VASCULAR RECONSTRUCTION FOR ABDOMINAL CANCER OPERATIONS: TIPS & TRICKS

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Intra-abdominal malignancy

- Vascular invasion
- Common types:
  - Pancreas
  - Renal cell
  - Sarcoma

Vascular invasion

- Pancreas
- Portal vein, SMV
- SMA
- Renal cell
- IVC
- Sarcoma
- IVC
- Iliacs

Options for reconstruction

- Primary repair
- Vein patch
- Saphenous v
- Vein graft
- Femoral
- IJV
- Prosthetic
- PTFE, Dacron
- Cadaveric vein

Disclosures

- Nothing to disclose

PV invasion
Challenges

- Preop imaging
- Urgent need for VS
- Prolong operation
- Additional incision

Techniques and results of portal vein/superior mesenteric vein reconstruction using femoral and saphenous vein during pancreaticoduodenectomy

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Background: Patients with pancreatic tumors may have portal vein (PV) and/or superior mesenteric vein (SMV) occlusion. In such cases, liver sparing resection may be performed by anastomosing arterial PV for PV/SMV reconstruction. In this study, however, we present the techniques of PV/SMV revascularization, pros and cons of such reconstructions, and the feasibility of using lower extremity veins for PV/SMV reconstruction during pancreaticoduodenectomy.

Methods: We reviewed the medical records of 100 patients who underwent pancreaticoduodenectomy from January 2010 to December 2019. We excluded patients with PV/SMV occlusion. In 28 patients, we confirmed PV/SMV occlusion using preoperative imaging. The portal vein was reconstructed using the left femoral vein (8 cases), the right femoral vein (9 cases), the saphenous vein (4 cases), and the saphenous vein from popliteal vein (1 case). During the median follow-up of 23 months, only one patient died due to distant metastasis.

Results: The mean age was 66.5 years. All 28 patients had undergone computed tomography (CT) imaging and/or contrast-enhanced ultrasonography (US) before pancreaticoduodenectomy. The overall tumor size was 6.5 cm (range, 2.5-15.5 cm). The mean operation time was 435 minutes (range, 270-595 minutes). The mean estimated blood loss was 1200 mL (range, 400-3500 mL).

Conclusions: PV/SMV reconstruction using femoral or saphenous veins is feasible and has a low complication rate. PV/SMV reconstruction using the saphenous vein from the popliteal vein may be an option for the reconstruction of the occluded segment of the portal vein.

Portal Vein

Technical risk factors for portal vein reconstruction thrombosis in pancreatic resection

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Objective: To characterize risk factors of portal vein reconstruction thrombosis in pancreatic resection.

Methods: Between July 2012 and December 2017, 453 patients underwent pancreaticoduodenectomy for pancreatic cancer. We identified 128 patients who underwent PV reconstruction using saphenous or femoral vein. We performed a multivariable analysis using logistic regression to identify risk factors for thrombosis.

Results: Of the 128 patients, 19 (15%) developed PV thrombosis. The median time to thrombosis was 10 days (range, 0-60 days). Multivariable analysis identified two independent risk factors for PV thrombosis: shorter ischemia time (adjusted odds ratio [AOR], 0.96; 95% confidence interval [CI], 0.93-0.98) and longer ischemia time (AOR, 1.06; 95% CI, 1.01-1.10). Additional factors tested were not statistically significant.

Conclusions: Shorter ischemia time and longer ischemia time are independent risk factors for PV thrombosis after pancreaticoduodenectomy.
Renal cell cancer
- Renal vein
- IVC
- Embolization

Extension in IVC
- Retro-hepatic
- Intra-cardiac
- CPB

Arterial reconstruction
# A Multidisciplinary Approach for Abdominal Venous Involvement in Oncologic Resections

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## SUMMARY

- Intra-abdominal malignancies vascular invasion
- Resection of vessels improves survival
- Autogenous reconstruction best choice
- Patch with saphenous
- Vein graft: femoral vein

### Fig. 1. Survival based on pathologic diagnosis.