



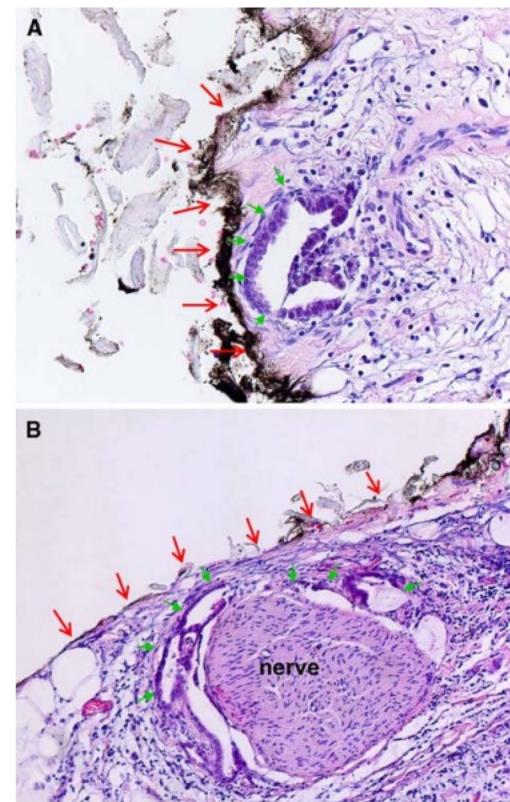
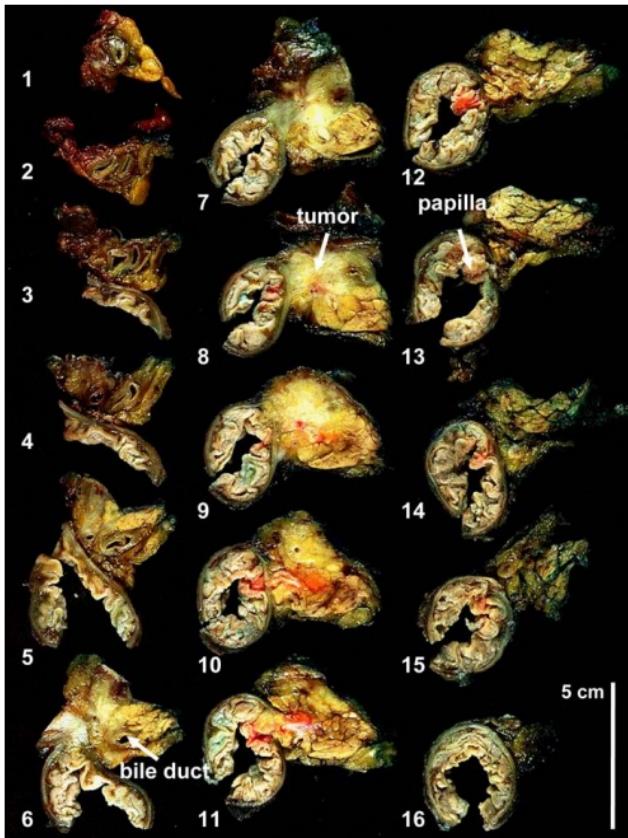
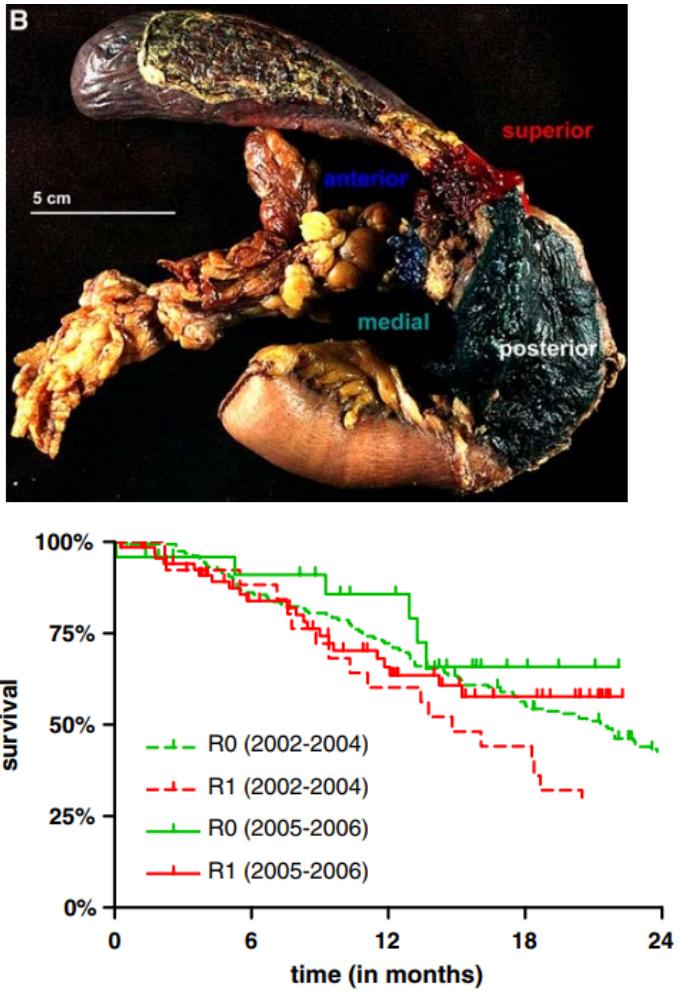
## ARTERY FIRST AND TOTAL MESOPANCREAS EXCISION FOR PANCREATIC DUCTAL ADENOCARCINOMA



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Full Professor and Chairman  
Department of Gastrointestinal Surgery  
Hepatopancreatobiliar Unit  
Universidade Federal do Maranhão - Brazil

## Most Pancreatic Cancer Resections are R1 Resections

Irene Esposito, MD,<sup>1,3</sup> Jörg Kleeff, MD,<sup>2,4</sup> Frank Bergmann, MD,<sup>1</sup> Caroline Reiser, MD,<sup>2,4</sup>  
Esther Herpel, MD,<sup>1</sup> Helmut Friess, MD,<sup>2,4</sup> Peter Schirmacher, MD,<sup>1</sup> and  
Markus W. Büchler, MD<sup>2</sup>



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**TABLE 3.** *Tumor margin characteristics of 111 consecutive macroscopic complete resections for pancreatic ductal adenocarcinoma (2005–2006)*

Characteristic	Value, n (%)
R classification	
R0	27 (24%)
R1	84 (76%)
RM involvement	
Posterior	39 (47%)
Medial	57 (68%)
Anterior surface	8 (10%)
Superior	0
Transection (pancreas)	3 (4%)
Bile duct	4 (5%)
Stomach/duodenum	3 (4%)
Number of margins	
1	56 (68%)
2	22 (26%)
3 or more	5 (6%)
Type of involvement	
Direct extension	78 (93%)
Locoregional spreading	6 (7%)

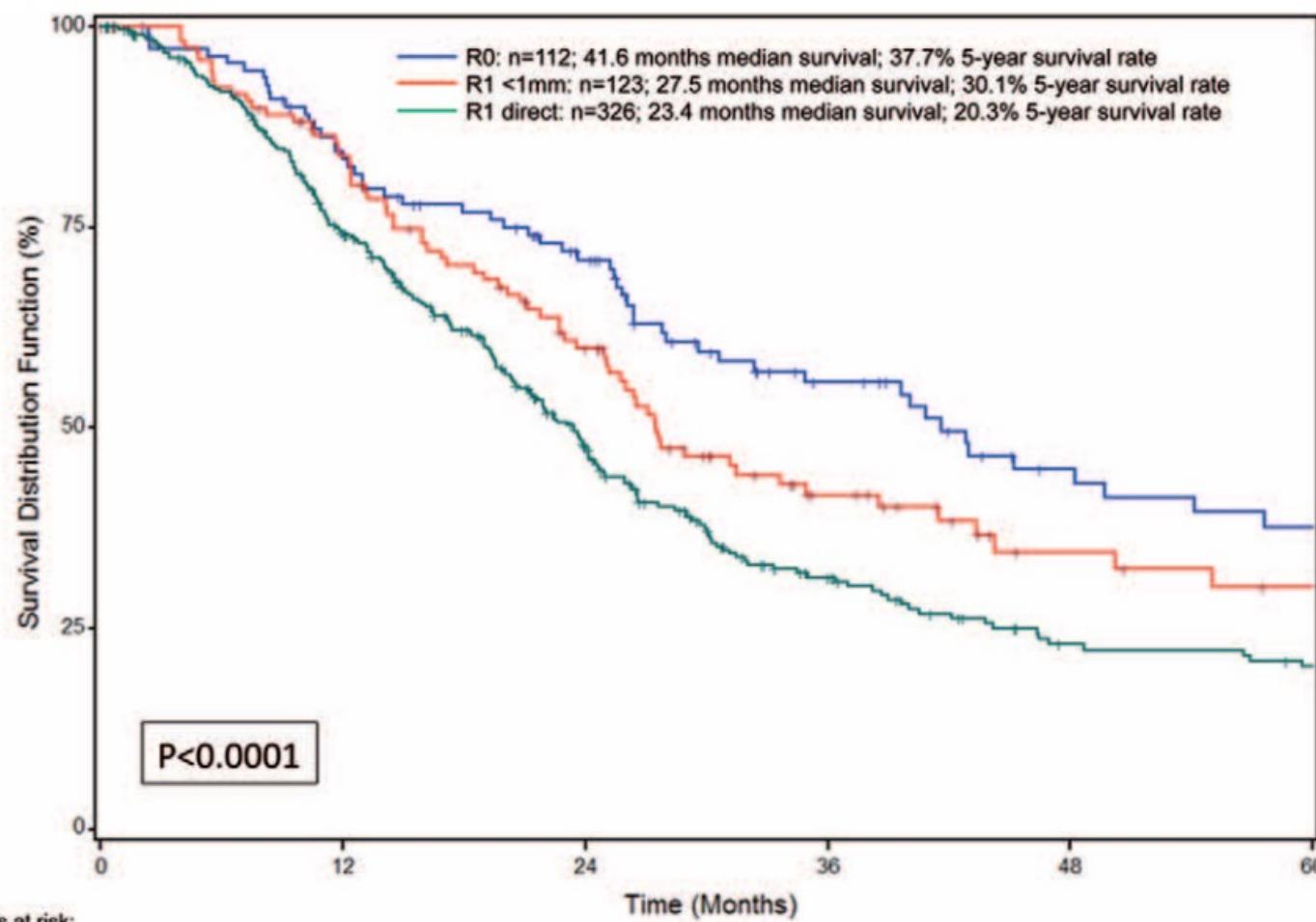
RM, resection margin.

2008

# Pancreatic Cancer Surgery

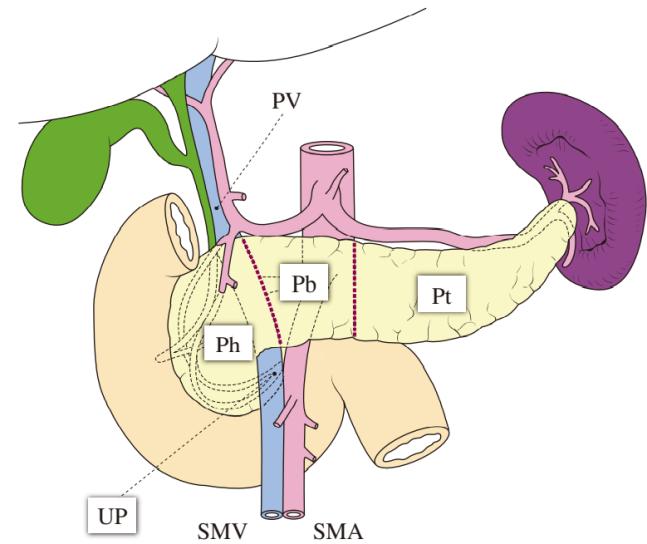
## The New R-status Counts

Oliver Strobel, MD,\* Thomas Hank, MD,\* Ulf Hinz, MSc,\* Frank Bergmann, MD,† Lutz Schneider, MD,\*  
Christoph Springfield, MD, PhD,‡ Dirk Jäger, MD,‡ Peter Schirmacher, MD,† Thilo Hackert, MD,\*  
and Markus W. Büchler, MD\*

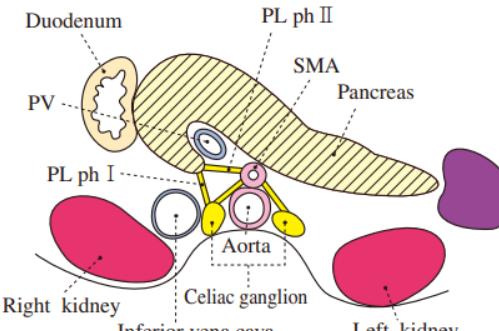


# Classification of Pancreatic Carcinoma

Japan Pancreas Society  
Fourth English Edition

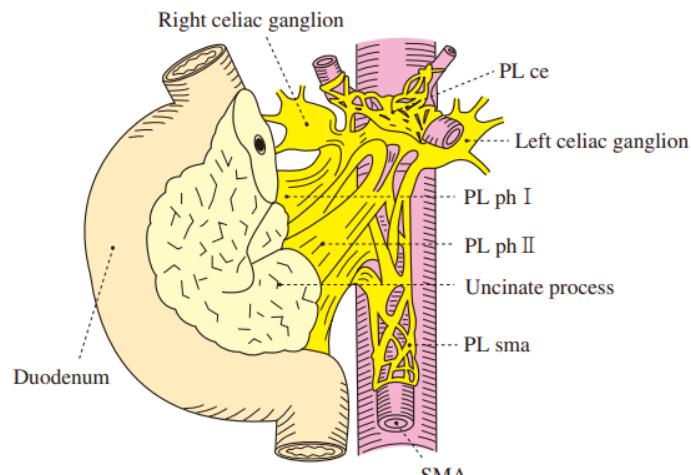


### PL



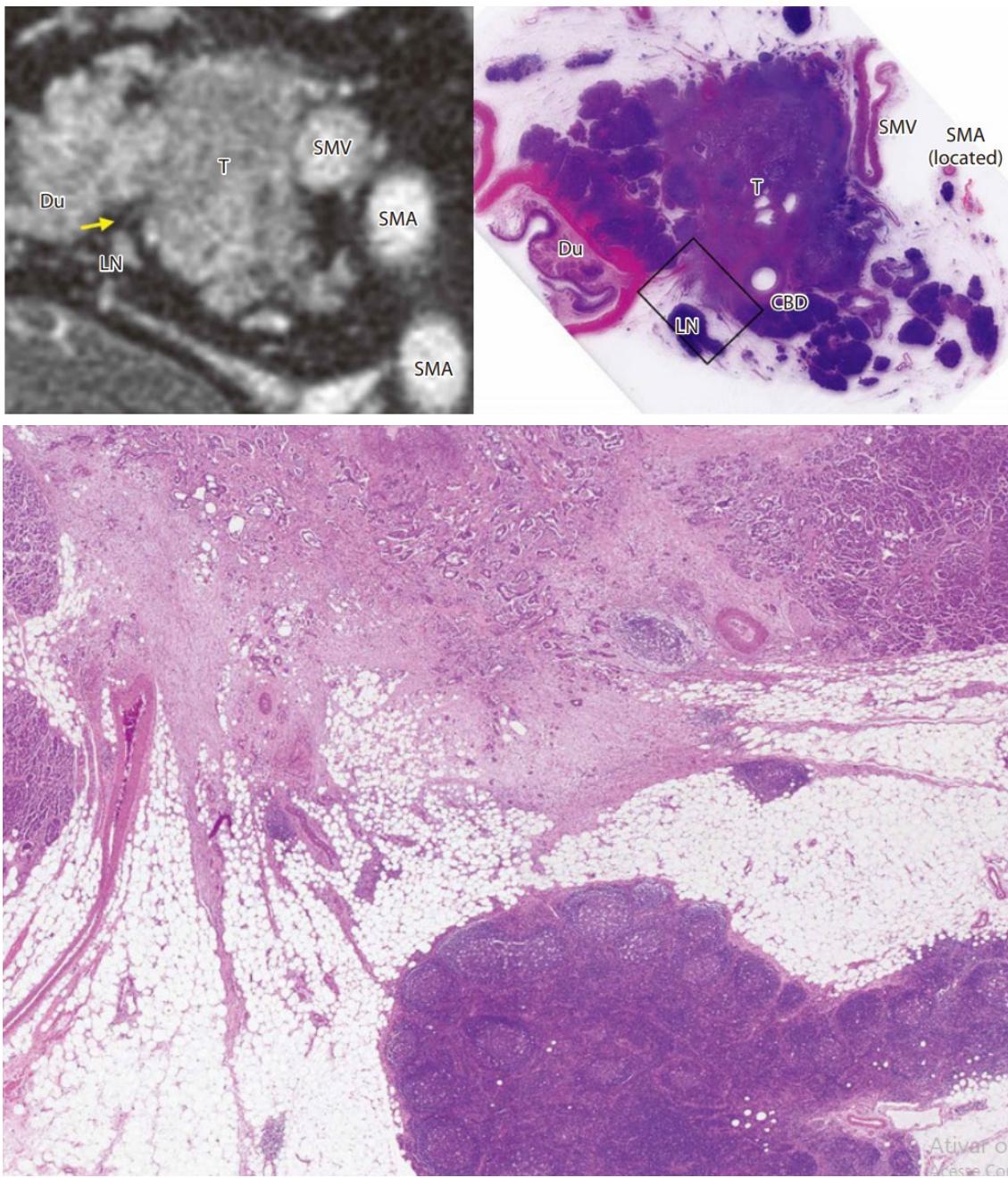
**Fig. 3a** Pancreatic nerve plexuses (cross-sectional diagram)

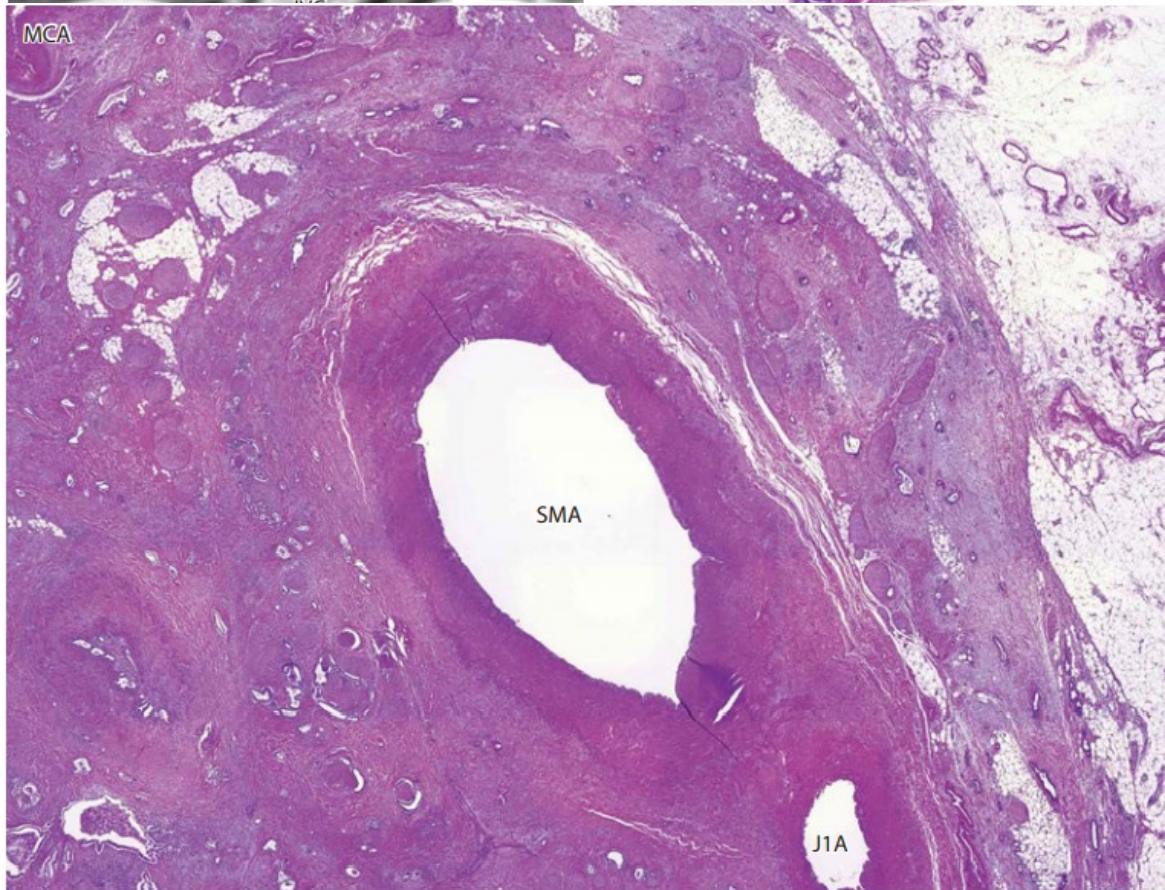
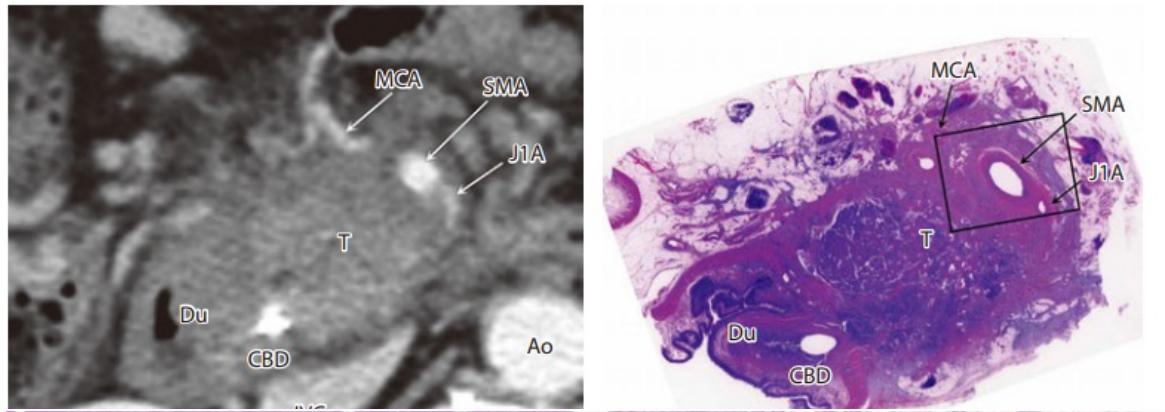
PLph I: pancreatic head nerve plexus I  
PLsma: superior mesenteric nerve plexus  
PLhdl: hepatoduodenal ligament nerve plexus  
PLce: celiac plexus



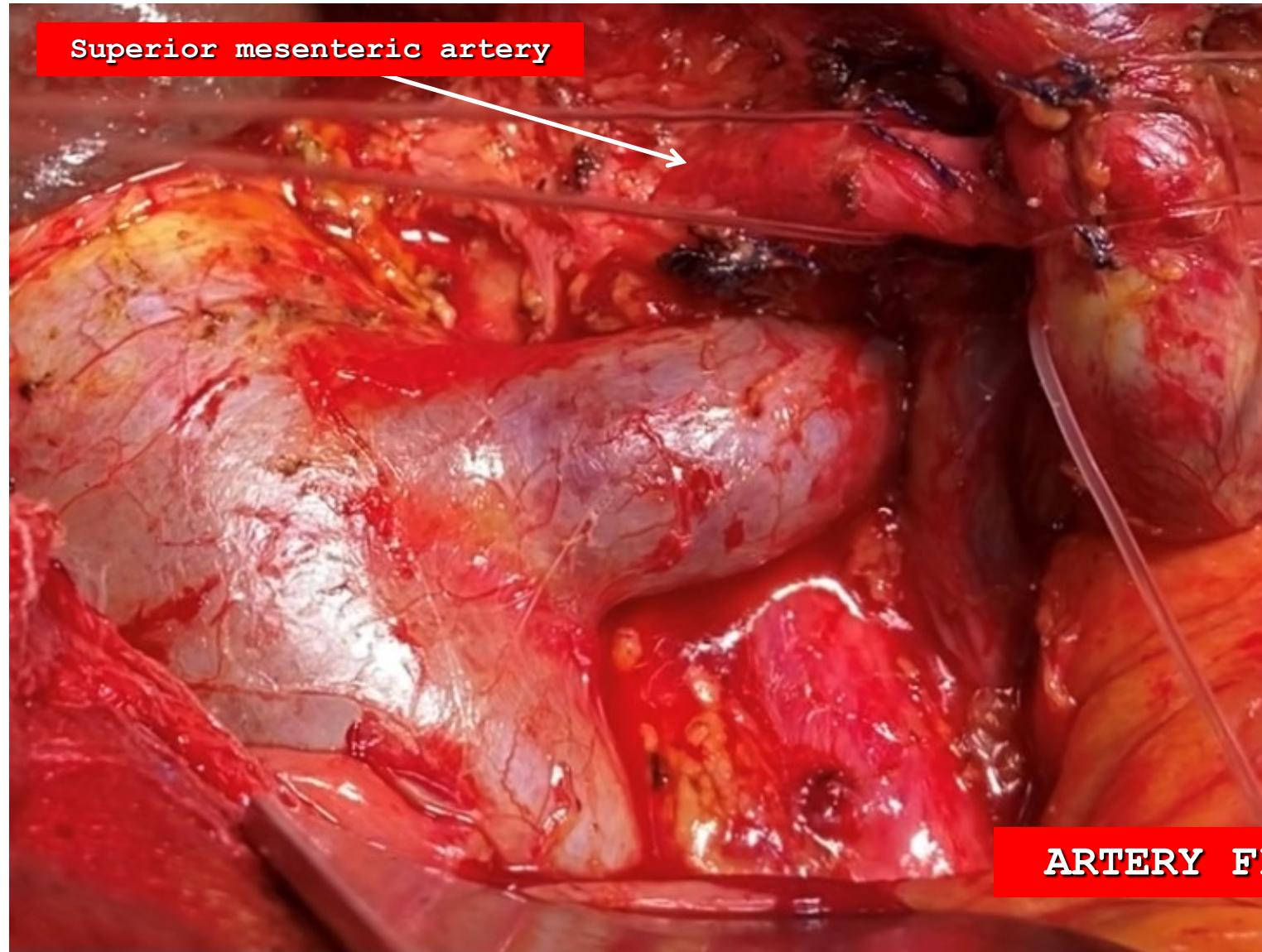
**Fig. 3b** Extrapancreatic nerve plexuses

