

Temporary fibrin glue occlusion of the main pancreatic duct in the prevention of intra-abdominal complications after pancreatic resection: prospective randomized trial.

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Abstract:

OBJECTIVE: To determine whether temporary occlusion of the main pancreatic duct with human fibrin glue decreases the incidence of intra-abdominal complications after pancreatoduodenectomy (PD) or distal pancreatectomy (DP). **SUMMARY BACKGROUND DATA:** To the authors' knowledge, there are no randomized studies comparing outcomes after pancreatic resection with or without main pancreatic duct occlusion by injection of fibrin glue. Of three nonrandomized studies, two reported no fistulas after intracanal injection and ductal occlusion with fibrin glue after PD with immediate pancreatodigestive anastomosis, while another study reported no protective effect of glue injection. **METHODS:** This prospective, randomized, single-blinded, multicenter study, conducted between January 1995 and January 1999, included 182 consecutive patients undergoing PD followed by immediate pancreatic anastomosis or DP, whether for benign or malignant tumor or for chronic pancreatitis. One hundred two underwent pancreatic resection followed by ductal occlusion with fibrin glue (made slowly resorbable by the addition of aprotinin); 80 underwent resection without ductal occlusion. The main end point was the number of patients with one or more of the following intra-abdominal complications: pancreatic or other digestive tract fistula, intra-abdominal collections (infected or not), acute pancreatitis, or intra-abdominal or digestive tract hemorrhage. Severity factors included postoperative mortality, repeat operations, and length of hospital stay. **RESULTS:** The two groups were similar in pre- and intraoperative characteristics except that there were

significantly more patients in the ductal occlusion group who were receiving octreotide, who had reinforcement of their anastomosis by fibrin glue, and who had fibrotic pancreatic stumps. However, the rate of patients with one or more intra-abdominal complications, and notably with pancreatic fistula, did not differ significantly between the two groups. There was still no significant difference found after statistical adjustment for these patient characteristic discrepancies, confirming the inefficacy of fibrin glue. The rate of intra-abdominal complications was significantly higher in the presence of a normal, nonfibrotic pancreatic stump and main pancreatic duct diameter less than 3 mm, whereas reinforcement of the anastomosis with fibrin glue or use of octreotide did not influence outcome. In multivariate analysis, however, normal pancreatic parenchyma was the only independent risk factor for intra-abdominal complications. No significant differences were found in the severity of complications between the two groups. CONCLUSIONS: Ductal occlusion by intracanal injection of fibrin glue decreases neither the rate nor the severity of intra-abdominal complications after pancreatic resection.