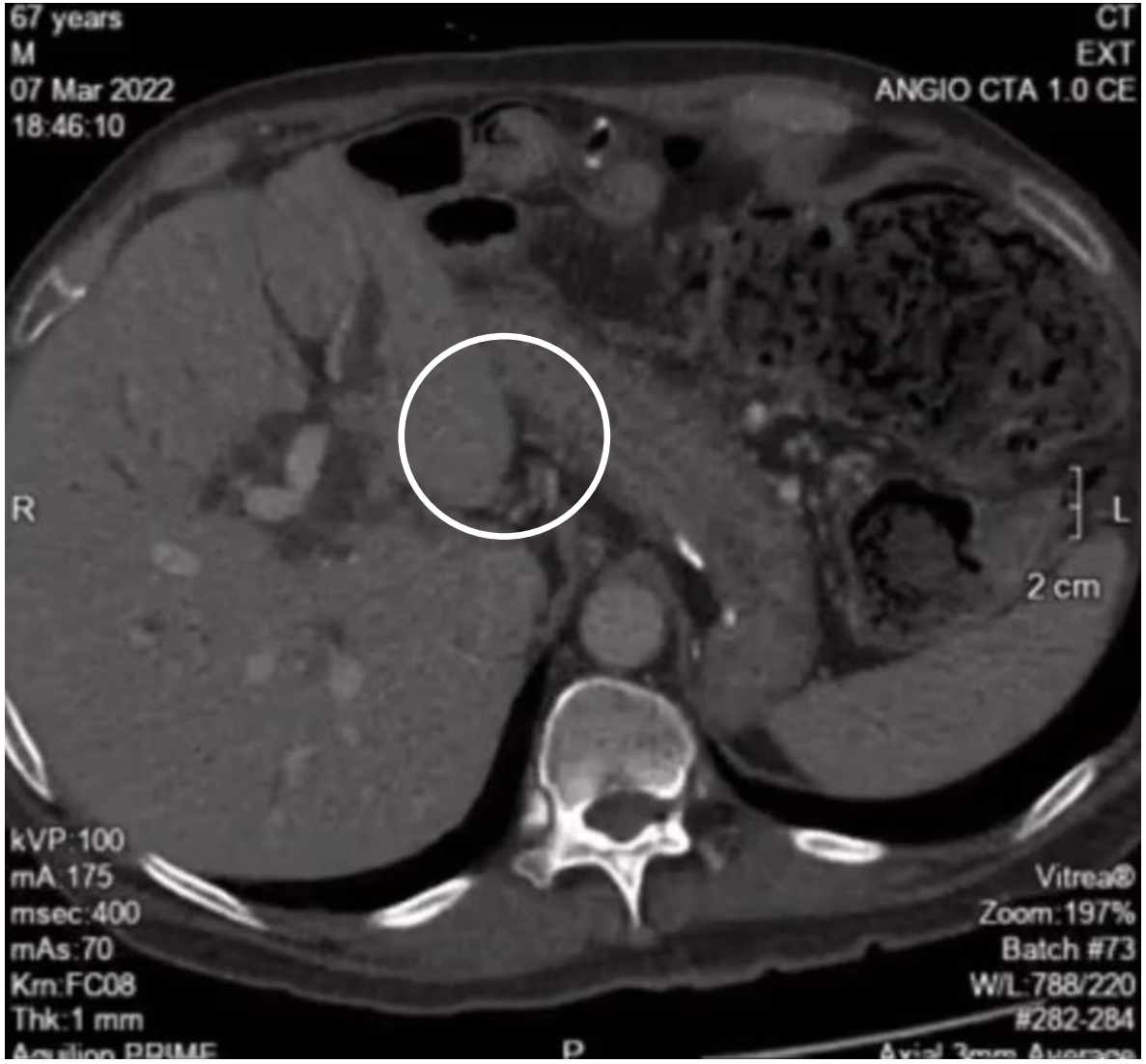
XVII CONGRESSO BRASILEIRO DE CIRURGIA ONCOLÓGICA

05 A 08 DE NOVEMBRO DE 2025

RIO DE JANEIRO

Estado da arte da duodenopancreatectomia robótica para PDAC: NÃO

Orlando Jorge M. Torres
Department of Gastrointestinal Surgery
Hepatopancreatobiliary Unit
Maranhão Federal University - Brazil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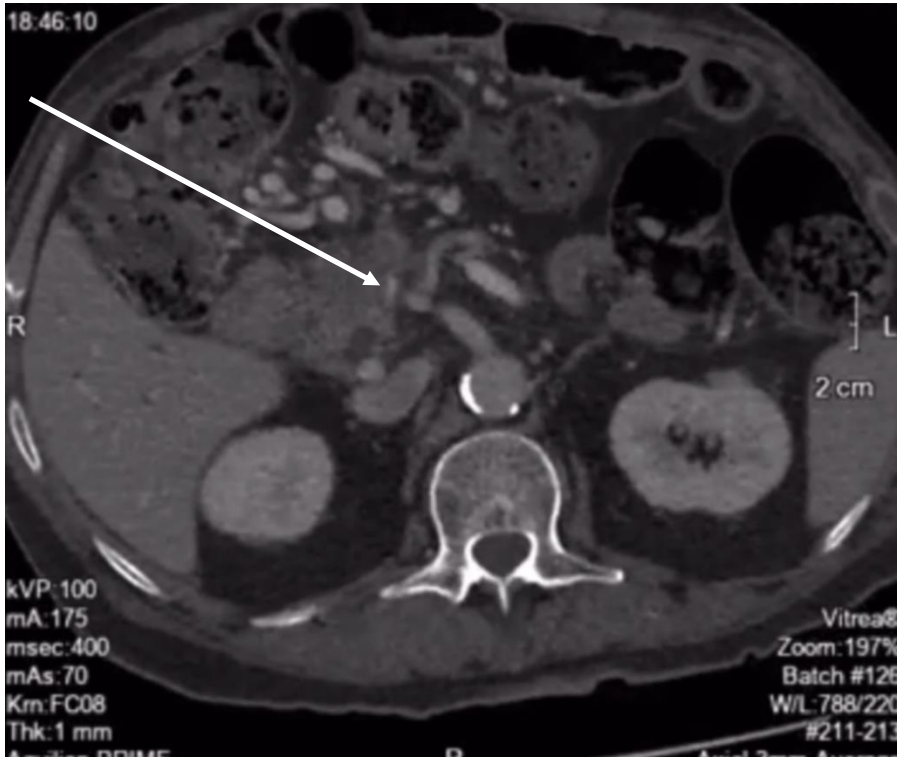
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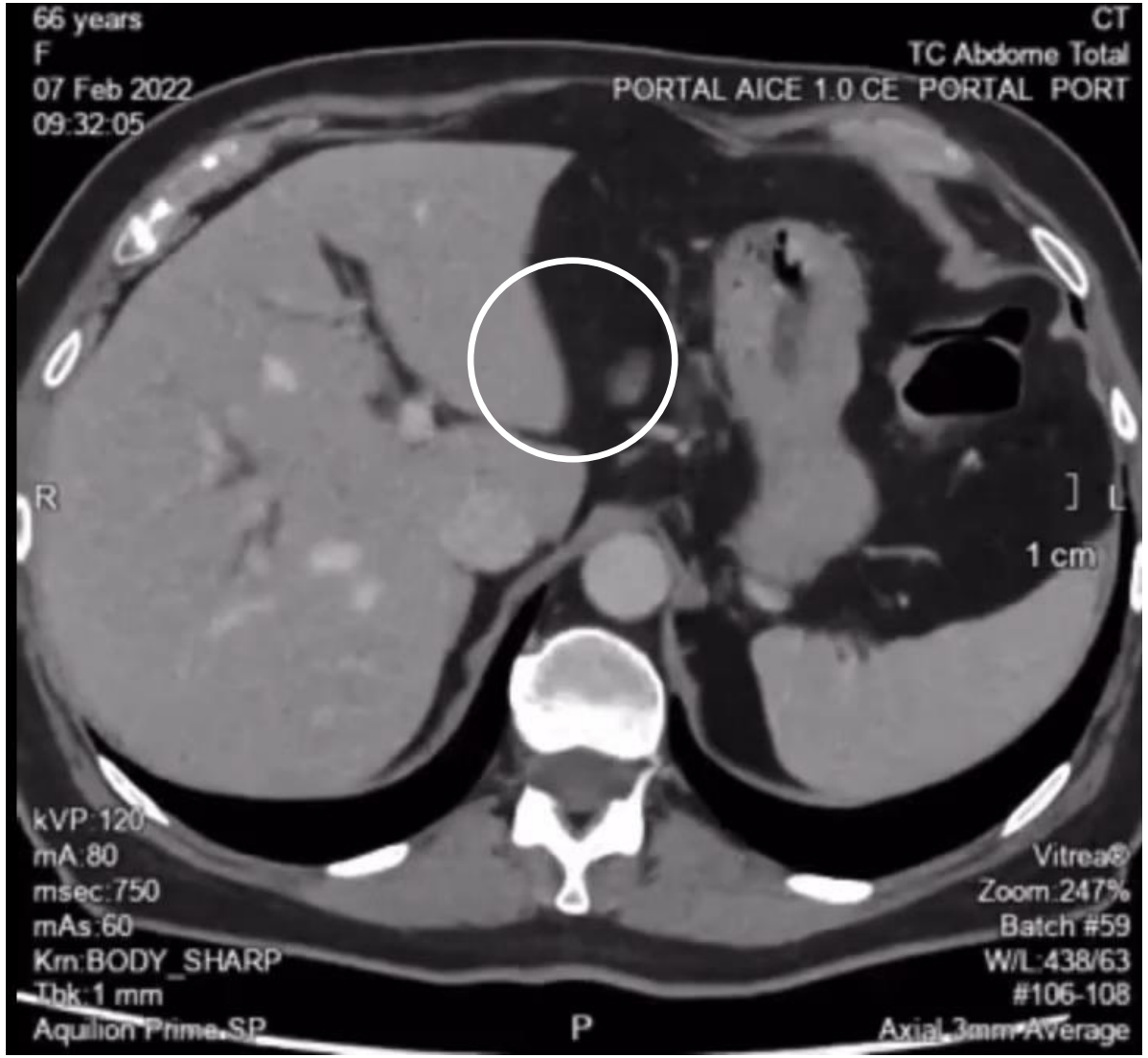
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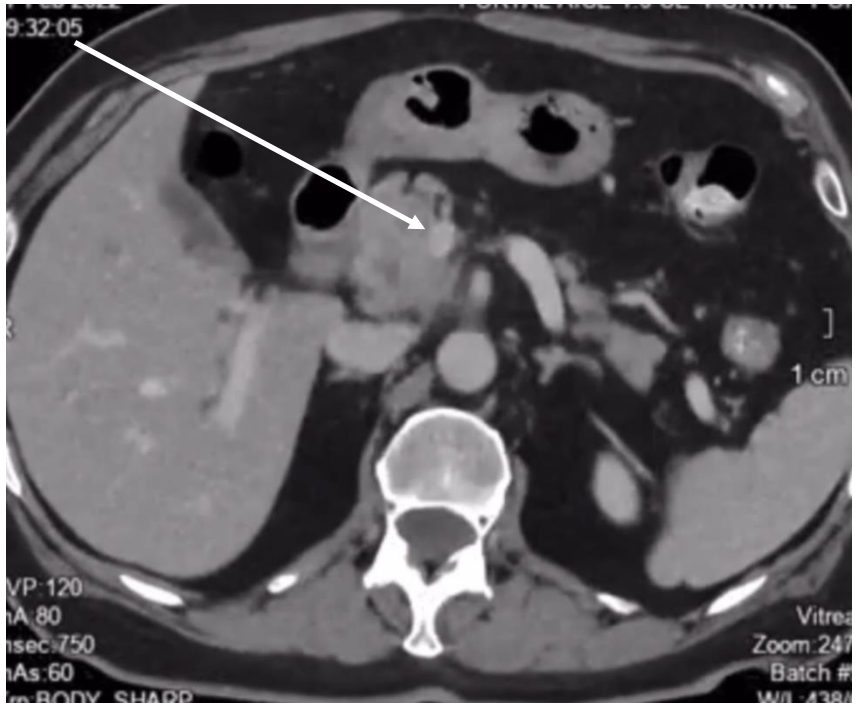
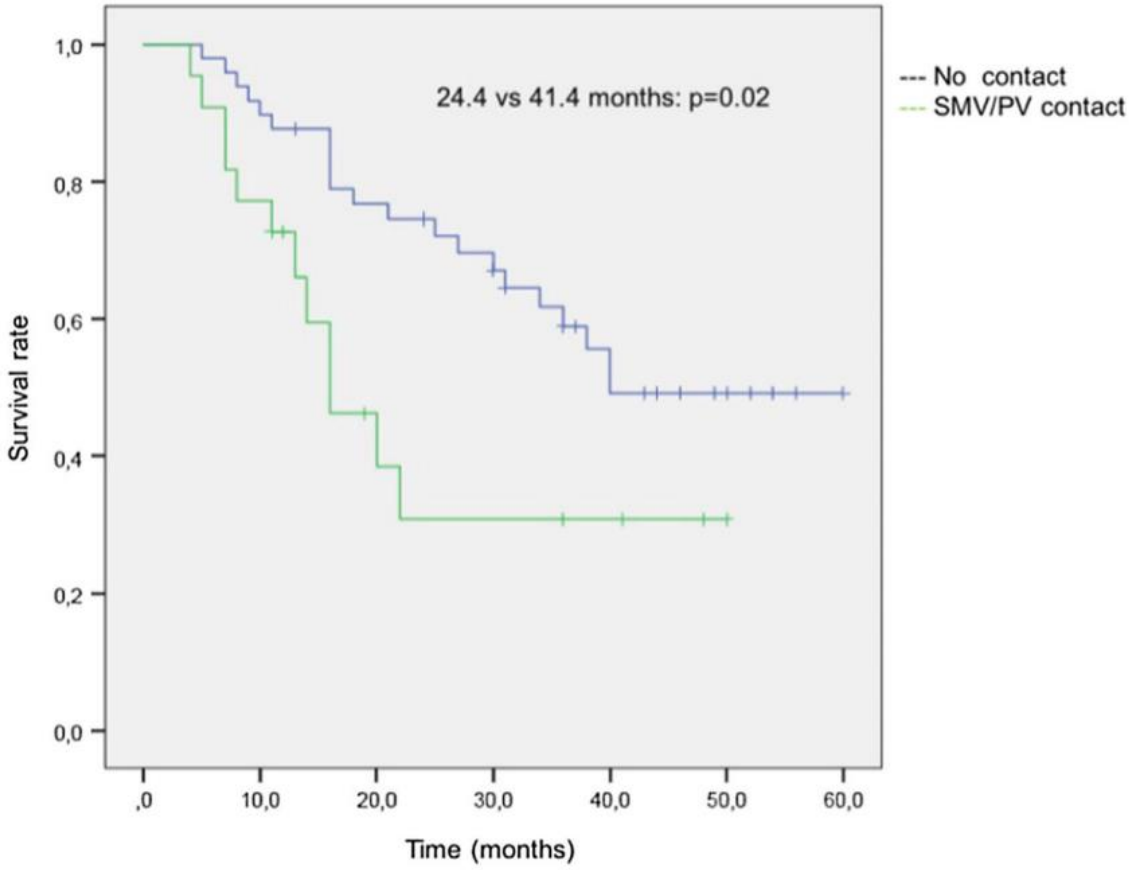