PLph II: pancreatic head nerve plexus II  
PLcha: common hepatic artery nerve plexus  
PLspa: splenic artery nerve plexus

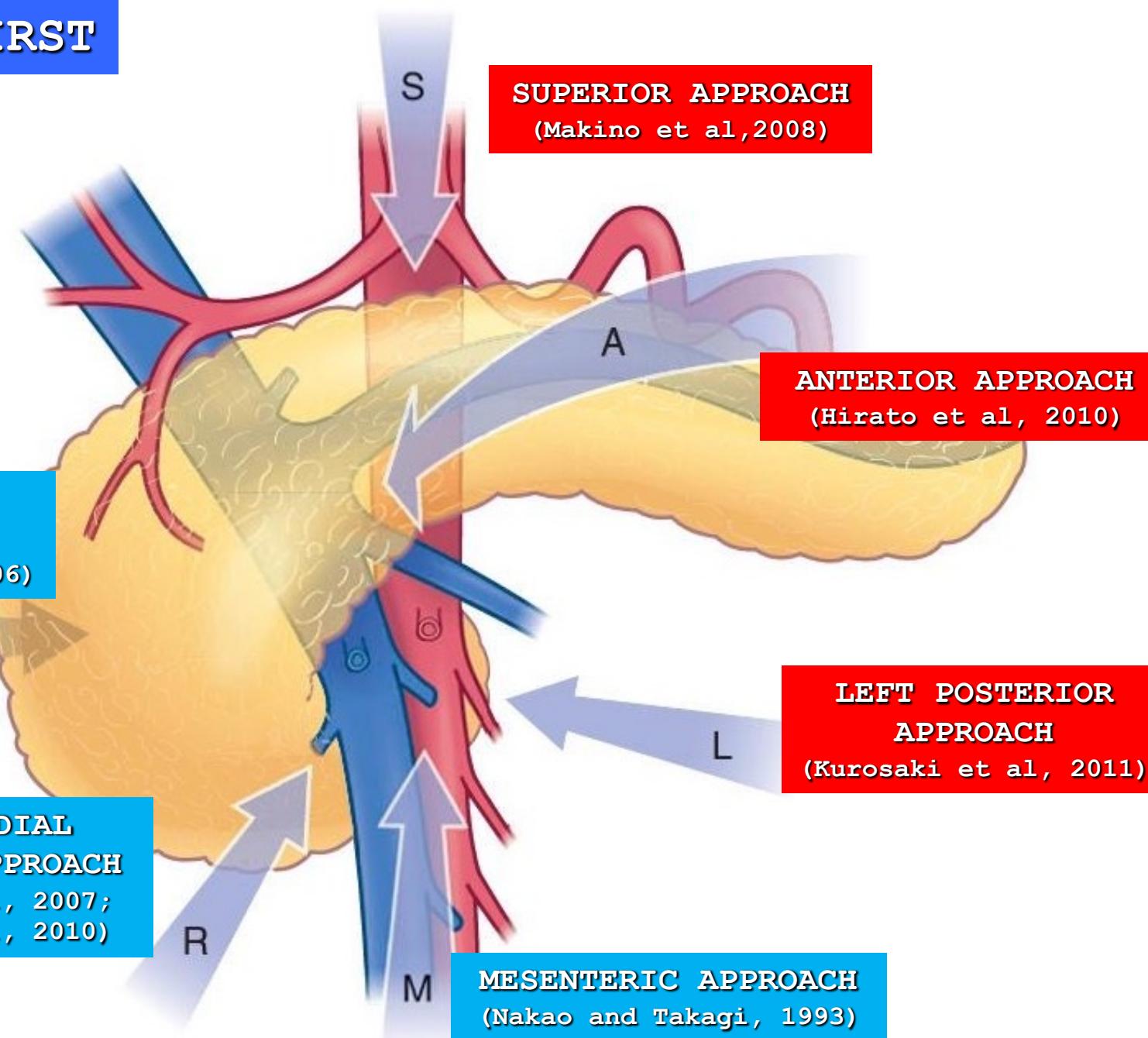




# ARTERY FIRST



# ARTERY FIRST



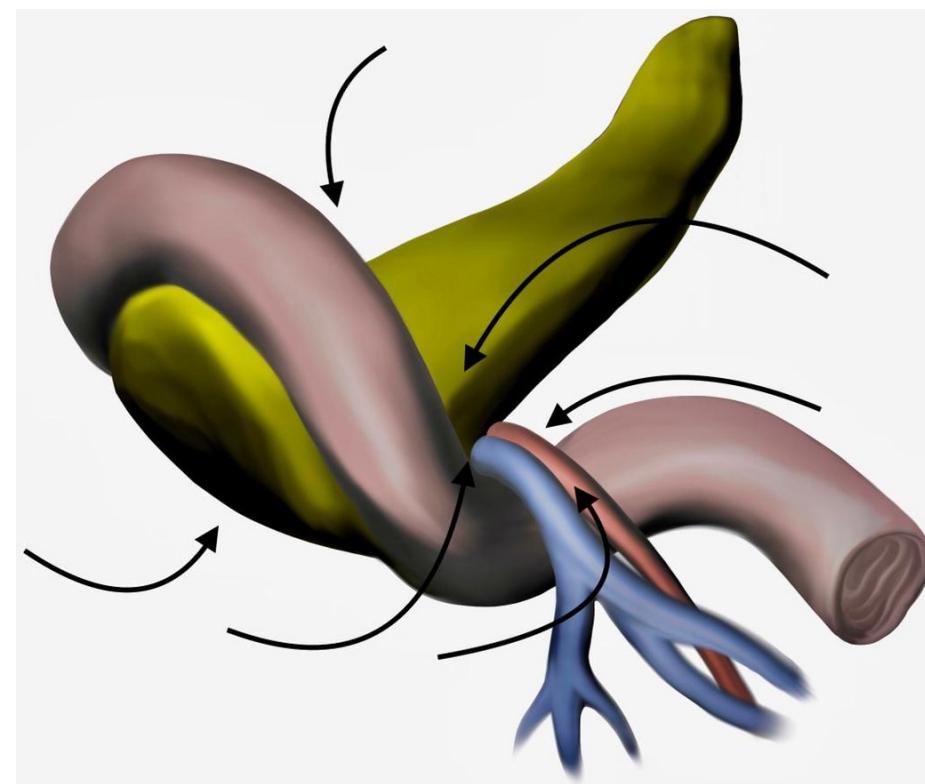


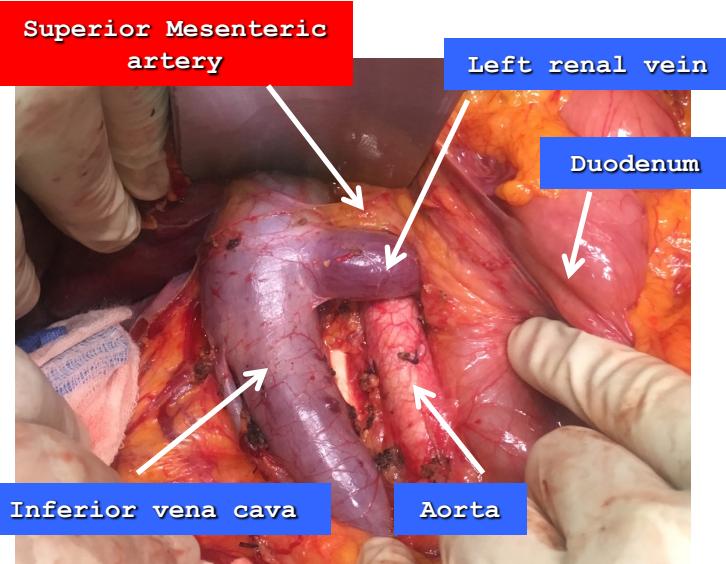
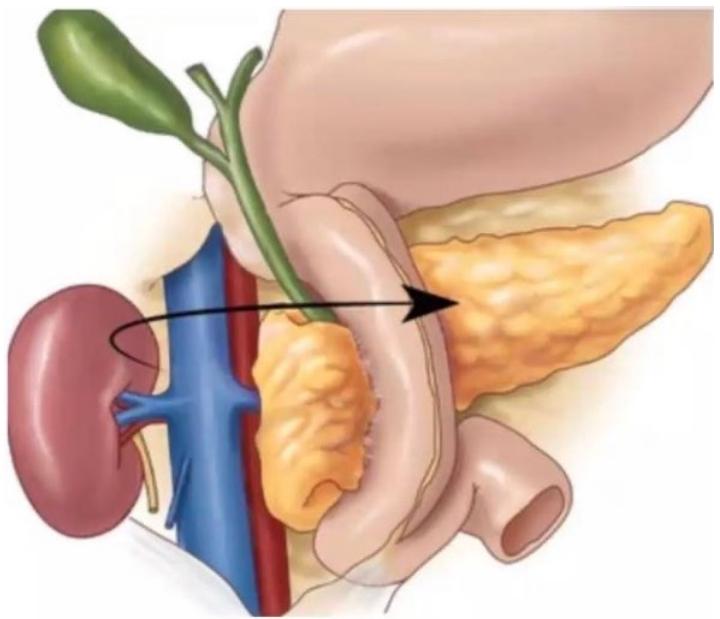
## What do surgeons need to know about the mesopancreas

Eduardo de Souza M. Fernandes<sup>1,2</sup> • Oliver Strobel<sup>3,4</sup> • Camila Girão<sup>1,2</sup> • Jose Maria A. Moraes-Junior<sup>5,6</sup> • Orlando Jorge M. Torres<sup>5,6</sup>

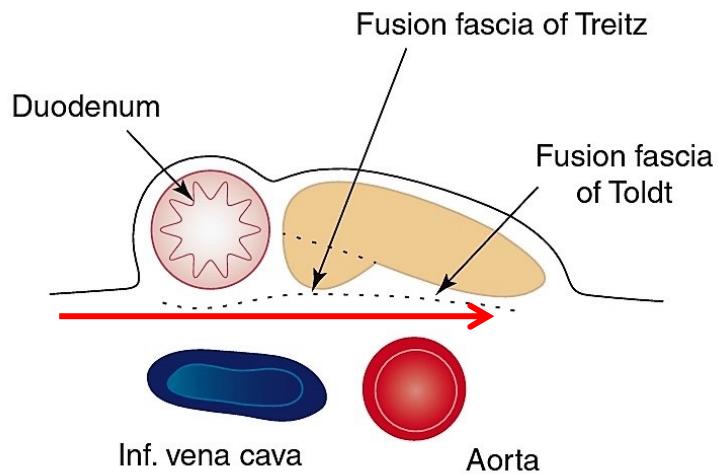
**Table 3** Advantages of the artery-first approach (SHARMA) [35]

1. Resection without breaching the tumor extension plane, thereby minimizing cell spillage
2. Increases curative (R0) resection, decreases local recurrence
3. Complete resection of peripancreatic retroperitoneal tissue around the plexuses
4. Increased lymph nodal clearance
5. Early assessment of non-resectability (SMA involvement), avoiding useless R2 resections
6. Better delineation of SMA and identification of RHA anomalies
7. Easier en bloc resection and reconstruction of SMV-PV by “no touch” technique
8. Reduced need for graft substitutions
9. Reduced operative time and blood loss (early ligation of IPDA/JA1)

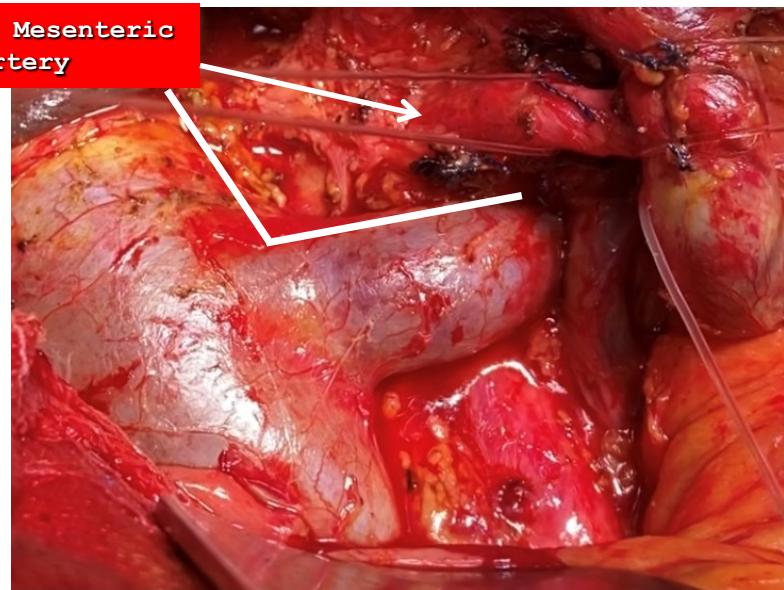




# ARTERY FIRST



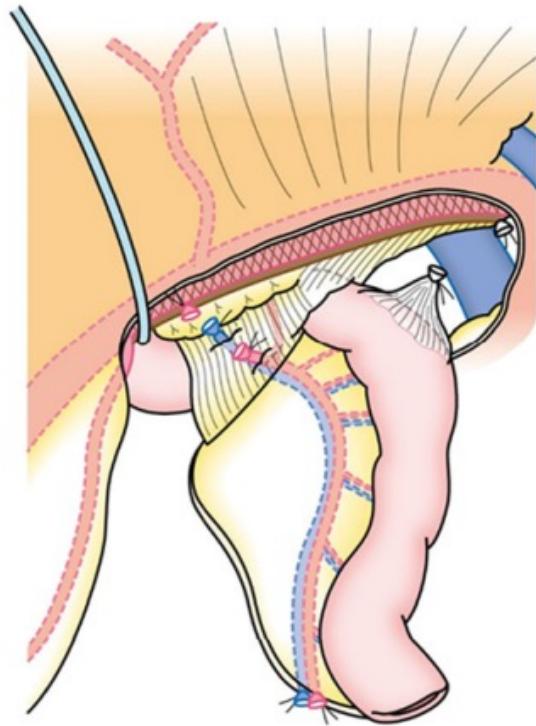
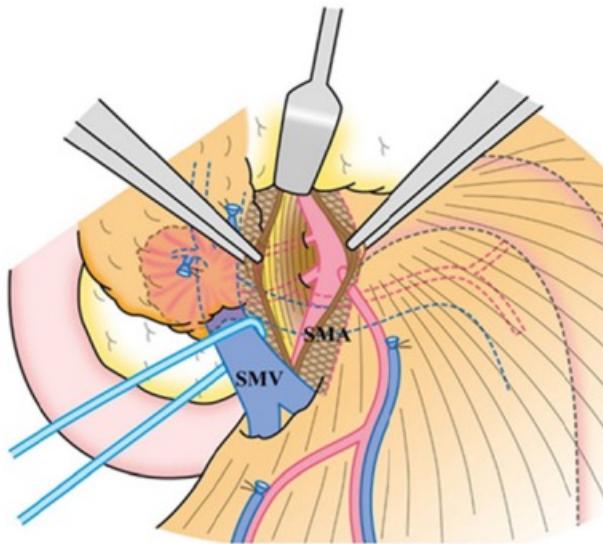
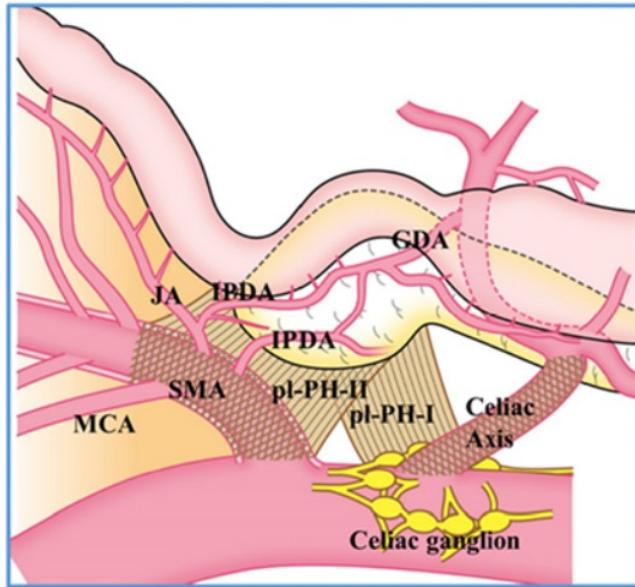
Superior Mesenteric artery



## Posterior approach



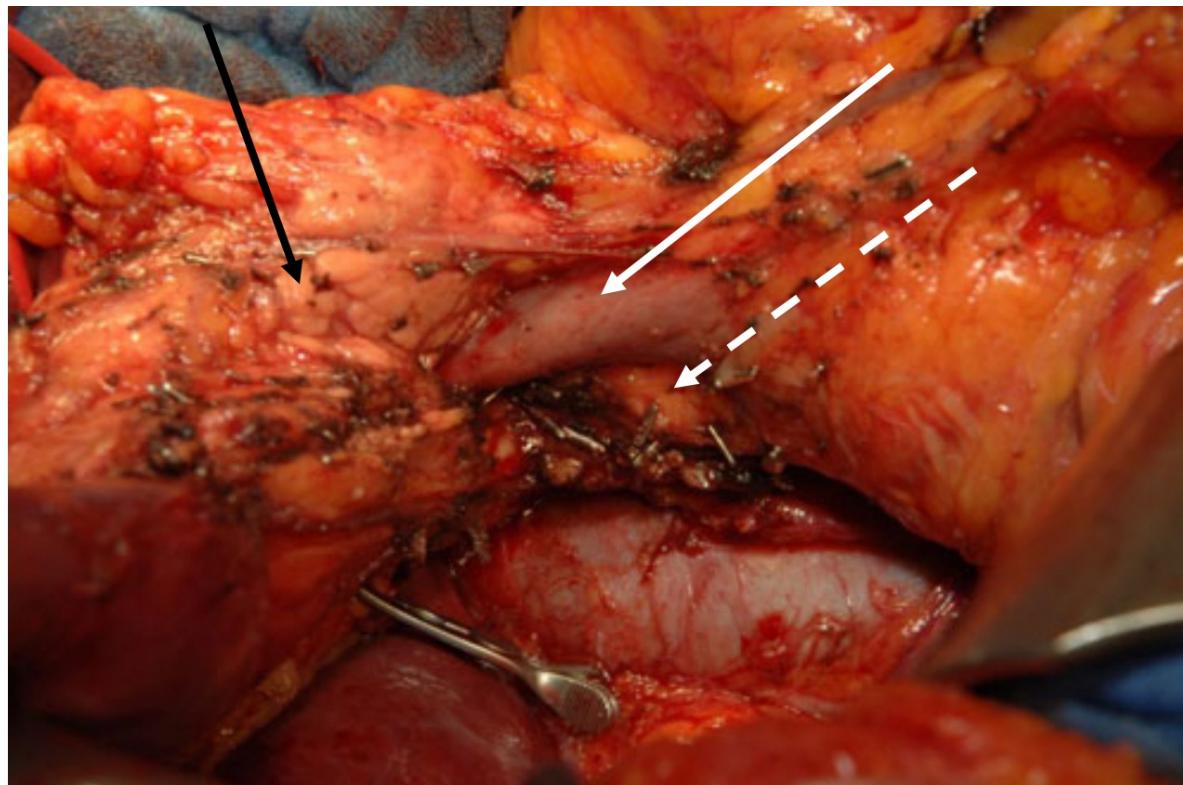
## Technical Details of an Anterior Approach to the Superior Mesenteric Artery During Pancreaticoduodenectomy



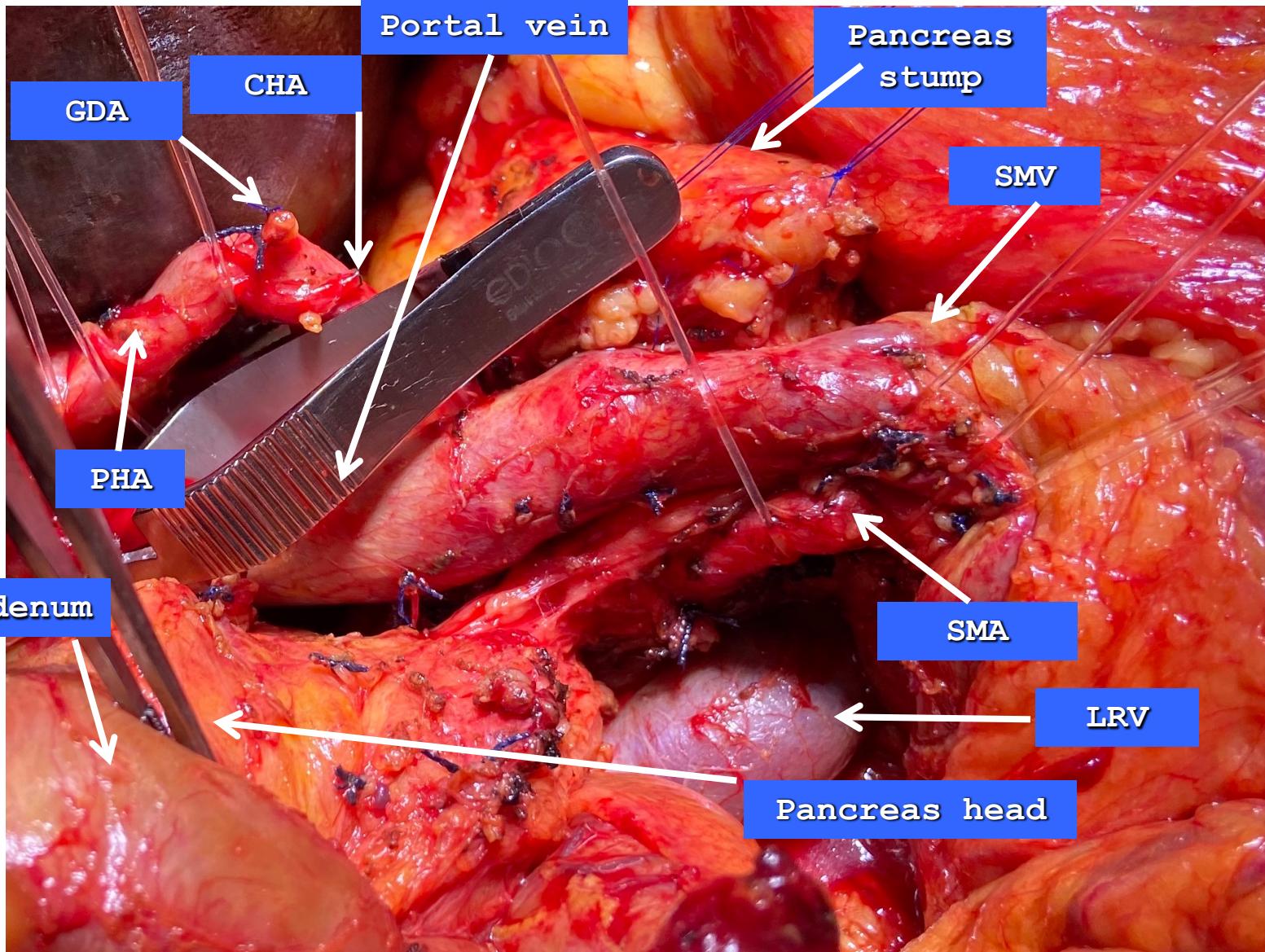
Anterior approach

HOW TO DO IT

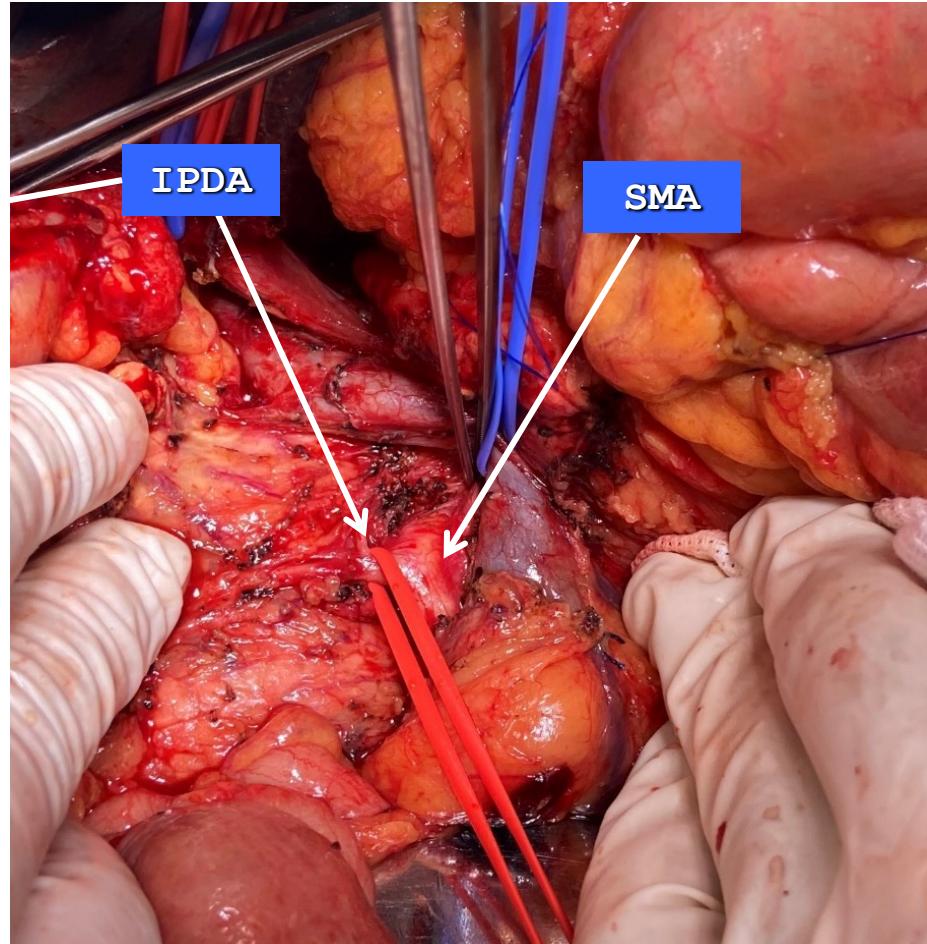
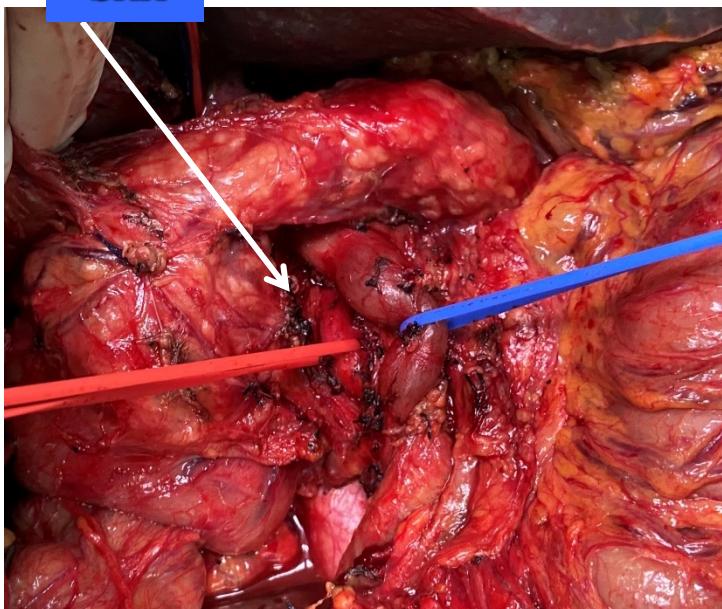
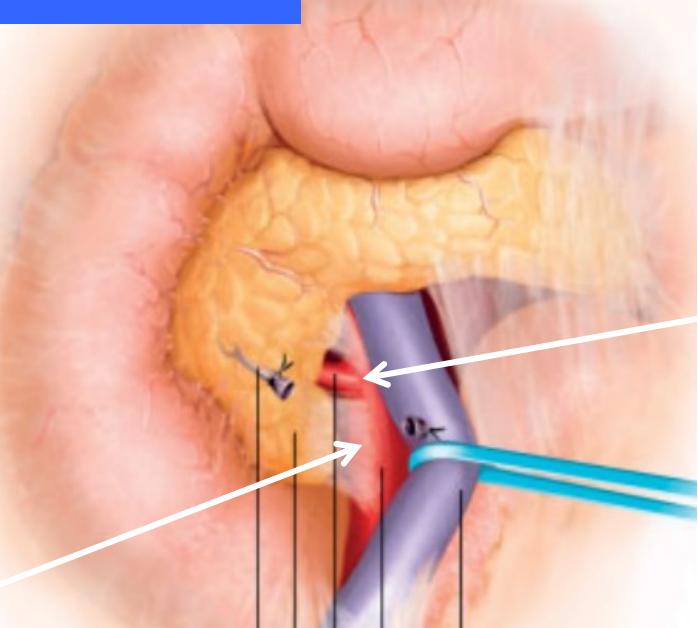
## Uncinate process first—a novel approach for pancreatic head resection



