Table 1 Patient characteristics (n=211).

Variable	All patients	POPF	No-POPF	P^*
Age (years), mean $\pm$ SD	52.07±13.81	54.70±12.50	51.58±14.02	0.234[†]
BMI (kg/m^2), mean $\pm$ SD	22.97±3.67	23.12±4.14	22.94±3.58	0.814[†]
Sex				0.089
Female	118	14	104	
Male	93	19	74	
Smoking				0.766
Yes	49	7	42	
No	162	26	136	
Drinking				0.662
Yes	33	6	27	
No	178	27	151	
Abdominal operation history				0.936
Yes	50	8	42	
No	161	25	136	
Diabetes mellitus				0.998
Yes	32	5	27	
No	179	28	151	
Cardiovascular disease				0.001
Yes	62	18	44	
No	149	15	134	

*χ^2 test, except † t test

Table 2 Preoperative biochemical markers (n=211)

Variable	All patients	POPF	No-POPF	$P^{\dagger}$
Albumin(g/L), mean ± SD	40.37±4.81	40.02±5.55	40.43±4.7	0.441
Hb(g/L), mean ± SD	126.85±16.85	127±17.33	126.74±16.81	0.824
LDH(U/L), median(IQR)	163(145-189)	158(147-186)	164(143-189)	$0.620^{\ddagger}$
PLT(10^9/L), mean ± SD	193.30±73.25	194.67±65.63	193.05±74.74	0.908
WBC(10^{12}/L), mean ± SD	5.69±2.14	6.06±3.03	5.61±1.93	0.276
CK(U/L), median(IQR)	64.00(48.00-90.00)	64.00(47.00-85.50)	64.0(48.00-91.00)	$0.837^{\ddagger}$

† t test, except ‡ Mann–Whitney U test

Table 3 Intraoperative parameters (n=211)

Variable	All patients	POPF	No-POPF	P^*
Operative time (min), median (IQR)	241.00 (192.00-326.00)	317.00 (250.00-370.00)	227.00 (186.00-311.00)	$< 0.001^{\ddagger}$
Surgical procedure				0.012
Laparoscope	72	5	67	
Laparotomy	139	28	111	
Operative time				< 0.001
> 280min	89	24	65	
≤ 280min	122	9	113	
Pancreas texture				< 0.001
Soft	86	23	63	
Hard	125	10	115	
Tumor size (cm), median (IQR)	3.50(2.30-5.00)	4.00 (2.50-6.60)	3.50 (2.20-5.00)	$0.388^{\ddagger}$
Tumor location				0.726
Body	76	11	65	
Tail	135	22	113	
Extrapancreatic extension				0.364
Yes	81	15	66	
No	130	18	122	
MPD(mm), mean ± SD	2.47±2.17	2.13±0.56	2.56±2.37	$0.478^{\dagger}$
Closure technique				0.174
Suture	74	15	59	
Stapler	137	18	119	
Splenectomy				0.745
Yes	193	31	162	
No	18	2	16	

* χ^2 test, except † *t* test and ‡ Mann–Whitney U test

Table 4 Postoperative data (n=211)

Variable	All patients	POPF	No-POPF	P
WBC on POD 1 (10^9/L), mean±SD	15.16±7.00	15.16±7.45	15.16±6.92	0.986[†]
RBC on POD 1 (10^{12}/L), mean±SD	3.73±0.54	3.83±0.50	3.71±0.55	0.223[†]
Hematokrit(%) on POD 1, mean ± SD	33.58±4.43	34.46±4.47	33.42±4.42	0.215[†]
Difference of albumin (g/L) on POD 1, mean±SD	10.71±5.61	13.92±5.04	10.12±5.52	< 0.001[†]
Difference of albumin				< 0.001[*]
>12.50g/L	87	24	63	
≤12.50g/L	124	9	115	
Drain amylase (U/L) on POD 1, median(IQR)	2013 (319-7213)	1129 (291-7187)	2257 (356-7516)	0.485[‡]
Length of hospital stay(d), median(IQR)	14 (11-16)	25 (16-30)	13 (11-15)	< 0.001[‡]
90-day readmission				0.048[*]
	14	5	9	
	197	28	169	
Postoperative intra-abdominal infection				< 0.001[*]
Yes	31	21	10	
No	180	12	178	
Postoperative intra-abdominal hemorrhage				0.028[*]
Yes	5	3	2	
No	206	30	176	

*χ^2 test, † t test and ‡ Mann–Whitney U test, ‡ Mann–Whitney U test

Table 5 Multivariate analyses of variable associate with POPF (n=211)

variable	OR	95% CI	P
Pancreas texture (soft)	4.23	1.71-10.45	0.002
Cardiovascular disease	5.05	1.97-13.01	0.001
Operation time (> 280min)	4.18	1.67-10.46	0.002
Difference of albumin (>12.50g/L)	6.41	2.40-17.08	<0.001