



Universiteit
Leiden

The Netherlands

Improving outcomes of pancreatic surgery

Groen, J.V.

Citation

Groen, J. V. (2023, June 29). *Improving outcomes of pancreatic surgery*.

Retrieved from <https://hdl.handle.net/1887/3628261>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3628261>

Note: To cite this publication please use the final published version (if applicable).

CHAPTER 10

Pancreas-preserving surgical interventions during relaparotomy for pancreatic fistula after pancreatoduodenectomy

J.V. Groen, F.J. Smits, I.Q. Molenaar, B.A. Bonsing, H.C. van Santvoort, J.S.D. Mieog, *for the Dutch Pancreatic Cancer Group*

HPB (Oxford). 2022 May;24(5):782-783. doi: 10.1016/j.hpb.2021.10.007. Epub 2021 Oct 23. PMID: 34740546.

TO THE EDITOR

With great interest we read the study by Garnier et al.¹ regarding their four-step standardized technique during completion pancreatectomy for pancreatic fistula after pancreatoduodenectomy. They conclude that their standardized technique appears to be relatively safe, reproducible, and could be particularly useful for young surgeons. Although we support standardization of this technique, we don't agree with the additional statements that pancreas-preserving surgical interventions are associated with more reoperations and mortality and that simple surgical drainage should not be adopted.

Within the Dutch Pancreatic Cancer Group, we recently compared 36 patients undergoing completion pancreatectomy and 126 patients undergoing a pancreas-preserving intervention during the first relaparotomy for pancreatic fistula after pancreatoduodenectomy.² Mortality was higher after completion pancreatectomy (odds ratio after correction for confounders 2.55, 95% confidence interval 1.07-6.08). The proportion of additional reinterventions was not different between groups (64% vs 67%, $P=0.76$). Additionally, we conducted a meta-analysis on mortality and found a similar association (745 patients, odds ratio 1.99, 95% confidence interval 1.03-3.84).

A subgroup analysis by different pancreas-preserving surgical interventions is shown in Table 1. The groups did not differ at baseline (before first relaparotomy for pancreatic fistula) regarding previous reinterventions, organ failure and APACHE II score. Mortality was 29% following simple surgical drainage vs 37% (range 30-44%) for the other subgroups ($P=0.341$). Additional reinterventions were performed in 65% following simple surgical drainage vs 70% (range 60-83%) for the other subgroups ($P=0.601$).

Simple surgical drainage was not associated with more reinterventions or mortality in our cohort compared to other pancreas-preserving surgical interventions. Therefore, we believe that, after failure of percutaneous drainage, simple surgical drainage is a viable option in the management of pancreatic fistula following pancreatoduodenectomy.

Table 1. Subgroup analysis following different surgical interventions during relaparotomy for pancreatic fistula after pancreatoduodenectomy

Pancreas-preserving surgical interventions during relaparotomy for pancreatic fistula																		
	Simple surgical drainage			Other subgroups			Repair of pancreatic anastomosis			DAPR			DAPR with external wirsungostomy			Redo PJ		
	N	%		N	%		N	%		N	%		N	%		N	%	
Total	80	63.5	46	36.5	-	-	20	15.8	12	9.5	9	7.1	5	4.0	-			
Baseline at time of relaparotomy																		
Previous reintervention																		
Organ failure 24h before*																		
No	33	41.3	24	52.2	0.236		9	45.0	7	58.3	7	77.8	1	20.0	0.166			
Single	43	54.4	25	55.6	0.848		14	70.0	7	58.3	3	33.3	1	25.0	0.235			
Multiple	26	32.9	13	28.9			6	30.0	2	16.7	3	33.3	2	50.0				
Highest APACHE II score 24h before*	10	12.7	7	15.6			0	0	3	25.0	3	33.3	1	25.0				
Median (IQR)	11 (8-14)		13 (9-16)		0.116		13 (7-17)		12 (10-16)		13 (12-15)		11 (10-14)		0.606			
Postoperative day of first relaparotomy	9 (7-15)		10 (6-14)		0.871		10 (7-14)		13 (7-15)		9 (5-14)		4 (2-10)		0.668			
Main outcomes after relaparotomy																		
Mortality																		
Organ failure 24h after*	23	28.8	17	37.0	0.341		6	30.0	5	41.7	4	44.4	2	40.0	0.785			
Single	22	27.8	12	26.7	0.752		7	35.0	3	25.0	1	11.1	1	20.0	0.894			
Multiple	18	22.8	8	17.8			4	20.0	2	16.7	1	11.1	1	25.0				
Highest APACHE II score 24h after*	39	49.4	25	55.6			8	40.0	7	58.3	7	77.8	2	50.0				
Median (IQR)	13 (11-17)		17 (13-21)		0.001		17 (11-21)		18 (16-23)		16 (14-21)		15 (15-17)		0.013			
Additional reintervention																		
Secondary completion pancreatectomy	52	65.0	32	69.6	0.601		16	80.0	10	83.3	7	77.8	3	60.0	0.627			
	3	3.8	7	15.2	0.022		4	20.0	2	16.7	1	1.11	0		0.103			

Abbreviations: DAPR: disconnection of pancreatic anastomosis with preservation of remnant; PJ: pancreaticojejunostomy; APACHE: Acute Physiology And Chronic Health Evaluation; IQR: interquartile range

*Missing data: organ failure 24h before (N=2), highest APACHE II score 24h before (N=14), organ failure 24h after (N=2), highest APACHE II score 24h after (N=15)

^a Comparison between simple surgical drainage and other subgroups

^b Comparison between all pancreas-preserving interventions

REFERENCES

1. Garnier J, Ewald J, Marchese U, Delpero JR, Turrini O. Standardized salvage completion pancreatectomy for grade C postoperative pancreatic fistula after pancreatoduodenectomy (with video). *HPB (Oxford)* 2021.
2. Groen JV, Smits FJ, Koole D, Besselink MG, Busch OR, den Dulk M, van Eijck CHJ, Groot Koerkamp B, van der Harst E, de Hingh IH, Karsten TM, de Meijer VE, Pranger BK, Molenaar IQ, Bonsing BA, van Santvoort HC, Mieog JSD. Completion pancreatectomy or a pancreas-preserving procedure during relaparotomy for pancreatic fistula after pancreatoduodenectomy: a multicentre cohort study and meta-analysis. *BJS* 2021;10.1093/bjs/znab273.