Uncinate first



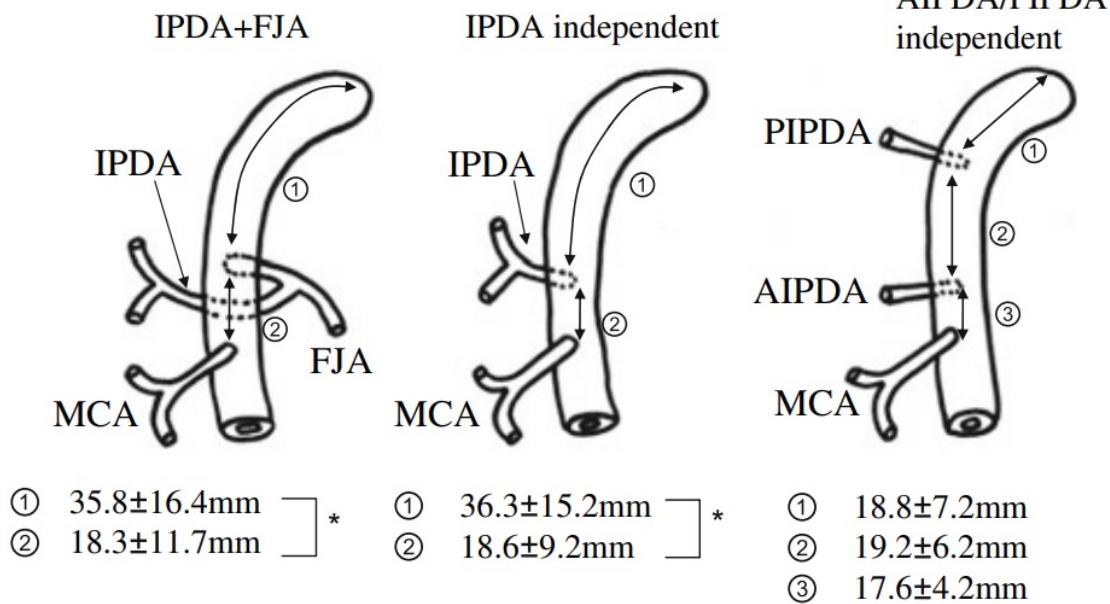
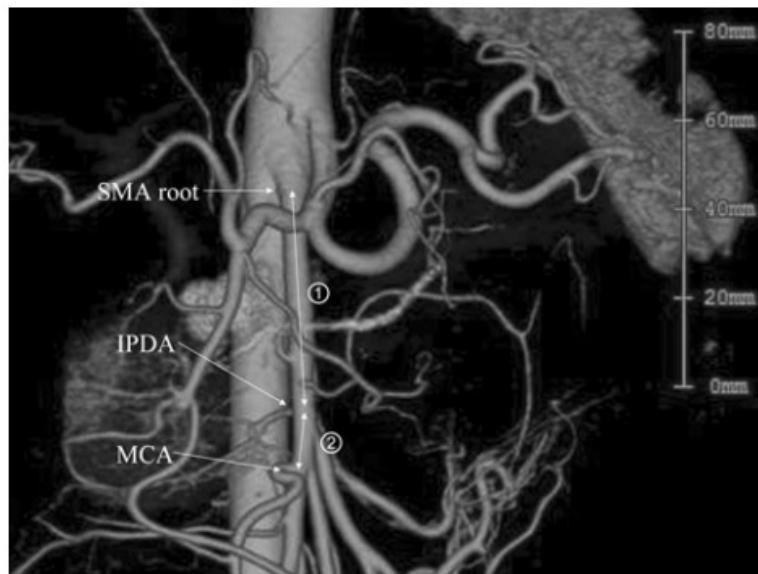
# ARTERY FIRST

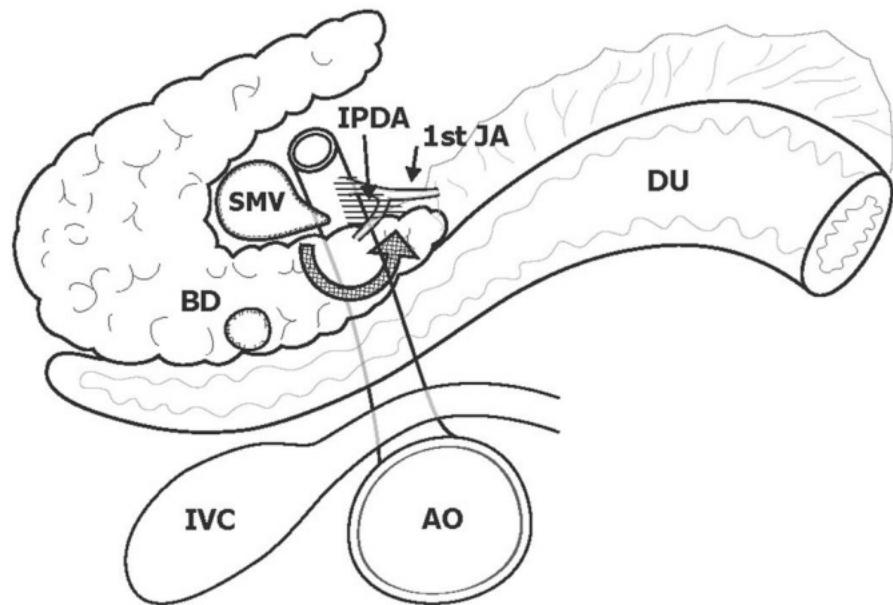
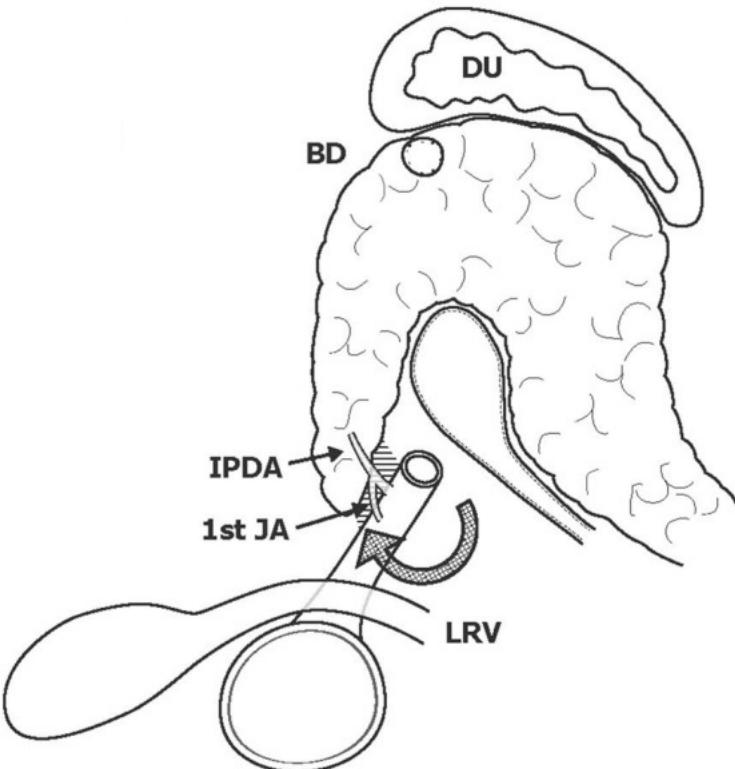
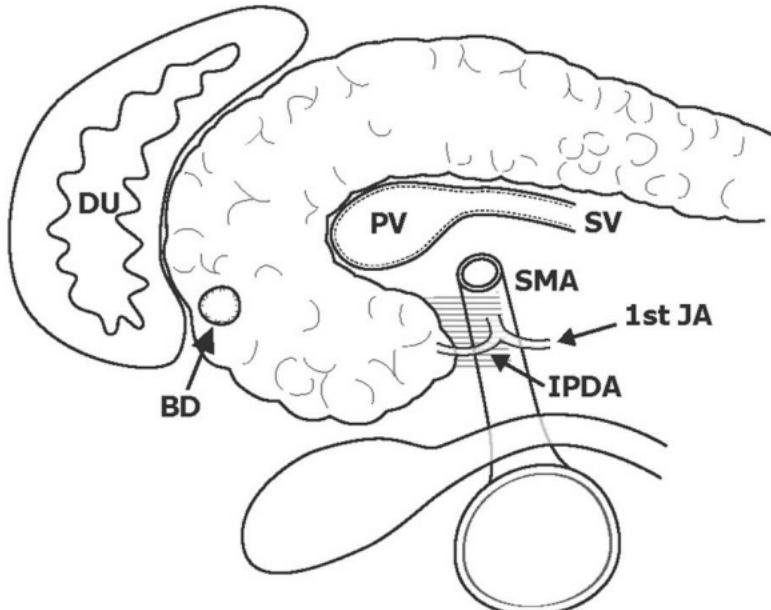


Uncinate first

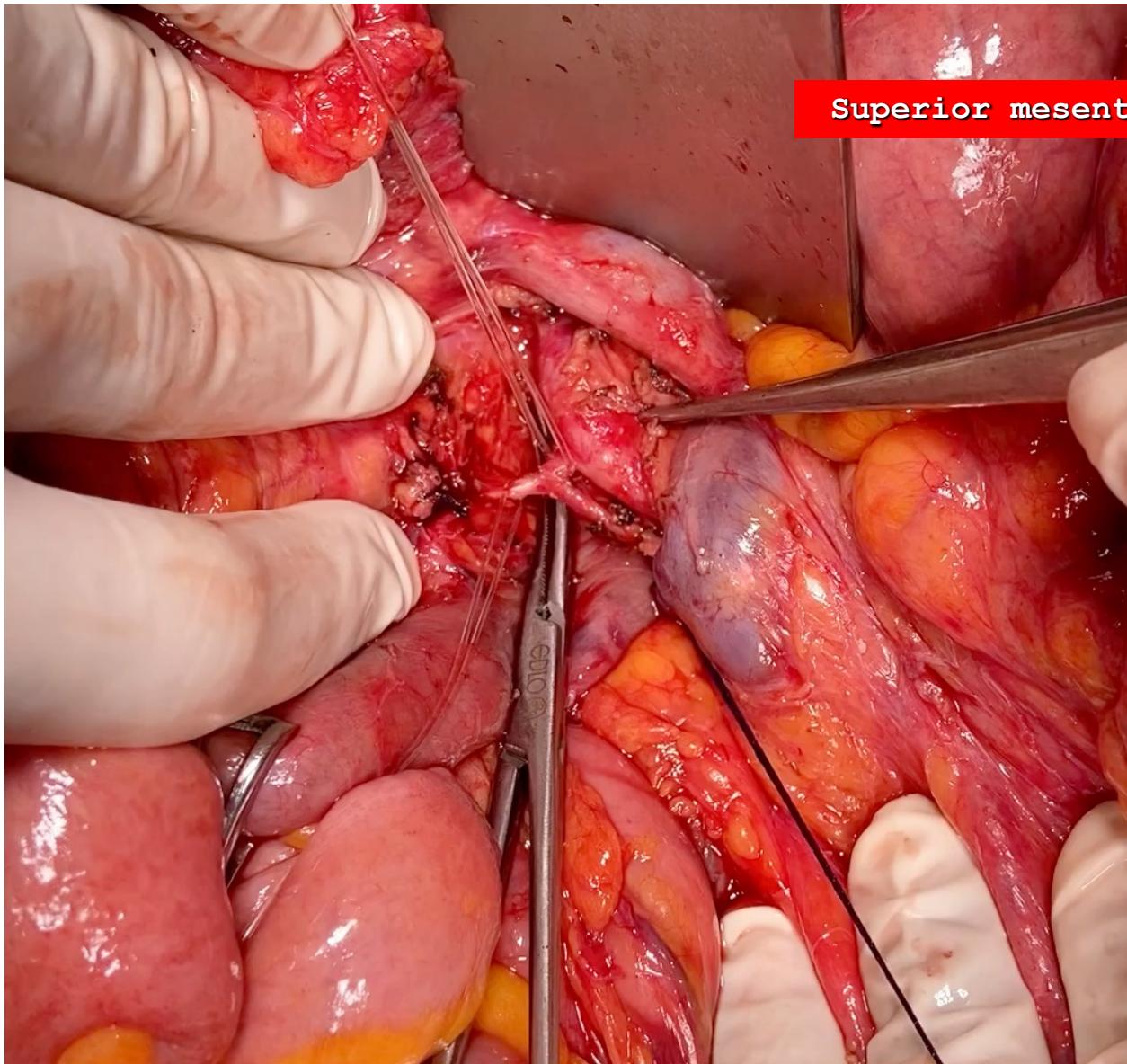
## Three-dimensional models of arteries constructed using multidetector-row CT images to perform pancreateoduodenectomy safely following dissection of the inferior pancreaticoduodenal artery

IPDA





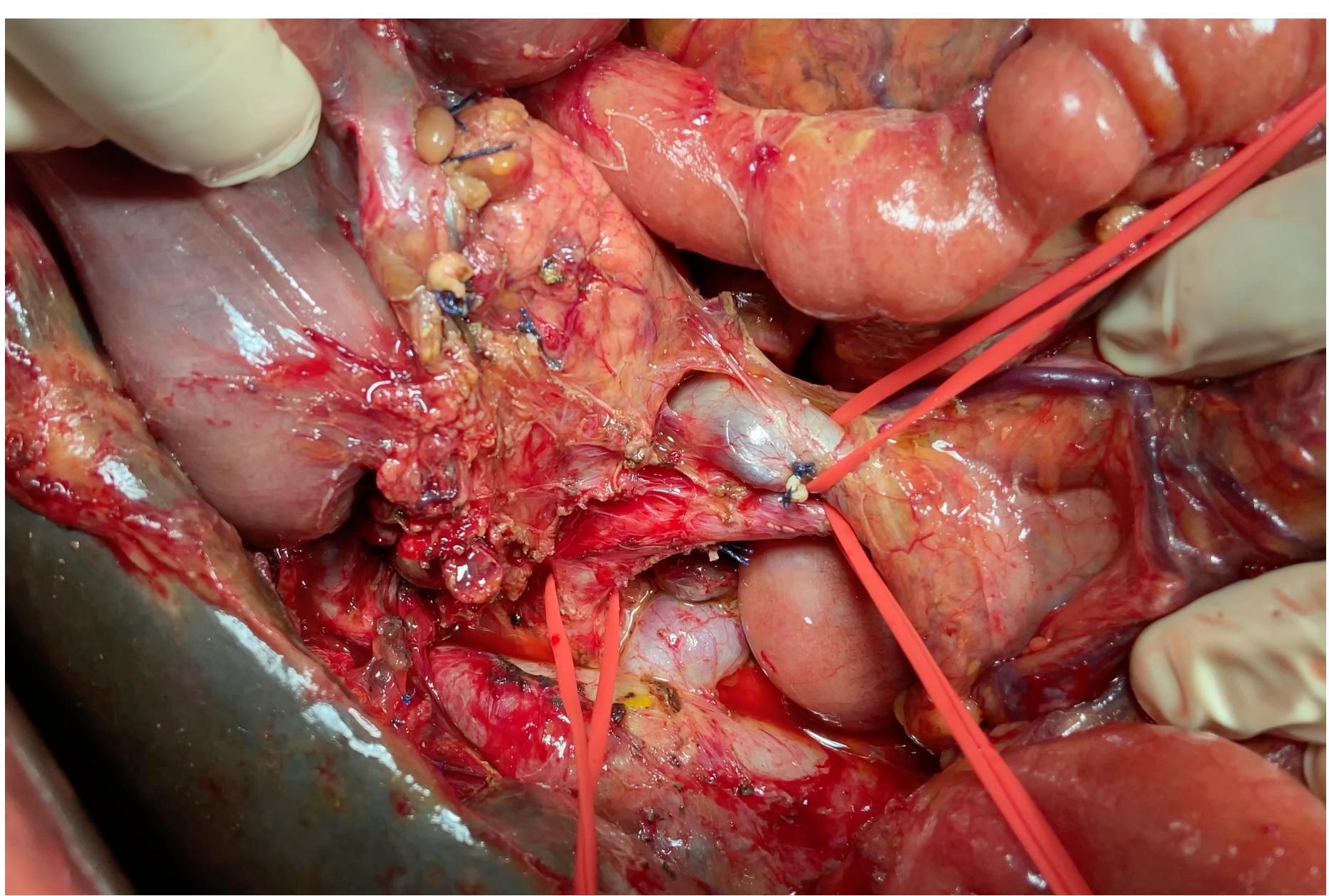
IPDA



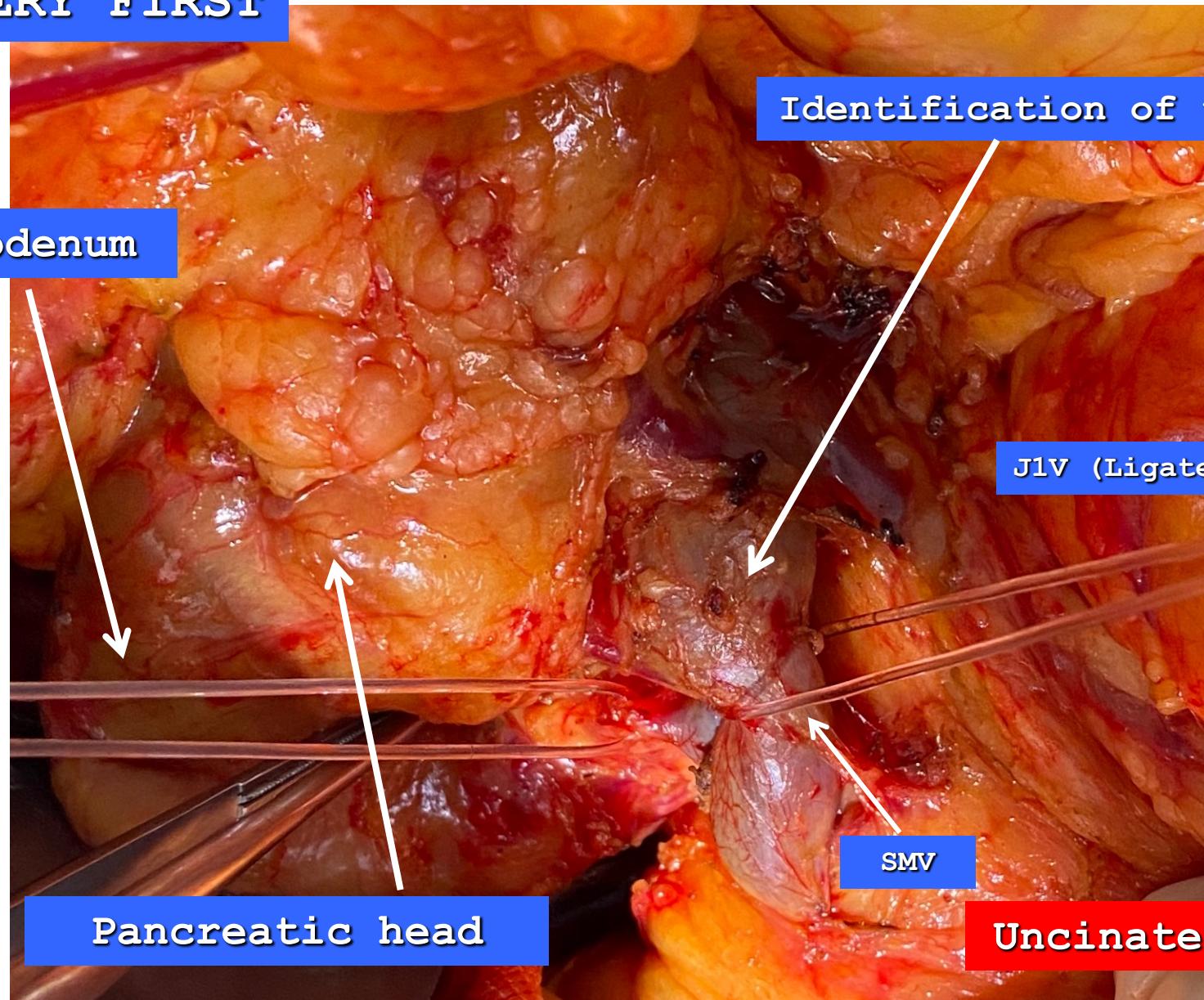
Superior mesenteric artery

J1A

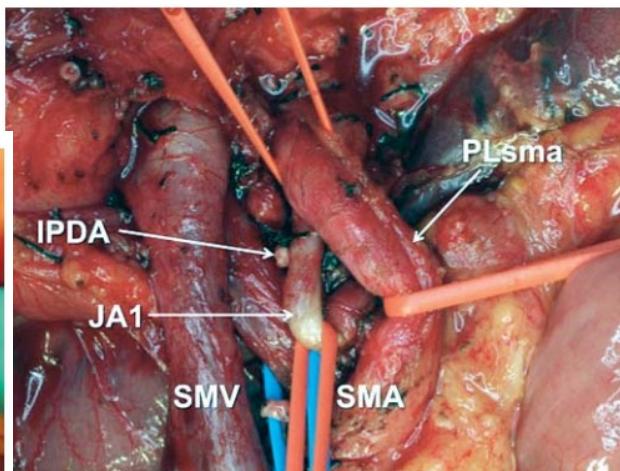
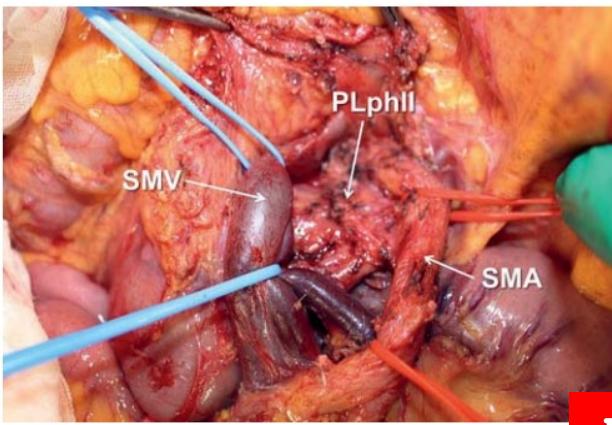
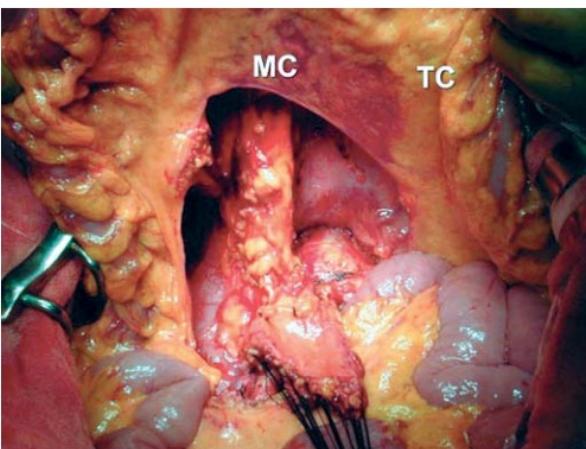
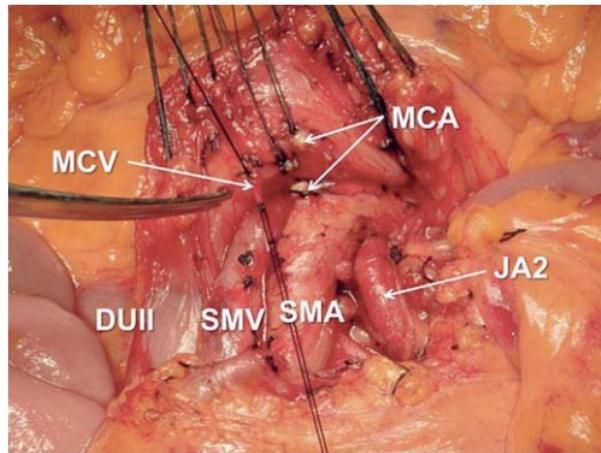
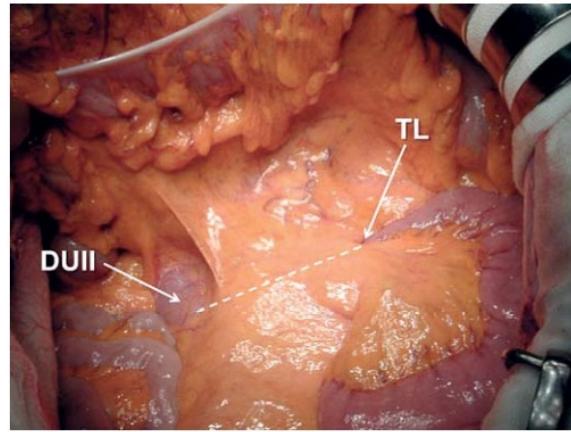




