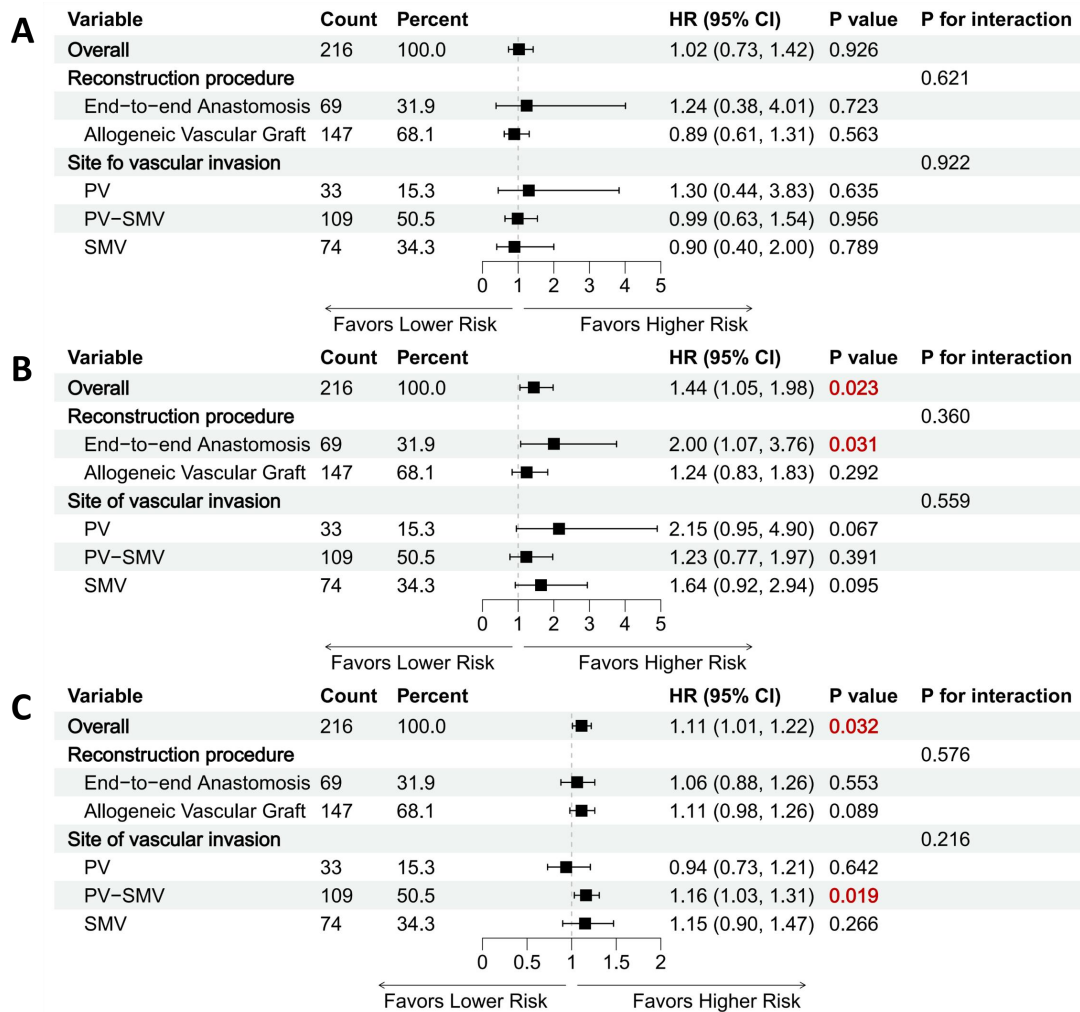
