detached and spread during an operation, and thus can be an effective means of preventing the recurrence of peritonitis.