**ARTERY FIRST**

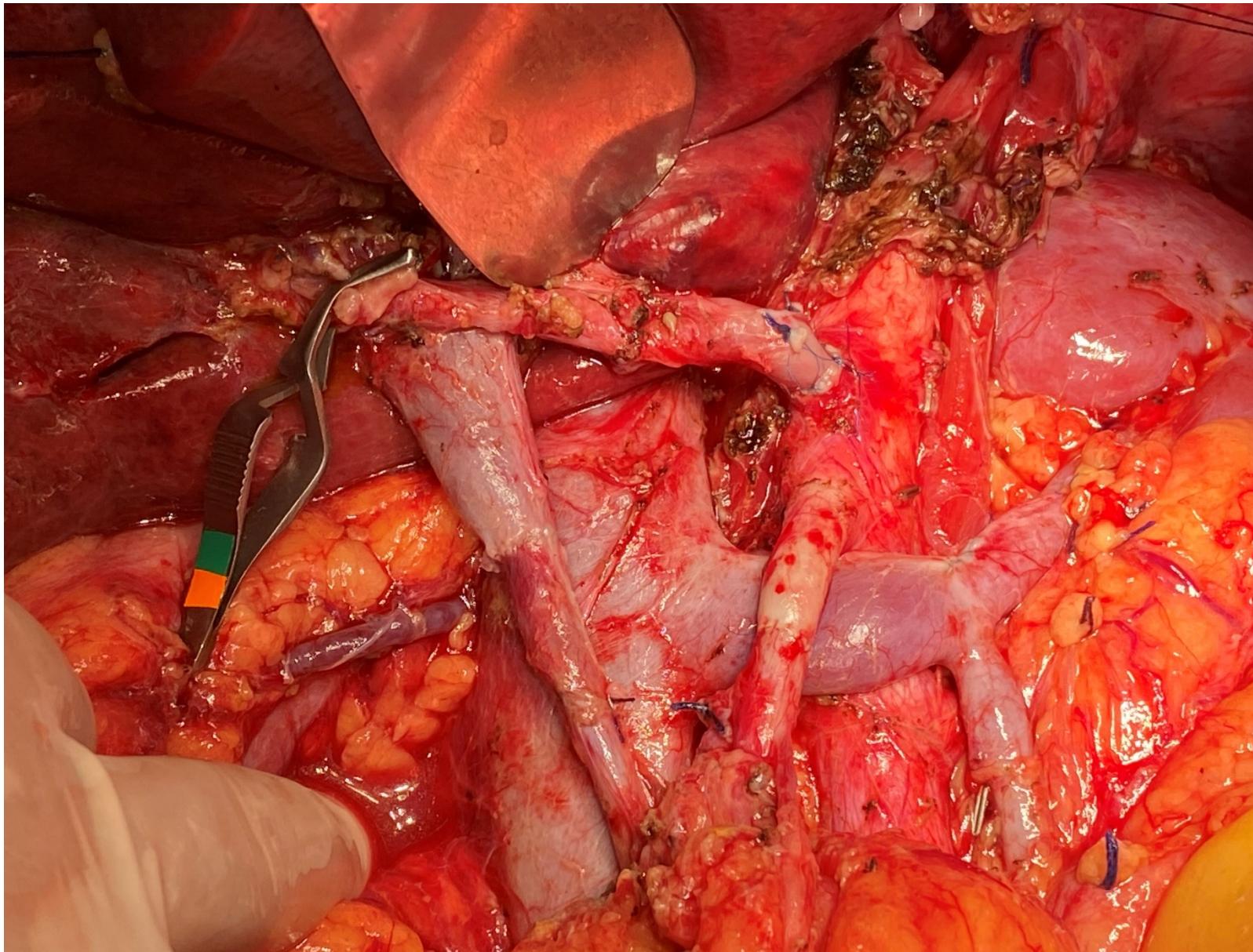


## The Mesenteric Approach in Pancreatoduodenectomy



Mesenteric approach

# MESENTERIC APPROACH





Review

Superior mesenteric artery first approach can improve the clinical outcomes of pancreaticoduodenectomy: A meta-analysis



- Higher R0 resection rate (p< 0.001)**
- Lower local recurrence rate (p< 0.0001)**
- Higher overall survival:**
  - 1-year p=0.015**
  - 2-year p=0.005**
  - 3-year p=0.001**

Meta-analysis – 18 studies

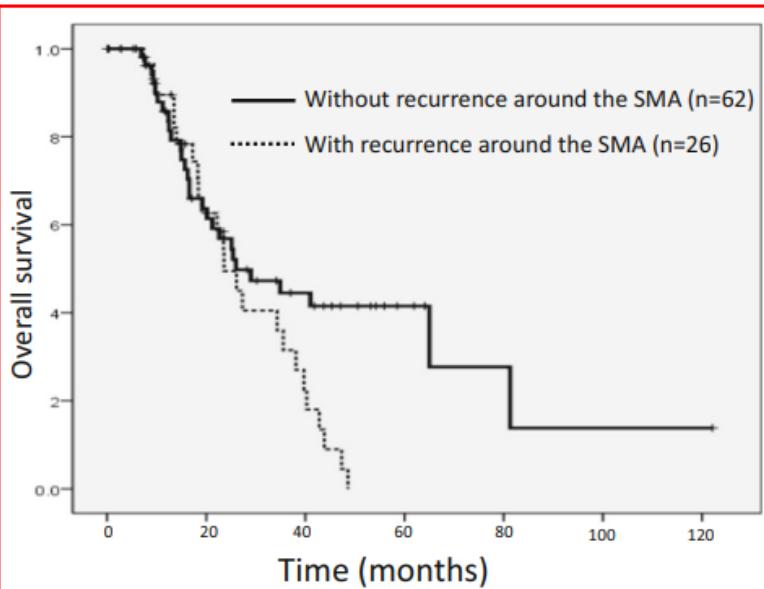
## Complete Lymphadenectomy Around the Entire Superior Mesenteric Artery Improves Survival in Artery-First Approach Pancreatoduodenectomy for T3 Pancreatic Ductal Adenocarcinoma

**Table 2** Comparison of perioperative and oncological outcomes between the AFA-PD group and the conventional PD group

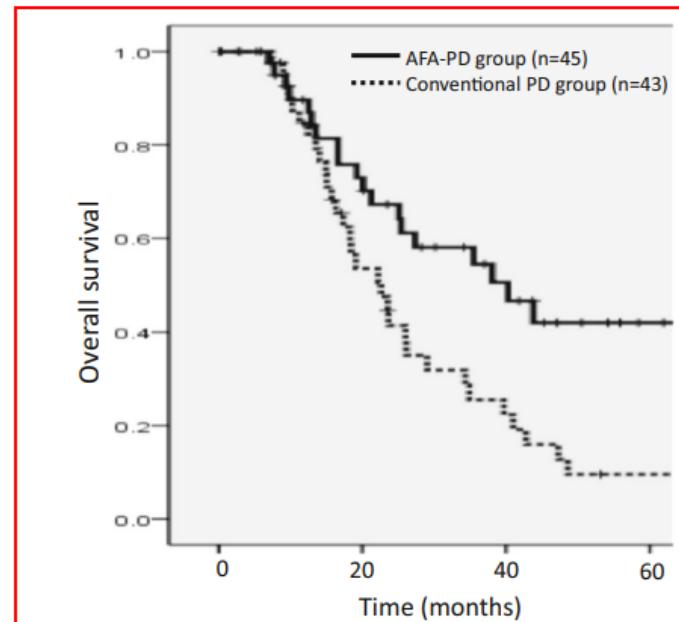
	AFA-PD group	Conventional PD group	P
Operative time, median (range), min	n = 45	n = 43	0.1312
Intraoperative blood loss, median (range), mL	443 (390–497)	467 (414–530)	<b>0.0210</b>
Transfusion, n (%)	811 (520–1150)	22 (51.2)	0.5178
Portal vein resection, n (%)	19 (42.2)	13 (30.2)	0.8147
Postoperative complications, ≥ grade IIIa, n (%)	3 (6.7)	5 (11.6)	0.4794
Curative resection R0, n (%)	35 (77.8)	28 (65.1)	0.3423
No. harvested lymph nodes, median (range)	23 (14–37)	19 (12–22)	<b>0.0165</b>
No. harvested lymph nodes of #14p, median (range)	4 (2–5)	1 (0–3)	< 0.001
No. harvested lymph nodes of #14d, median (range)	4 (2–5)	2 (0–3)	<b>0.0146</b>
Lymph node metastasis, n (%)	27 (60)	30 (69.8)	0.3376

Bold values are statistically significant ( $p < 0.05$ )

## Complete Lymphadenectomy Around the Entire Superior Mesenteric Artery Improves Survival in Artery-First Approach Pancreatoduodenectomy for T3 Pancreatic Ductal Adenocarcinoma



**Fig. 1** Overall survival according to recurrence around the SMA. The median survival was 23.6 months in patients with recurrence around the SMA and 26 months in patients without recurrence around the SMA ( $p = 0.0367$ ) SMA: superior mesenteric artery



**Fig. 2** Overall survival according to the type of surgery. The median survival was 40.3 months in the AFA-PD group and 22.6 months in the conventional PD group ( $p = 0.005$ ) AFA-PD: artery-first approach pancreatoduodenectomy

Meta-analysis – 18 studies

## ORIGINAL ARTICLE

# Recurrence patterns of pancreatic cancer after pancreateoduodenectomy: systematic review and a single-centre retrospective study

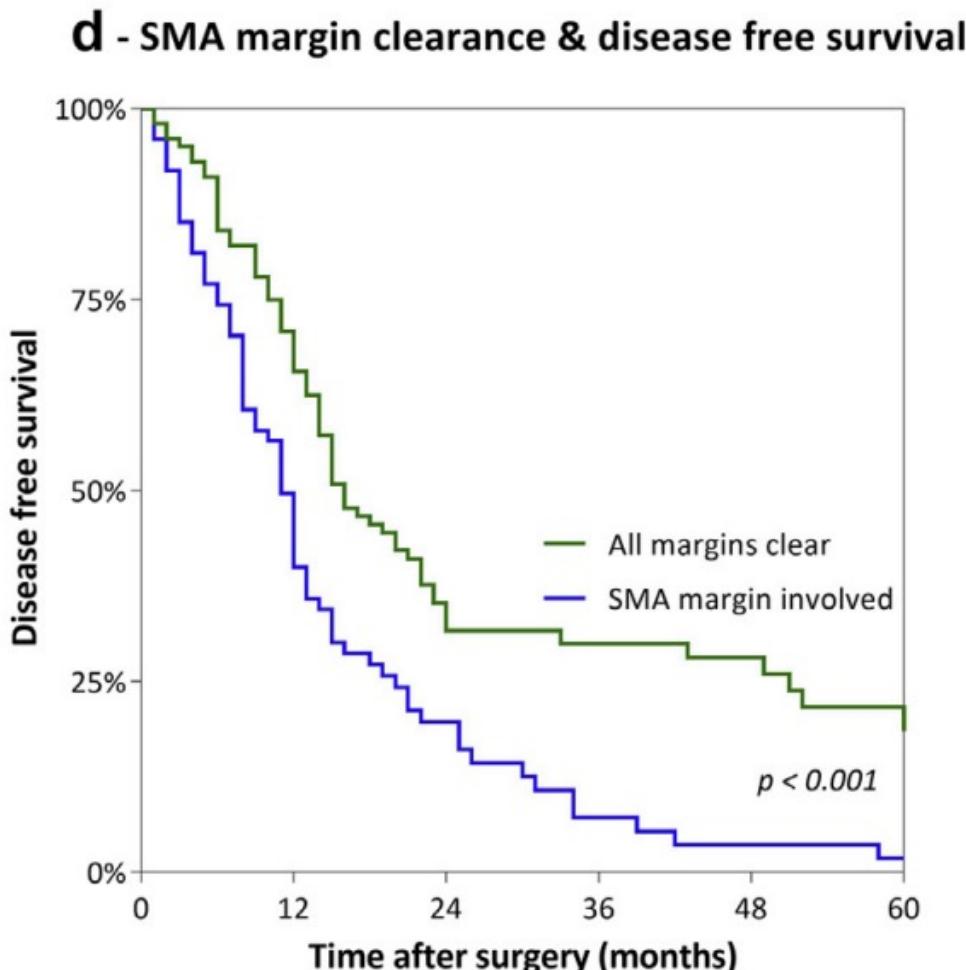
**Table 3** Patterns of pathologic margin involvement and recurrence of pancreatic cancer after pancreateoduodenectomy

Recurrence	Overall (n = 204)	R0 (clear margins n = 101)	R1 any margin (n = 103)	p-value (R0 vs. R1 overall)	R1 including SMA margin (n = 74)	p-value (R0 vs. R1 incl SMA)
<i>Overall</i>	163 (79%)	72 (71%)	91 (88%)	0.002	68 (92%)	0.001
<i>Local</i>	109 (53%)	45 (45%)	64 (62%)	0.012	49 (66%)	0.005
<i>Metastatic disease</i>	106 (52%)	50 (50%)	56 (54%)	0.487	41 (55%)	0.44
Lymph nodes	25 (12%)	11 (11%)	14 (14%)	–	10 (14%)	–
Peritoneal	23 (11%)	8 (8%)	15 (15%)	–	12 (16%)	–
Liver	58 (28%)	27 (27%)	31 (30%)	–	23 (31%)	–
Distant metastases	34 (17%)	23 (23%)	11 (11%)	–	10 (14%)	–
<i>Recurrence pattern</i>				0.013		0.004
No Recurrence	41 (20%)	29 (29%)	12 (12%)	–	6 (8%)	–
Only local	56 (28%)	22 (22%)	34 (33%)	–	27 (37%)	–
Only metastases	53 (26%)	27 (27%)	26 (25%)	–	19 (26%)	–
Simultaneous	54 (26%)	23 (23%)	31 (30%)	–	22 (30%)	–
<i>Timing of recurrence</i>				0.009		0.003
≤18 months	123 (60%)	53 (53%)	69 (67%)	–	52 (70%)	–
>18 months	40 (20%)	19 (19%)	22 (21%)	–	16 (22%)	–

A

ORIGINAL ARTICLE

## Recurrence patterns of pancreatic cancer after pancreateoduodenectomy: systematic review and a single-centre retrospective study

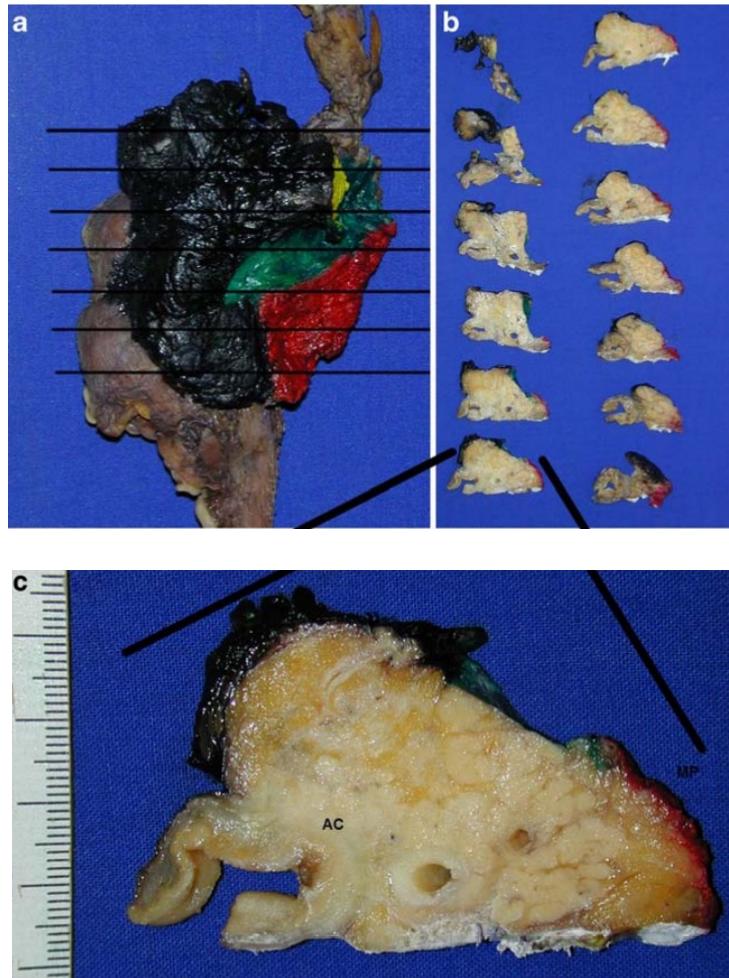


ORIGINAL ARTICLE

## Recurrence patterns of pancreatic cancer after pancreateoduodenectomy: systematic review and a single-centre retrospective study

**Conclusion:** Local recurrence of pancreatic cancer is common and associated with similar mortality rates as those who present with simultaneous or metastatic recurrence. Involvement of the SMA margin is an independent predictor for disease progression and should be the target of future adjuvant local therapies.

## The mesopancreas is the primary site for R1 resection in pancreatic head cancer: relevance for clinical trials



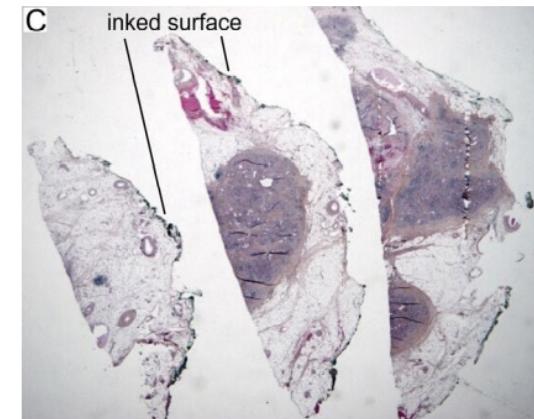
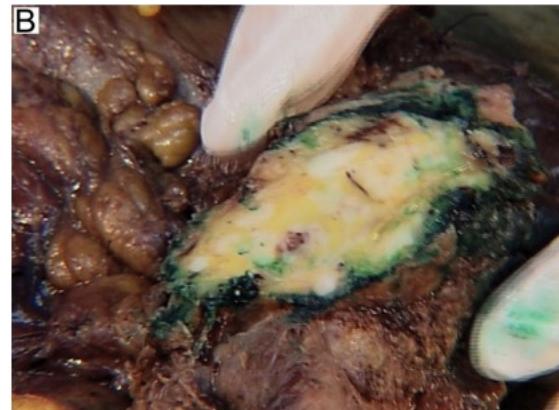
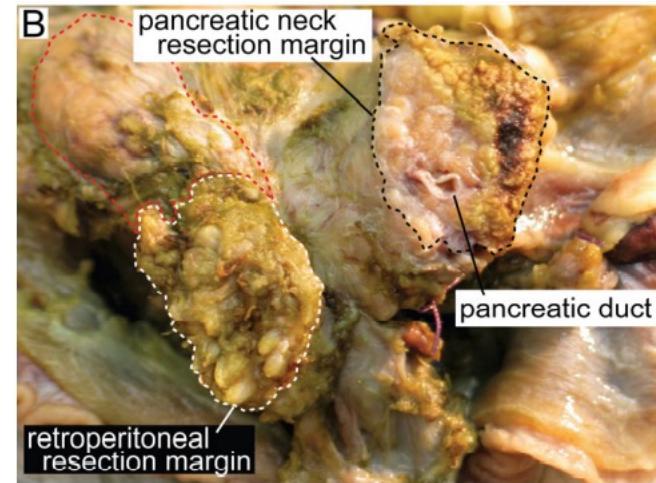
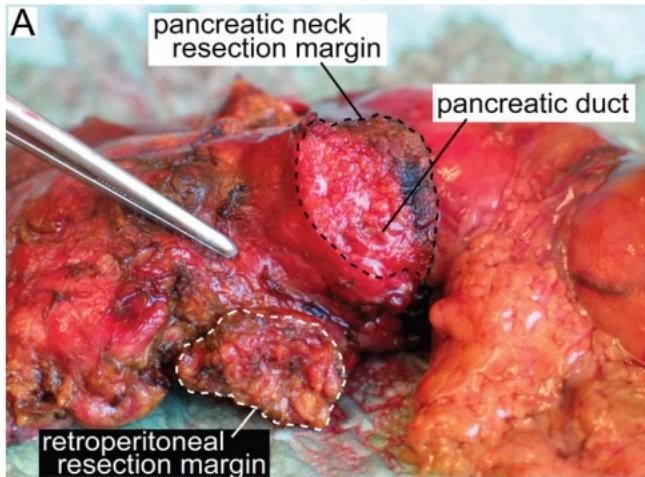
**Table 2** Histopathological and resection classification data

	All cancers		PDAC	
	UICC	RCP	UICC	RCP
<b>Resection</b>				
R0	32 (49.2%)	19 (29.2%)	17 (37.0%)	8 (17.4%)
R1/R2	33 (50.8%)	46 (70.8%)	29 (63.0%)	38 (82.6%)
<b>Site of R1</b>				
Mesopancreas	22 (56.4%)	27 (32.5%)	19 (57.6%)	24 (34.3%)
Pancreatic transection margin	4 (10.3%)	11 (13.3%)	3 (9.1%)	10 (14.3%)
Anterior	2 (5.1%)	18 (21.7%)	2 (6.1%)	15 (21.4%)
Posterior	1 (2.6%)	13 (15.7%)	1 (3.0%)	11 (15.7%)
Groove of SMV	1 (2.6%)	4 (4.8%)	1 (3.0%)	2 (2.9%)
SMV (n=17)	7 (17.9%)	8 (9.6%)	5 (15.2%)	6 (8.6%)
Duodenum oral	2 (5.1%)	2 (2.4%)	2 (6.1%)	2 (2.9%)