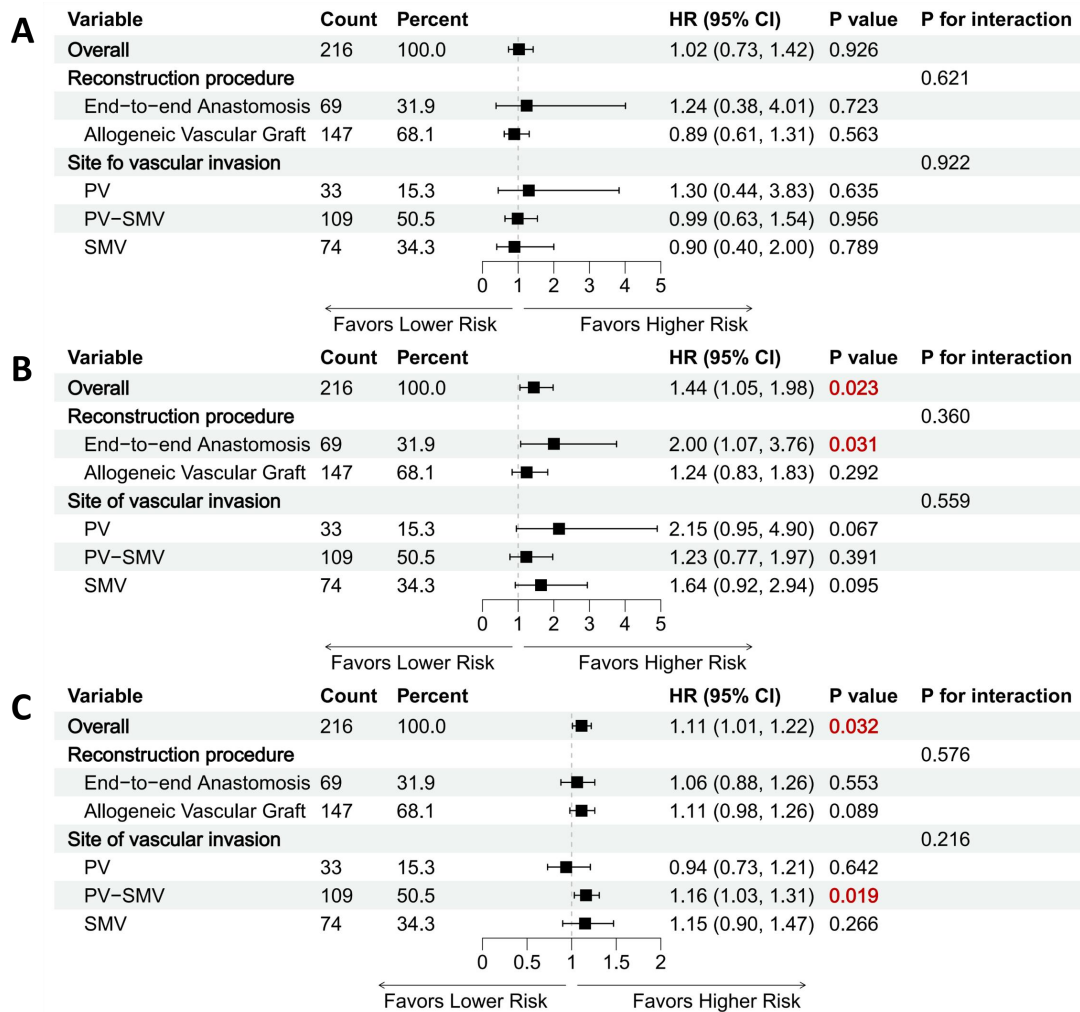