1 cm

Langenbeck's Archives of Surgery
https://doi.org/10.1007/s00423-020-02065-w

ORIGINAL ARTICLE

Clinical impact of preoperative tumour contact with superior mesenteric-portal vein in patients with resectable pancreatic head cancer



Tumor contact with SMV/PV

Ausania F, et al. Langenbecks Arch Surg 2021

PORTAL VEIN/SMV RESECTION

Patients	venous resection	(%)	Ref
2,247	661	29.4	1
937	435	46.4	2

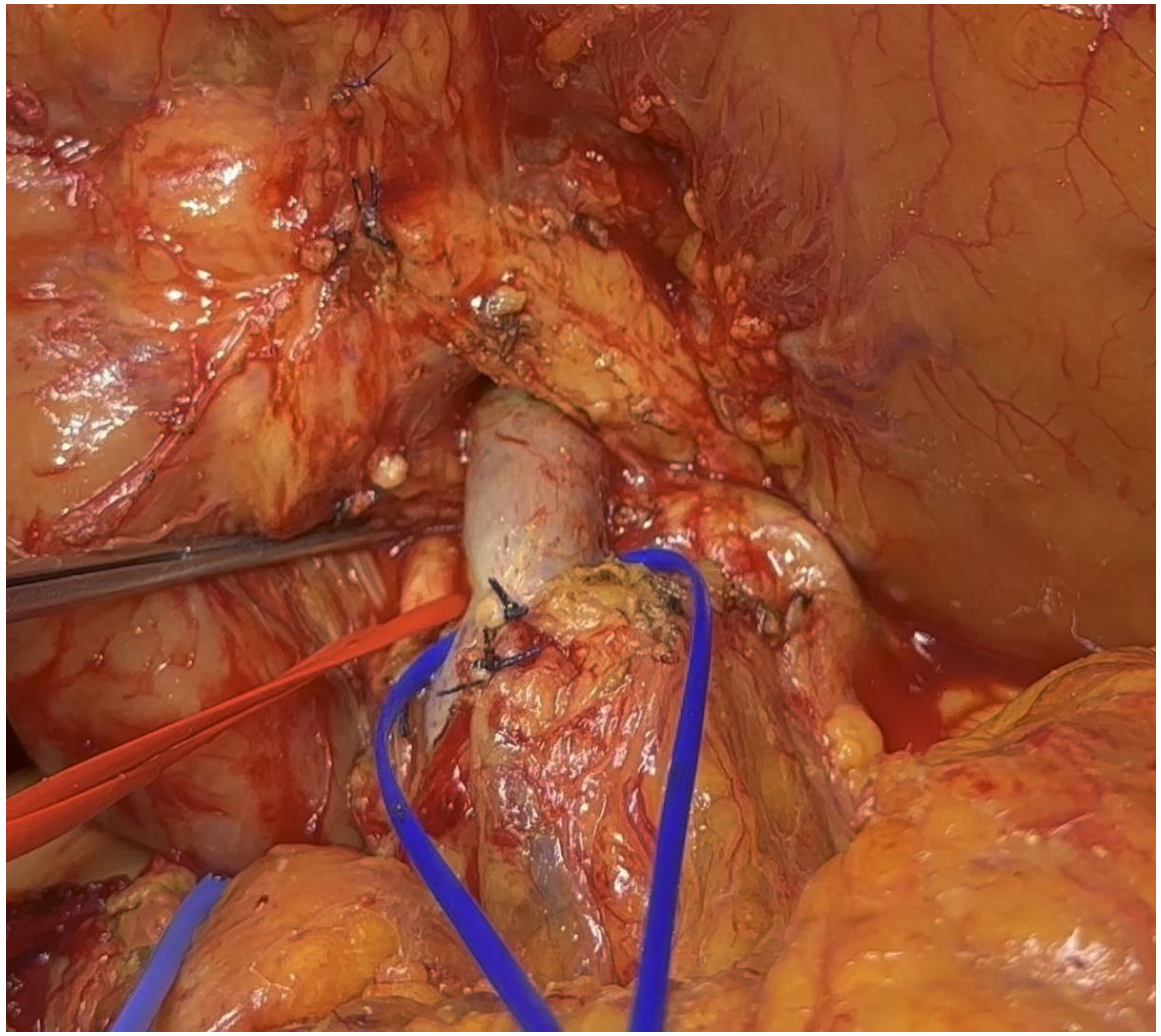
[1]Zhou Y, et al. World J Surg. 2012;36:884–91.
[2]Murakami Y, et al. Br J Surg. 2015;102(7):837–46

TABLE 2 Survey results for question 1: Do you recommend that surgical trainees be aware of the following anatomical structures, including variations/anomalies, as part of surgical training for minimally invasive pancreatoduodenectomy?

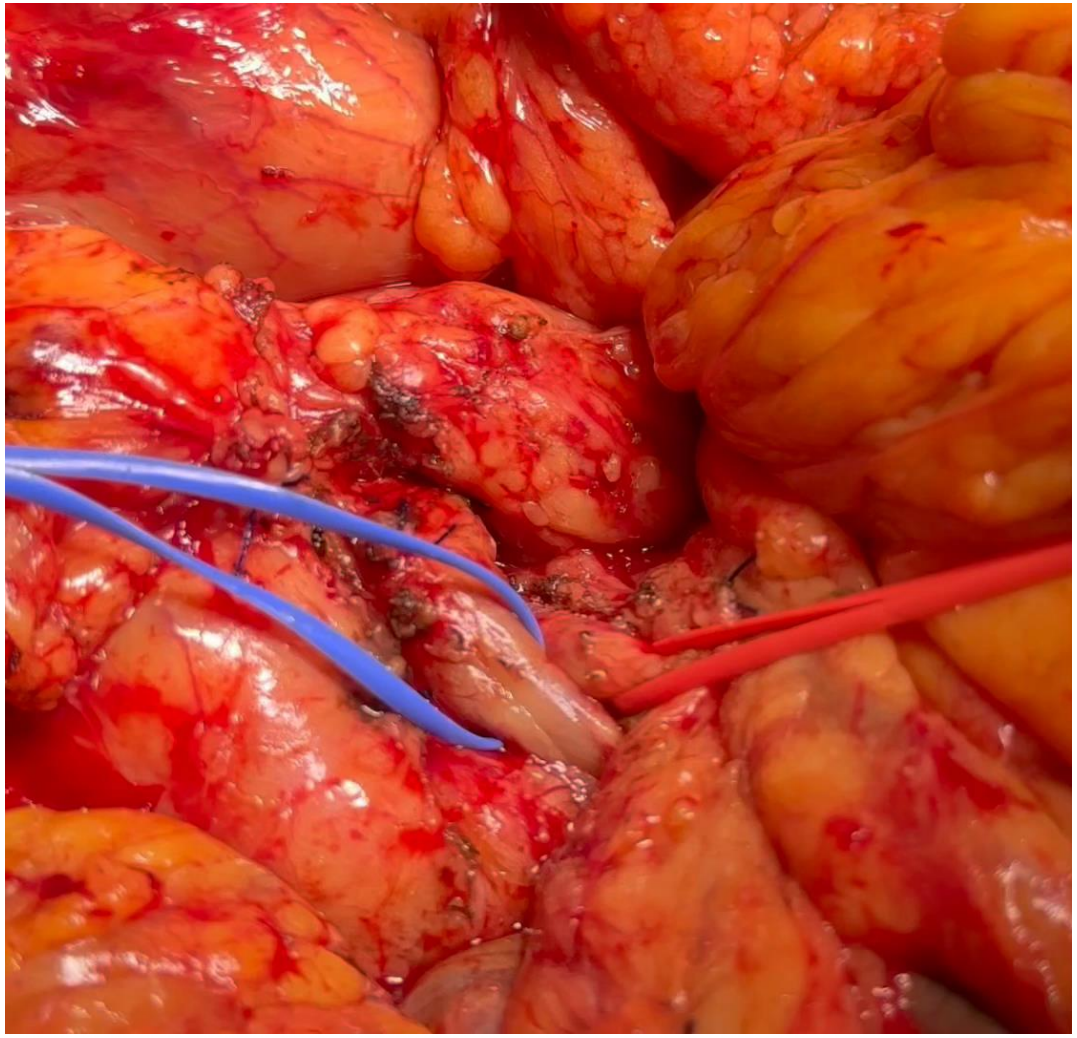
		Strongly Recommend	Recommend	Suggest
Anatomical structures	Celiac trunk	22 (88%)	2 (8%)	1 (4%)
	SMA	24 (96%)	1 (4%)	0 (0%)
	IPDA	23 (92%)	2 (8%)	0 (0%)
	Jejunal arteries (J1A, J2A)	14 (56%)	10 (40%)	1 (4%)
	DPA	14 (56%)	9 (36%)	2 (8%)
	GCT	18 (72%)	6 (24%)	1 (4%)
	SMV	22 (88%)	2 (8%)	1 (4%)
	LGV	17 (68%)	4 (16%)	4 (16%)
	IMV	14 (56%)	5 (20%)	6 (24%)
	FJV(PDJV)	21 (84%)	4 (16%)	0 (0%)
	IMV	14 (56%)	5 (20%)	6 (24%)
	IPDV	17 (68%)	7 (28%)	1 (4%)
	Ligament of Treitz	13 (52%)	10 (40%)	2 (8%)
	Extra pancreatic nerve plexus (PLphI and PLphI II)	11 (44%)	12 (52%)	2 (8%)
Anatomical variations	Variants of the hepatic arteries	25 (100%)	0 (0%)	0 (0%)
	Celiac artery stenosis	16 (54%)	8 (32%)	1 (4%)
	Circumportal pancreas	13 (52%)	7 (28%)	5 (20%)

Abbreviations: DPA, dorsalis pedis artery; FJV, first jejunal vein; GCT, gastrocolic trunk; IMV, Inferior mesenteric vein; IPDA, inferior pancreaticoduodenal artery; IPDV, inferior pancreaticoduodenal vein; J1A, first jejunal artery; J2A, second jejunal artery; LGV, left gastric vein; PDJV, proximal dorsal jejunal vein; PLphI, pancreatic head plexus I; PLphII, pancreatic head plexus II; SMA, superior mesenteric artery; SMV, superior mesenteric vein.

