

Supplementary Table 1 Model 1 Age, sex, body mass index and follow-up time were adjusted during the multivariate analysis.

Variable	PCS						MCS					
	B	SE	Beta	t	P	95%CI	B	SE	Beta	t	P	95%CI
intercept	60.91	3.905		15.60	<0.001	53.203 to 68.609	69.51	4.18		16.63	<0.001	61.269 to 77.758
Group	-2.66	1.19	-0.16	-2.23	0.027	-5.015 to -0.304	-5.695	1.28	-0.30	-4.46	<0.001	-8.216 to -3.174
Age	-0.10	0.05	-0.15	-2.08	0.039	-0.192 to -0.005	-0.11	0.05	-0.15	-2.23	0.027	-0.213 to -0.013
Sex	-1.42	1.00	-0.10	-1.43	0.156	-3.393 to -0.547	-3.56	1.07	-0.22	-3.33	0.001	-5.665 to -1.448
BMI	-0.06	0.77	-0.01	-0.08	0.936	-1.580 to 1.457	-0.959	0.824	-0.08	-1.16	0.246	-2.585 to 0.666
Follow-up time	0.01	0.02	0.03	0.44	0.663	-0.027 to -0.042	0.02	0.02	0.07	1.03	0.306	-0.018 to -0.056

BMI: Body Mass Index.

PCS: Adjusted R² =4.2%; MCS: Adjusted R²=15.8%

Supplementary Table 2 Model 2 Tumor size, bile duct invasion, preoperative dilatation of the common bile duct, preoperative dilatation of the pancreatic duct and pathological classification were adjusted during the multivariate analysis.

Variable	PCS						MCS					
	B	SE	Beta	t	P	95%CI	B	SE	Beta	t	P	95%CI

	B	SE	Beta	t	P	95%CI		B	SE	Beta	t	P	95%CI
intercept	55.60	1.62		34.34	<0.001	52.409 to 58.797		60.63	1.77		34.32	<0.001	57.144 to 64.144
Group	-2.83	1.67	-0.17	-1.70	0.091	-6.116 to 0.460	-	-5.39	1.82	-0.29	-2.96	0.003	-8.975 to 1.799
Tumor size D1	0.10	0.1	0.16	1.00	0.321	-0.098 to 0.298	-	-0.01	0.11	-0.01	-0.03	0.978	-0.219 to 0.213
Tumor size D2	-0.06	0.12	-0.07	-0.49	0.626	-0.292 to 0.176	-	0.06	0.13	0.06	0.42	0.672	-0.200 to 0.310
Bile duct invasion	-2.08	1.48	-0.10	-1.41	0.161	-4.983 to 0.831	-	-4.42	1.61	-0.19	-2.75	0.007	-7.591 to 1.247
Preoperative dilatation of the common bile duct	1.71	1.24	0.10	1.38	0.170	-0.738 to 4.162	to	1.16	1.36	0.06	0.85	0.394	-1.516 to 3.831
Preoperative dilatation of the pancreatic duct	-1.10	5.52	-0.04	-0.44	0.663	-6.079 to 3.877	to	0.35	2.75	0.01	0.13	0.900	-5.086 to 5.778

Pathological classification	-0.63	0.47	-0.11	-1.34	0.18	-1.54	to	-0.51	0.51	-0.08	-1.00	0.317	-1.514	to	0.493
						0.294									

PCS: Adjusted R² =3.6%; MCS: Adjusted R²=11.9

Supplementary Table 3 Model 3 Carcinoma antigen-199, direct bilirubin, alkaline phosphatase, gamma-glutamyl transferase, hemoglobin and platelet were adjusted during the multivariate analysis

Variable	PCS						MCS						
	B	SE	Beta	t	P	95%CI	B	SE	Beta	t	P	95%CI	
intercept	51.83	4.71		11.01	<0.001	42.539 to 61.115	52.42	5.16		10.17	<0.001	42.251 to 62.595	
Group	-3.60	1.36	-0.22	-2.65	0.009	-6.282 to -0.925	-5.43	1.49	-0.29	-3.65	<0.001	-8.367 to -2.500	
CA-199	0.02	0.03	0.06	0.56	0.577	-0.037 to 0.067	0.01	0.03	0.04	0.44	0.660	-0.044 to 0.070	
DBiL	0.064	0.07	0.08	0.90	0.370	-0.077 to 0.206	0.12	0.08	0.13	1.51	0.133	-0.036 to 0.273	
ALP	-0.01	0.011	-0.07	-0.46	0.648	-0.027 to 0.017	0.01	0.01	0.02	0.15	0.881	-0.022 to 0.026	
GGT	0.01	0.01	0.15	1.29	0.199	-0.003 to 0.014	-0.01	0.01	-0.07	-0.68	0.498	-0.012 to 0.006	

Hb	0.04	0.03	0.11	1.43	0.154	-0.015 to 0.096	0.07	0.03	0.15	2.09	0.038	0.004 to 0.126
PLT	-0.01	0.01	-0.06	-0.86	0.391	-0.027 to 0.011	-0.01	0.01	-0.06	-0.91	0.363	-0.031 to 0.011

CA-199: Carcinoma Antigen-199; DBil: Direct Bilirubin; ALP: Alkaline Phosphatase; GGT: Gamma-Glutamyl Transferase; Hb: Hemoglobin; PLT: Platelet;

PCS: Adjusted R² =3.6%; MCS: Adjusted R²=11.3%.

Supplementary Table 4 Model 4 Pain, weight loss, pancreatic fistula, biliary fistula, abdominal infection, incisional wound infection and delayed bleeding were adjusted during the multivariate analysis

Variable	PCS						MCS						
	B	SE	Beta	t	P	95%CI	B	SE	Beta	t	P	95%CI	
intercept	57.51	1.56		36.78	<0.001	54.426 to 60.596	60.35	1.75		35.56	<0.001	58.891 to 65.805	
Group	-3.29	1.30	-0.20	-2.52	0.012	-5.854 to 0.716	-6.29	1.46	-0.35	-4.31	<0.001	-9.173 to 3.414	-
pain	-6.54	1.05	-0.41	-6.25	<0.001	-8.609 to 4.475	-5.01	1.17	-0.28	-4.27	<0.001	-7.323 to 2.691	-

Weight loss	-0.97	1.39	-0.05	-0.70	0.485	-3.704 1.763	to	-0.18	1.56	-0.01	-0.12	0.909	-3.242 2.885	to
Pancreatic fistula	-0.05	2.53	-0.01	-0.02	0.985	-5.045 4.951	to	-6.27	2.84	-0.18	-2.21	0.029	-11.868 -0.665	to
Biliary fistula	4.64	4.75	0.07	0.98	0.331	-4.741 14.017	to	10.04	5.33	0.13	1.88	0.061	-0.472 20.549	to
abdominal infection	0.90	2.08	0.04	0.43	0.667	-3.202 4.995	to	2.31	2.33	0.08	0.99	0.322	-2.281 6.906	to
Infection of incisional wound	2.07	4.52	0.031	0.46	0.648	-6.850 10.979	to	10.16	5.06	0.14	2.01	0.046	0.174 20.154	to
Delayed bleeding	-4.31	1.85	-0.15	-2.33	0.021	-7.968 0.653	to	-4.09	2.08	-0.13	-1.97	0.050	-8.190 0.007	to

PCS: Adjusted R² =22.0%; MCS: Adjusted R²=22.2%