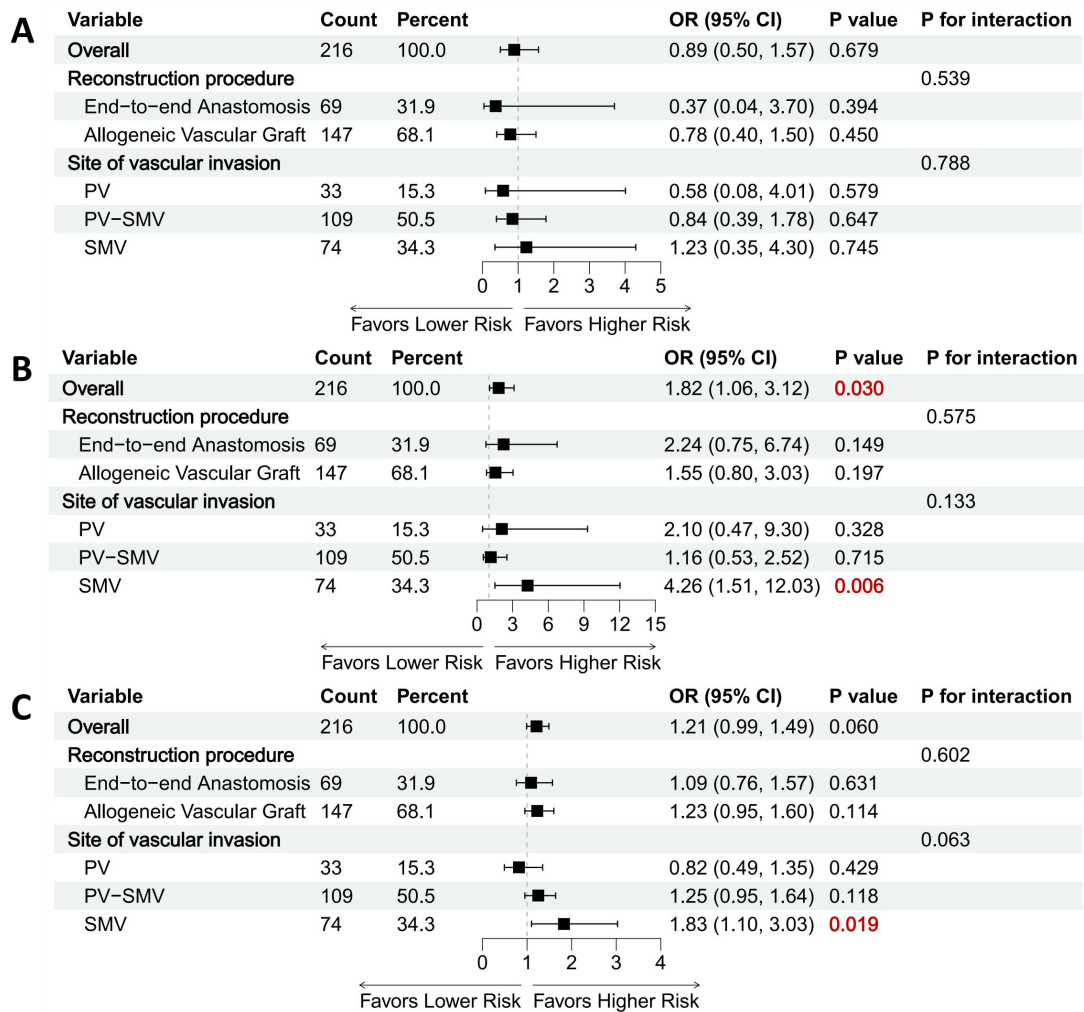
Supplementary Figure 1 Intraoperative lymph node dissection and vascular reconstruction in borderline resectable pancreatic cancer patients. A: Patient with pancreatic head cancer received radical pancreaticoduodenectomy combining direct end-to-end anastomosis to reconstruct superior mesenteric vein; **B:** Patient with pancreatic tail cancer received radical distal pancreatectomy combining vascular reconstruction with allogeneic vascular patch; **C:** Patient with pancreatic neck and body cancer received radical total pancreaticoduodenectomy combining vascular reconstruction with allogeneic vessels.



