TRAILBLAZING SINCE 1835

ST MARK'S HOSPITAL

CME - COMPLETE MESOCOLIC EXCISION.
STILL A CONTROVERSY?

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Imperial College London

Disclosures Danilo Miskovic

Proctor for Intuitive Surgery (since 2018)
Consultancy work for Proximie (2022)

C U R R E N T C O N T R O V E R S I E S

What is CME?

Does CME offer an advantage?

Is CME dangerous?

Should CME be offered to all patients?

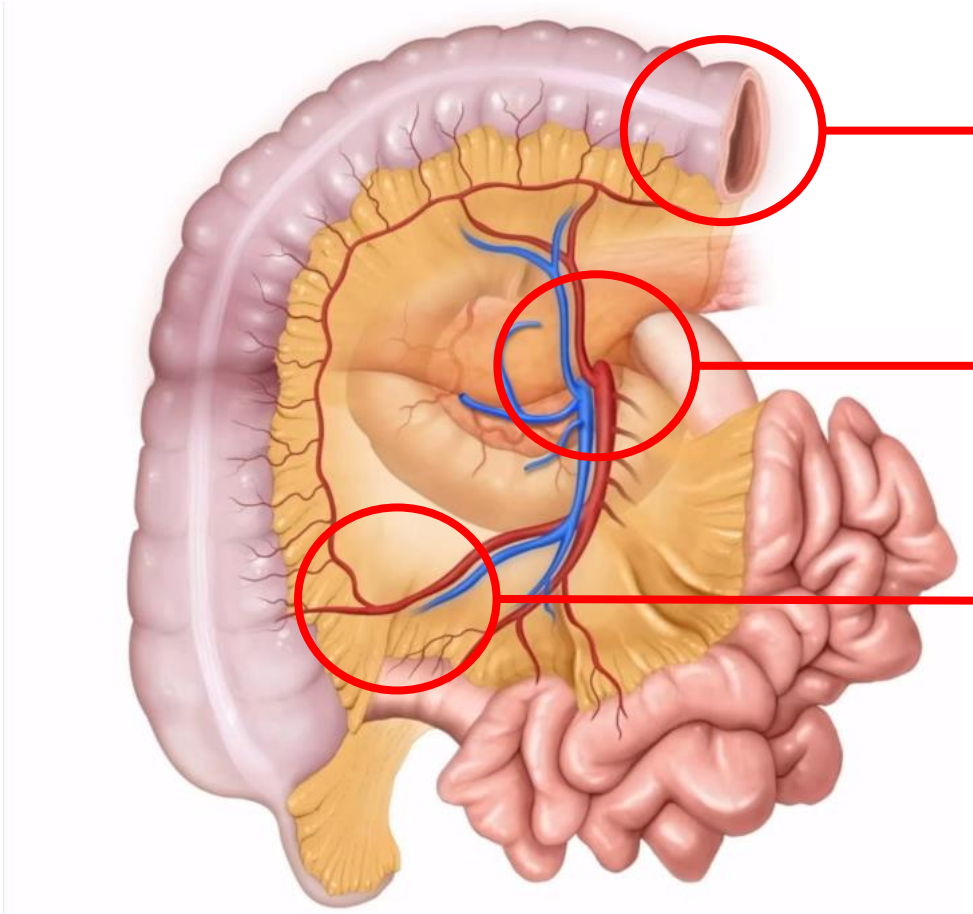
What extent of central vascular dissection is needed?

Can CME be standardised?

Should CME become part of guidelines?

What is the definition of CME?

CME – Complete Mesocolic Excision



Longitudinal
Proximal and distal margin

Central
Central vascular ligation

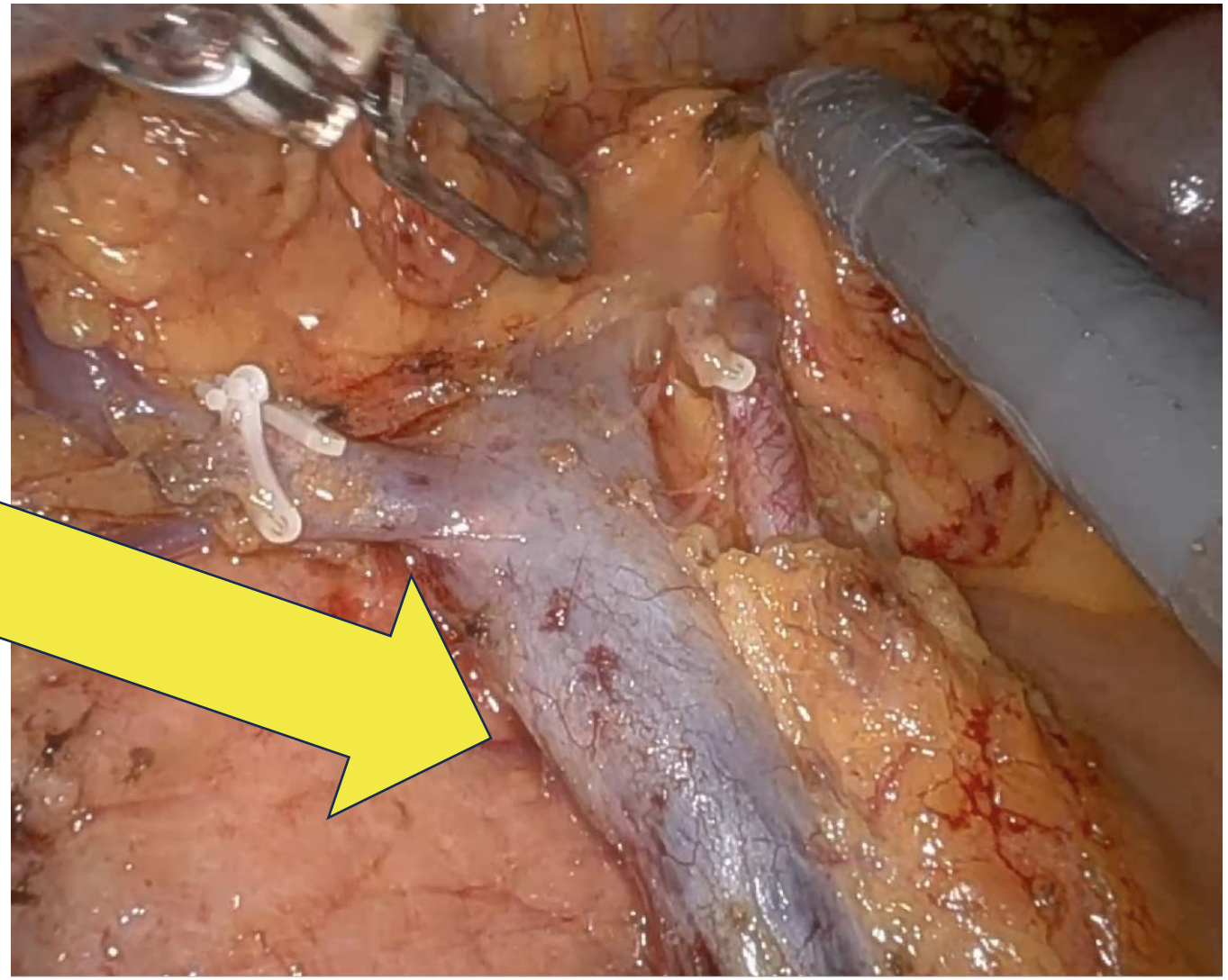
Circumferential
Embryologic planes

Illustration courtesy of Jordan Fletcher

Hohenberger et al. Colorectal Dis. 2009 May;11(4):354-64

CME – Complete Mesocolic Excision

…is not what it is about!



CME – Complete Mesocolic Excision

"CME is a surgical concept based on marginal gains through meticulous and standardized operative techniques."