UNCINATE FIRST



SMV INVOLVEMENT



International Journal of Clinical Oncology (2023) 28:493–511
https://doi.org/10.1007/s10147-023-02317-x

SPECIAL ARTICLE

Clinical Practice Guidelines for Pancreatic Cancer 2022 from the Japan Pancreas Society: a synopsis

RO5 Is minimally invasive pancreaticoduodenectomy recommended in patients with invasive ductal carcinoma who are candidates for pancreaticoduodenectomy?

Statement:

Minimally invasive pancreaticoduodenectomy is recommended in patients with invasive ductal carcinoma who are candidates for pancreaticoduodenectomy, but only at facilities specializing in the treatment of pancreatic cancer.

Recommendation strength: weak; evidence level: C; agreement rates ($N = 51$): 1 = 2%, 2 = 86%, 3 = 2%, 4 = 0%, and 5 = 10%.

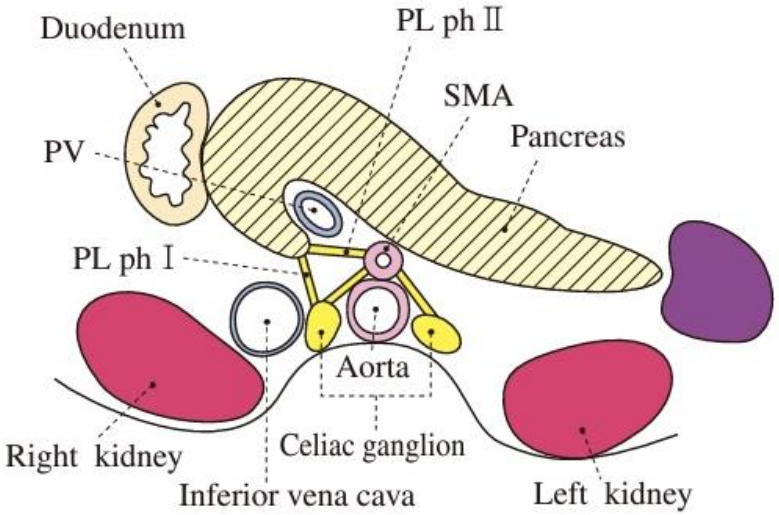


Fig. 3a Pancreatic nerve plexuses (cross-sectional diagram)

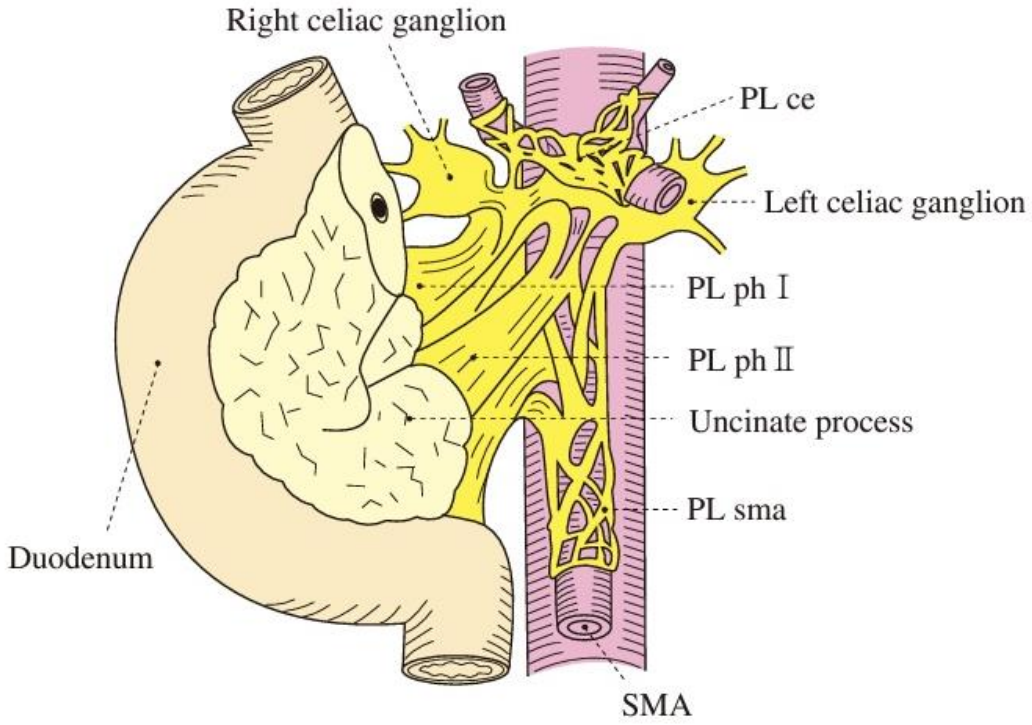


Fig. 3b Extrapancreatic nerve plexuses

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

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

CELIAC TRUNK

PANCREATIC HEAD AND UNCINATE

SUPERIOR MESENTERIC ARTERY

LEFT RENAL VEIN

MESENTERIC ROOT

Langenbeck's Archives of Surgery
https://doi.org/10.1007/s00423-021-02261-2

Technical progress in robotic pancreatoduodenectomy: TRIANGLE and periadventitial dissection for retropancreatic nerve plexus resection

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Table 1 Nomenclature and definitions to achieve a radical dorsal and medial tumor margin

Nomenclature	Definition
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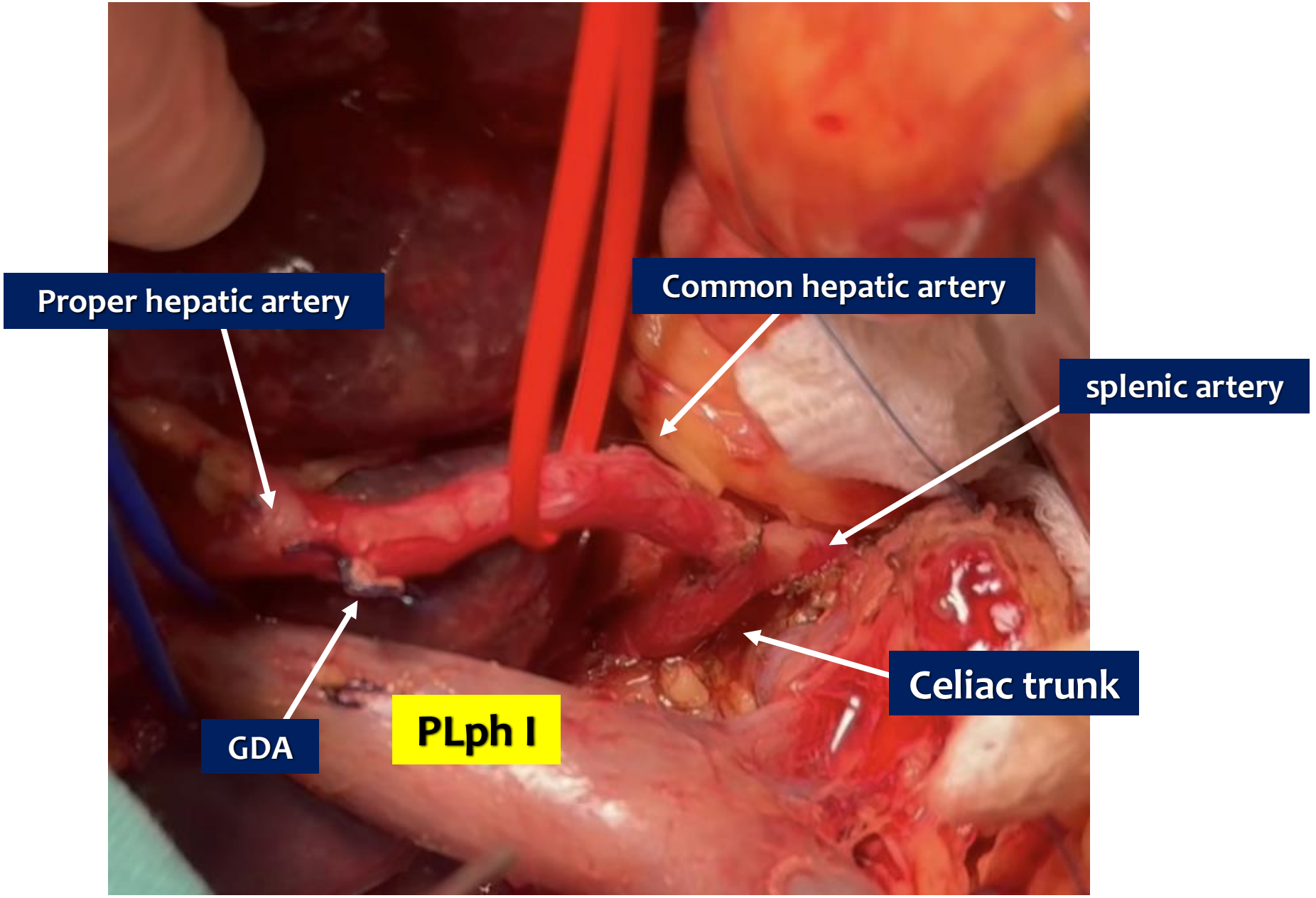
PLph I

Kinny-Köster B, et al. Langenbeck's Arch Surg 2021


Proper hepatic artery
Common hepatic artery
splenic artery
Celiac trunk
GDA
PLph I