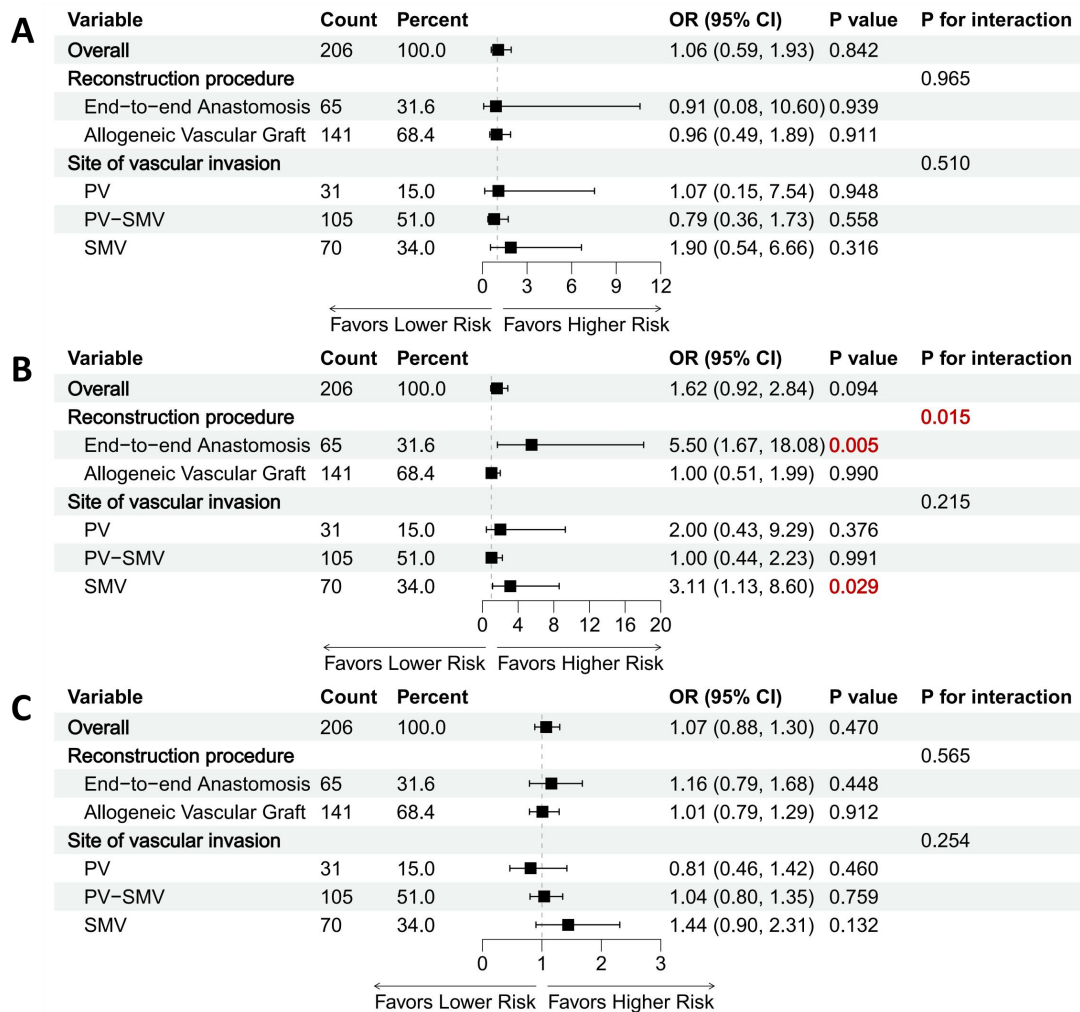
Supplementary Figure 2 Impact of portomesenteric vascular invasion extent on postoperative disease-free survival in different subgroups. A: Impact of angle of vascular invasion on disease-free survival; B: Impact of imaging vascular morphology changes on disease-free survival; C: Impact of vascular invasion length on disease-free survival.