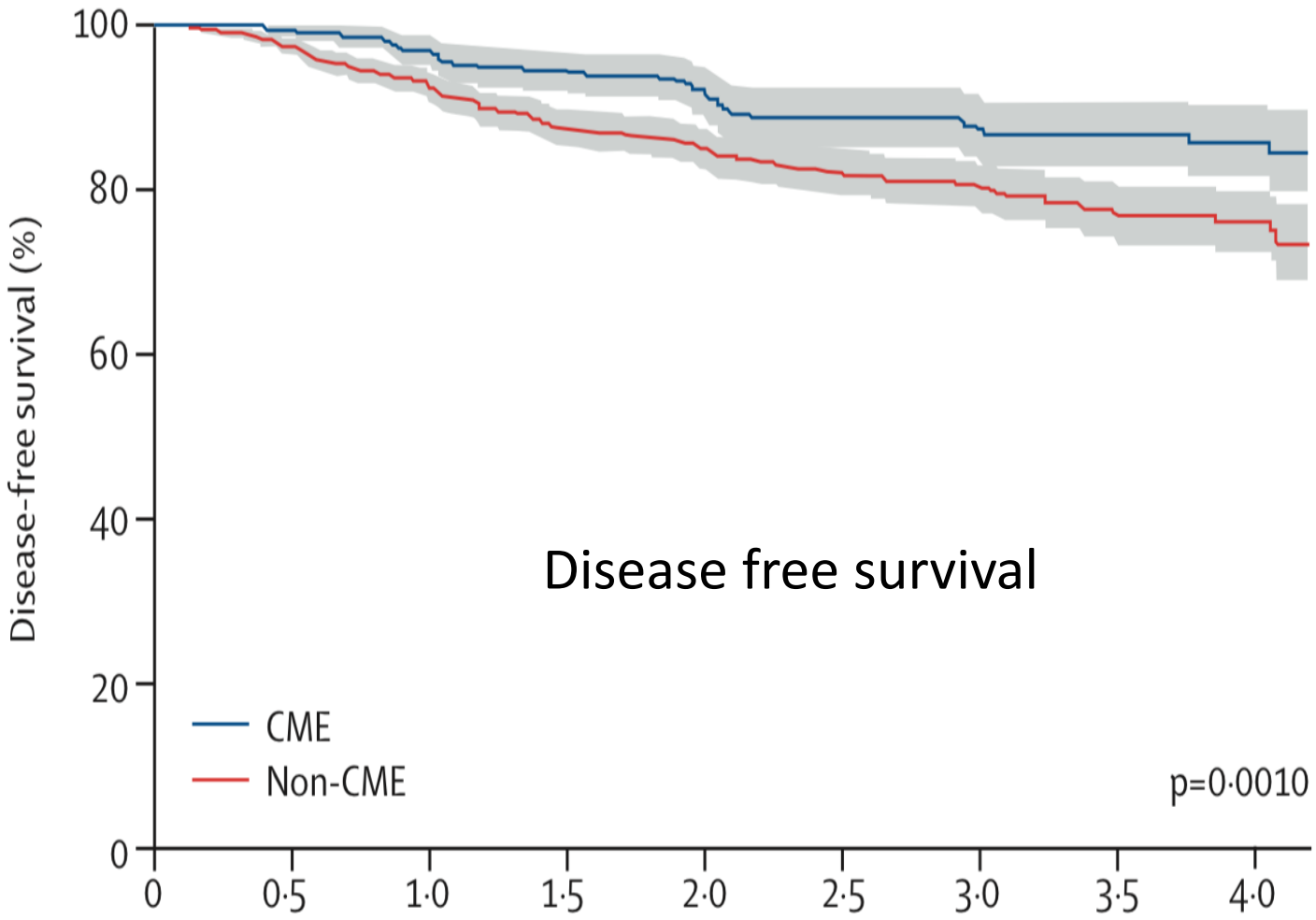
Longitudinal
Proximal and distal margin

Central
Central vascular ligation

Circumferential
Embryologic planes

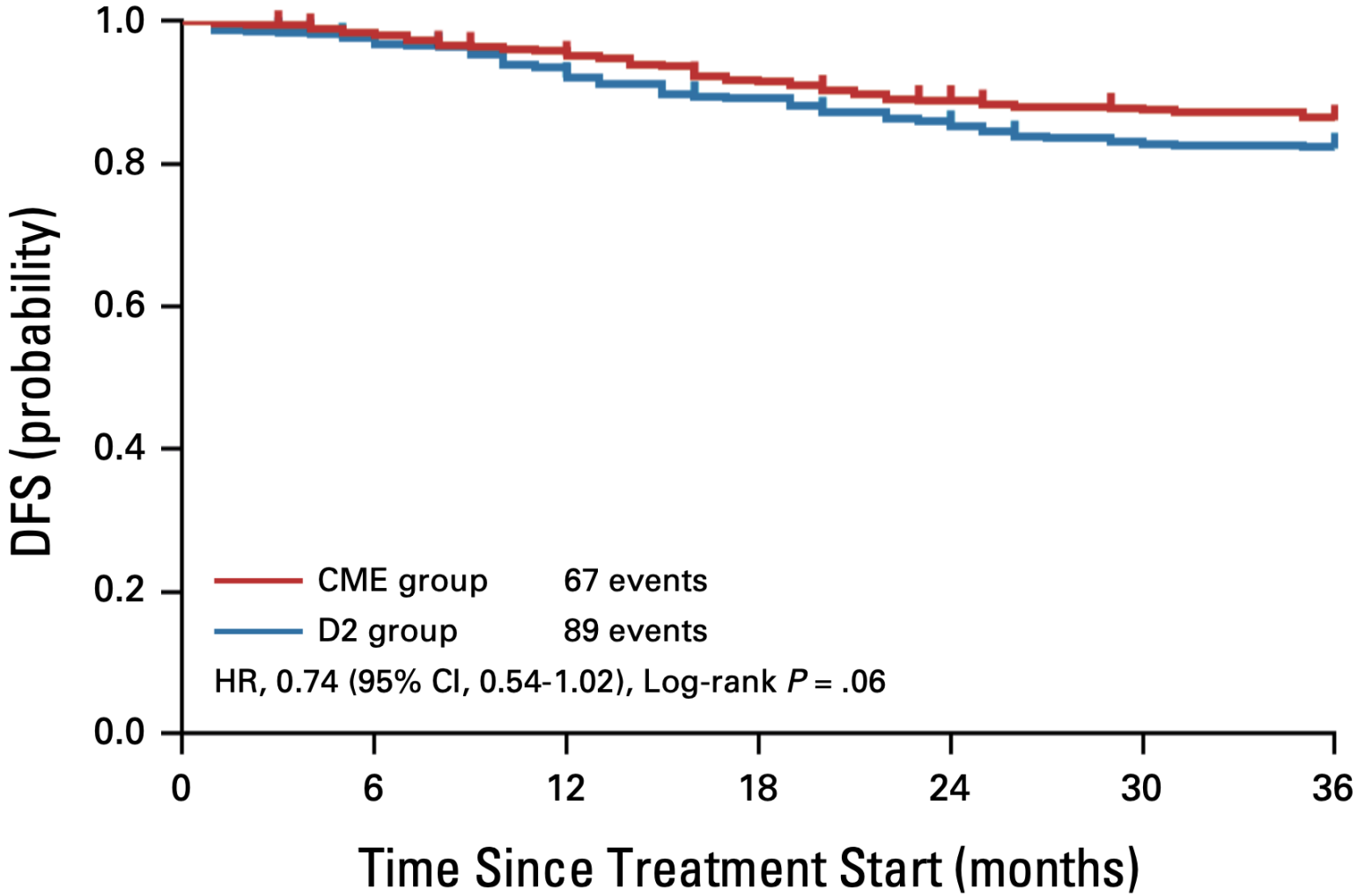
Does CME offer an advantage?

THE DANISH



Bertelsen et al. *Lancet Oncology* 16.2 (2015): 161-168.

THE CHINESE

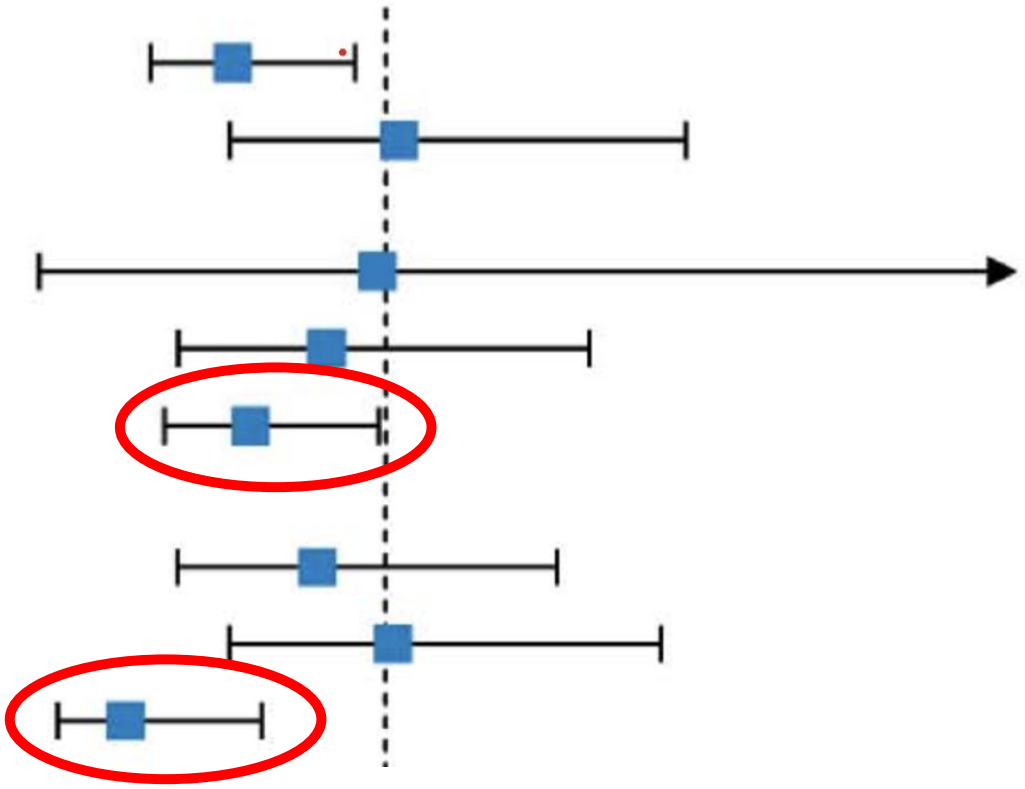


Lu et al. J Clin Onc (Aug 2024), The Randomized Phase III RELARC Trial. *JCO* online before print