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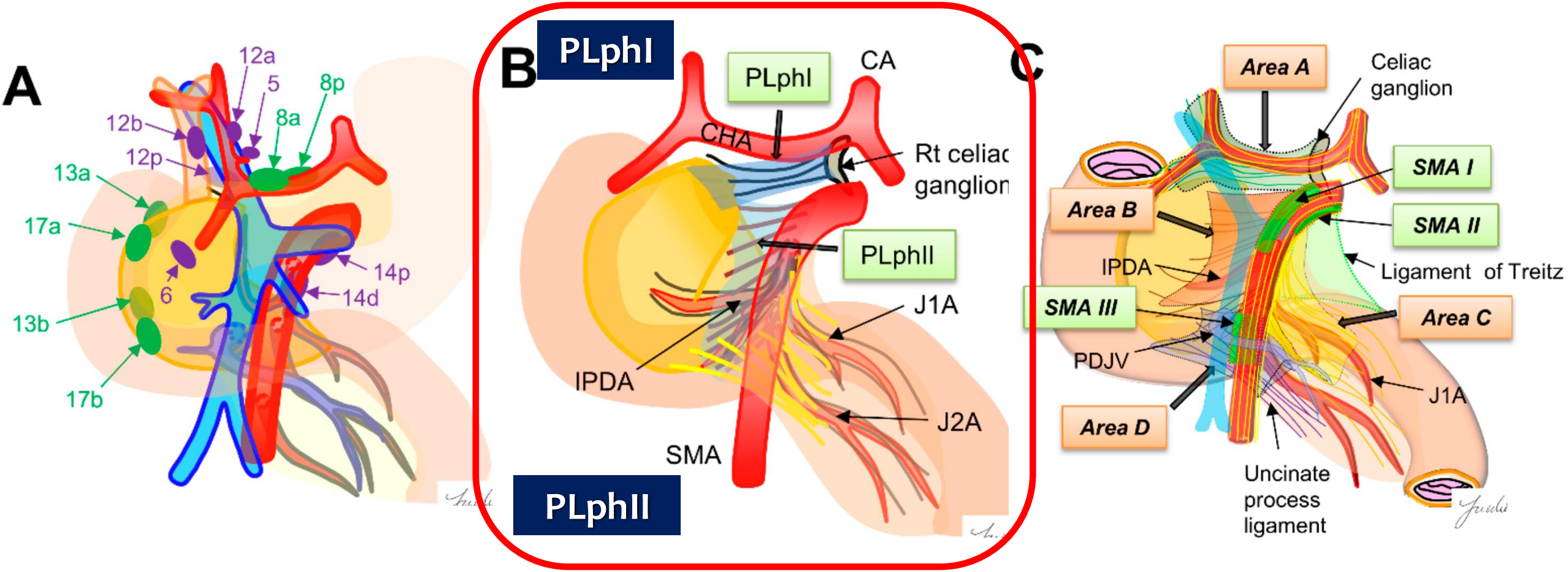
PLph II

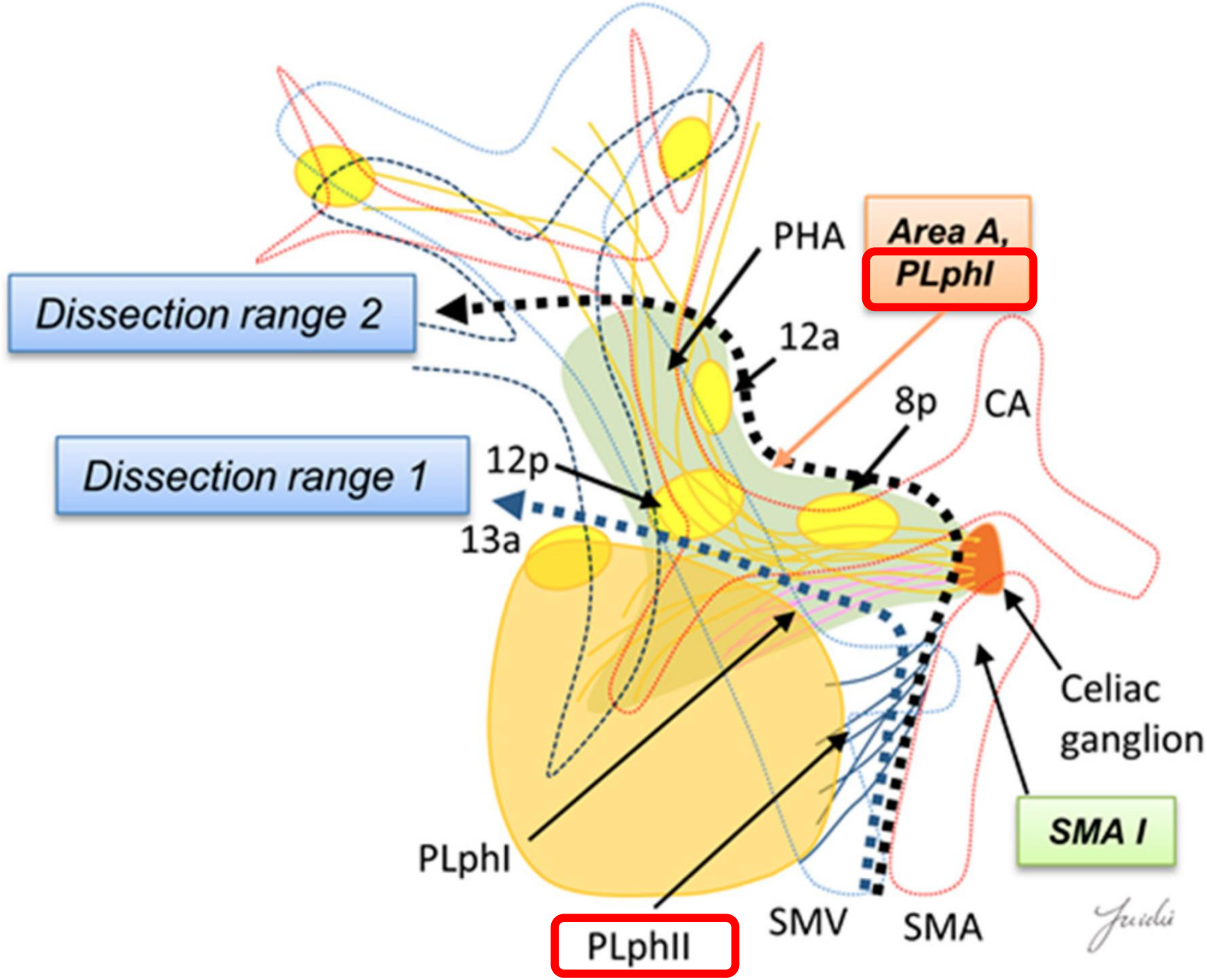
Kinny-Köster B, et al. Langenbeck's Arch Surg 2021