Research article

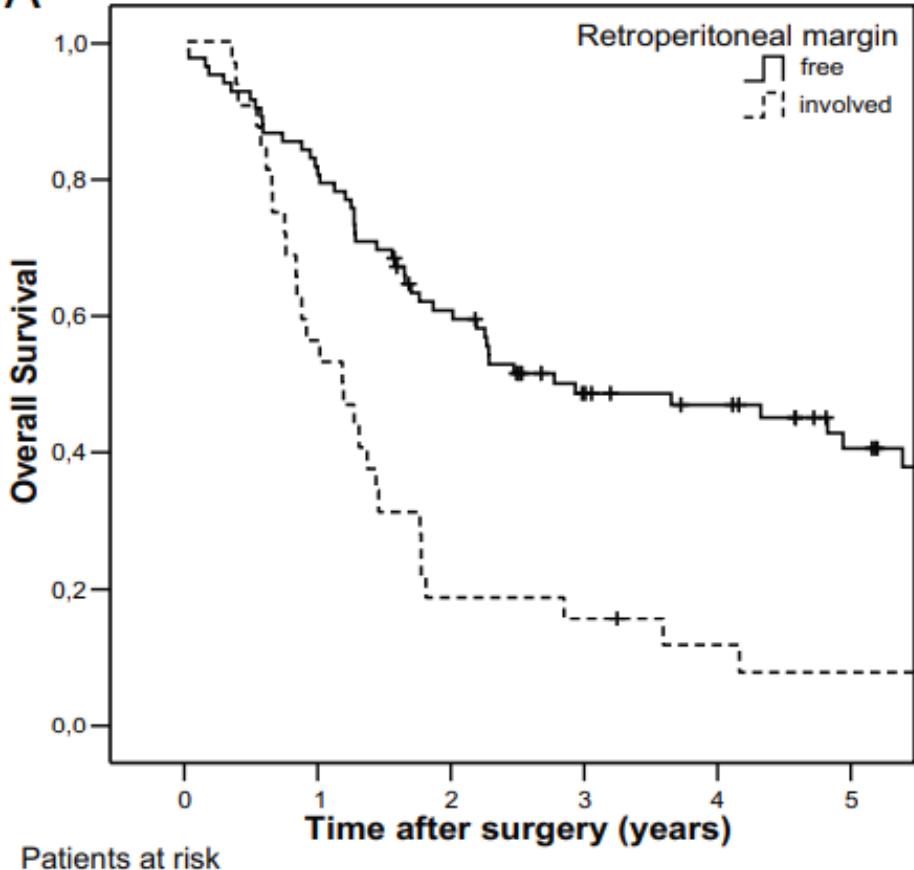
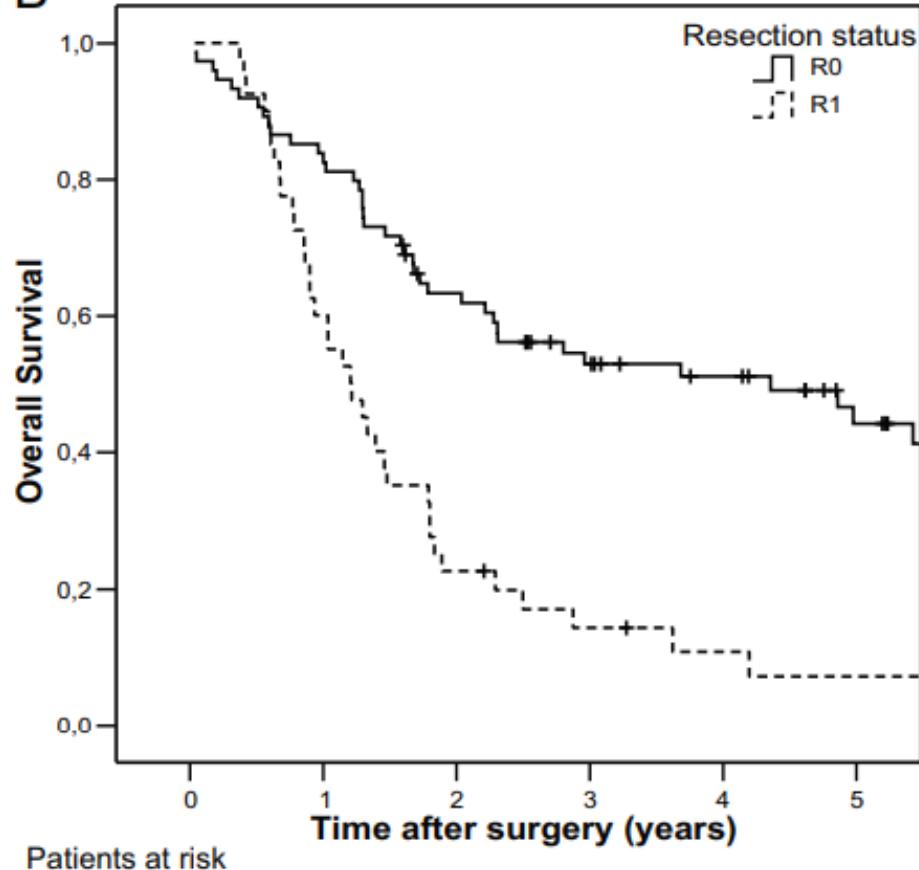
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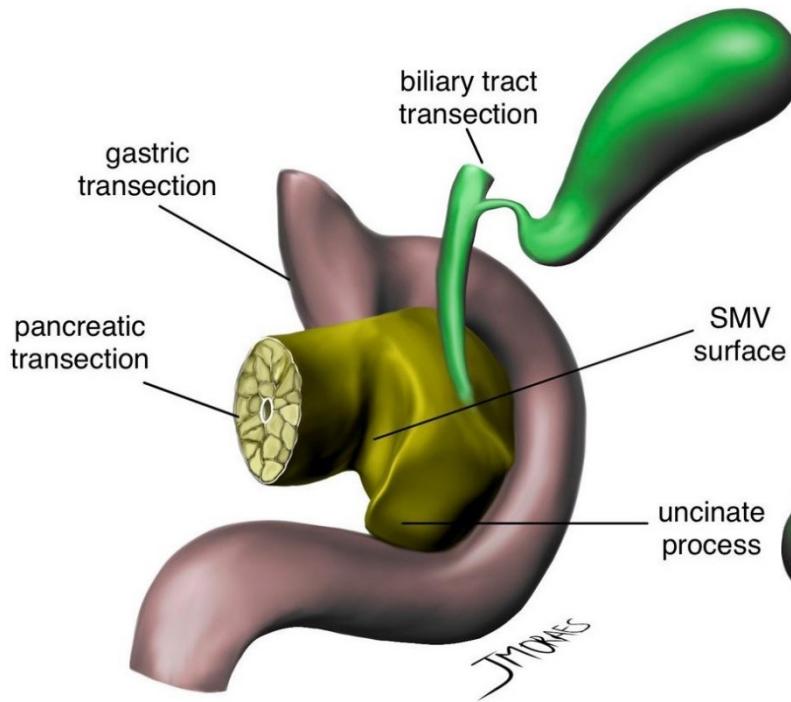
## **Resectable adenocarcinomas in the pancreatic head: the retroperitoneal resection margin is an independent prognostic factor**



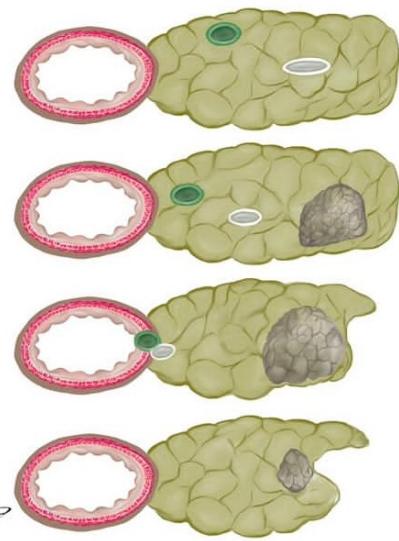
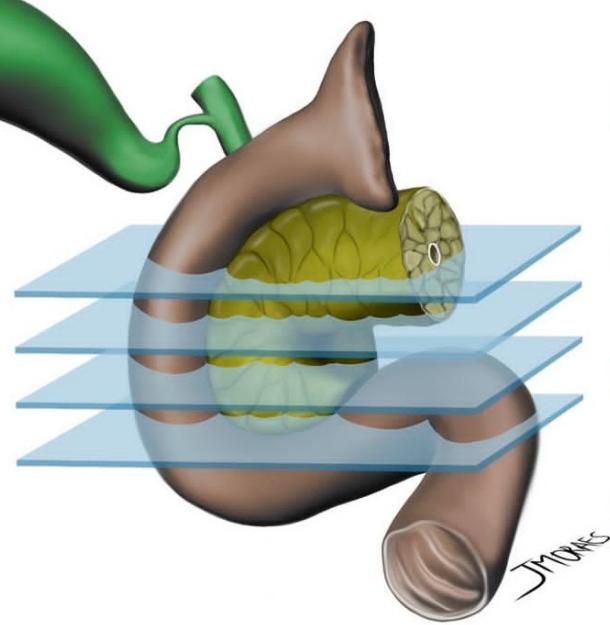
Research article

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**Resectable adenocarcinomas in the pancreatic head: the retroperitoneal resection margin is an independent prognostic factor****A****B**



## PATHOLOGY

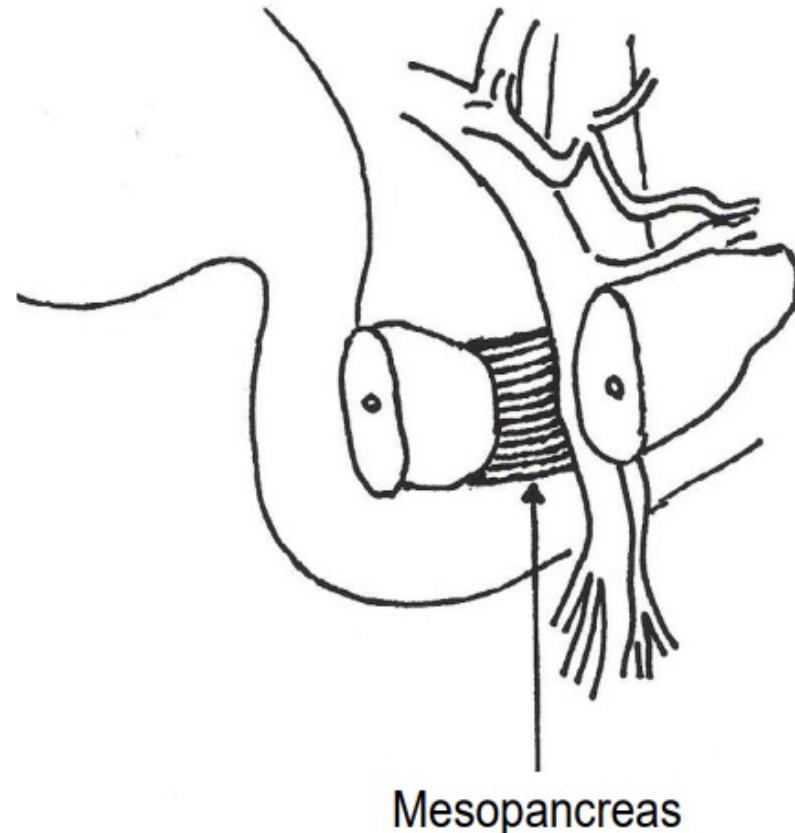


Research

Open Access

## **Resection of the mesopancreas (RMP): a new surgical classification of a known anatomical space**

Ines Gockel\*<sup>1</sup>, Mario Domeyer<sup>1</sup>, Tanja Wolloscheck<sup>2</sup>, Moritz A Konerding<sup>2</sup> and Theodor Junginger<sup>1</sup>



# TOTAL MESOPANCREAS EXCISION

- Bleeding
- Pancreatic fistula
- Delayed gastric emptying
- Oncology

## MESOPANCREAS

- plPh-I
- plPh-II
- IPDA inferior
- Jejunal arteries
- Jejunal veins
- Lymph nodes

Right celiac ganglion

Pl-ce

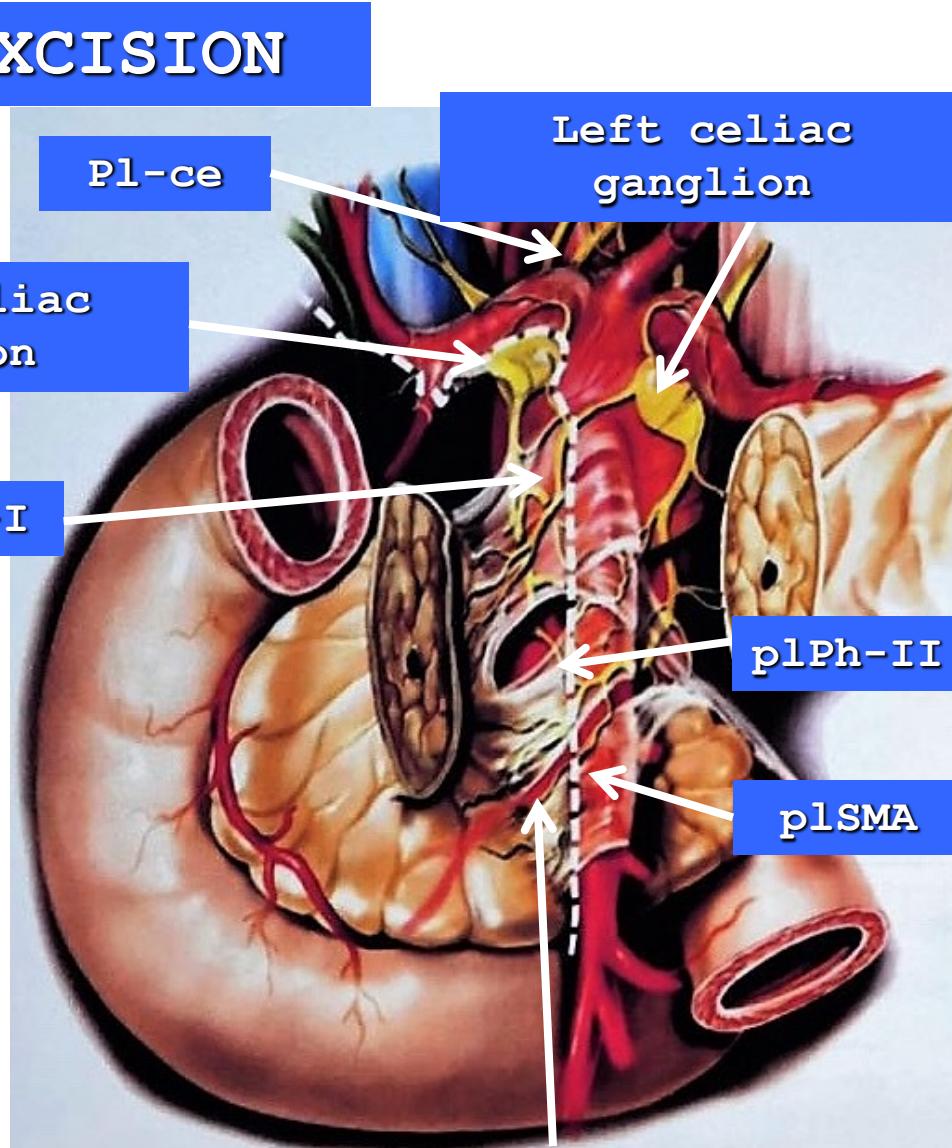
Left celiac ganglion

plPh-I

plPh-II

plsMA

IPDA



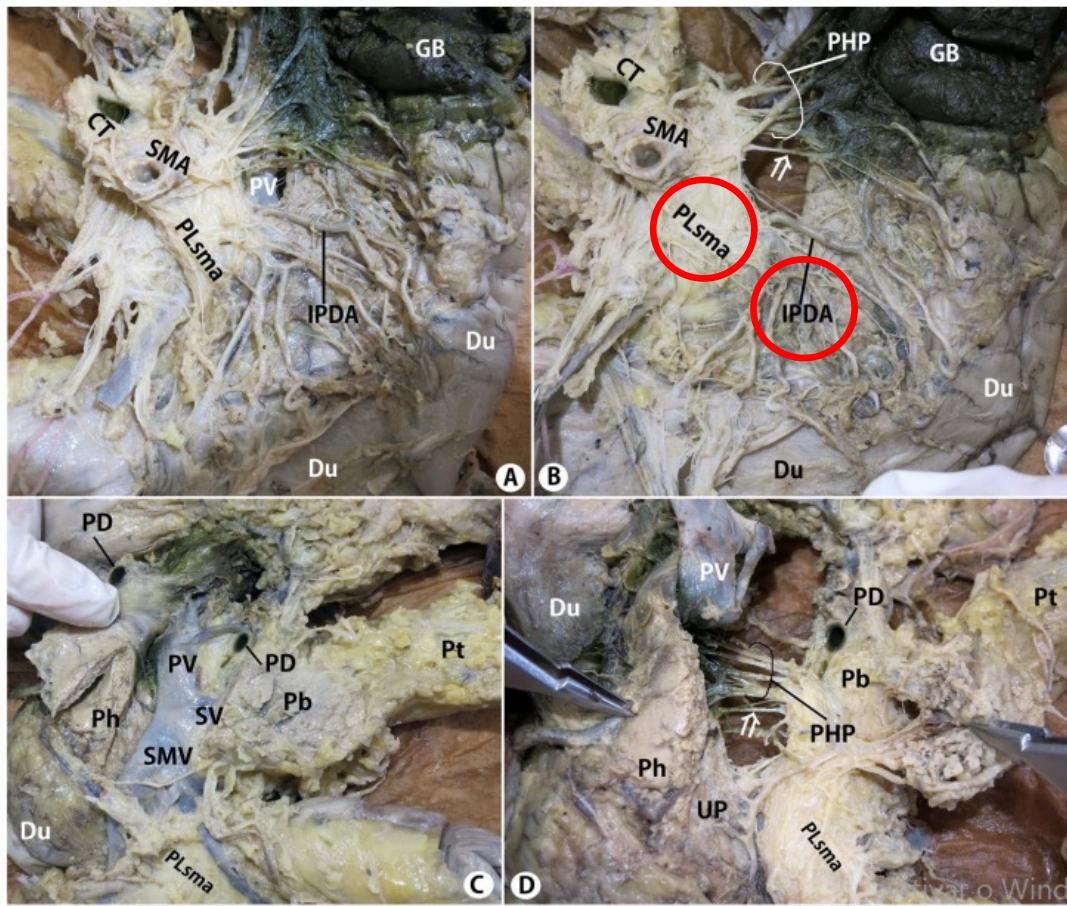
## Mesopancreas

- **Medial:** Right margin of SMA and PV/SMV
- **Lateral:** Medial and posterior margin of the pancreatic head and uncinate.
- **Proximal (cephalic):** celiac trunk.
- **Distal:** Mesenteric root
- **Posterior:** Left renal vein.

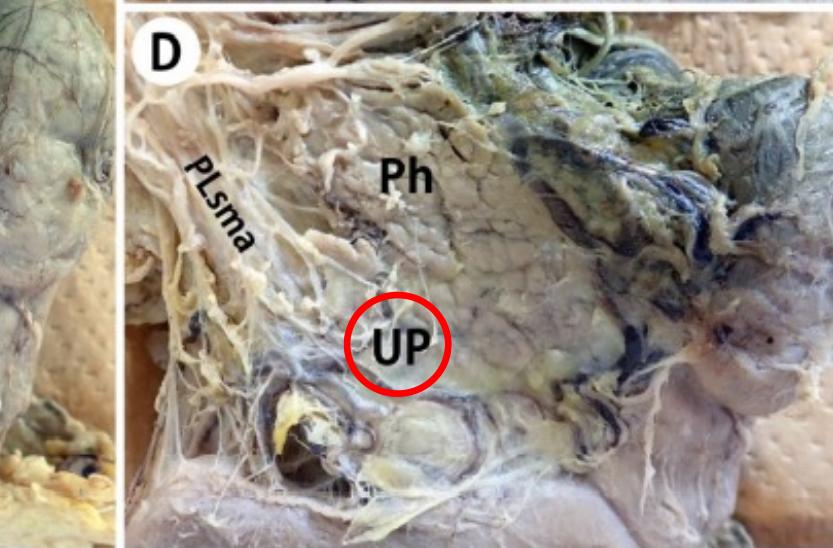
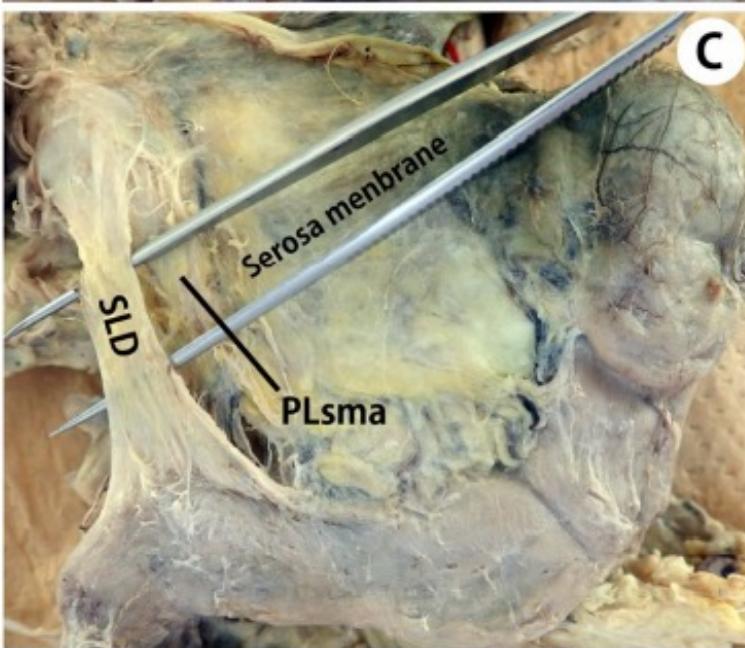
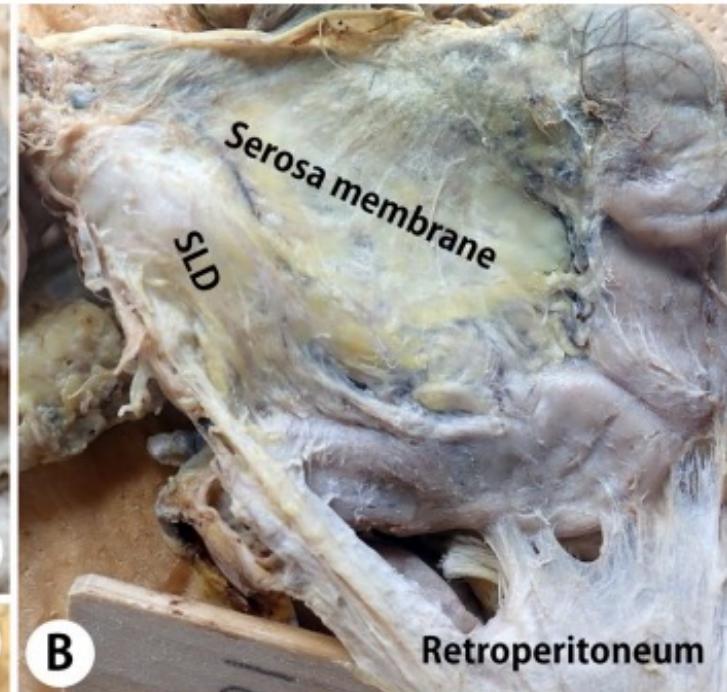
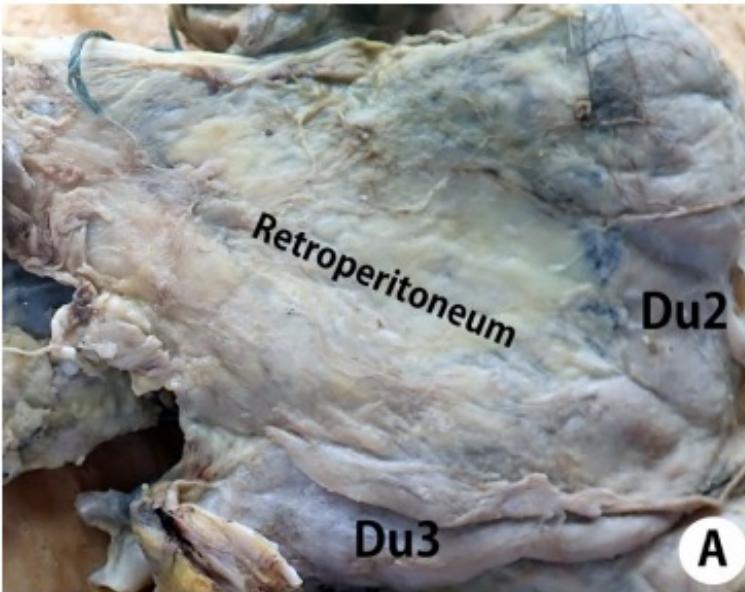


## The mesopancreas and pancreatic head plexus: morphological, developmental, and clinical perspectives

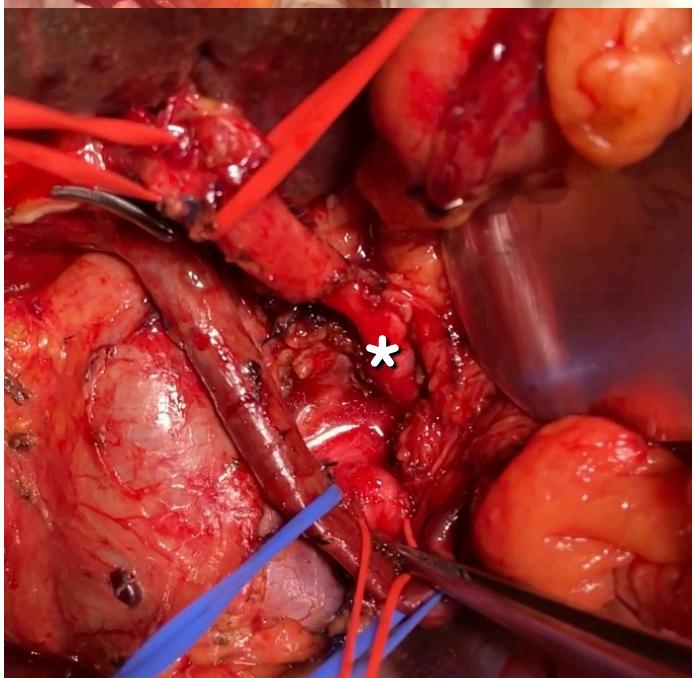
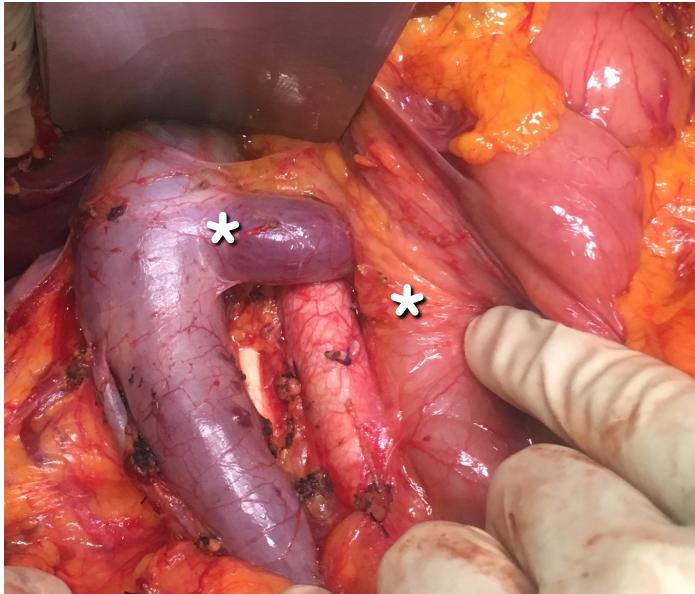
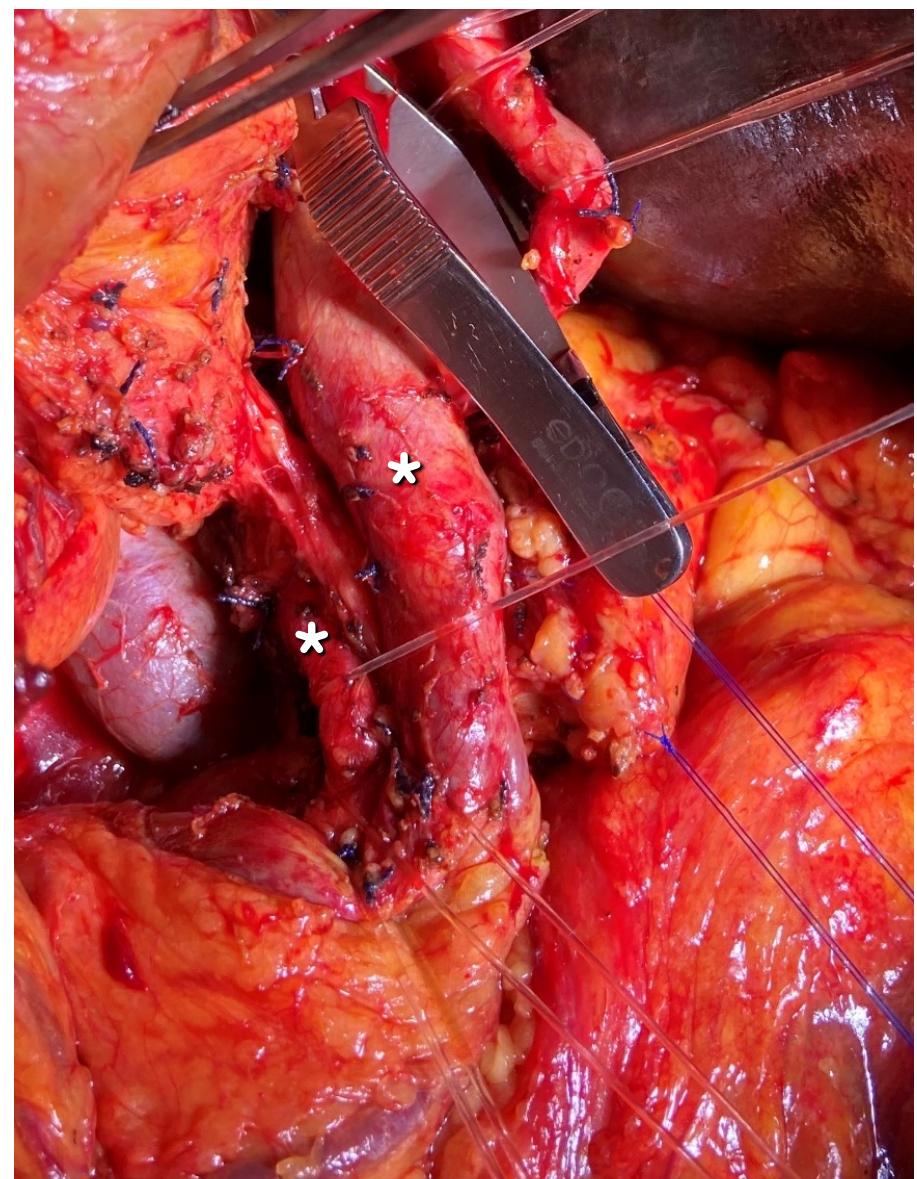
PLPH  
or  
PHPL