THE CHINESE

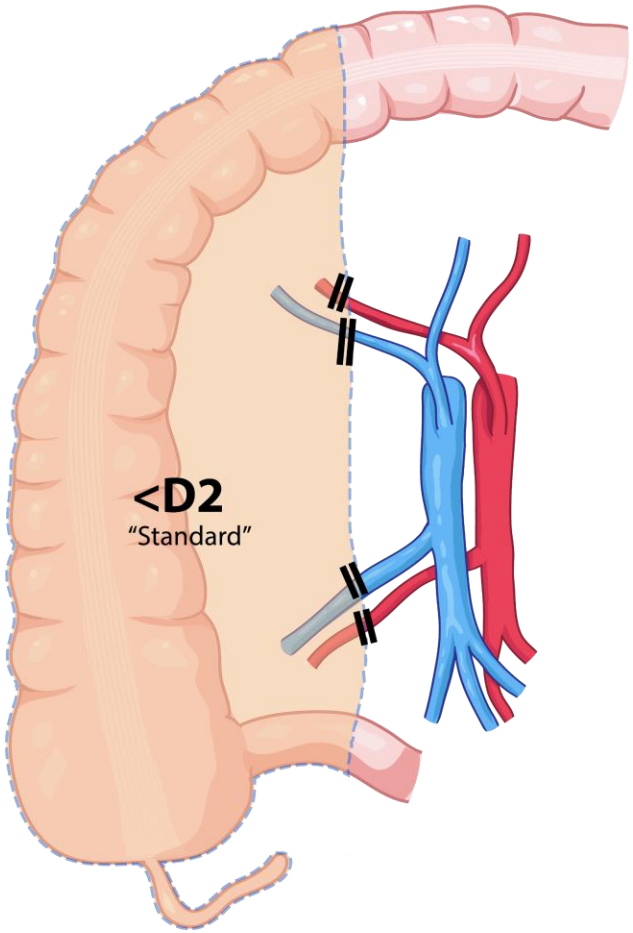
3-Year DFS

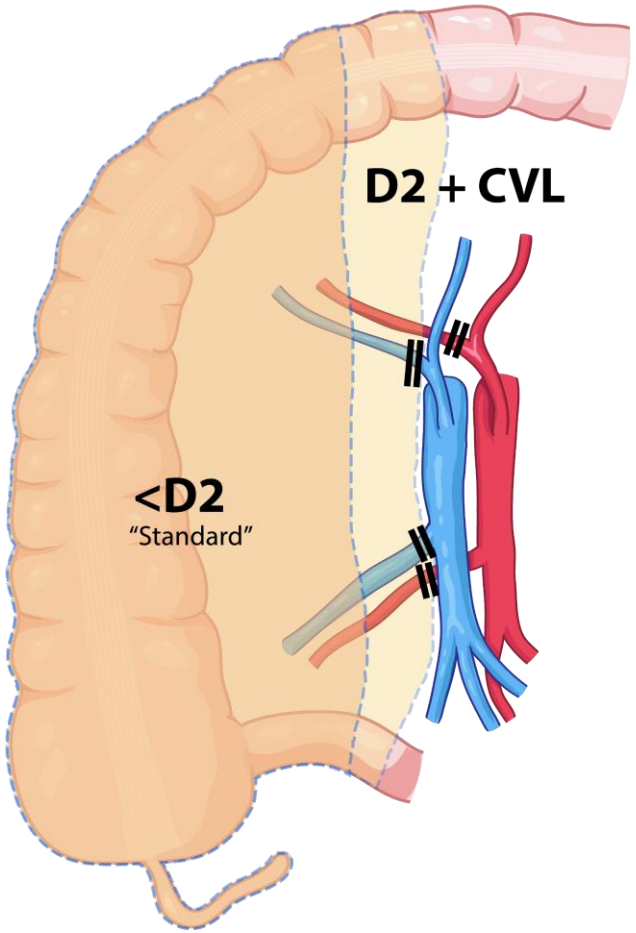
Age, years		
<65	41/338 (87.7)	59/311 (80.8)
≥65	26/157 (82.8)	30/189 (83.6)
Pathological stage		
I	2/48 (95.8)	2/47 (95.7)
II	22/267 (91.4)	26/272 (90.2)
III	43/180 (75.8)	61/181 (66.0)
N stage		
N0	24/315 (92.1)	29/320 (90.7)
N1	31/128 (75.7)	29/121 (76.0)
N2	12/52 (75.9)	31/59 (46.4)



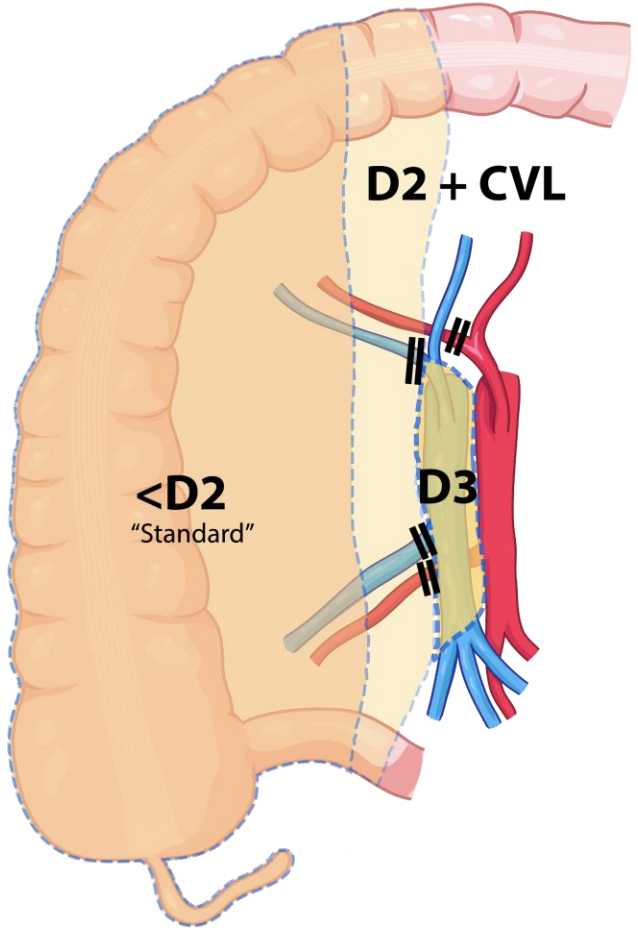
Lu et al. J Clin Onc (Aug 2024), The Randomized Phase III RELARC Trial. *JCO* online before print

CONTROL GROUP?





CVL/D3

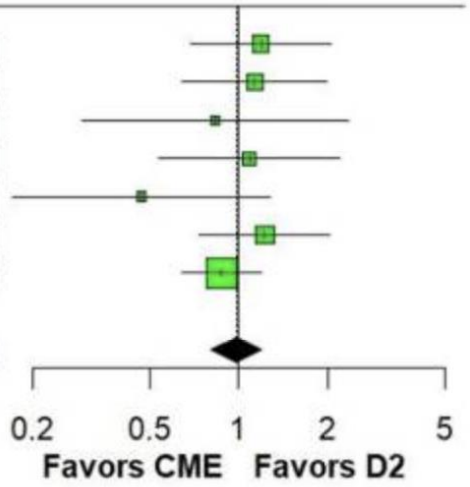


Is CME dangerous?

All complications

Study	CME Events	CME Total	D2 Events	D2 Total	Weight	OR	95% CI
CoME□in trial 2024	35	116	36	135	13.3%	1.19	[0.69; 2.06]
Giani 2022	32	146	29	146	12.7%	1.13	[0.64; 1.99]
Khan 2021	6	40	14	80	3.7%	0.83	[0.29; 2.36]
LaCoMEStaR 2021	25	67	23	65	8.0%	1.09	[0.53; 2.21]
Lieto 2017	9	88	9	46	4.0%	0.47	[0.17; 1.28]
Magistro 2022	40	186	34	186	15.5%	1.22	[0.74; 2.04]
RELARC 2021	97	495	109	500	42.8%	0.87	[0.64; 1.19]
Total (95% CI)	**244**	**1138**	**254**	**1158**	**100.0%**	**0.98**	**[0.80; 1.20]**

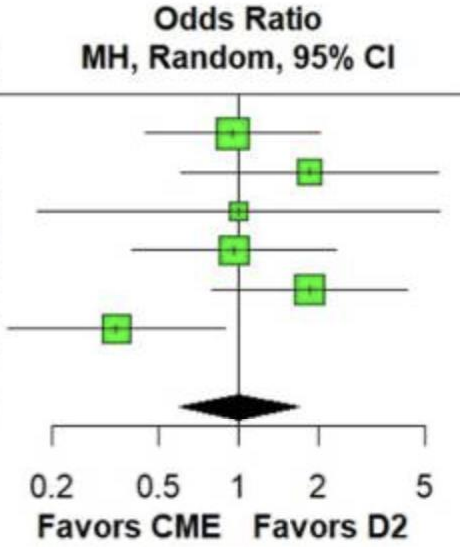
Heterogeneity: $Tau^2 = 0$; $Chi^2 = 4.24$, df = 6 (P = 0.64); $I^2 = 0\%$
Test for overall effect: Z = -0.18 (P = 0.861)



Clavien Dindo 3-4

Study	CME Events	CME Total	D2 Events	D2 Total	Weight	OR	95% CI
CoME in trial 2024	14	116	17	135	22.2%	0.95	[0.45; 2.03]
Giani 2022	9	146	5	146	14.2%	1.85	[0.61; 5.67]
Khan 2021	2	40	4	80	7.3%	1.00	[0.18; 5.71]
LaCoMEStaR 2021	12	67	12	65	18.9%	0.96	[0.40; 2.33]
Magistro 2022	16	186	9	186	19.9%	1.85	[0.80; 4.30]
RELARC 2021	6	495	17	500	17.6%	0.35	[0.14; 0.89]
Total (95% CI)	**59**	**1050**	**64**	**1112**	**100.0%**	**1.01**	**[0.60; 1.69]**

Heterogeneity: $Tau^2 = 0.1670$; $Chi^2 = 8.07$, df = 5 (P = 0.15); $I^2 = 38\%$
Test for overall effect: Z = 0.02 (P = 0.981)



Zhen et al. Tech Healthcare 2025 33(1)

COMPLICATIONS
RELARC trial

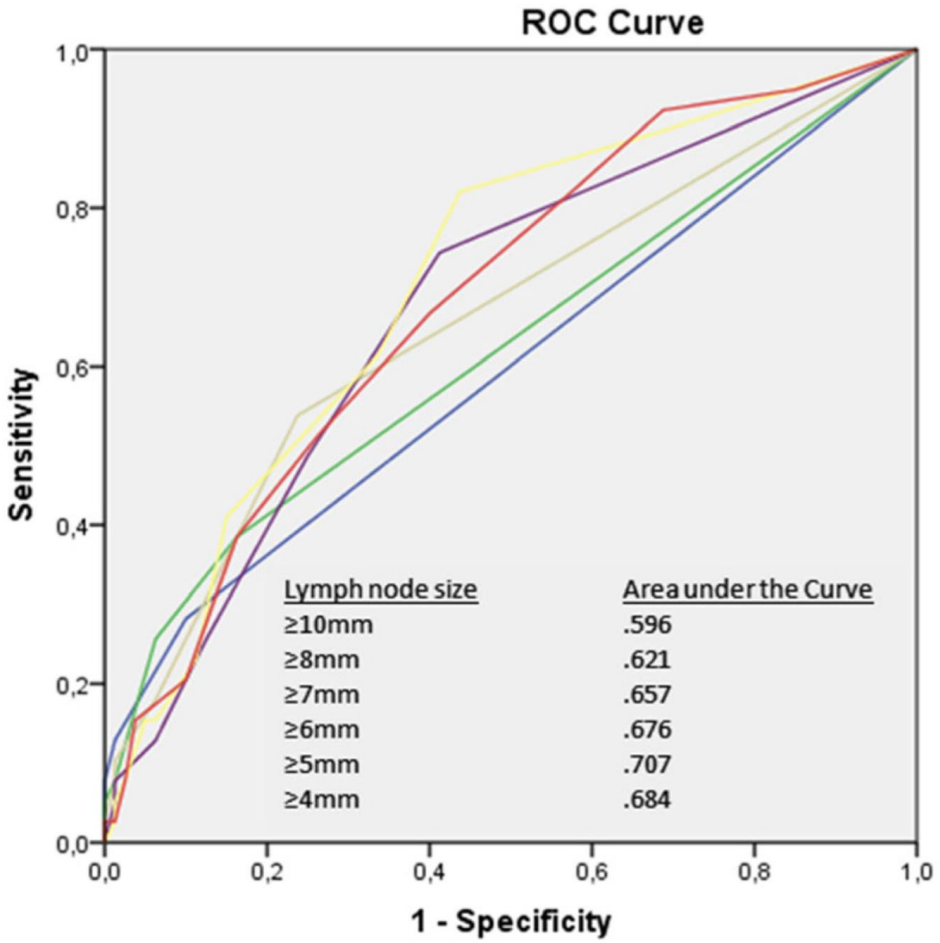
Clavien-Dindo	CME	Non-CME	p value
I–II	91 (18%)	92 (18%)	1·0
III–IV	6 (1%)	17 (3%)	0·022