Common hepatic artery

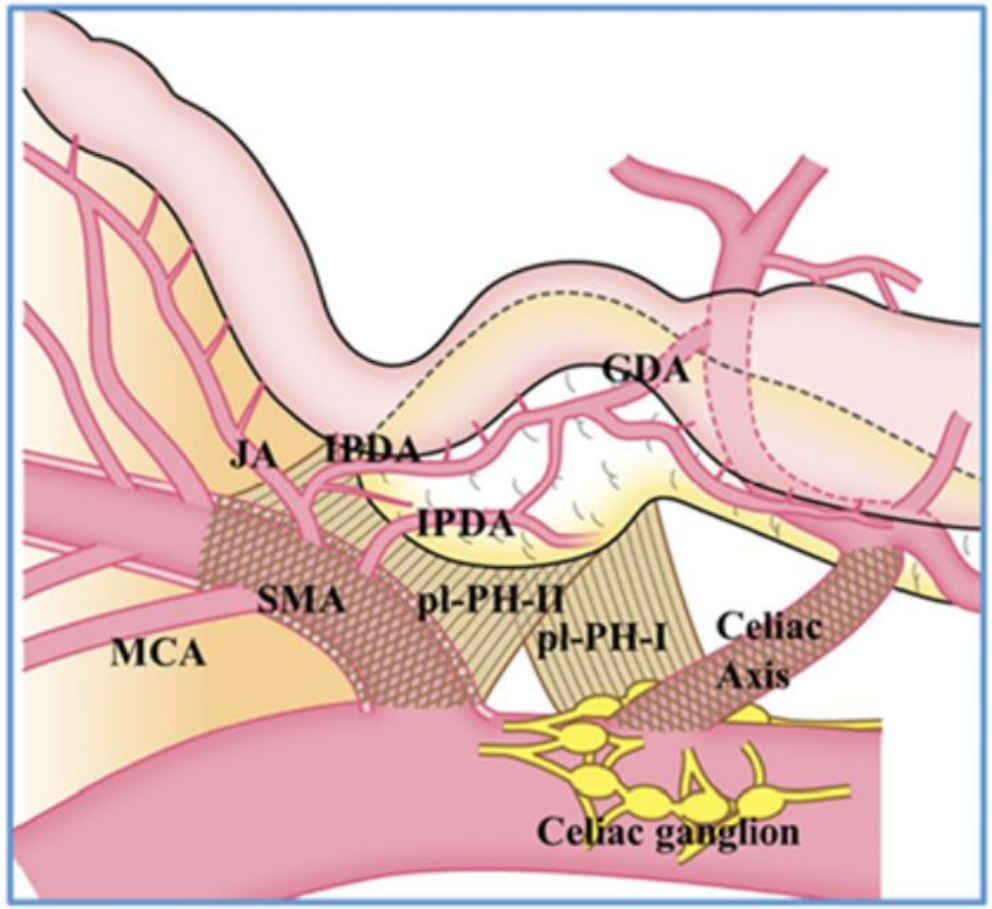
Celiac trunk

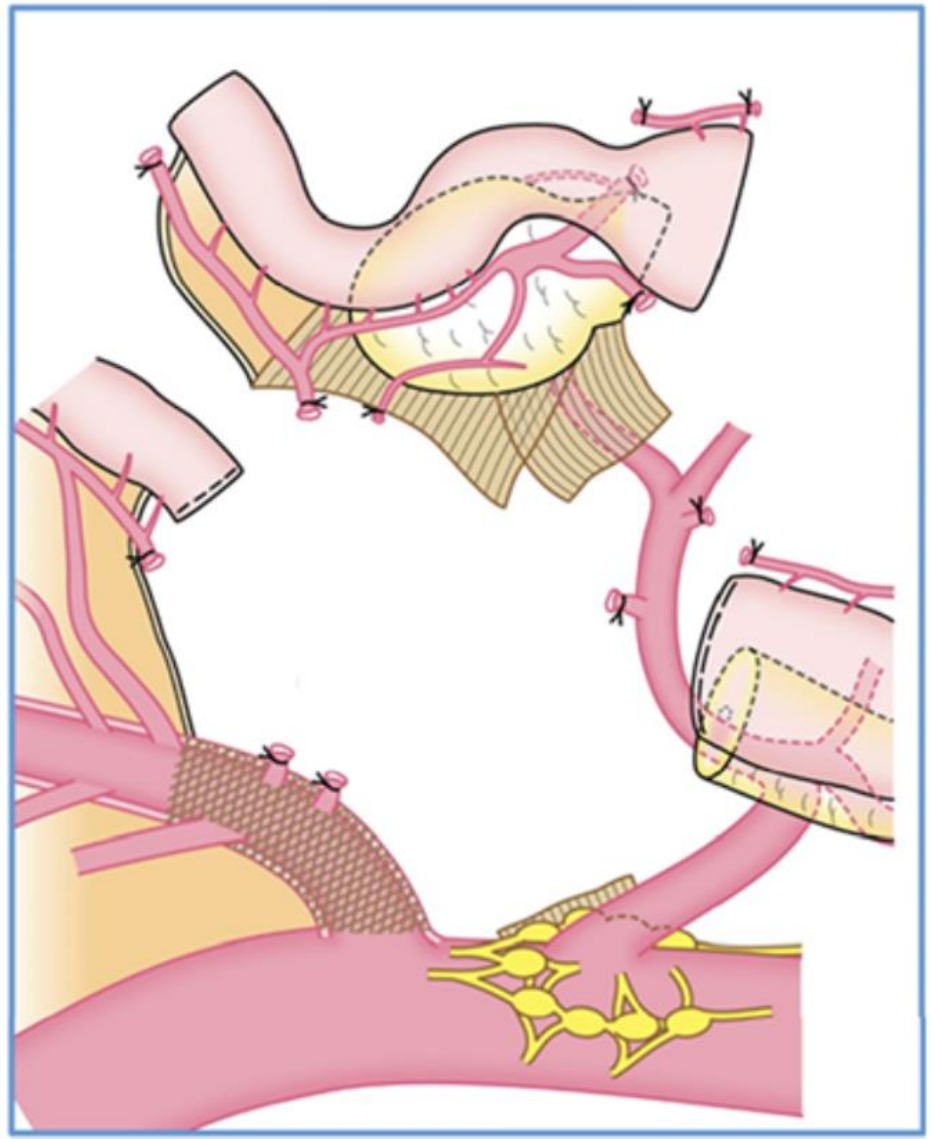


Nagakawa Y, et al. Cancers 2021; 13, 3605

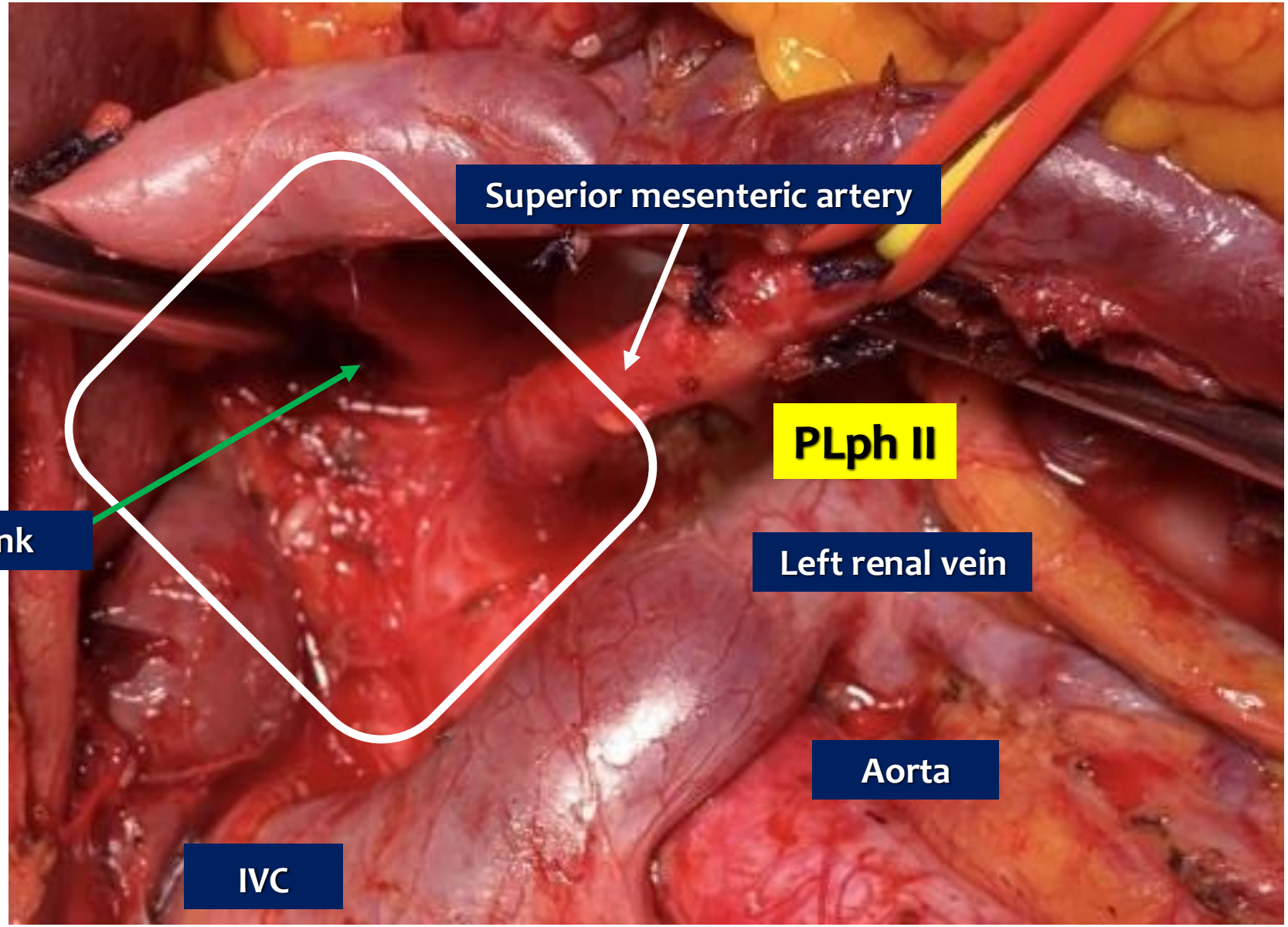


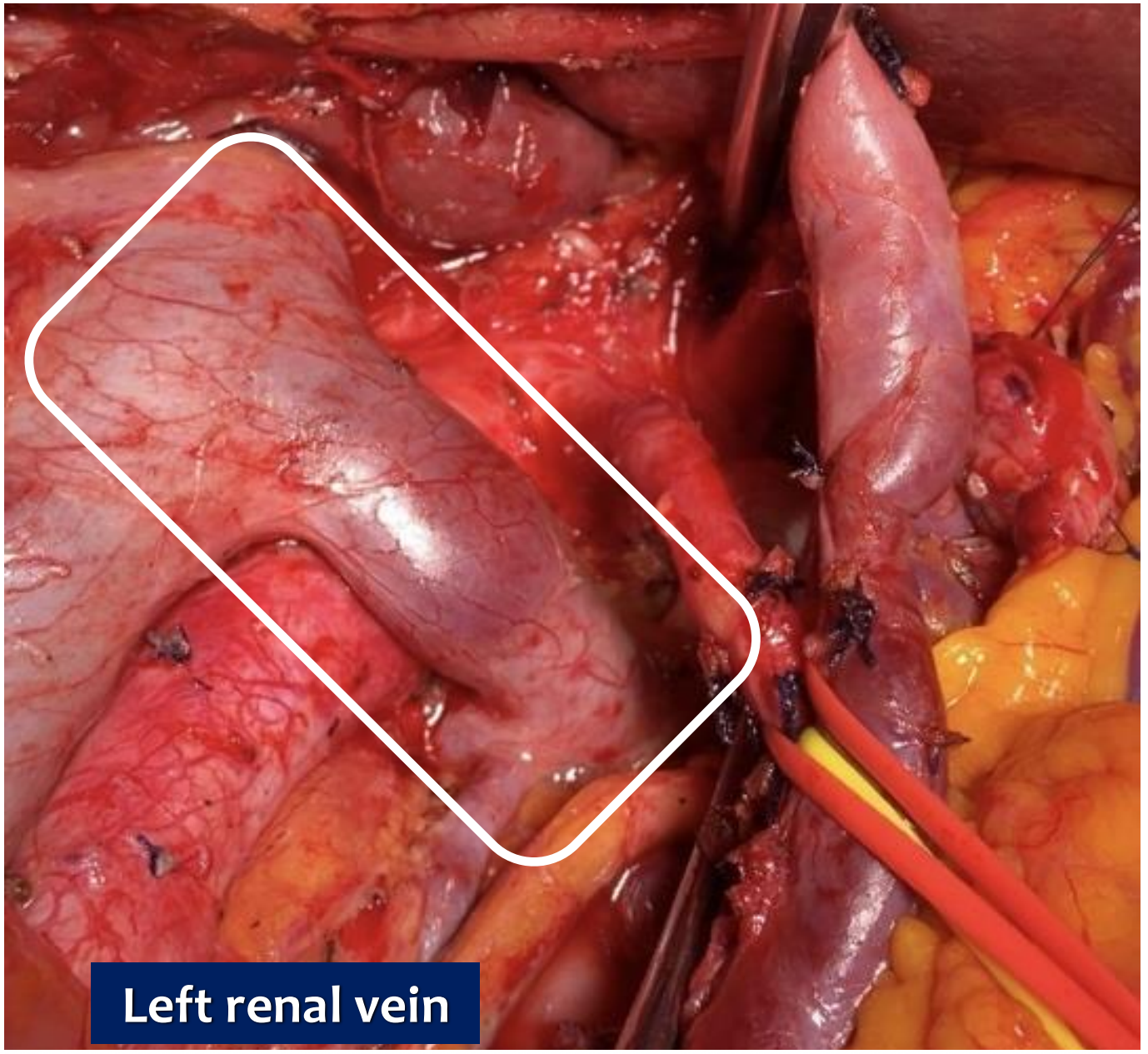
Nagakawa Y, et al. Cancers 2021; 13, 3605





Inoue Y, et al. J Gastrointest Surg 2016


Superior mesenteric artery
PLph II
Celiac trunk
Left renal vein
Aorta
IVC


Left renal vein

Langenbeck's Archives of Surgery
https://doi.org/10.1007/s00423-021-02261-2

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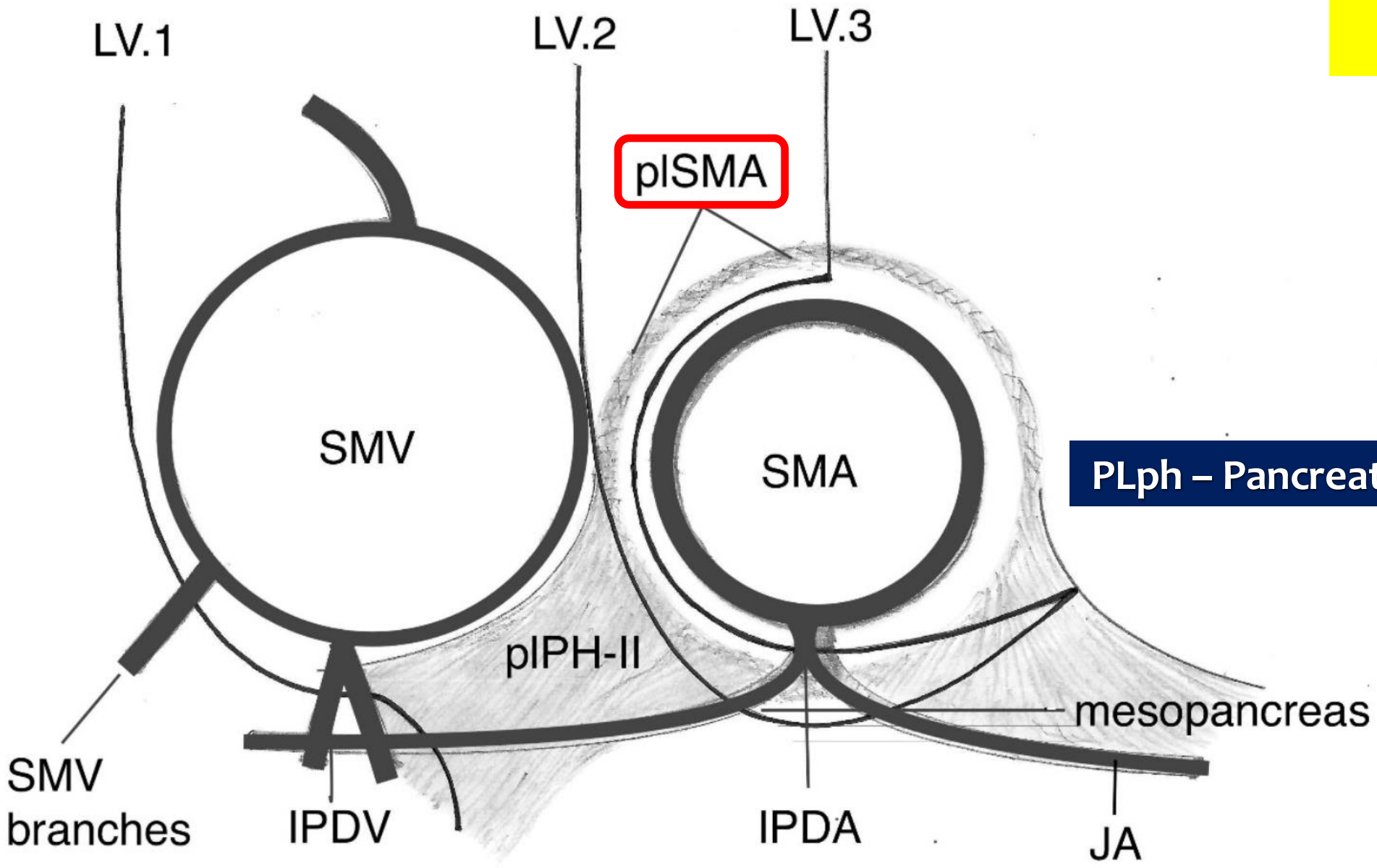
PLsma

