

Venous resection in pancreatic surgery – use of tubulised autologous peritoneal graft as an alternative venous substitute in an experiment

Abstract:

The dissertation deals with the issue of venous resections in pancreatic surgery in both experimental and clinical aspects. Venous resections are nowadays a standard part of pancreatic resections in specialized departments. Nevertheless, there are some controversies of this procedure. They concern the risks of surgery and long-term outcomes. Venous resection also raises the choice of possible replacement where necessary. In many aspects, the use of autologous peritoneum is advantageous in this sense. In the experimental part, the paper compares the technical parameters of tubulated autologous peritoneal grafts constructed in different ways in a large laboratory animal. The clinical part evaluates the perioperative and long-term results of pancreatic resections without and with the addition of venous resection at the author's institution. In the experiment, the posterior vena cava was replaced in a pig with an autologous peritoneal graft constructed by manual suture or stapler. Several parameters (procedure time, blood loss, patency, etc.) were compared in both groups. In the clinical part, a series of proximal and total pancreatic resections without or with vein resection was evaluated. Short- and long-term results of resections were compared between groups with and without vein resection and between tangential and segmental resection. The experiment found no statistically significant difference in the two groups. Conduit preparation time was shorter in the comparison, but not statistically significant. Of the 12 replacements performed, there was a single closure after 2 weeks, which was related to the complicated anastomosis design. Comparison of 202 simple resections and 65 venous resections of the clinical arm revealed a difference in operative time and blood loss. Other parameters including survival did not differ. Comparing tangential and segmental resection, both sets were without statistically significant difference. The peritoneal vein graft seems to be a safe and well usable alternative to other venous substitutes. Venous resections for pancreatectomies for malignancy in our cohort did not worsen short-term outcomes or survival when compared and can be recommended in well-indicated cases.

Key words: pancreas, peritoneum, peritoneal graft, pancreatic cancer, resection, venous resection, venous substitute