	CME	Non-CME	p value
Overall	**24 (5%)**	**20 (4%)**	**0·52**
Haemorrhage	7 (1%)	12 (2%)	0·26
Vascular injury	15 (3%)	6 (1%)	0·045
Intestinal injury	0	2 (<1%)	0·50
Ureter injury	1 (<1%)	0	0·50
Subcutaneous emphysema	1 (<1%)	0	0·50

Xu et al. Lancet Oncology Volume 22, Issue 3 P391-401 March 2021

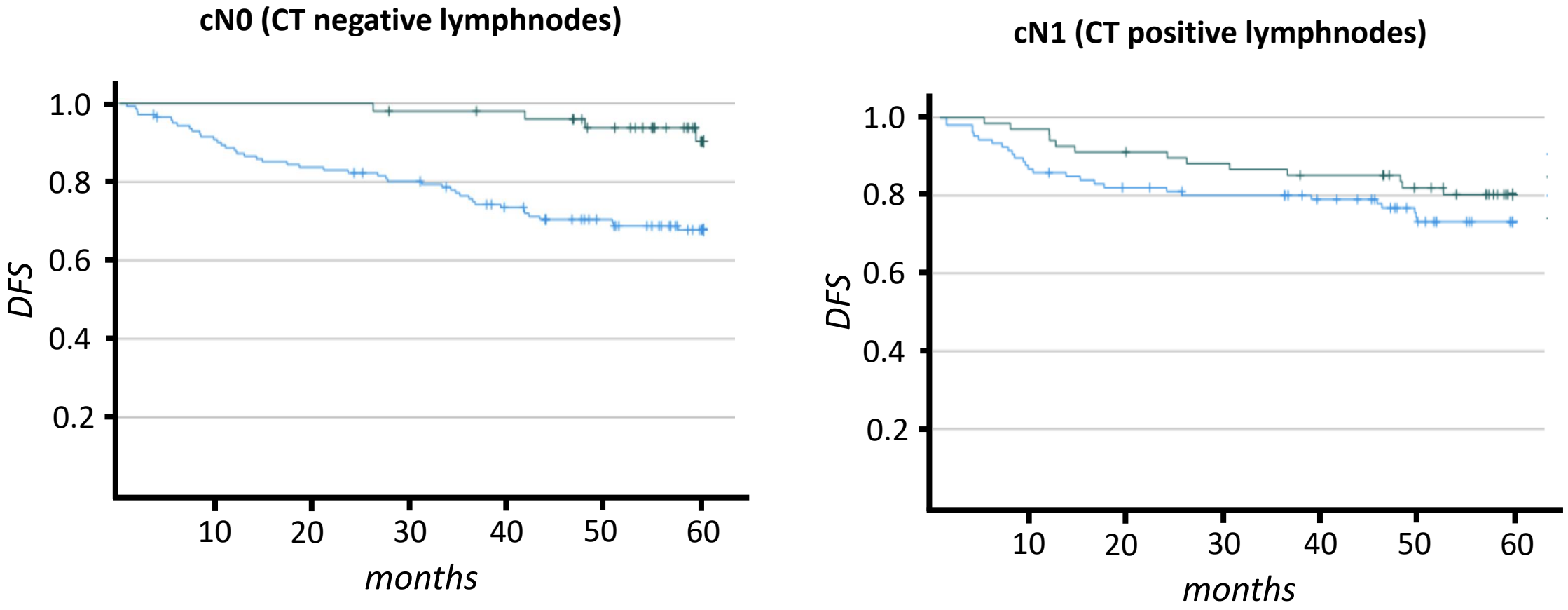
Should it be offered to all - why can we not simply select the high risk (Stage III)?

Predictive value of CT for lymphnode metastases



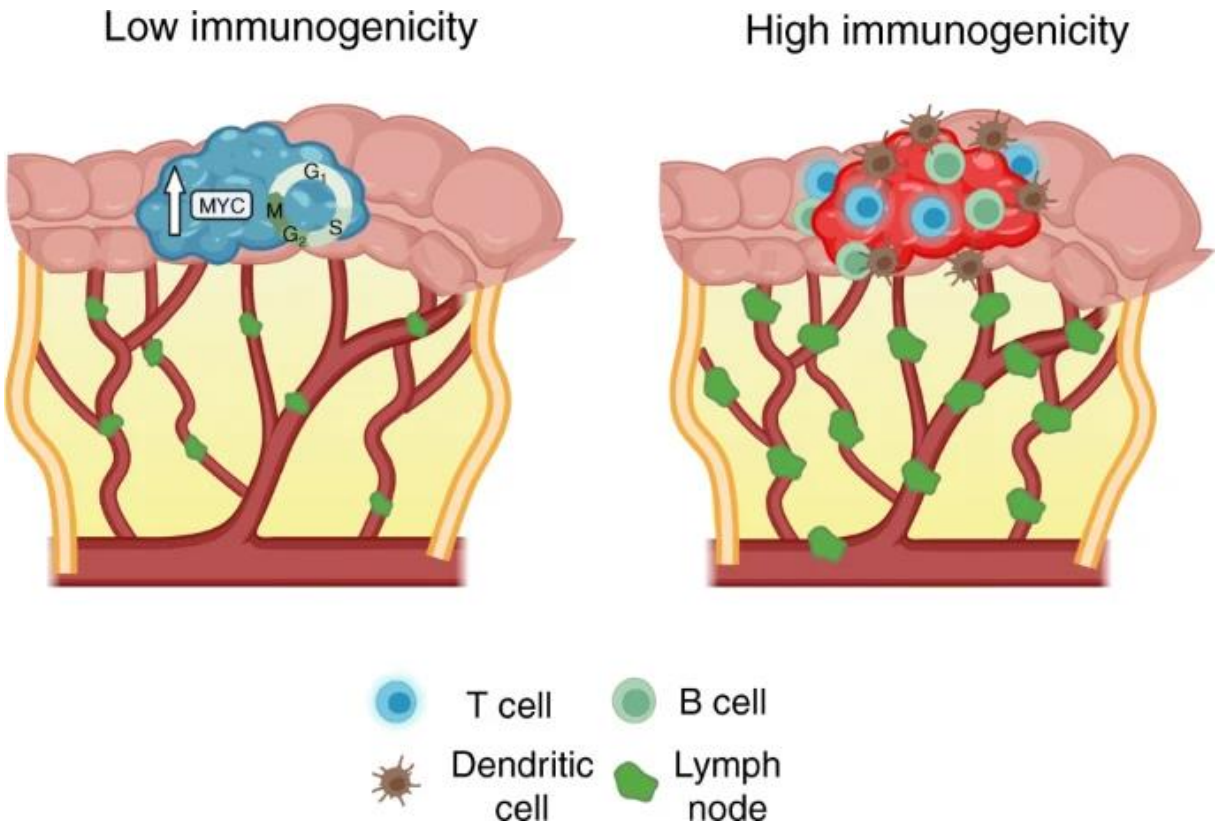
Rollvén et al. Cancer Imaging (2017) 1

cN staging and benefits of CME



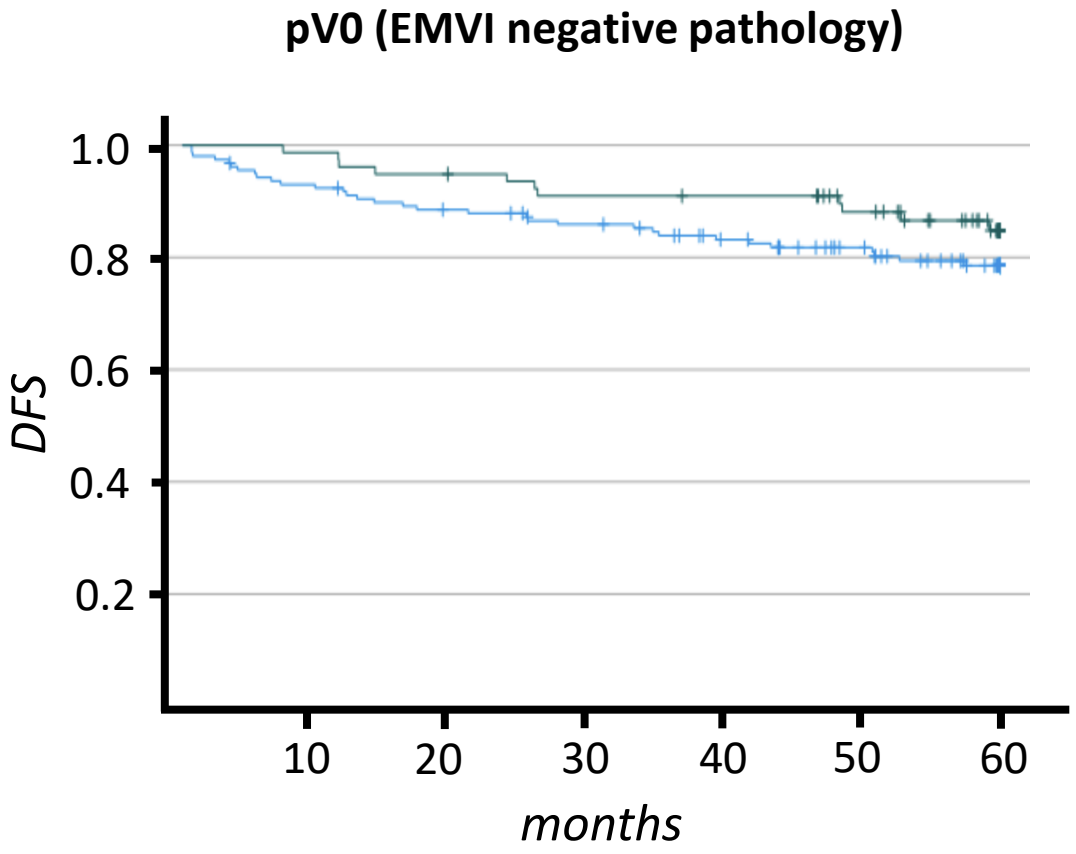
Hodges et al. (submitted)