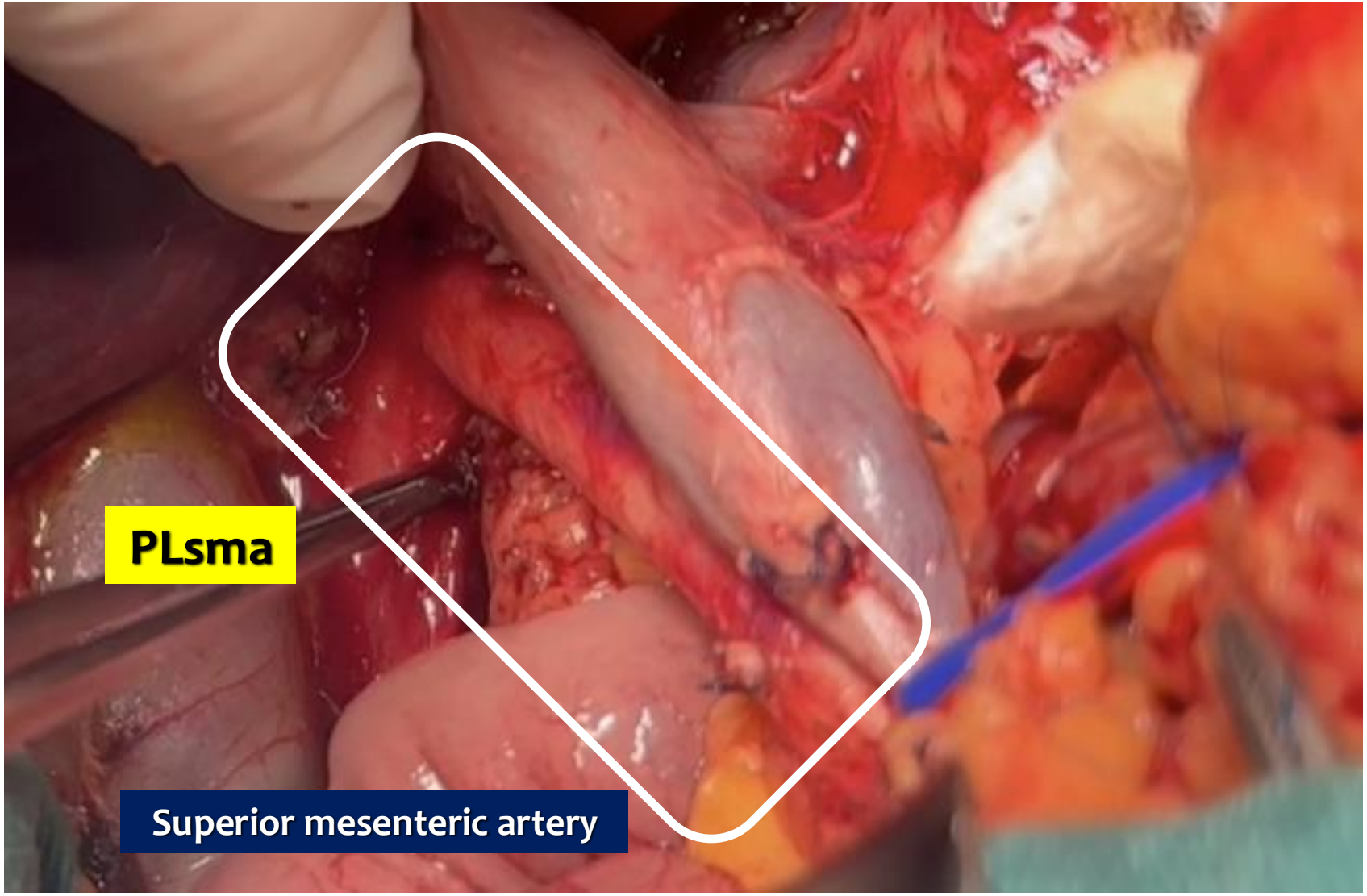
Kinny-Köster B, et al. Langenbeck's Arch Surg 2021

IPDA



PLph – Pancreatic head plexus

Olakowski M, et al. J Oncol 2021


PLsma
Superior mesenteric artery

Langenbeck's Archives of Surgery
https://doi.org/10.1007/s00423-021-02261-2

Technical progress in robotic pancreatoduodenectomy: TRIANGLE and periadventitial dissection for retropancreatic nerve plexus resection

Level 3 dissection

Benedict Kinny-Köster[1,2] · Joseph R. Habib[1] · Ammar A. Javed[1] · Sami Shoucair[1] · A. Floortje van Oosten[1,3] · Elliot K. Fishman[4] · Kelly J. Lafaro[1] · Christopher L. Wolfgang[5] · Thilo Hackert[2] · Jin He[1,6]

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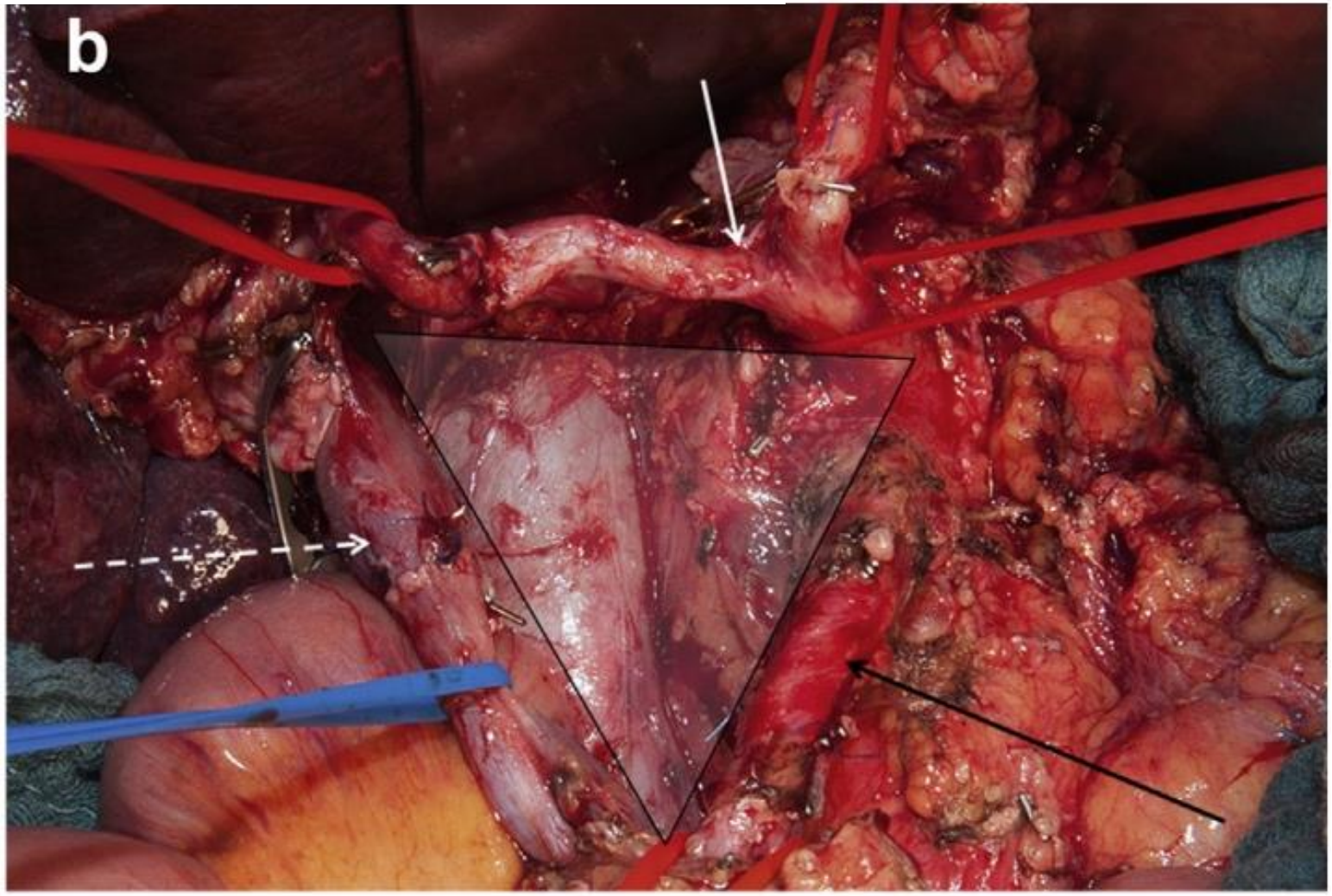
Kinny-Köster B, et al. Langenbeck's Arch Surg 2021

http://dx.doi.org/10.1016/j.hpb.2017.07.007 HPB

ORIGINAL ARTICLE

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



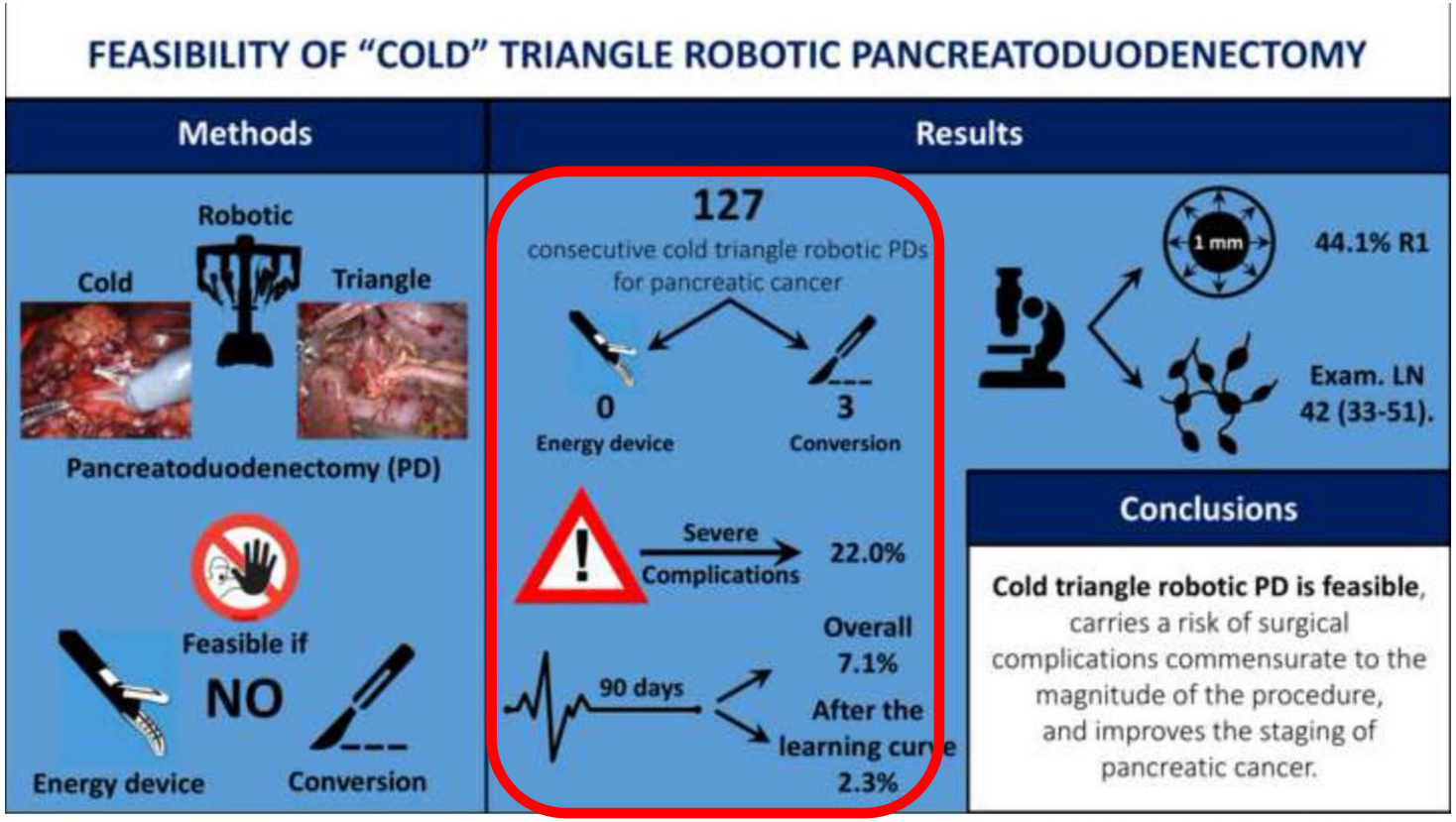
Hackert T, et al. HPB 2017

Surgical Endoscopy (2022) 36:9424–9434
https://doi.org/10.1007/s00464-022-09411-7