Supplementary Figure 3 Impact of portomesenteric vascular invasion extent on postoperative liver-recurrence free survival in different subgroups. A: Impact of angle of vascular invasion on liver-recurrence free survival; B: Impact of imaging vascular morphology changes on liver-recurrence free survival; C: Impact of vascular invasion length on liver-recurrence free survival.



Supplementary Figure 4 Impact of portomesenteric vascular invasion extent on postoperative early tumor recurrence in different subgroups. A: Impact of angle of vascular invasion on early tumor recurrence; B: Impact of imaging vascular morphology changes on early tumor recurrence; C: Impact of vascular invasion length on early tumor recurrence



Supplementary Figure 5 Impact of portomesenteric vascular invasion extent on postoperative early liver recurrence in different subgroups. A: Impact of angle of vascular invasion on early liver recurrence; B: Impact of imaging vascular morphology changes on early liver recurrence; C: Impact of vascular invasion length on early liver recurrence.

Supplementary Table 1 Extent of lymph node dissection for each surgical procedure

| Lymph node | Pancreaticoduodectomy | Total | Distal |
|--------------------|-----------------------|-----------------------|----------------|
| | | Pancreaticoduodectomy | Pancreatectomy |
| No.5 | √ | √ | × |
| No.6 | √ | √ | × |
| No.12 (a, b, p) | √ | √ | × |
| No.13 (a, b) | √ | √ | × |
| No.17 (a, b) | √ | √ | × |
| No.8 (a, p) | √ | √ | √ |
| No.9 | √ | √ | √ |
| No.14 | √ | √ | √ |
| No.16 (a1, a2, b1) | √ | √ | √ |
| No.10 | × | √ | √ |
| No.11 | × | √ | √ |
| No.18 | × | √ | √ |

Supplementary Table 2 Result of multivariate Cox analysis for postoperative disease-free survival after adjusting for total bilirubin

| Variable | HR | 95%CI | P Value |
|-------------------------------------|-----------|---------------|----------------|
| Preoperative CEA (ng/mL) | 1.021 | 1.002 - 1.040 | 0.030* |
| Preoperative CA19-9 (U/mL) | 1.074 | 0.969 - 1.190 | 0.176 |
| Preoperative TB (umol/L) | 1.001 | 0.999 - 1.003 | 0.184 |
| Length of vascular invasion (cm) | 1.089 | 0.965 - 1.230 | 0.166 |
| Tumor diameter (cm) | 1.108 | 1.010 - 1.217 | 0.030* |
| Imaging vascular morphology changes | 1.241 | 0.864 - 1.782 | 0.243 |
| Moderate-High tumor differentiation | 0.679 | 0.483 - 0.953 | 0.025* |
| Lymph node metastasis | 1.498 | 1.015 - 2.210 | 0.042* |

(CEA: Carcino-embryonic antigen; CA19-9: Carbohydrate antigen 19-9; TB: Total bilirubin; HR: Hazard ratio; CI: Confidence interval; *: $p < 0.05$)

Supplementary Table 3 Result of multivariate logistic analysis for postoperative early tumor recurrence after adjusting for total bilirubin

| Variable | OR | 95%CI | P Value |
|---------------------------------------|-----------|---------------|----------------|
| Preoperative WBC ($\times 10^9/L$) | 1.421 | 0.868 - 2.326 | 0.162 |
| Preoperative NEUT ($\times 10^9/L$) | 0.780 | 0.450 - 1.351 | 0.376 |
| Preoperative CEA (ng/ml) | 1.083 | 1.008 - 1.163 | 0.029* |
| Preoperative CA19-9 (U/mL) | 1.137 | 0.903 - 1.432 | 0.273 |
| Preoperative TB (umol/L) | 1.000 | 0.997 - 1.004 | 0.908 |
| Length of vascular invasion (cm) | 1.023 | 0.808 - 1.294 | 0.853 |
| Tumor diameter (cm) | 1.237 | 1.013 - 1.511 | 0.037* |
| Imaging vascular morphology changes | 1.594 | 0.826 - 3.075 | 0.164 |
| Moderate-High tumor differentiation | 0.509 | 0.271 - 0.954 | 0.035* |
| Lymph node metastasis | 2.155 | 1.078 - 4.310 | 0.030* |

(WBC: White blood cell; NEUT: Neutrophil; CEA: Carcino-embryonic antigen; CA19-9: Carbohydrate antigen 19-9; TB: Total bilirubin; OR: Odds ratio; CI: Confidence interval; *: $p < 0.05$)