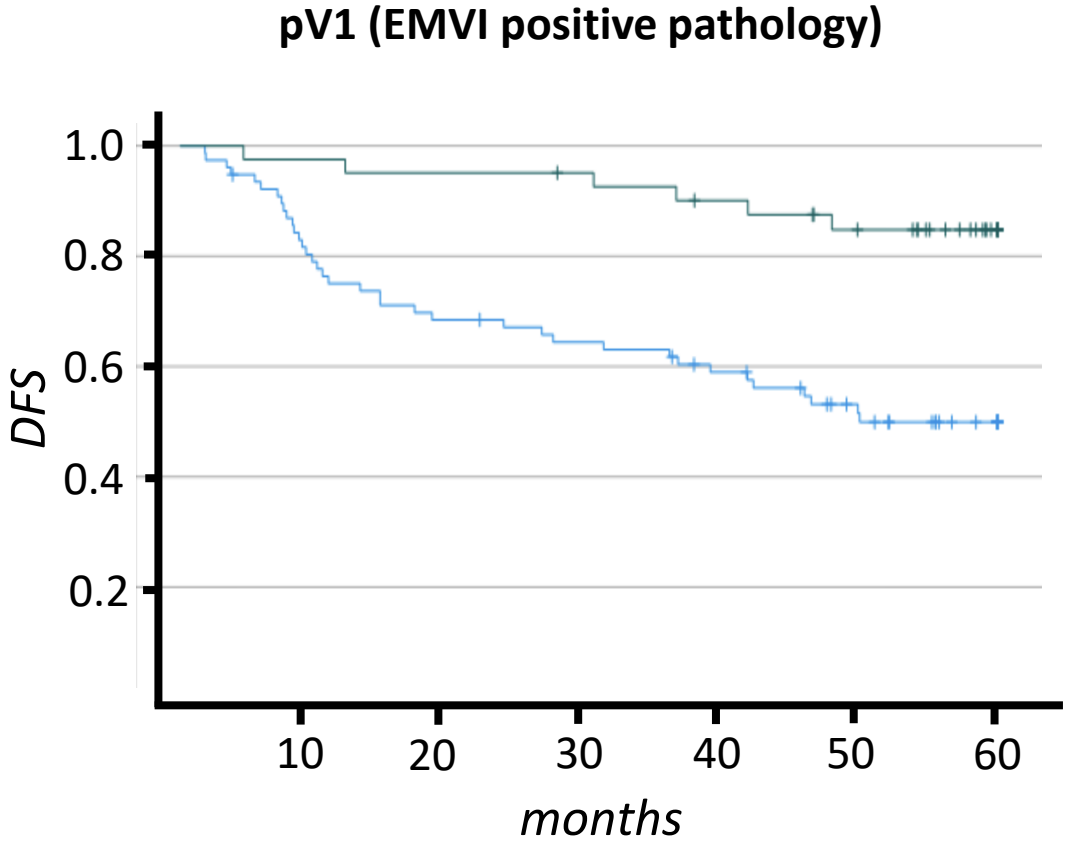
TUMOUR IMMUNOGENICITY



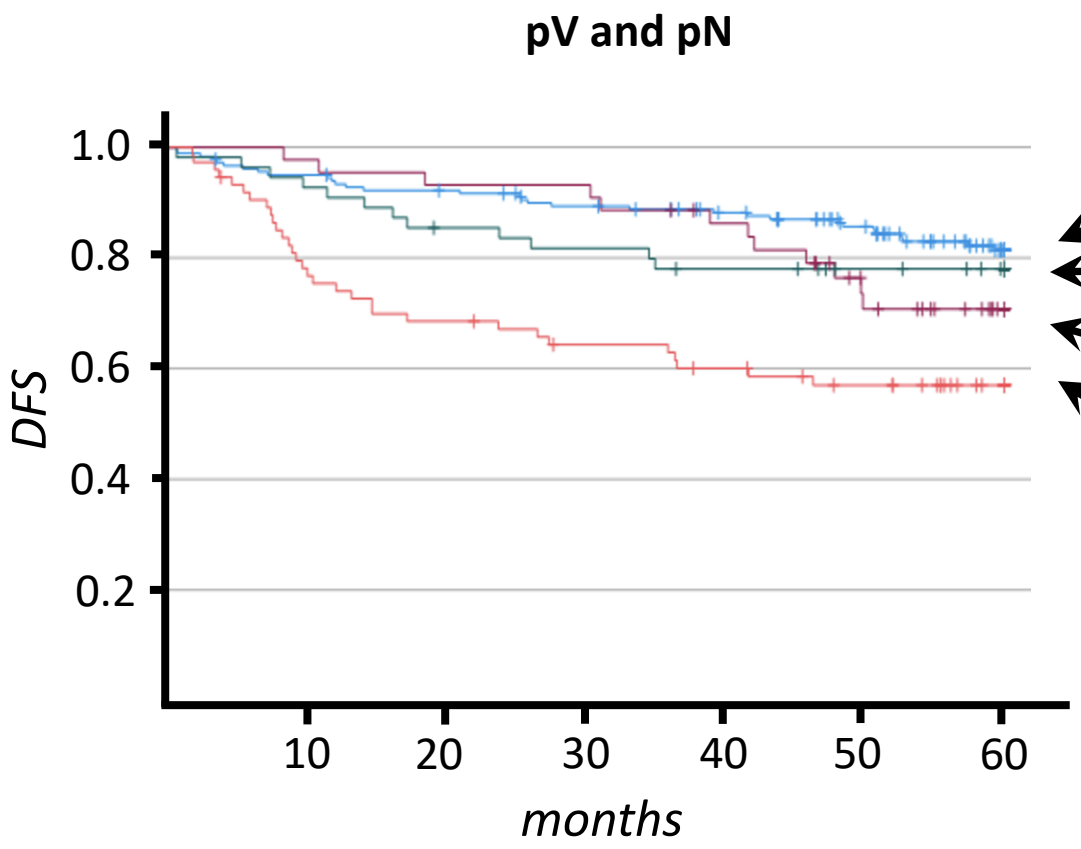
High lymph node yield

Image taken from Lal et al (2022) Primary tumour immune response and lymph node yields in colon cancer. British Journal of cancer. 126: 1178 – 1185.





Hodges et al. (accepted)

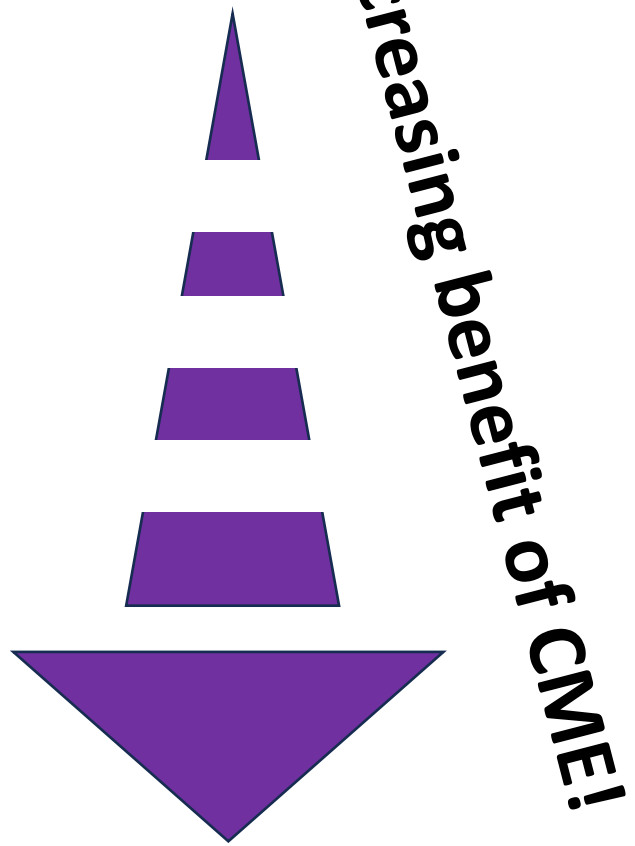


N- V-

N+ V-

N- V+

N+ V+

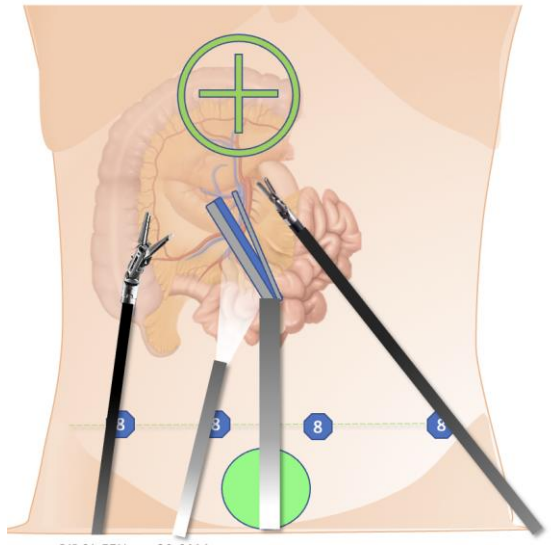


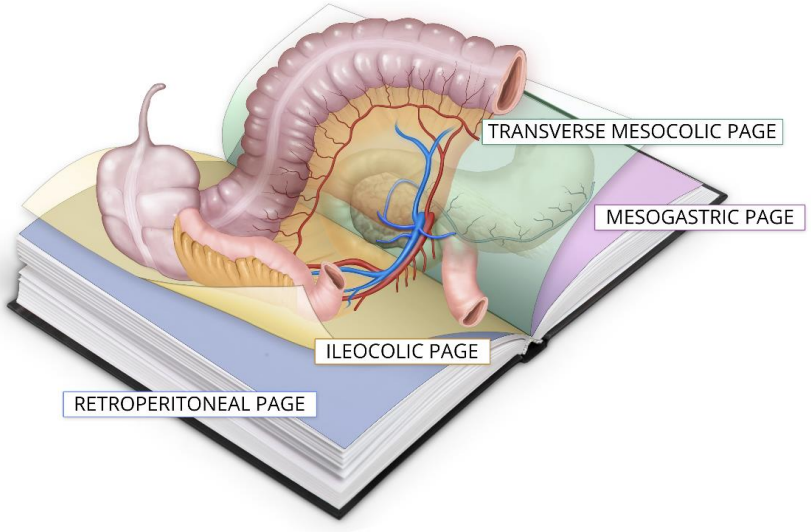
Increasing benefit of CME!