DYNAMIC MANUSCRIPT

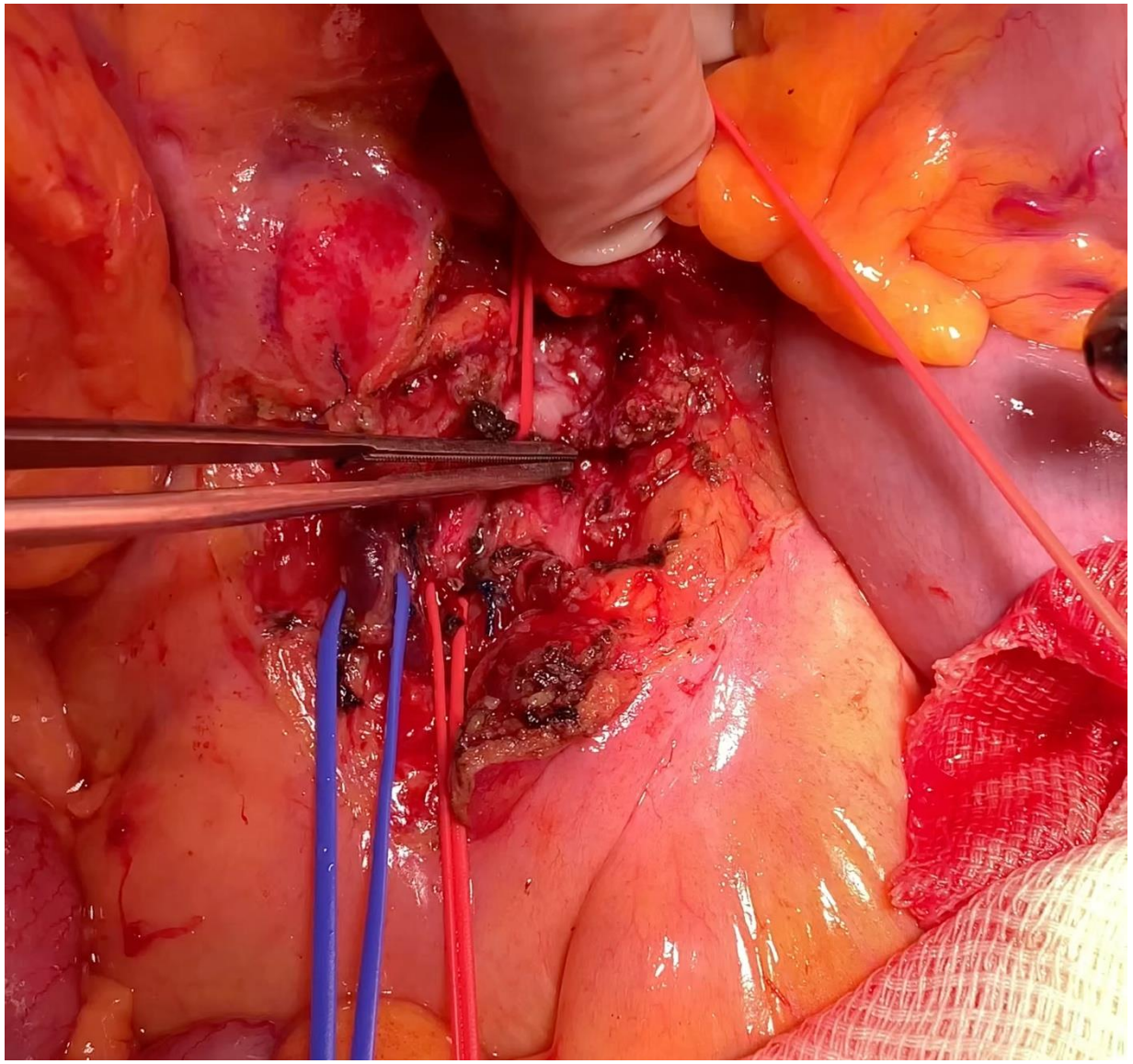
Feasibility of "cold" triangle robotic pancreatoduodenectomy

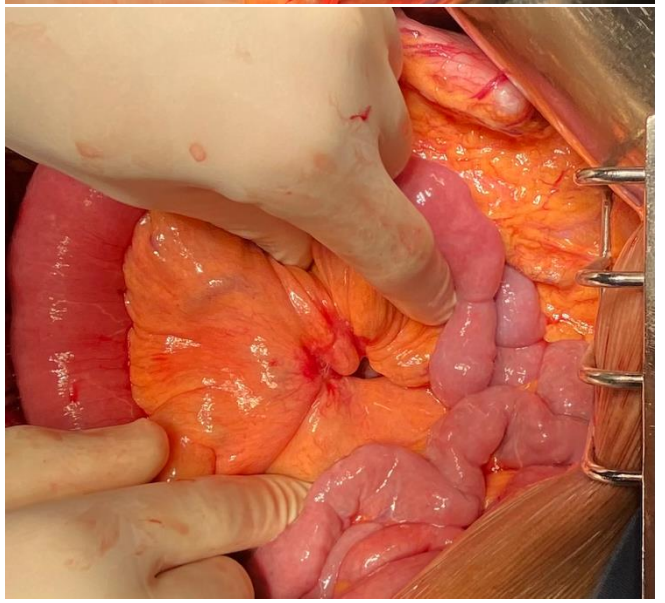
Emanuele F. Kauffmann[1] · Niccolò Napoli[1] · Michael Ginesini[1] · Cesare Gianfaldoni[1] · Fabio Asta[1] · Alice Salamone[1] · Gabriella Amorese[2] · Fabio Vistoli[1] · Ugo Boggi[1]



