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Vascular resections in pancreatoduodenectomy

Speaker: Nicholas J Zyromski, Indiana University Indianapolis USA
nzyromsk@iupui.edu

Numerous studies have shown that portal vein resection during pancreatectomy can help achieve complete tumor clearance and long term-survival. While the safety of vascular resection (VR) during pancreatectomy is well documented, the risk of superior mesenteric vein/portal vein (SMV/PV) thrombosis after reconstruction remains unclear. Prof Zyromski described their own experience of VR in 220 consecutive patients who underwent portal VR out of 2700 pancreatectomies from 2007 to 2019 at a single centre.

Thrombosis occurred in 36 patients after a median of 15 days. SMV/PV patency rates were 93% and 88% at 1 and 3 months, respectively. Various type of reconstructions performed were - prosthetic graft (3%), venorrhaphy 18%, primary end-to-end anastomosis 65% and autologous vein 14%. The rate of SMV/PV thrombosis was significantly more after prosthetic graft (83%) while its was 13% after venorrhaphy, 13% primary end-to-end anastomosis, 23% autologous vein ($p < 0.0001$). Although SMV/PV thrombosis was associated with increased 30-day mortality length of hospital stay and overall 30-day complication rate but were non-significant. Pancreatectomy type, neoadjuvant chemoradiation, pathologic tumor venous invasion, resection margin status, and manner of perioperative anticoagulation did not influence the incidence of PV thrombosis. Post-operative sepsis was found to be the only significant variable on multi-variate analysis associated with around 4and half times more risk of thrombosis.

In conclusion this series suggested that PV thrombosis after VR is a common complication after pancreatectomy. Primary end-to-end repair should be attempted first whenever technically feasible as reconstruction with prosthetic graft carries high risk of thrombosis. Patient with post-operative sepsis have significantly high risk of PV thrombosis, hence these patient should have low threshold of suspicion even in asymptomatic patients.

Summary prepared by
Rapporteur

Peeyush Varshney
AIIMS, Jodhpur