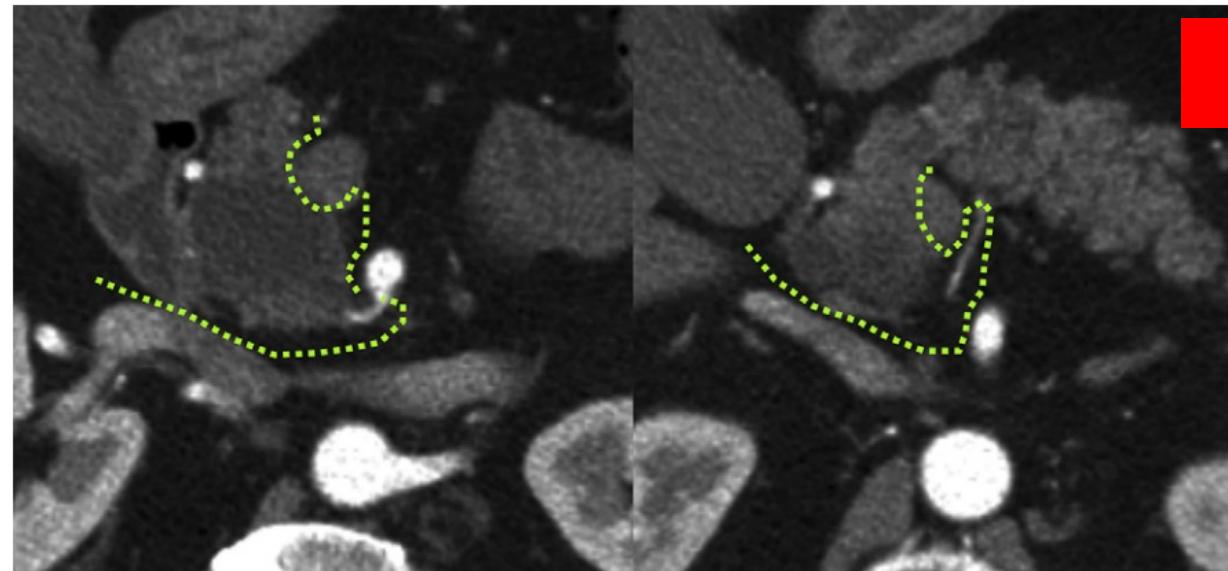
PLph I  
PLph II  
PLsma



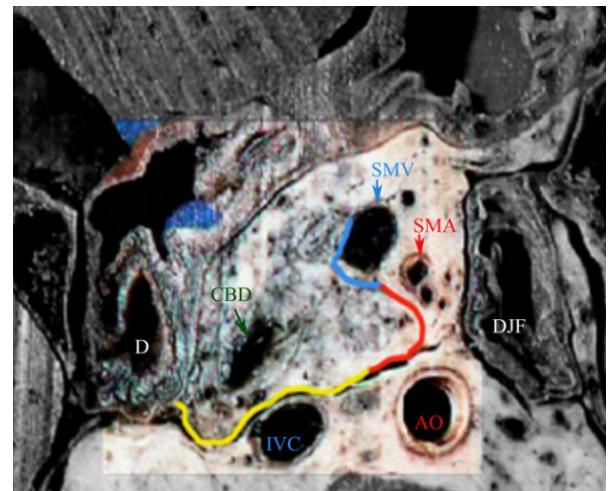
## Pancreas-duodenum complex SMA



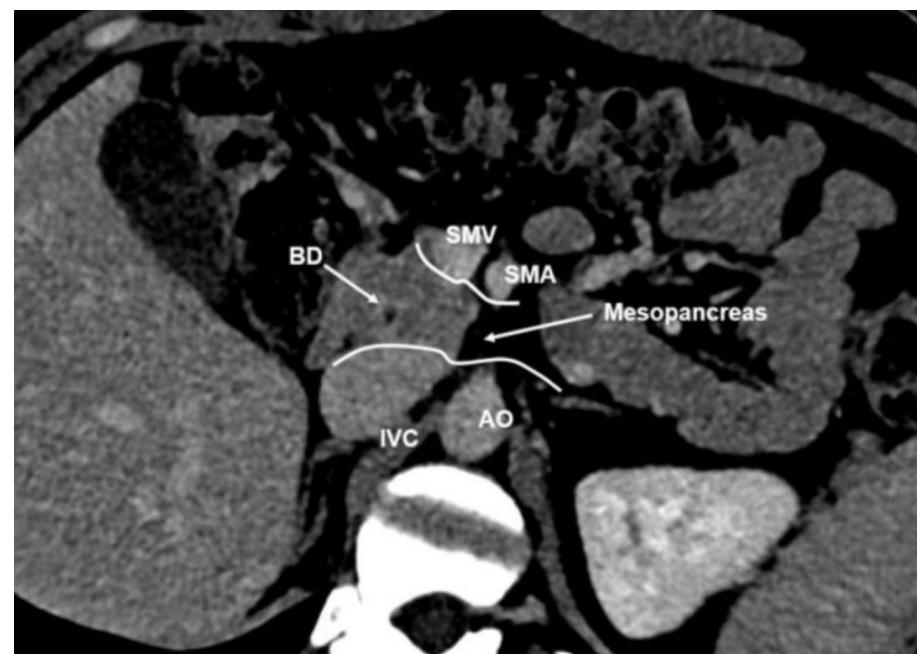
Superior mesenteric artery  
IPDA



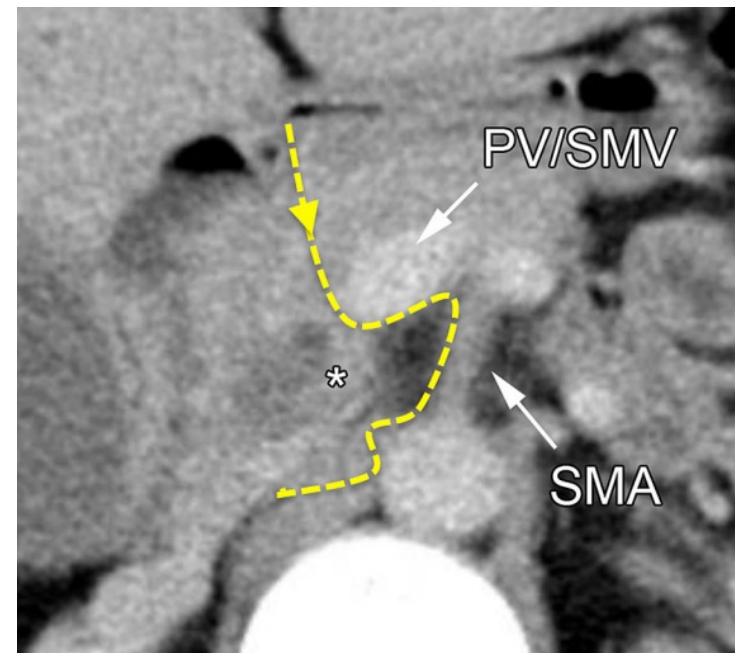
Adham M, et al. 2012



Delpero JR, et al. HPB 2014;16:20-33

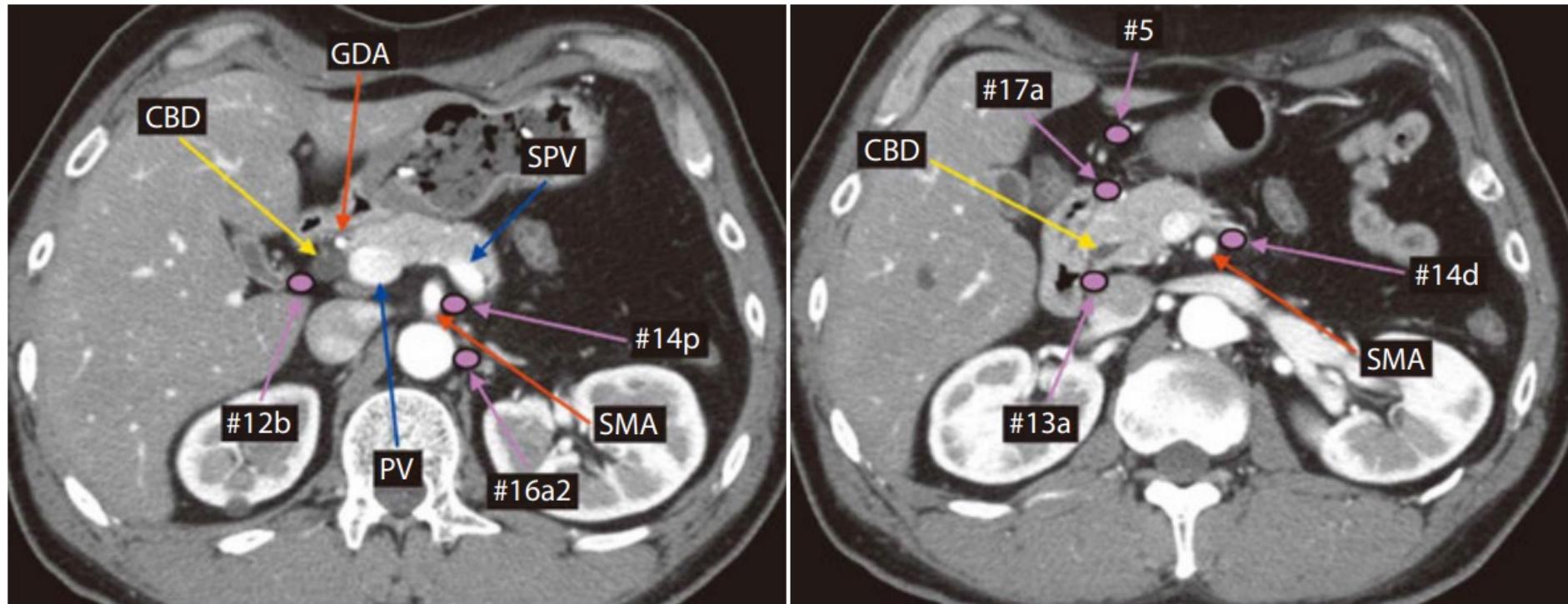


Fernandes ESM, et al. Langenbeck's Arch Surg 2021



Welsch T, et al. J Surg Oncol 2016

# LYMPHADENECTOMY



14p, 14d

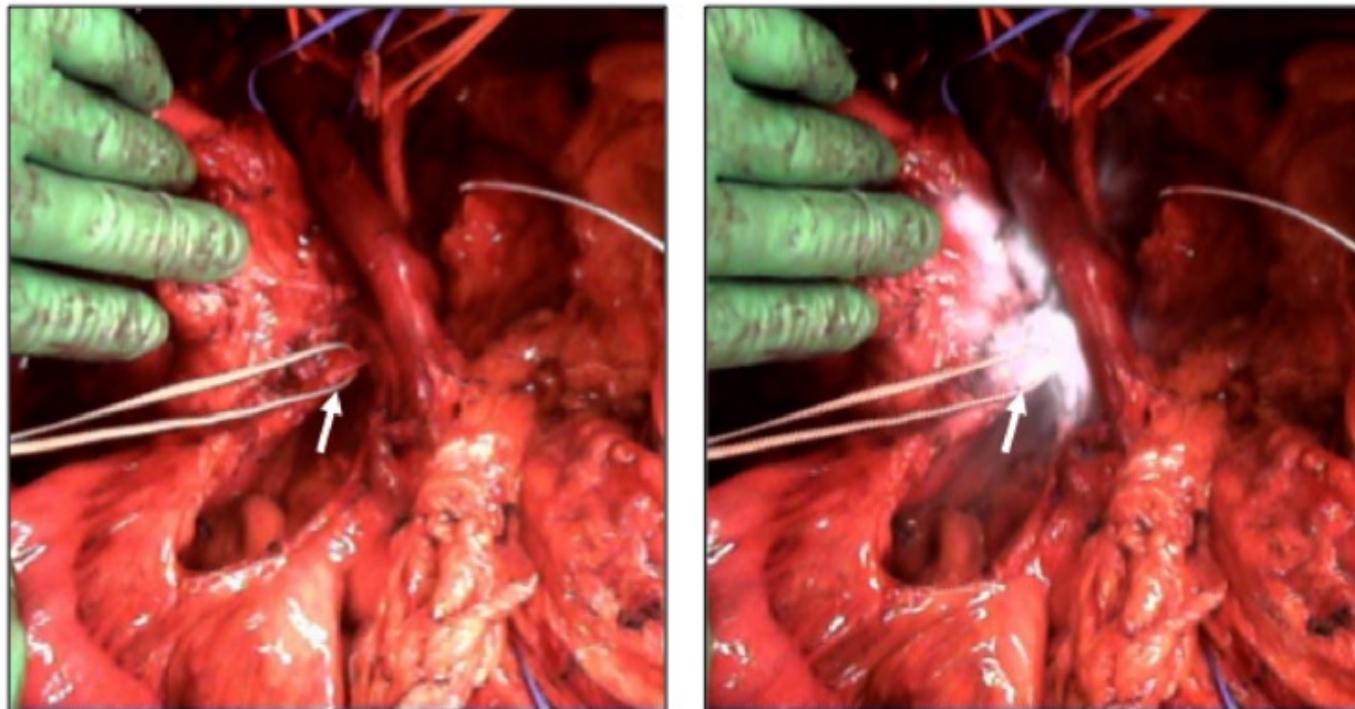
ORIGINAL ARTICLE



Check for updates

## Optimal Lymphadenectomy of the Mesopancreas Based on Fluorescence Imaging During Pancreaticoduodenectomy

**Fig. 1** Lymphatic pathways from the pancreatic head. The first JA is taped. Fluorescence is seen in the mesentery of the IPDA and first JA (arrow), but not in that of the second JA or more distant



ORIGINAL ARTICLE



## Optimal Lymphadenectomy of the Mesopancreas Based on Fluorescence Imaging During Pancreaticoduodenectomy

**Table 2** Lymphatic pathways around the mesopancreas in the patients injected with ICG

No	Time after injection of ICG (min)	Mesentery along the IPDA-J1A	Mesentery along the J2A	Mesentery along the middle colic artery	Along the SMA	Paraaoctic region
1	112	○	×	×	○	○
2	117	○	×	×	○	○
3	145	○	×	×	○	○
4	217	○	×	×	○	○
5	170	○	×	×	○	○
6	246	○	×	×	○	○
7	157	○	×	×	○	○
8	175	×	×	×	○	○
9	280	○	×	×	○	○
10	180	○	×	×	○	○

○: Positive staining

×: Negative staining

ICG indocyanine green, IPDA inferior pancreaticoduodenal artery, JA jejunal artery, SMA superior mesenteric artery

Ativar o Windows

Acesse Configurações para ativar o

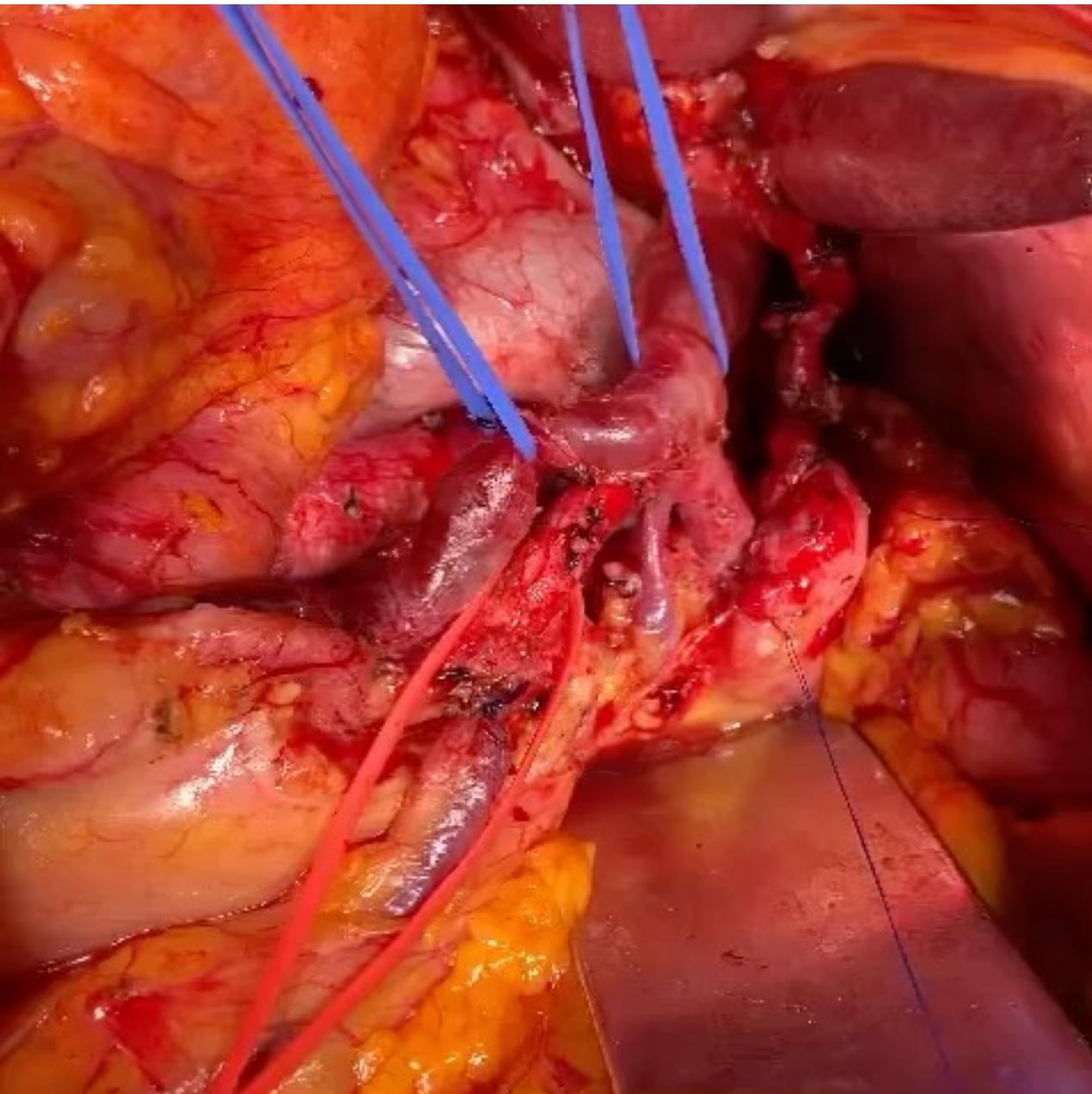


Check for  
updates

## Optimal Lymphadenectomy of the Mesopancreas Based on Fluorescence Imaging During Pancreaticoduodenectomy

### Conclusion

Lymphatic flow from the pancreatic head to the SMA and finally to the paraaortic region was mainly via the IPDA and first JA. Excision of the mesopancreas with the IPDA and first JA, while preserving the second JA and more distant arteries, might be optimal for PD with lymphadenectomy for periampullary malignancies.



## Technical advances in surgery for pancreatic cancer

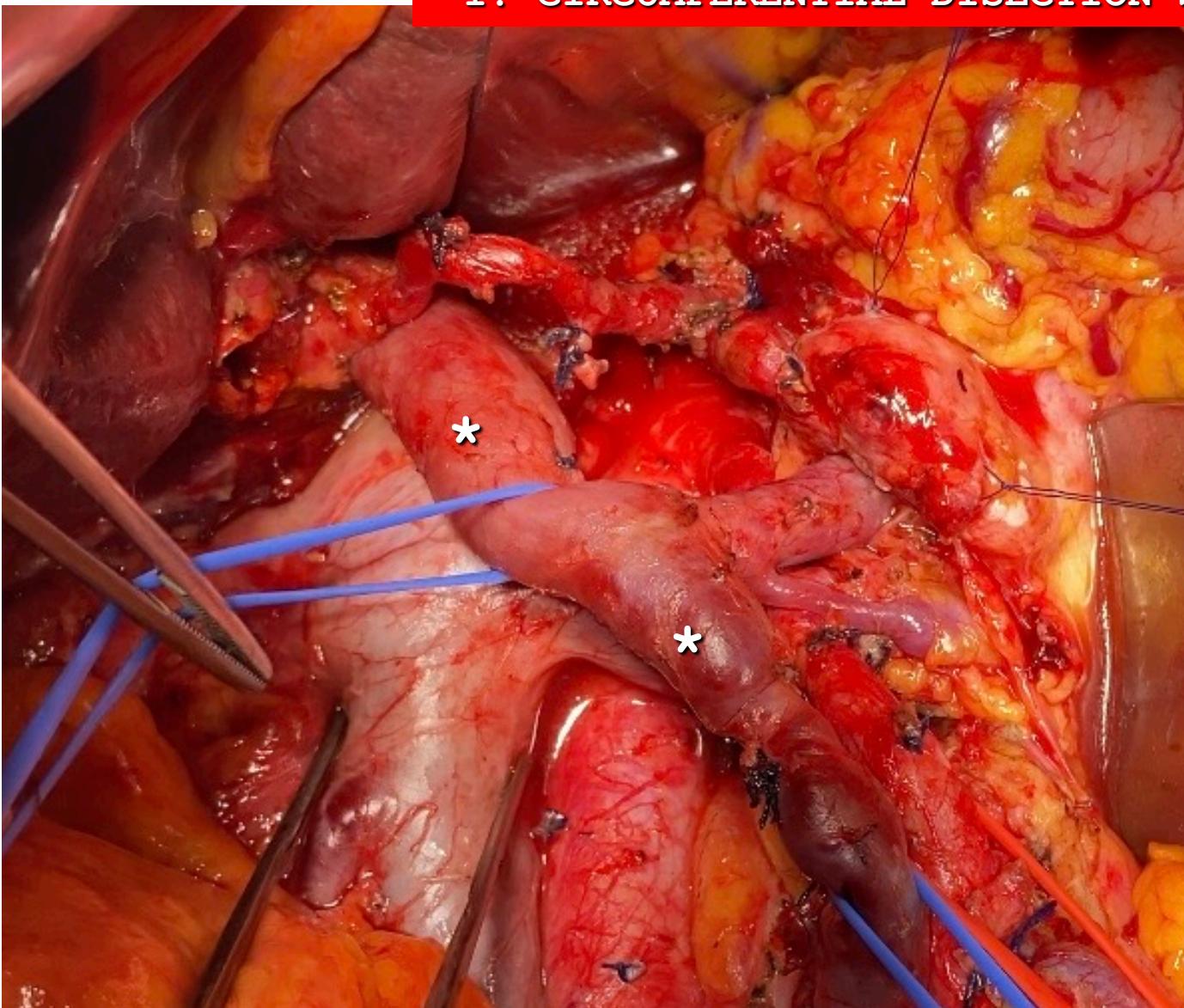
M. Schneider<sup>1</sup>, T. Hackert  <sup>1</sup>, O. Strobel<sup>2</sup> and M.W. Büchler<sup>1,\*</sup>