Hodges et al. (unpublished data)

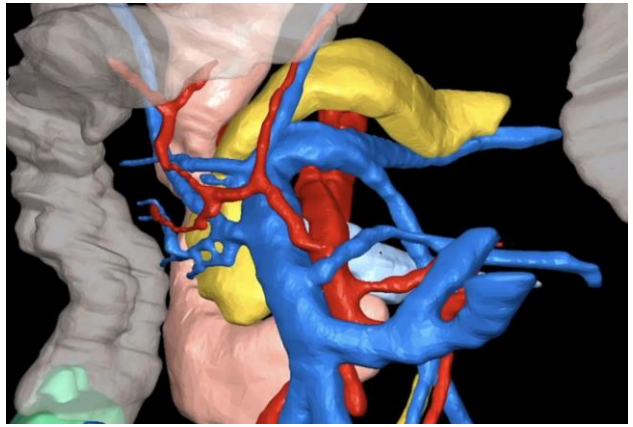
Selecting patients with cN1-2 lymphnodes doesn't work…

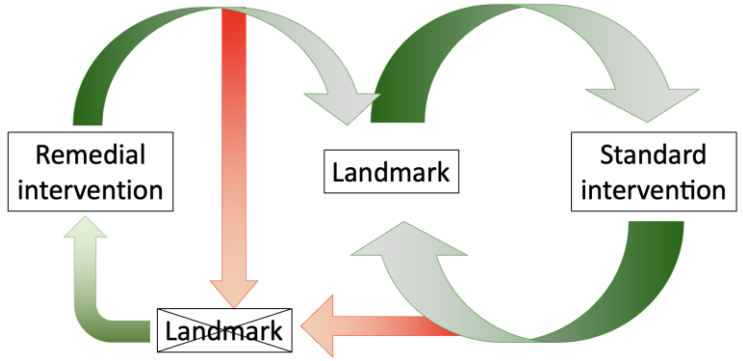
What this is really about…



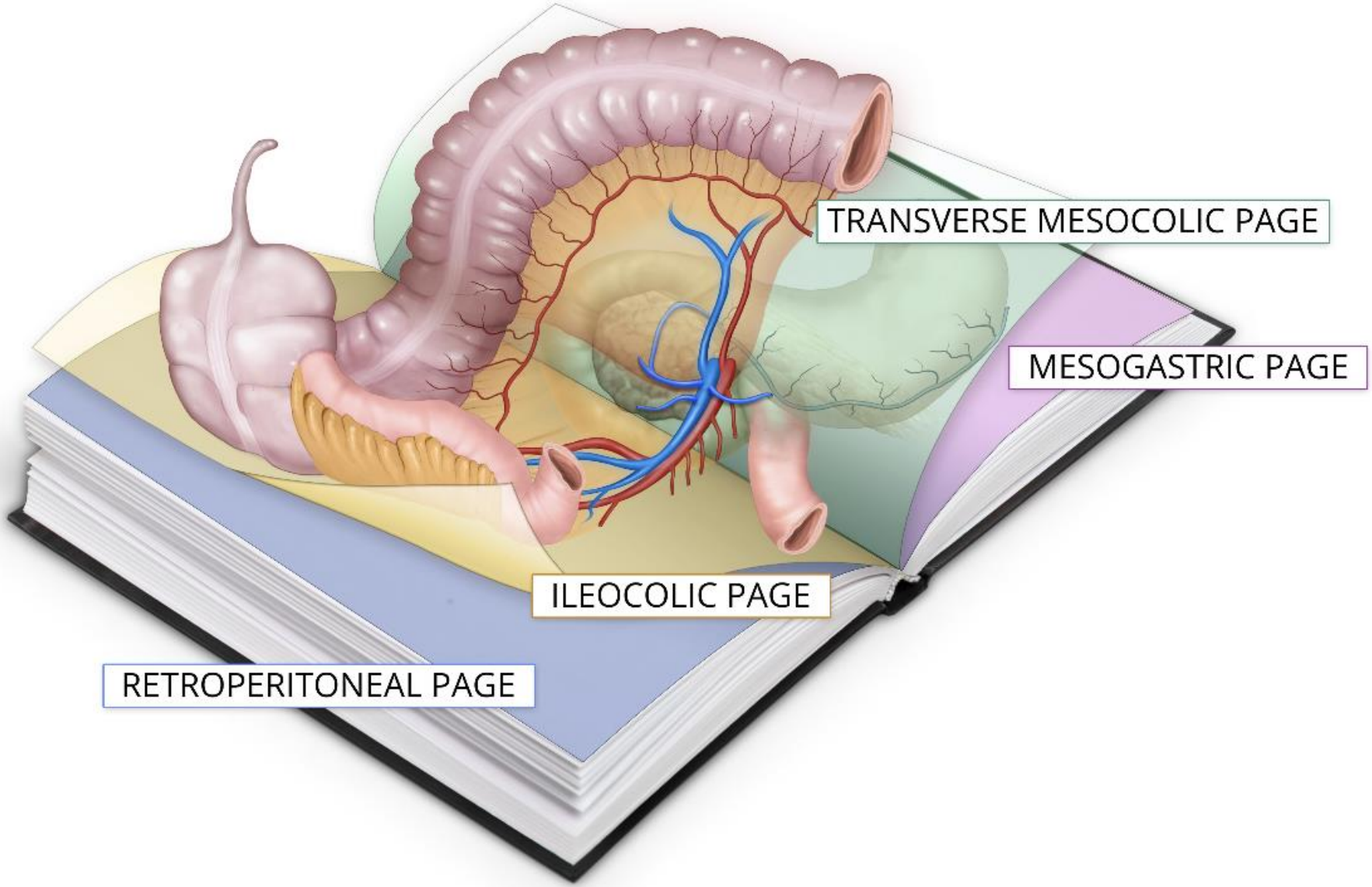


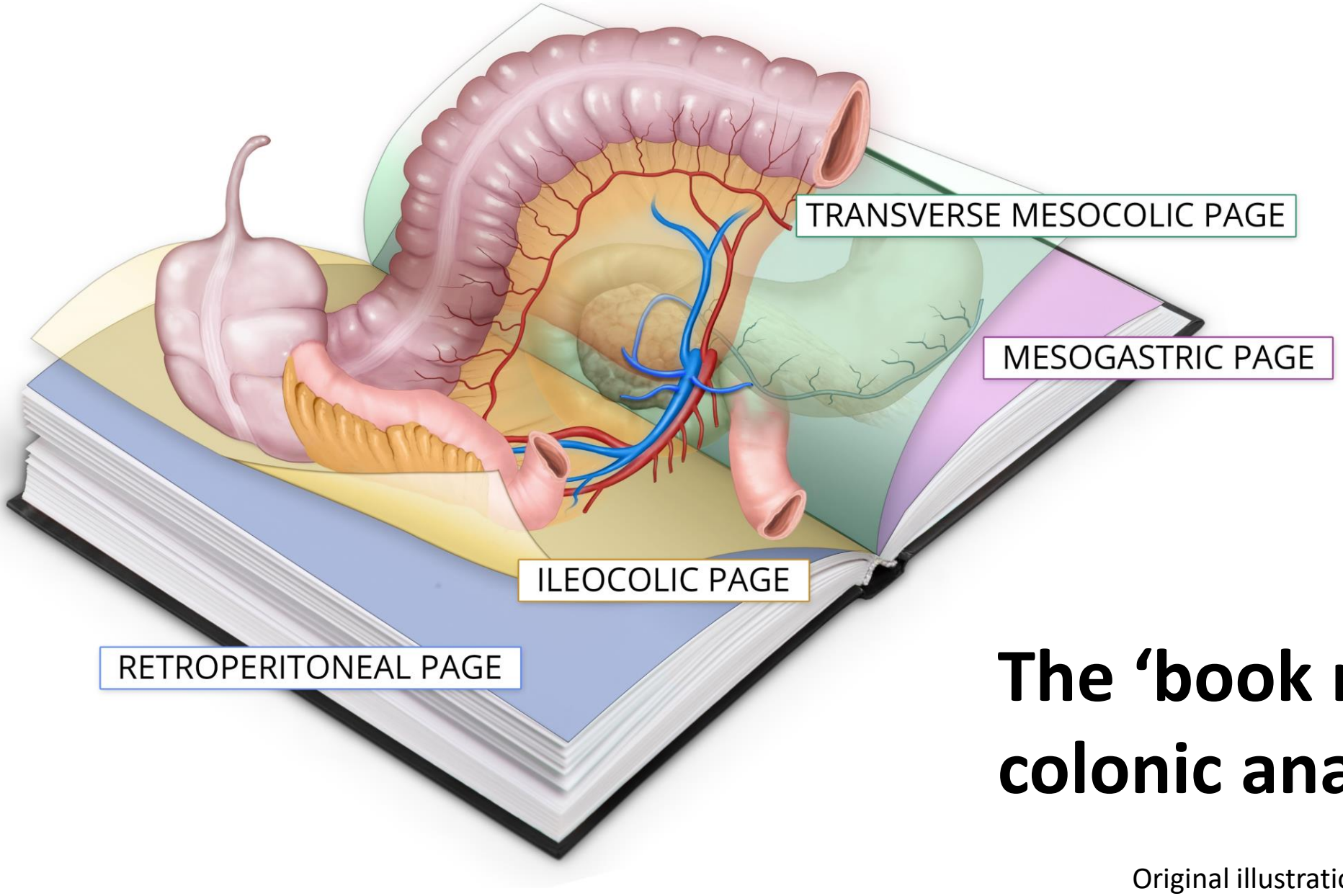
S T A N D A R D I S A T I O N