Kauffmann EF, et al. Surg Endosc 2022

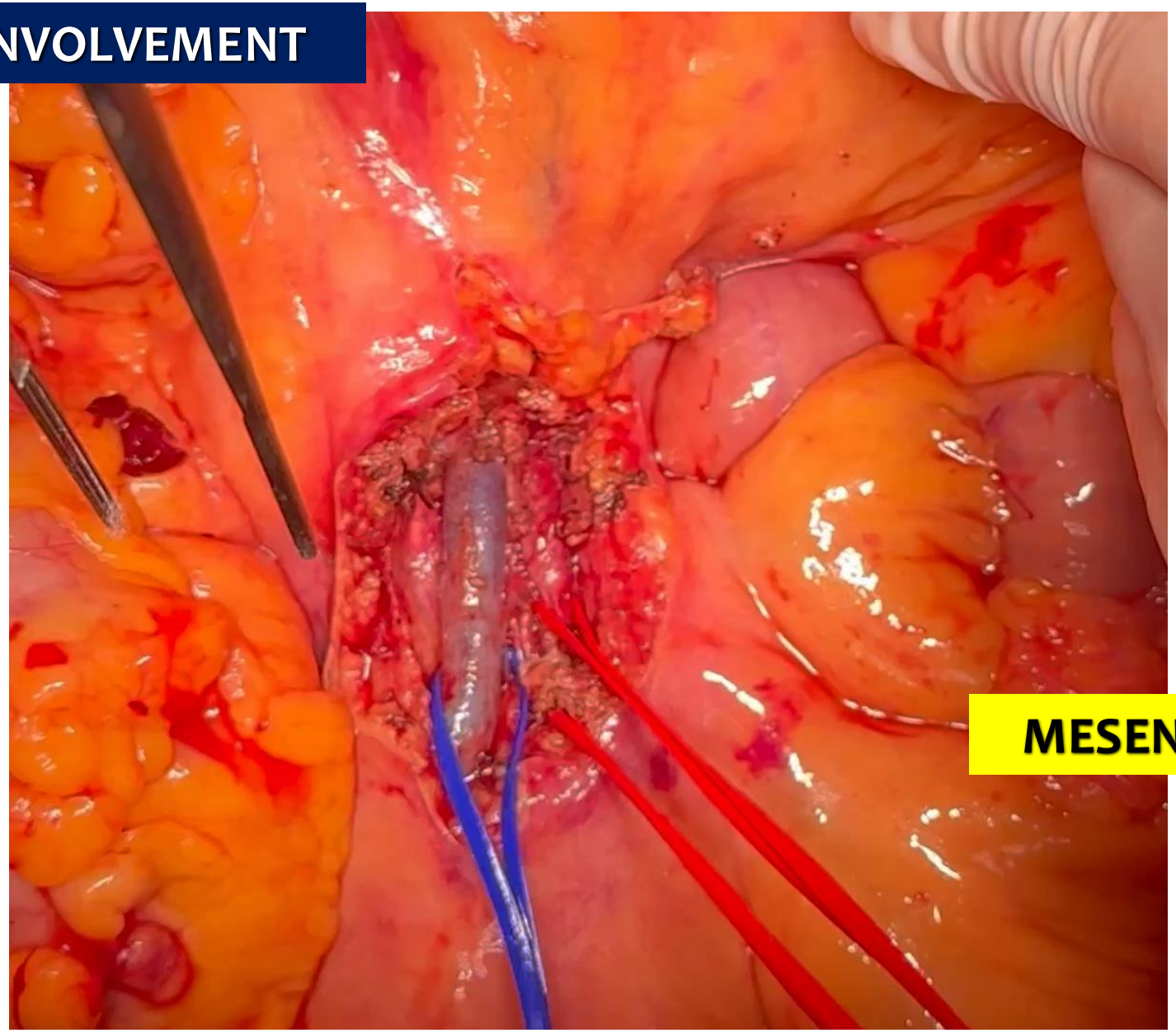
ARTERIAL INVOLVEMENT





MESENTERIC APPROACH

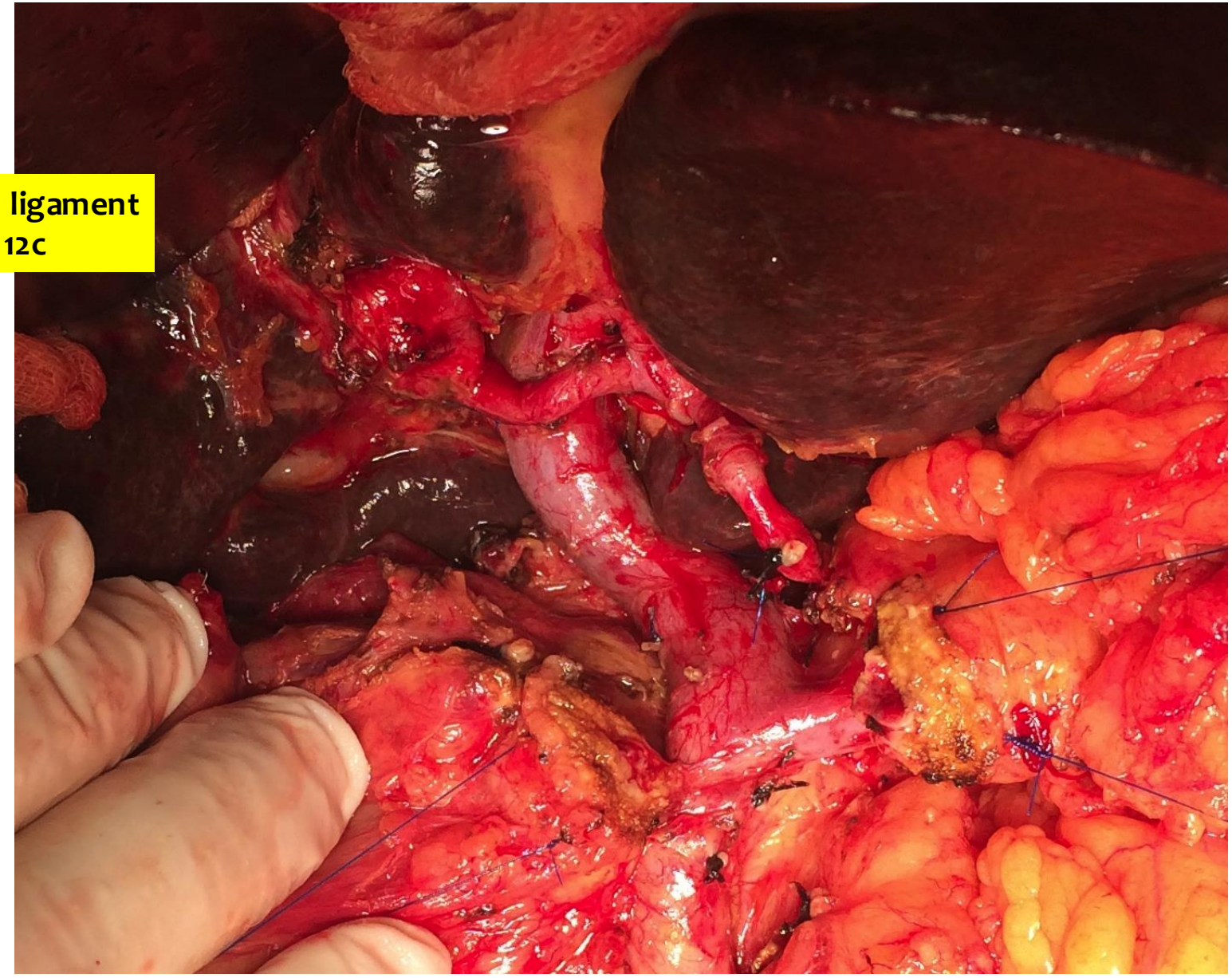
ARTERIAL INVOLVEMENT



MESENTERIC APPROACH

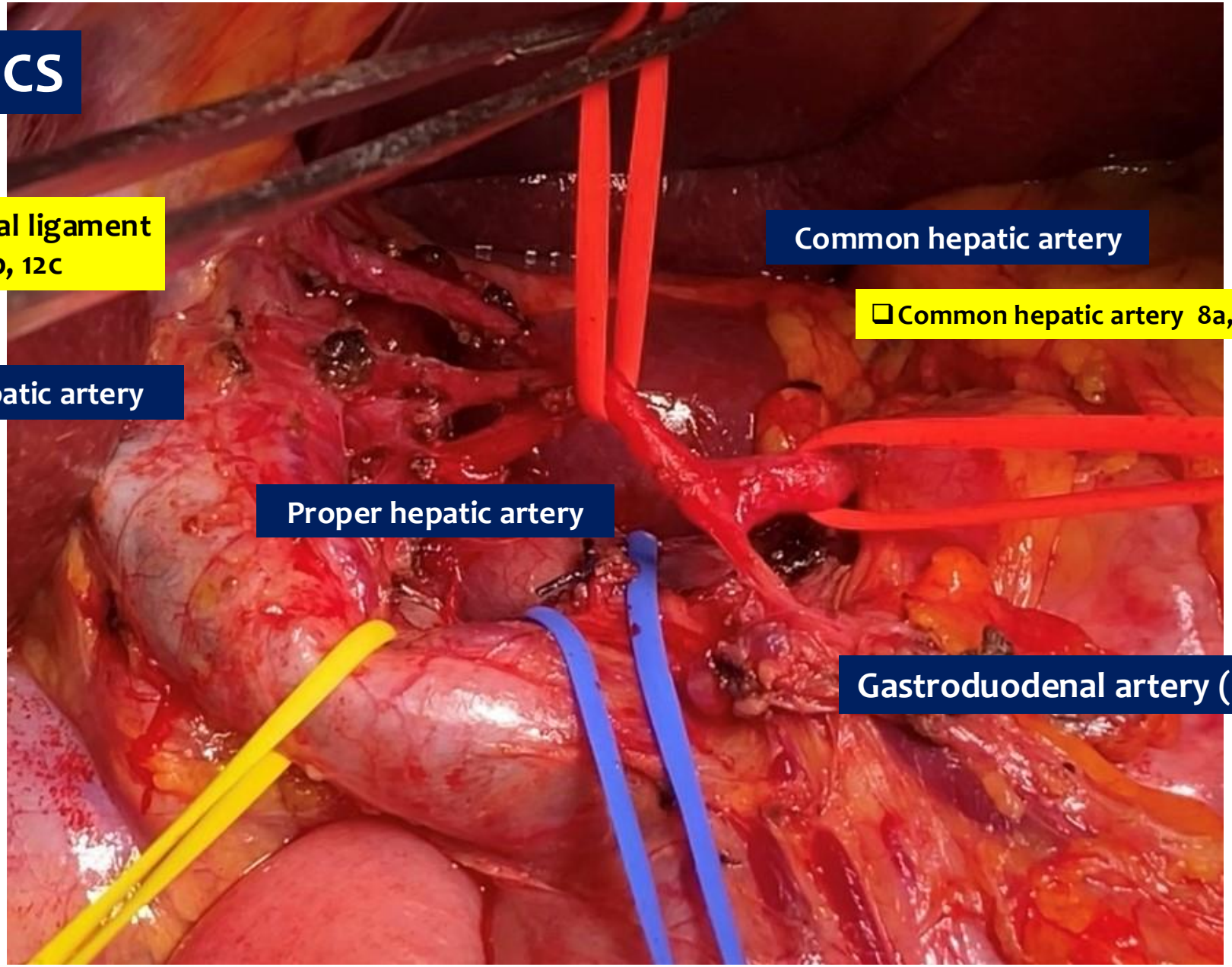
LYMPHATICS

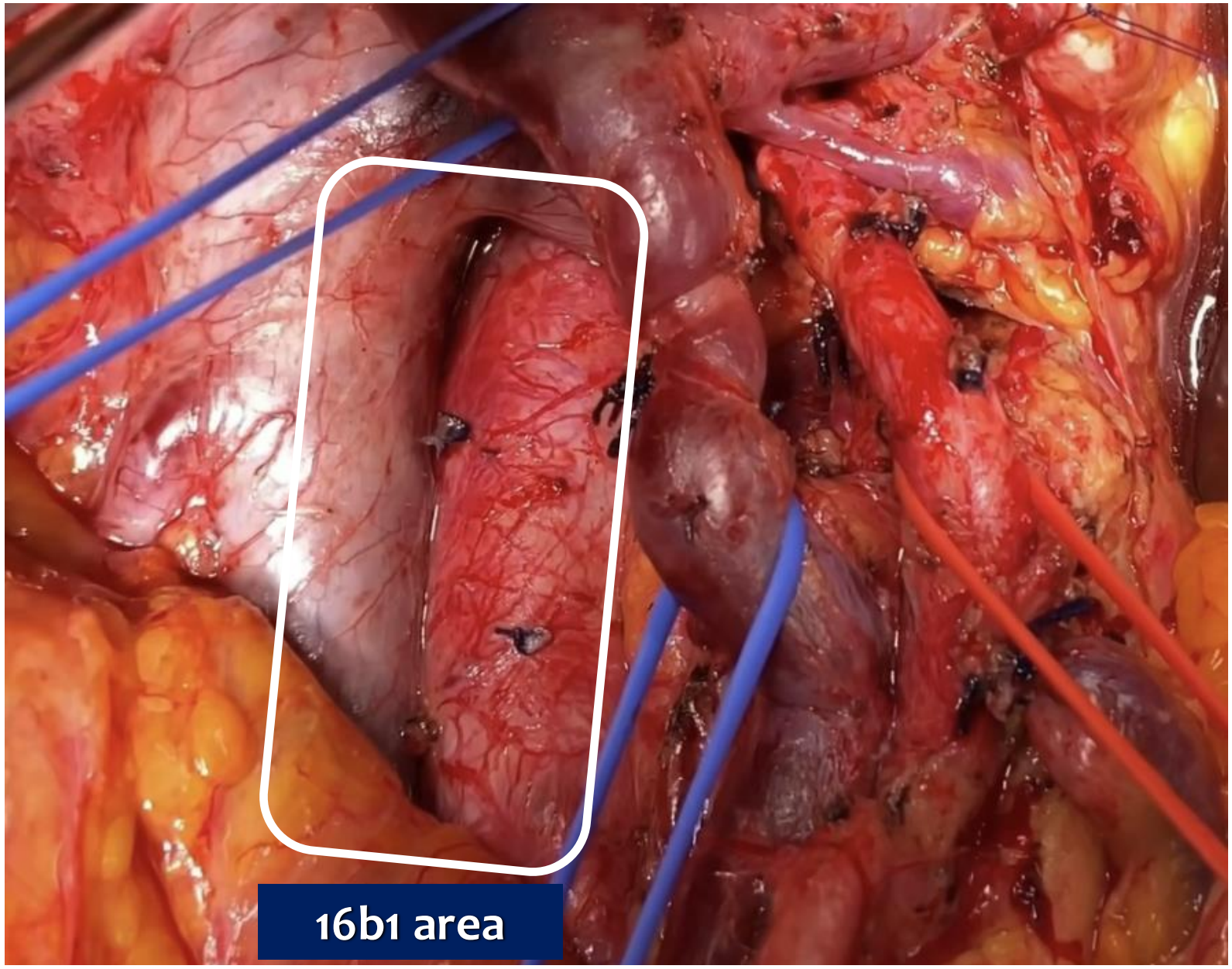
- Hepatoduodenal ligament
  12a, 12b1, 12b2, 12p, 12c



LYMPHATICS

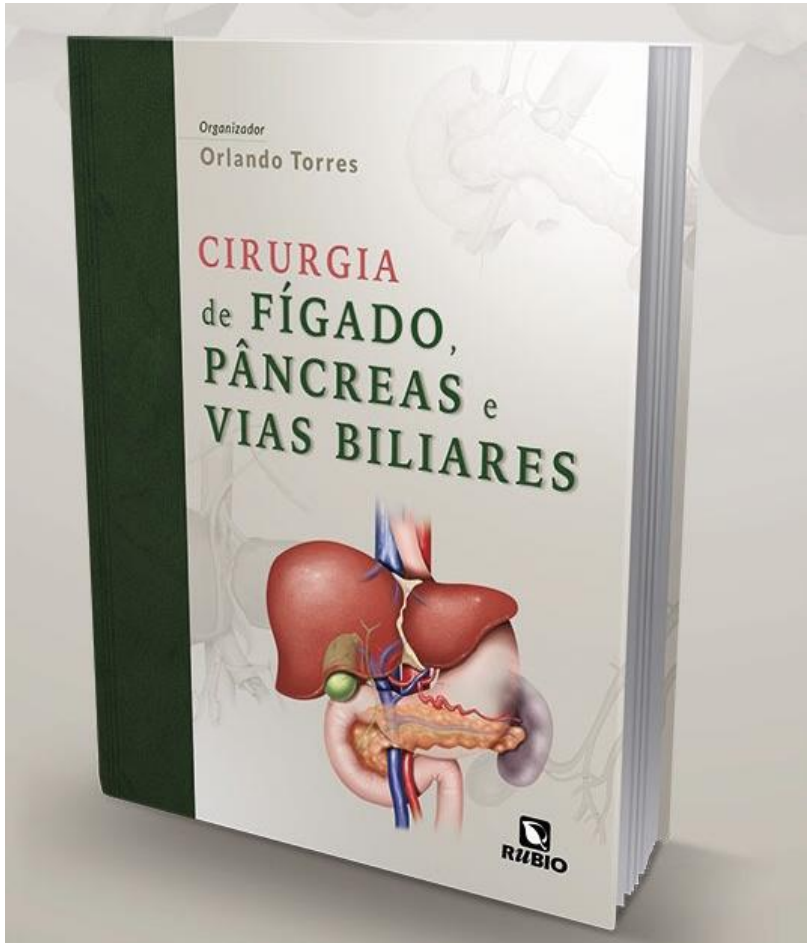
❑Hepatoduodenal ligament
12a, 12b1, 12b2, 12p, 12c




16b1 area

CONCLUSIONS

- ❑ It is feasible, carries a risk of surgical complications commensurate to the magnitude of the procedure, and improves staging of PDAC.
- ❑ Principles from open pancreatic resections can be incorporated precisely and safely, overcoming the lack of haptic feedback while exploiting the technological advantages of the robotically-assisted platform.



www.drorlandotorres.com.br

Thanks!

Lençóis Maranhenses

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