### State-of-the-art dissection techniques in pancreatic ductal adenocarcinoma

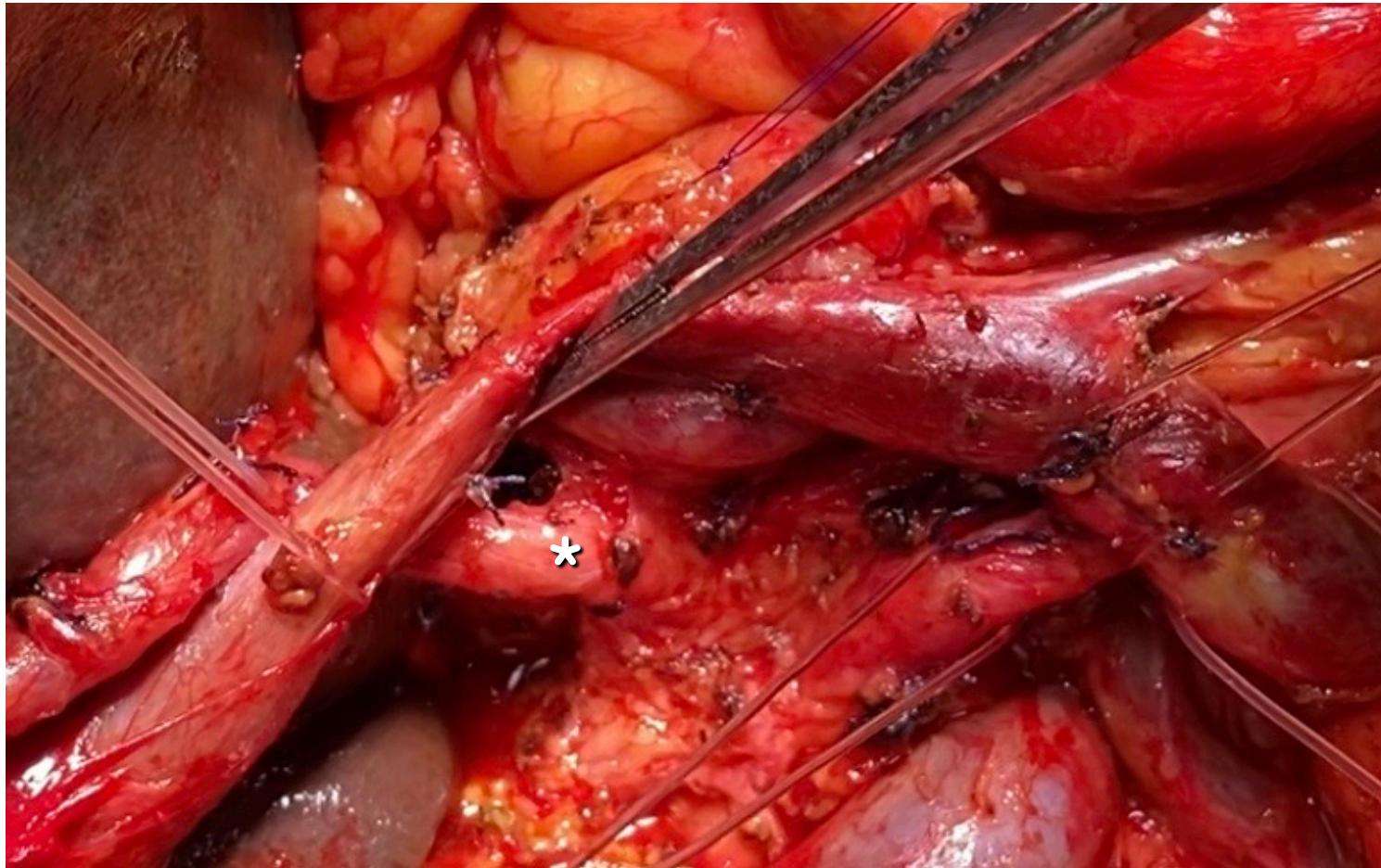
To achieve tumour-free resection margins, state-of-the-art dissection aims to systematically clear tumour-infiltrated soft tissue alongside the coeliac and superior mesenteric vessels in PDAC situated in the pancreatic head

# Technique

## 1. CIRCUMFERENTIAL DISECTION SMV/PV

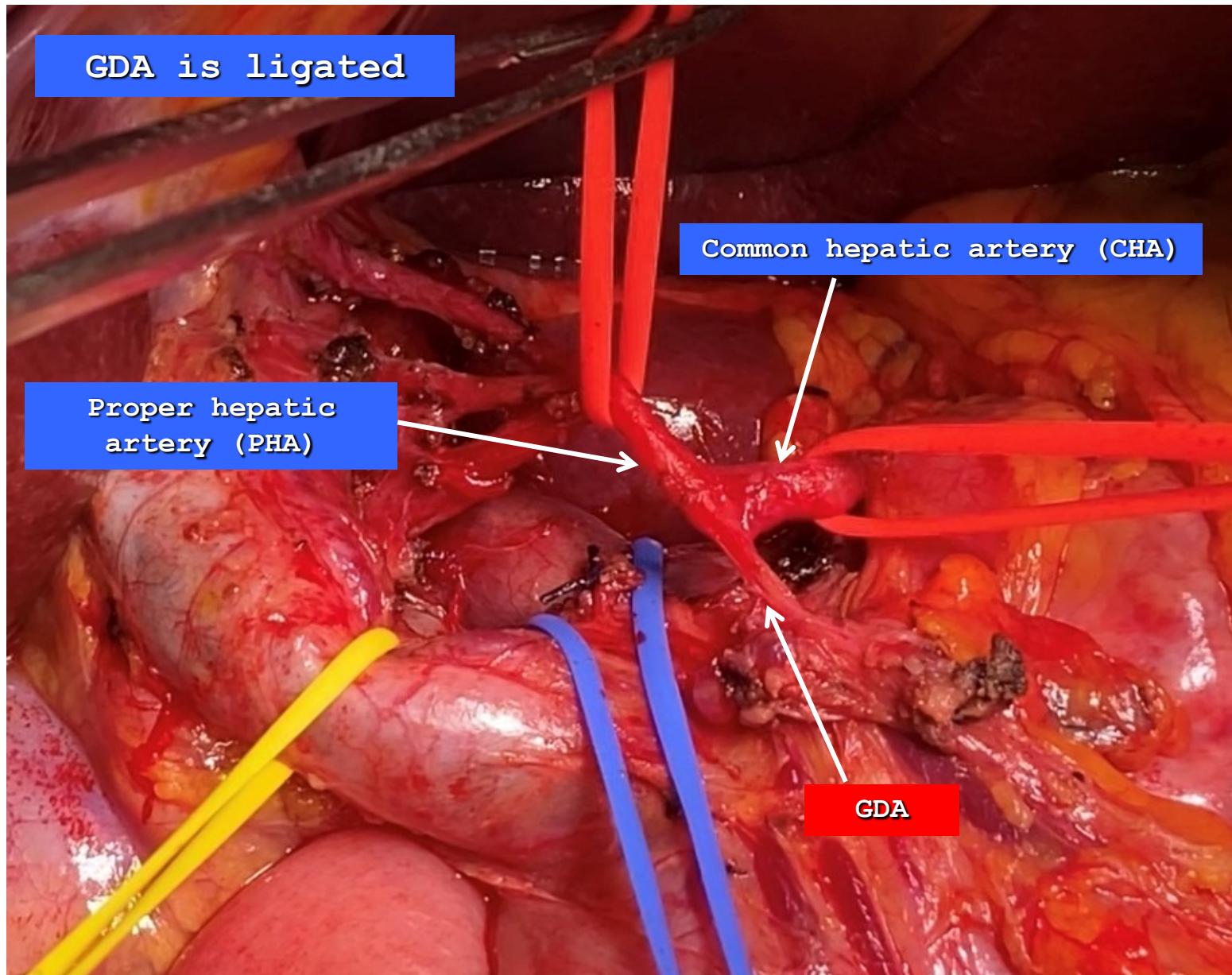


# Technique

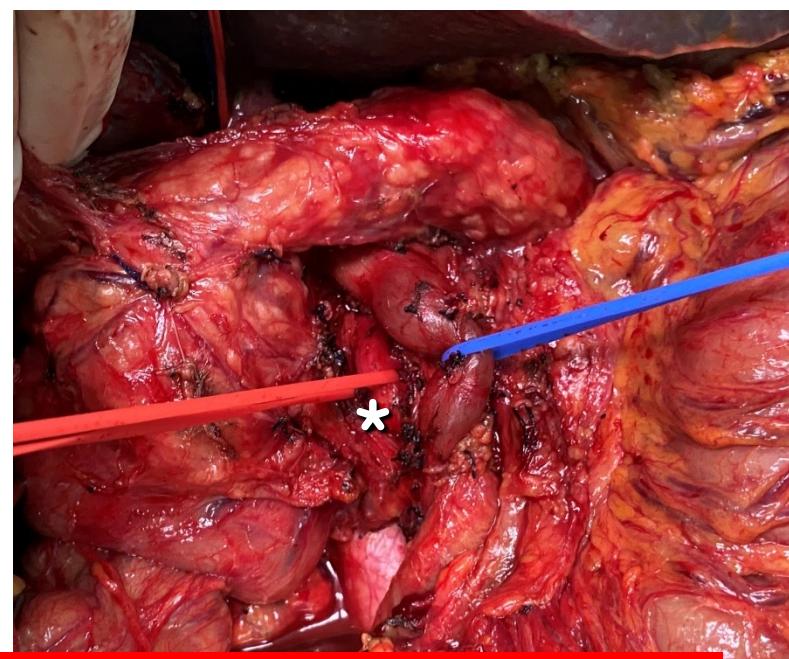


2. CLEAR THE RIGHT MARGIN OF THE COMMON HEPATIC ARTERY

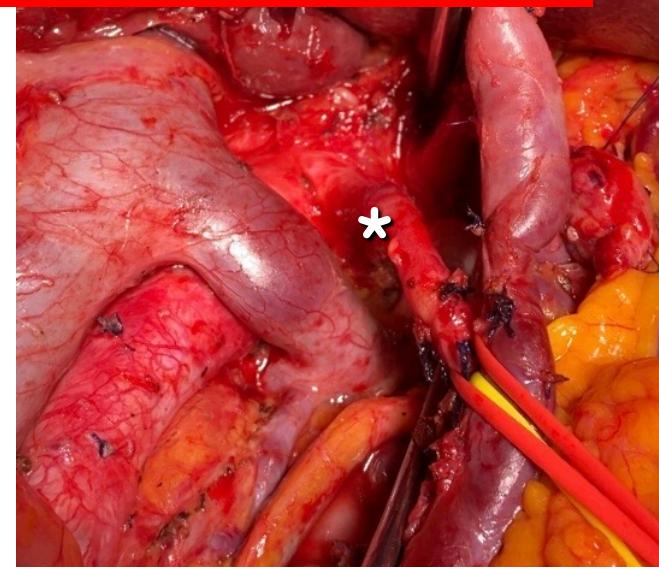
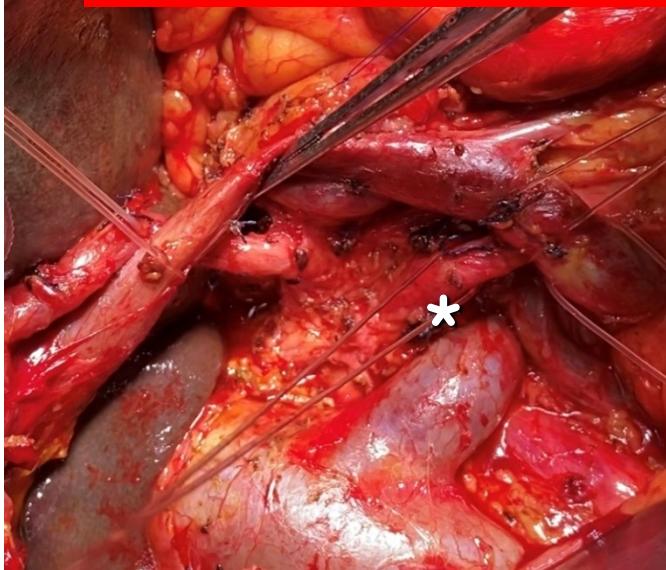
GDA is ligated



# Technique

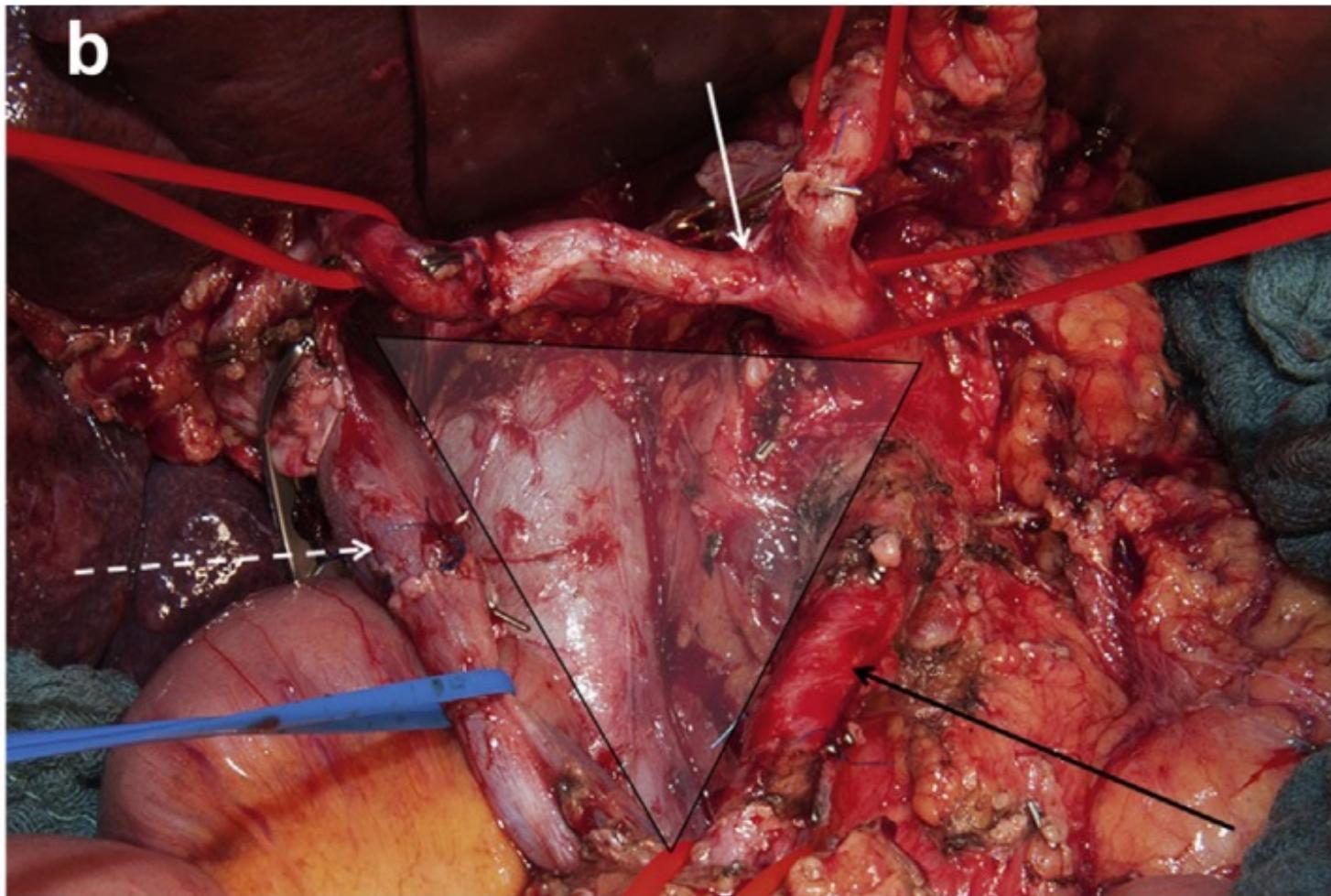


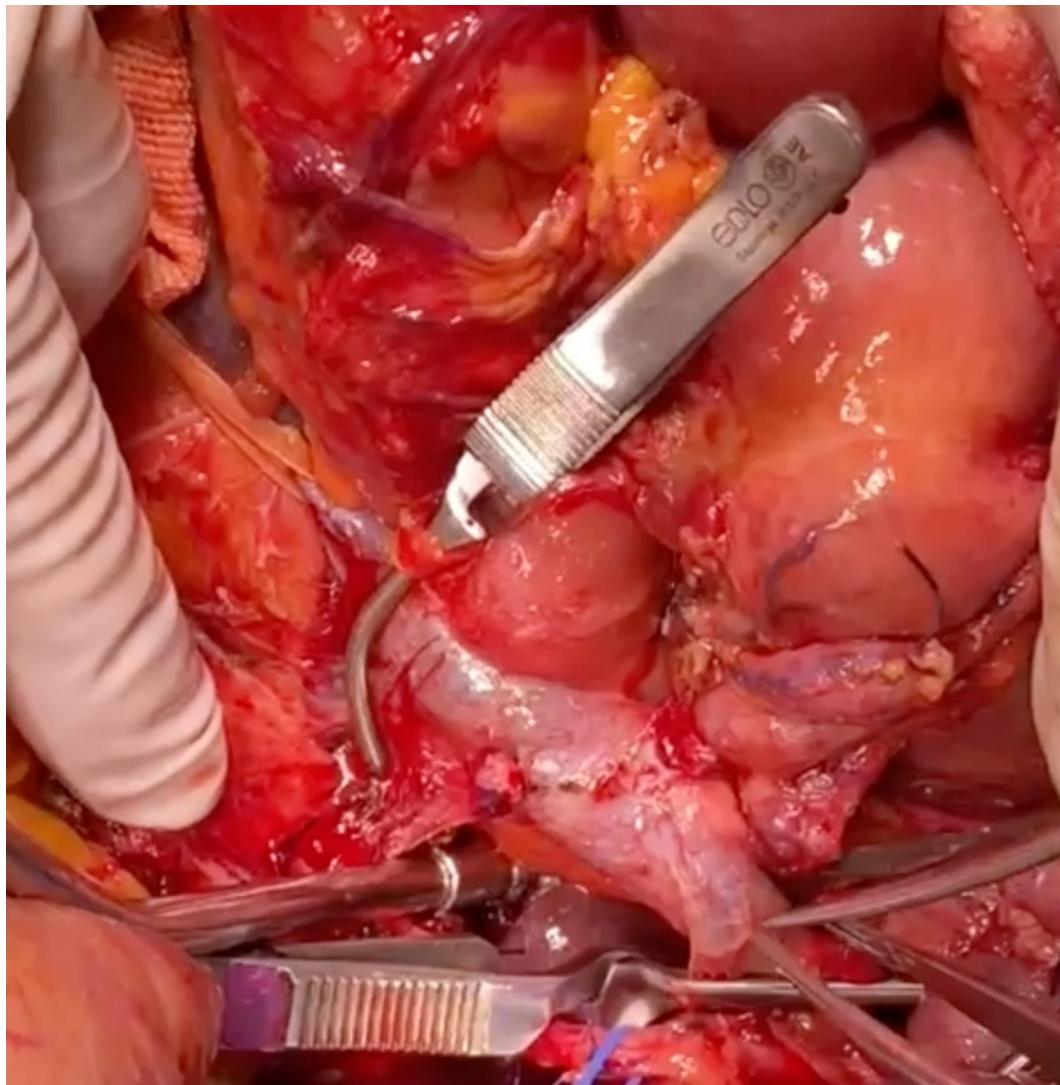
3. CLEAR THE RIGHT MARGIN OF THE SUPERIOR MESENTERIC ARTERY



ORIGINAL ARTICLE

**The TRIANGLE operation – radical surgery after neoadjuvant treatment for advanced pancreatic cancer: a single arm observational study**





# Local radicality and survival outcome of pancreatic cancer surgery

Willem Niesen | Thomas Hank | Markus Büchler | Oliver Strobel 

Study	Type of study	Patients included	Type of surgery	R-definition	R0/R1 rate, absolute (%)	Years	Median survival	5-year survival rate	Adjuvant (chemo-)therapy
Uesaka 2016 <sup>4</sup> JASPAC 01	RCT	385	257 (68%): PD 116 (13%): DP 4 (1%): TP	0-mm rule	R0 > 0 mm: 49 (13%) R1 0 mm: 328 (87%)	2007-2010	25.5 months	24.4%	Yes: 98.7%
			190 GEM		R0 > 0 mm: 26 (14%) R1 0 mm: 164 (86%)				
			187 S-1		R0 > 0 mm: 23 (12%) R1 0 mm: 164 (88%)		46.5 months	44.1%	
Demir 2017 <sup>43</sup>	Retrospective single-center	254	174 (67.5%): PD 44 (17.3%): DP 36 (14.2%): TP	0-mm rule	R0 > 0 mm: 153 (60.2%) R1 0 mm: 101 (39.8%)	2007-2014	R0 > 0 mm: 28.6 months R1 0 mm: 16.5 months	All patients: Yes: 92% 22.5%	All patients: Yes: 92% 22.5%
				1-mm rule	R0 > 1 mm: 109 (42.9%) R1 0-1 mm: 145 (57.1%)		R0 > 1 mm: 31.7 months R1 0-1 mm: 17.1 months	PD: R0 > 0 mm: 31.8 months R1 0 mm: 14.5 months	
Strobel 2017 <sup>41</sup>	Retrospective single-center	561	561 PD 72 (12.8%): cPD 427 (76.1%): ppPD 62 (11.1%): prPD	1-mm rule	R0 > 1 mm: 112 (20%) R1 0-1 mm: 123 (21.9%) R1 0 mm: 326 (58.1%)	2006-2012	R0 > 1 mm: 41.6 months R1 0-1 mm: 27.5 months R1 0 mm: 23.4 months	37.7% 30.1% 20.3%	Yes: 438 (78.1%) No: 72 (12.8%) NA: 51 (9.1%)
							PD: R0 > 1 mm: 41.2 months R1 0-1 mm: 16.8 months		
Hank 2018 <sup>42</sup>	Retrospective single-center	455	218 DP: (47.9%) 237 TP: (52.1%)	1-mm rule	R0 > 1 mm: 107 (23.5%) R1 0-1 mm: 104 (22.9%) R1 0 mm: 244 (53.6%)	2006-2014	R0 > 1 mm: 62.4 months R1 0-1 mm: 24.6 months R1 0 mm: 17.2 months	52.6% 16.8% 13%	Yes: 81.5% No: 18.5%

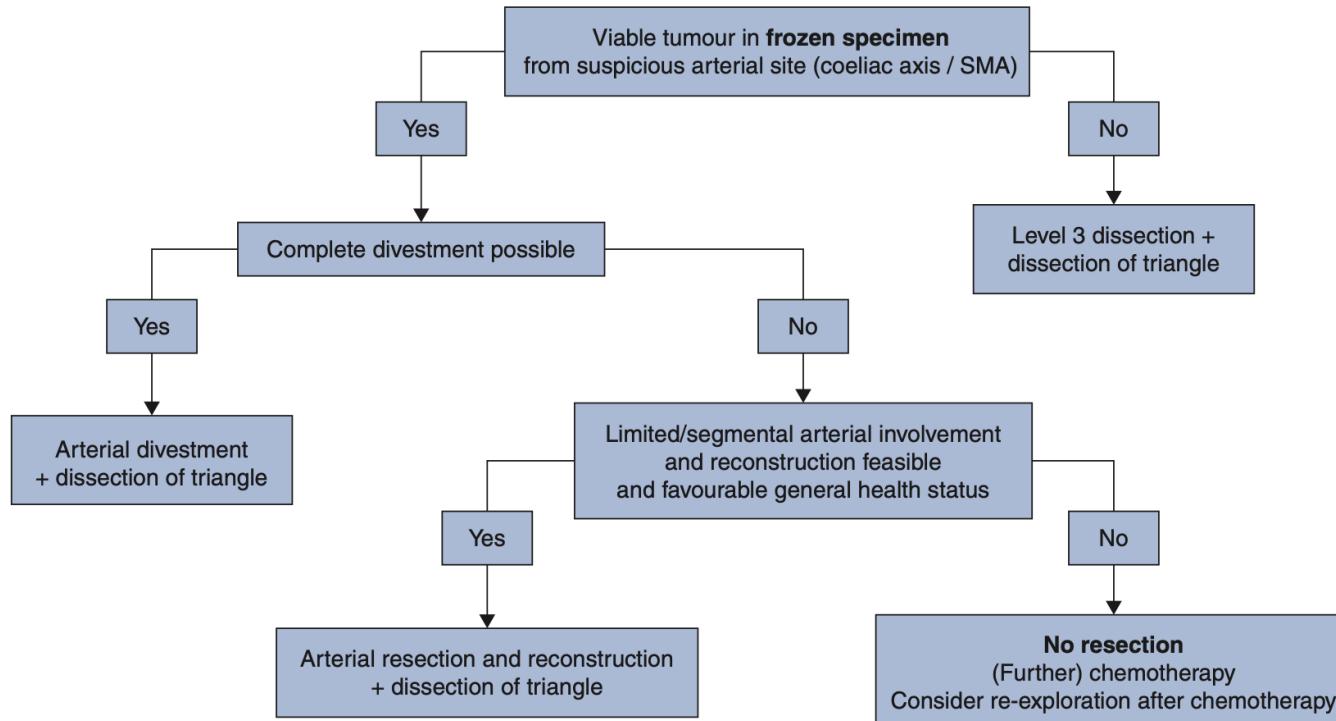
# Local radicality and survival outcome of pancreatic cancer surgery

Willem Niesen | Thomas Hank | Markus Büchler | Oliver Strobel 

These techniques include artery-first approaches, level-3 dissection with removal of the periarterial nerve plexus, the triangle operation, and extended resections. Local radicality and quality of surgical resection remain among the most important parameters that determine the chances for survival in patients with non-metastatic pancreatic cancer.