INTRODUCING THE OPEN BOOK MODEL





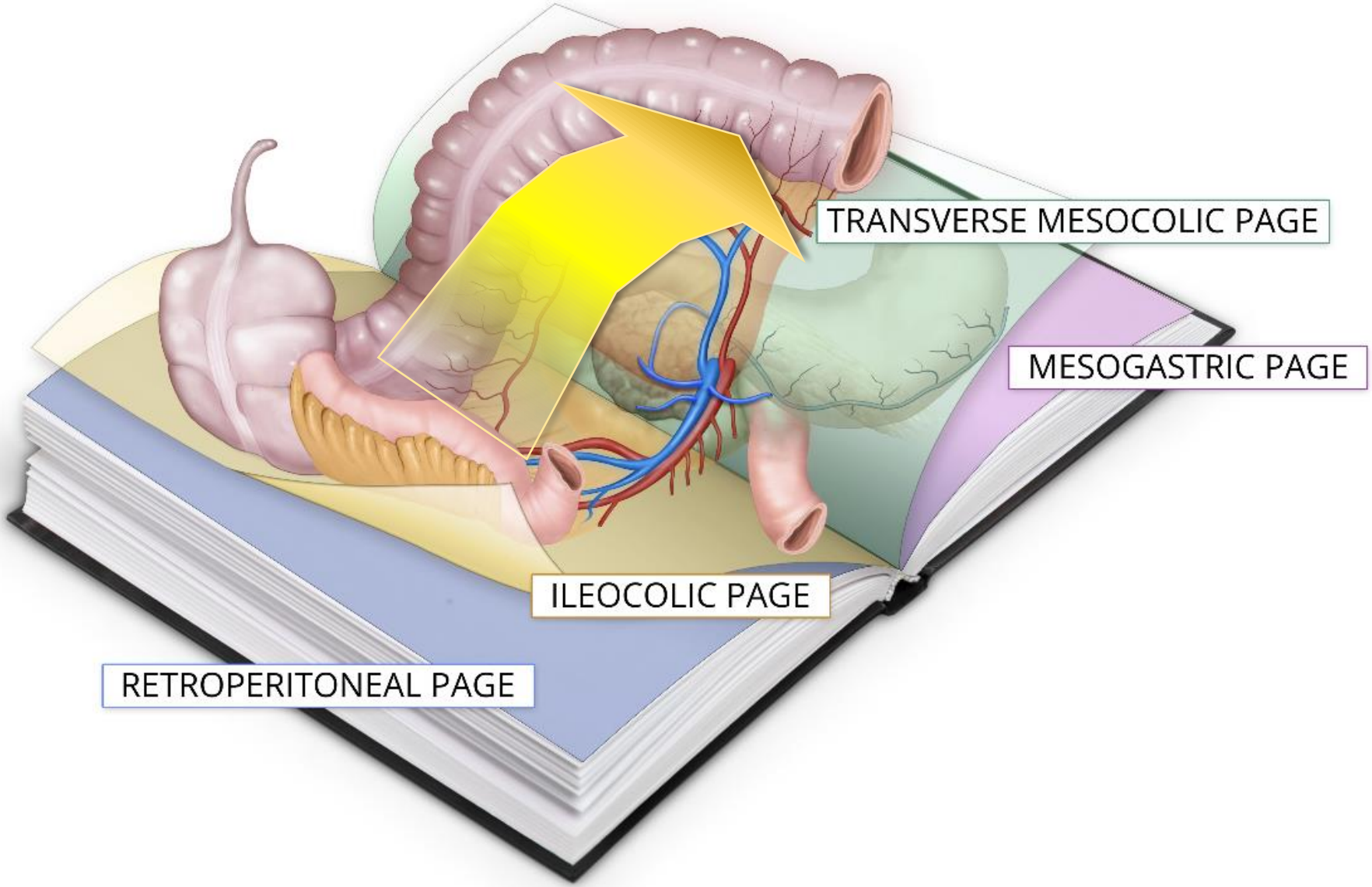
Paper

Video

The ‘book model’ of colonic anatomy

Original illustration adapted from Benz et al

APPROACH 1: INFRAILEAL



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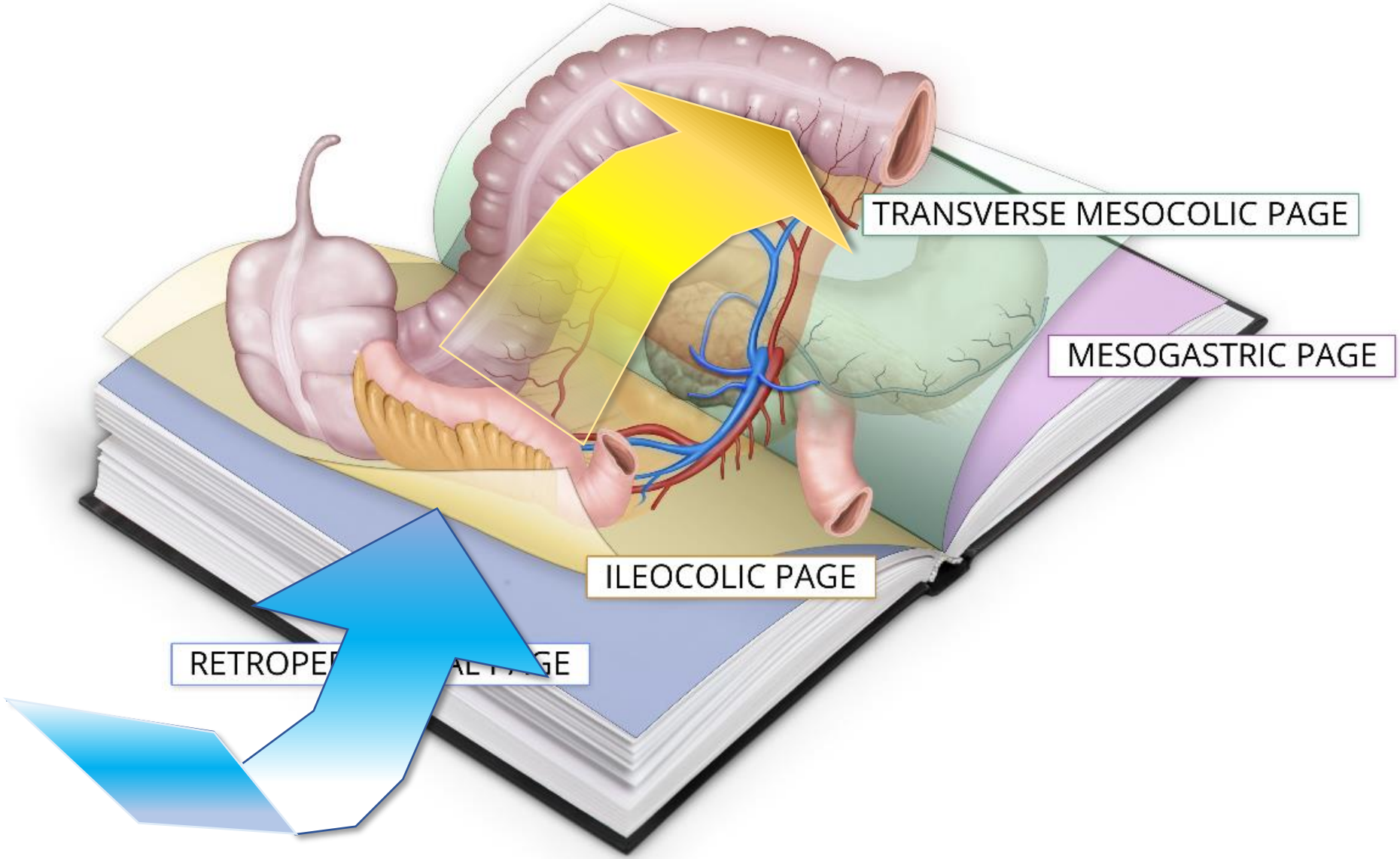
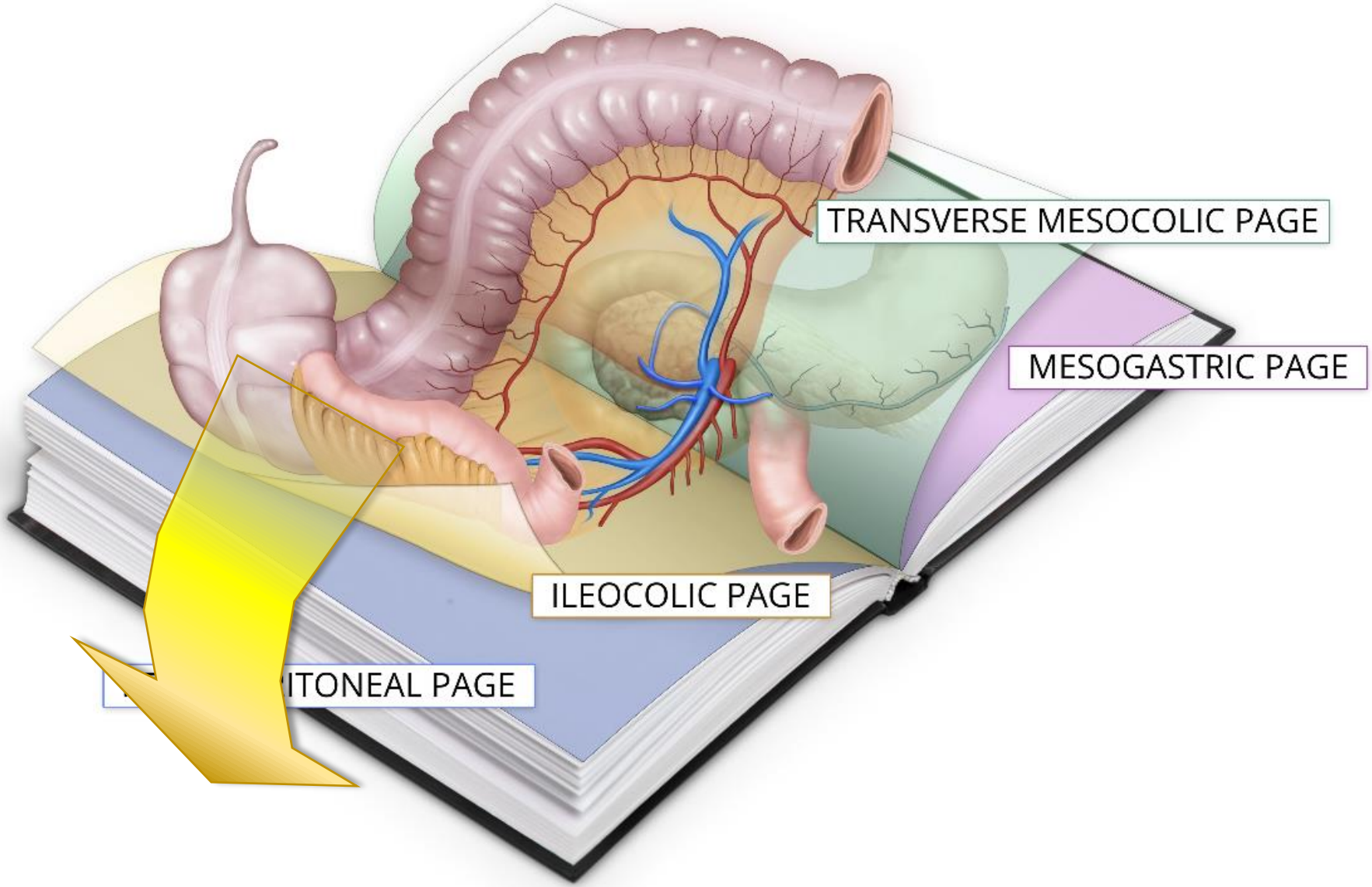