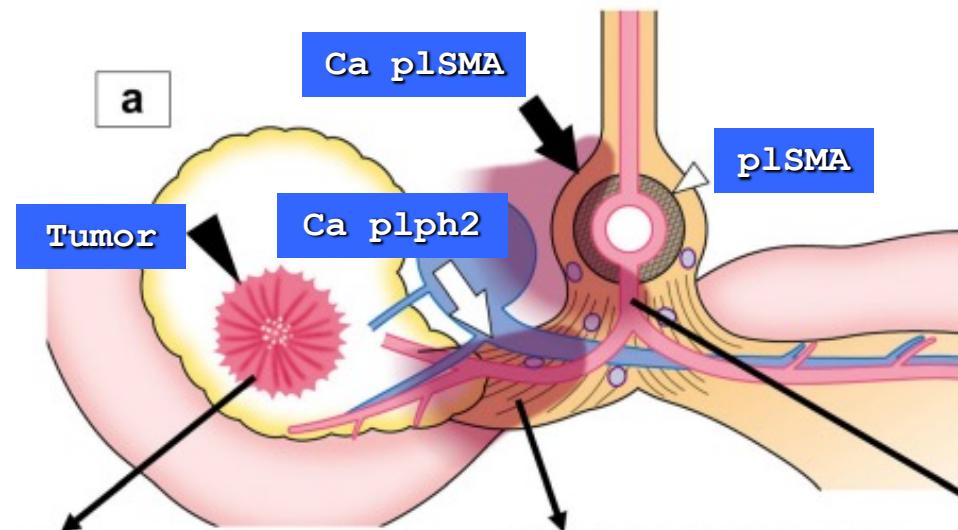
# Technical advances in surgery for pancreatic cancer

M. Schneider<sup>1</sup>, T. Hackert  <sup>1</sup>, O. Strobel<sup>2</sup> and M.W. Büchler<sup>1,\*</sup>

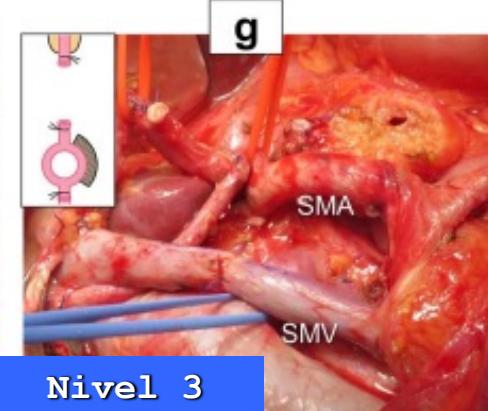
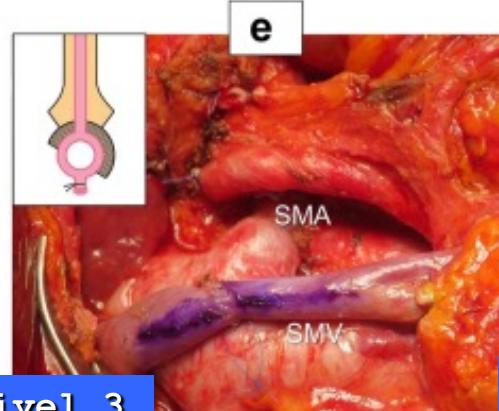
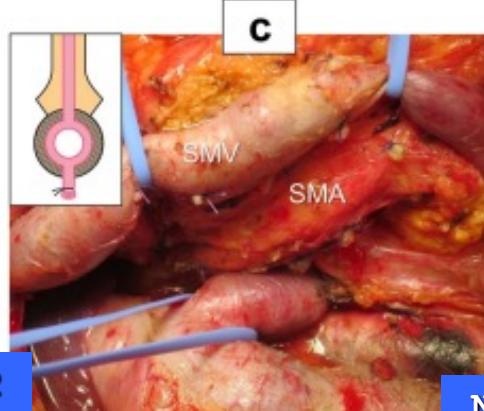
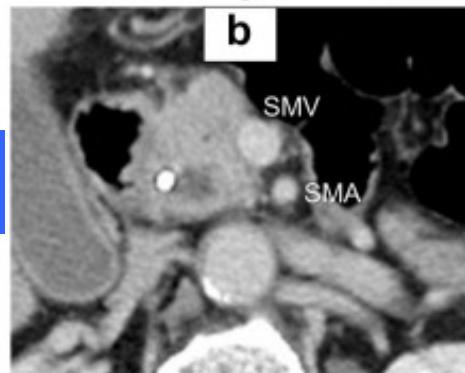


**Markus Buchler**





Sem invasão  
perineural



Nivel 2

Nivel 3

Nivel 3  
estendida

ORIGINAL ARTICLE



## Optimal Extent of Superior Mesenteric Artery Dissection during Pancreaticoduodenectomy for Pancreatic Cancer:

J Gastrointest Surg

**Table 2** Pathological outcomes and recurrences

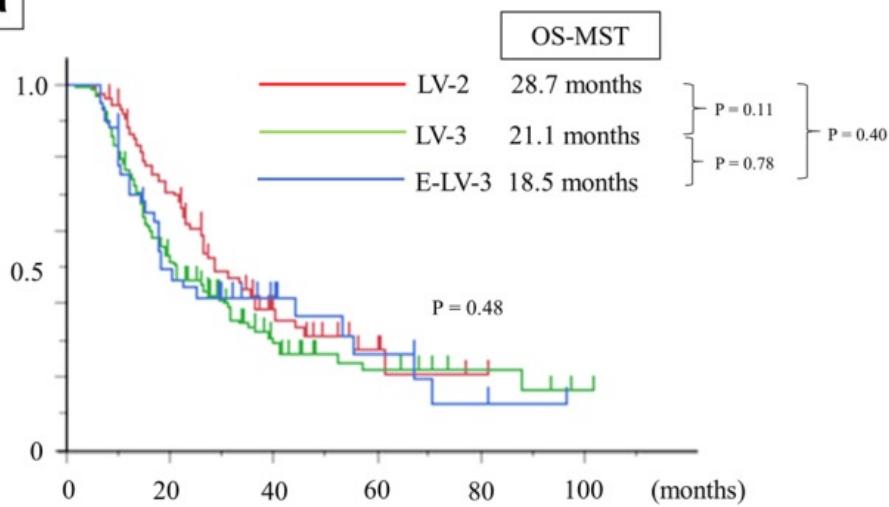
	Level 2 75	Level 3 117	Extended-level 3 41	P value
Pathology (pap well/mod/por)	23/46/6	29/71/17	13/26/2	0.53
Pathological margin status				
R0	63 (84%)	93 (79%)	24 (59%)	0.0054
R1	11	24	17	
R2	1	0	0	
Site of positive margin*				
Margin around the SMA	8 (11%)	15 (13%)	15 (37%)	0.0005
Posterior margin	2 (3%)	2 (2%)	2 (5%)	
Margin around the hepatic artery	2 (3%)	4 (3%)	0	
Pancreatic stump	1 (1%)	3 (3%)	2 (5%)	
Bile duct stump	0	1 (1%)	0	
Recurrence	54 (72%)	85 (74%)	30 (73%)	0.82
Local recurrence	13 (17%)	24 (21%)	6 (15%)	0.63
Soft tissue	9 (12%)	20 (17%)	6 (15%)	
Remnant pancreas	4 (5%)	4 (3%)	0	
Distant metastasis**	42 (55%)	65 (57%)	25 (61%)	0.83
Liver	25 (33%)	37 (32%)	12 (29%)	
Mesenteric lymph nodes	5 (7%)	3 (3%)	1 (2%)	
Peritoneal dissemination	7 (9%)	17 (15%)	7 (17%)	
Others	14 (19%)	12 (10%)	6 (15%)	

ORIGINAL ARTICLE

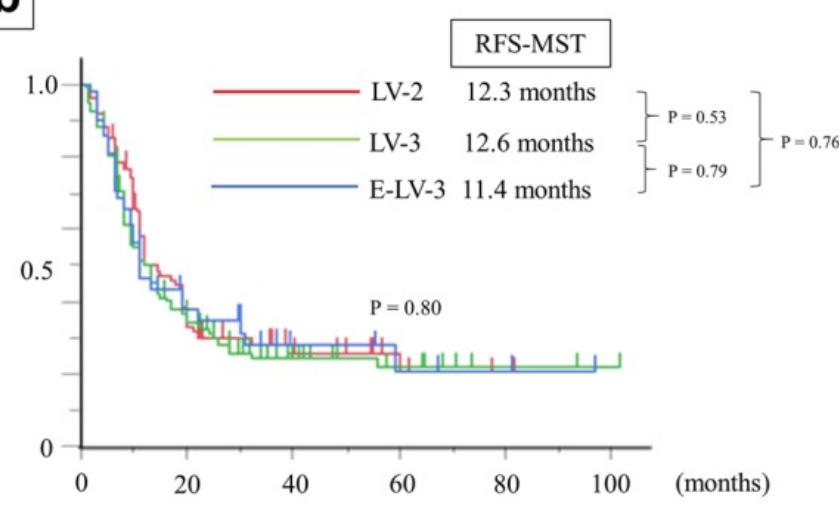


## Optimal Extent of Superior Mesenteric Artery Dissection during Pancreaticoduodenectomy for Pancreatic Cancer: Balancing Surgical and Oncological Safety

a

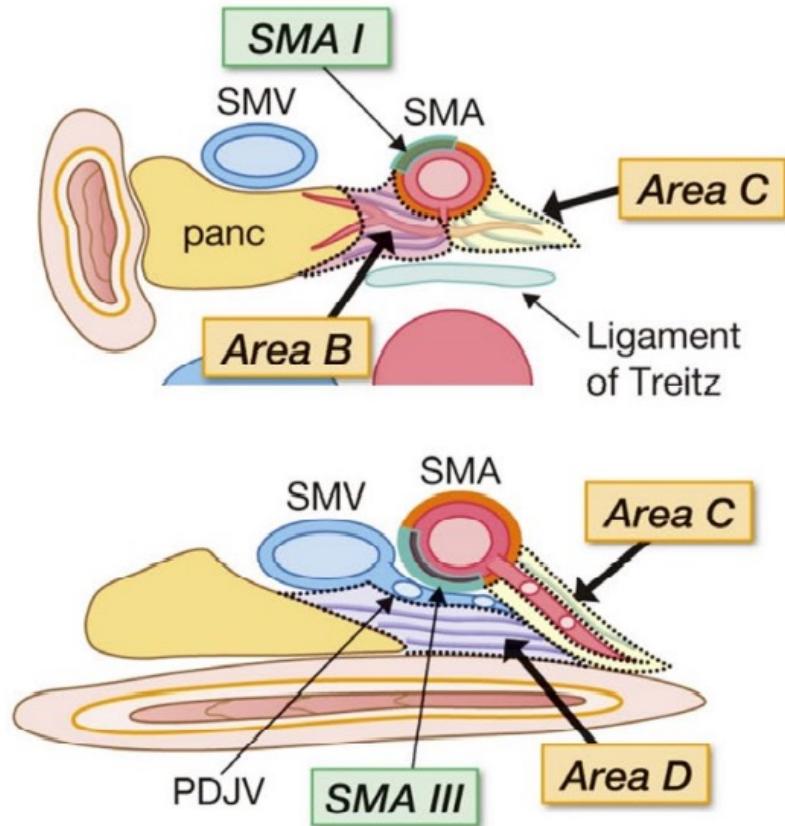
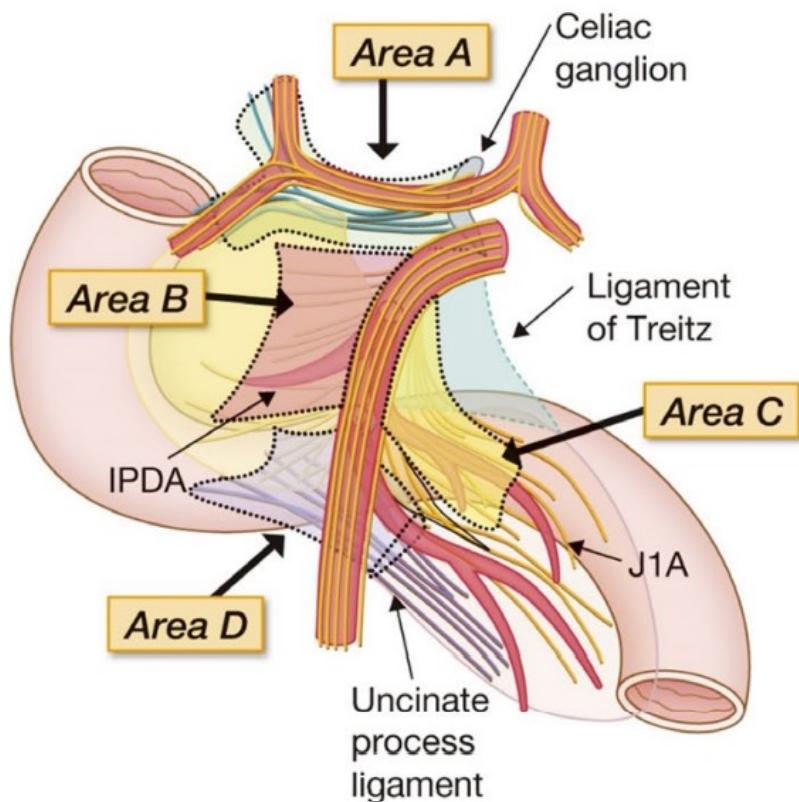


b



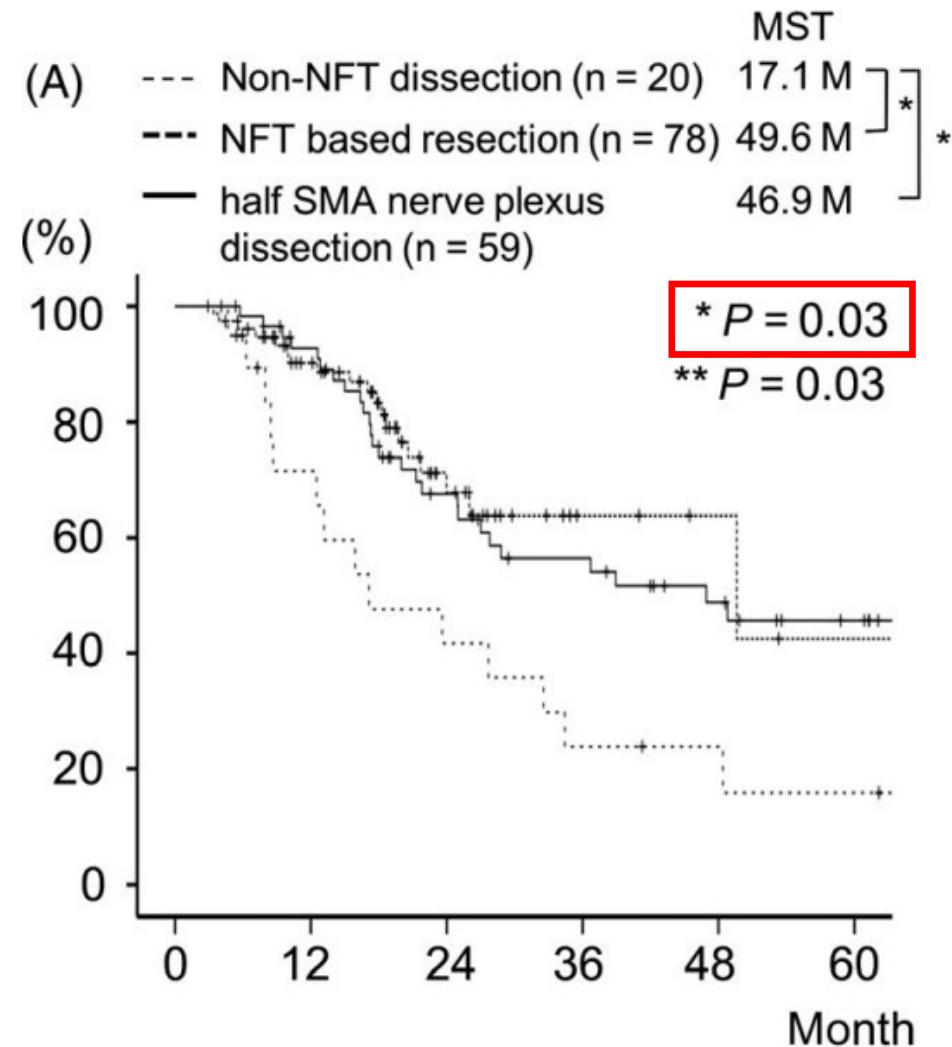
## ORIGINAL ARTICLE

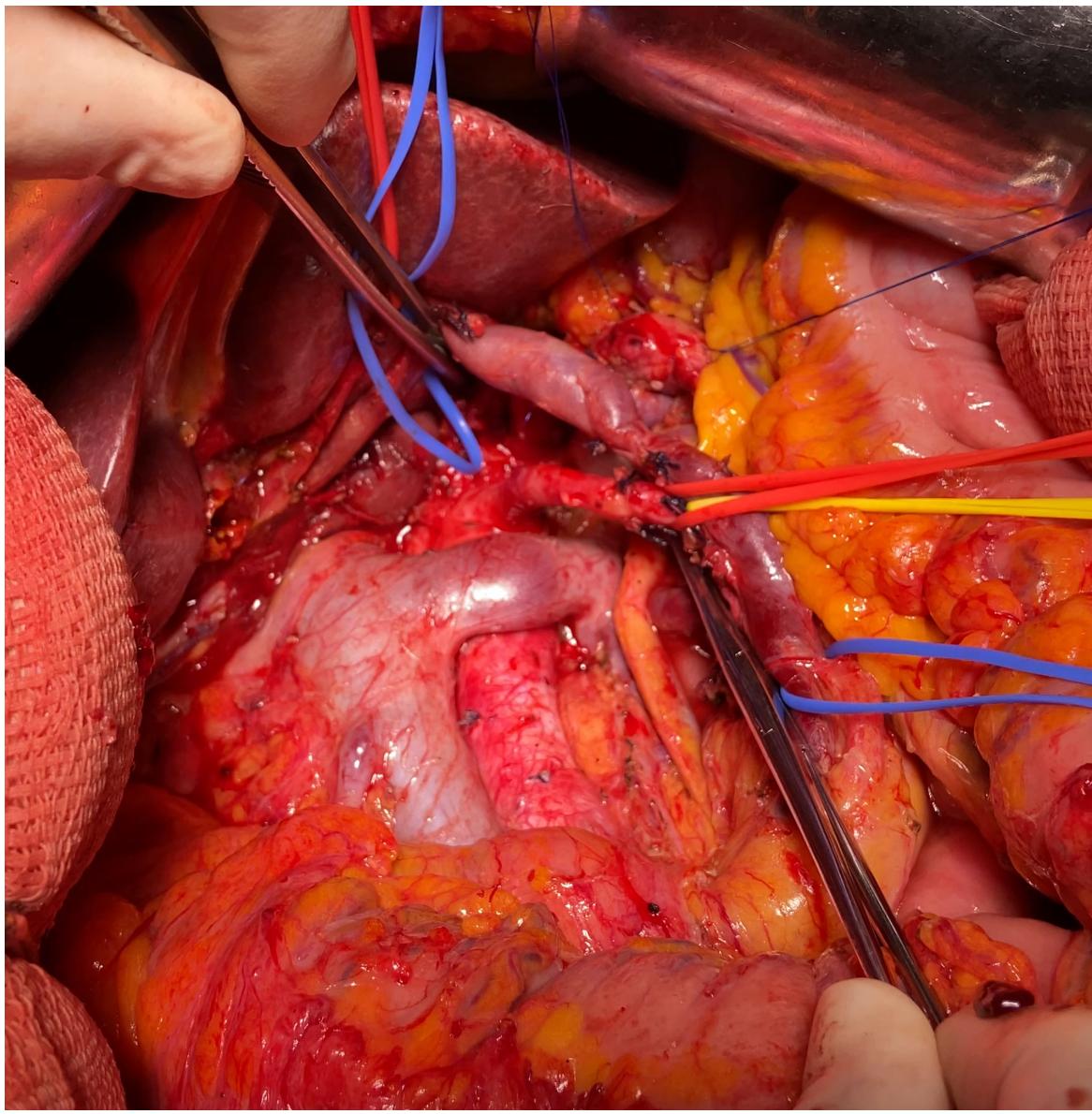
# Precise anatomical resection based on structures of nerve and fibrous tissue around the superior mesenteric artery for mesopancreas dissection in pancreaticoduodenectomy for pancreatic cancer



## ORIGINAL ARTICLE

Precise anatomical resection based on structures of nerve and fibrous tissue around the superior mesenteric artery for mesopancreas dissection in pancreaticoduodenectomy for pancreatic cancer







## What do surgeons need to know about the mesopancreas

Eduardo de Souza M. Fernandes<sup>1,2</sup> • Oliver Strobel<sup>3,4</sup> • Camila Girão<sup>1,2</sup> • Jose Maria A. Moraes-Junior<sup>5,6</sup> •  
Orlando Jorge M. Torres<sup>5,6</sup>

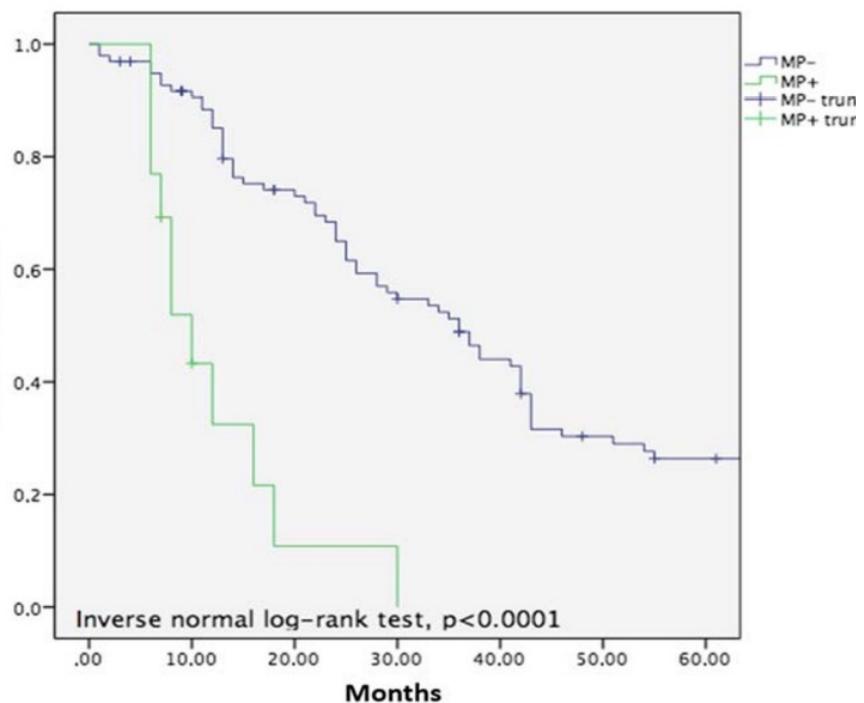
**Table 1** Studies comparing total mesopancreas excision versus standard pancreatoduodenectomy

Author	Results	TME	SPD	p	Ref
Kawabata et al. (2012)	R0 resection (%)	92.8	60	0.019	39
	R1 resection (%)	7.2	40		
	Recurrence (%)	14.2	64	0.036	
Aimoto et al. (2013)	R0 resection (%)	74	68	NS	41
	R1 resection (%)	26	30	NS	
	Local recurrence (%)	0	37	<0.01	
Xu et al. (2017)	Median DFS (Months)	16.9	13.4	0.044	37
	Median OS (Months)	19.9	22.5	0.176	
	1-year total recurrence rate (%)	31.8	55.3	0.054	
	1-year local recurrence rate (%)	18.2	39.5	0.018	
	Disease-free survival (%)	22.3	14.8	0.04	
Quero et al. (2021)	R1 Mesopancreas margin (%)	5.0	16.7	0.04	38
	Local tumor recurrence (%)	26.8	55.5	0.002	

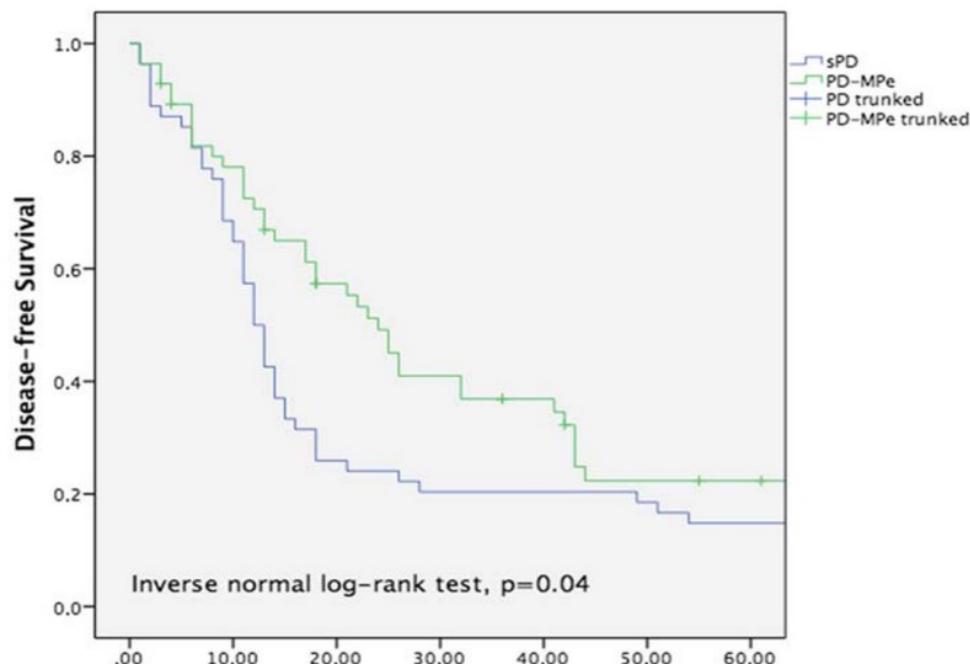
Legends: *TME*, total mesopancreas excision; *SPD*, standard pancreatoduodenectomy; *DFS*, disease-free survival; *OS*, overall survival; *NS*, no significant



## Total mesopancreas excision for periampullary malignancy: a single-center propensity score-matched comparison of long-term outcomes



P<0,0001



P=0,04



Check for  
updates

## Total mesopancreas excision for periampullary malignancy: a single-center propensity score-matched comparison of long-term outcomes

**Conclusion** PD-MPe offers clinical advantages in terms of MP resection margin status, local recurrence, long-term mortality, and DFS. The lower MP positivity rate, achieved with PD-MPe, leads to better outcomes both in terms of OS and DFS.

Thanks !



[www.drorlandotorres.com.br](http://www.drorlandotorres.com.br)