APPROACH 2: MEDIAL



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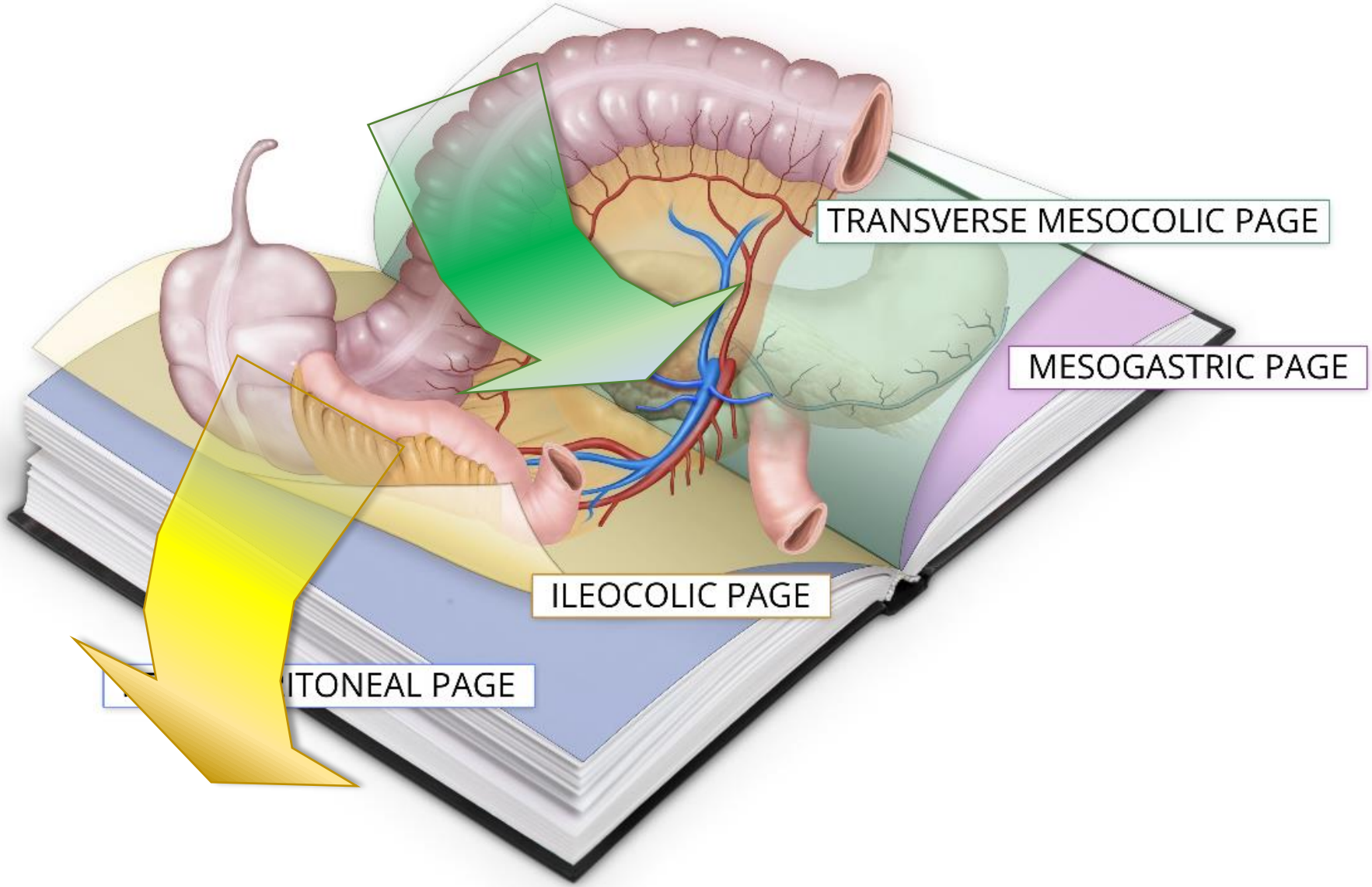
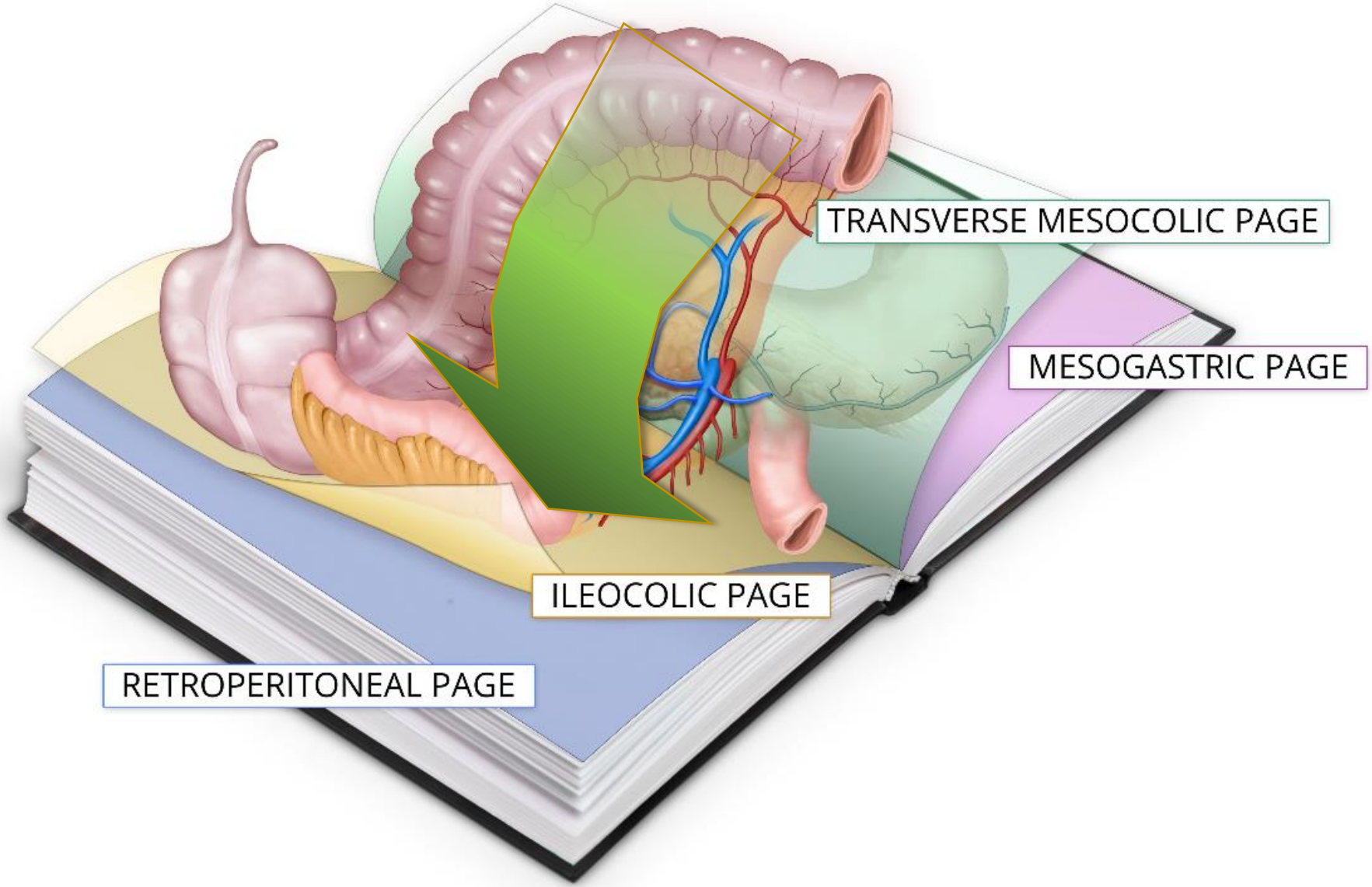


APPROACH 3: SUPRACOLIC



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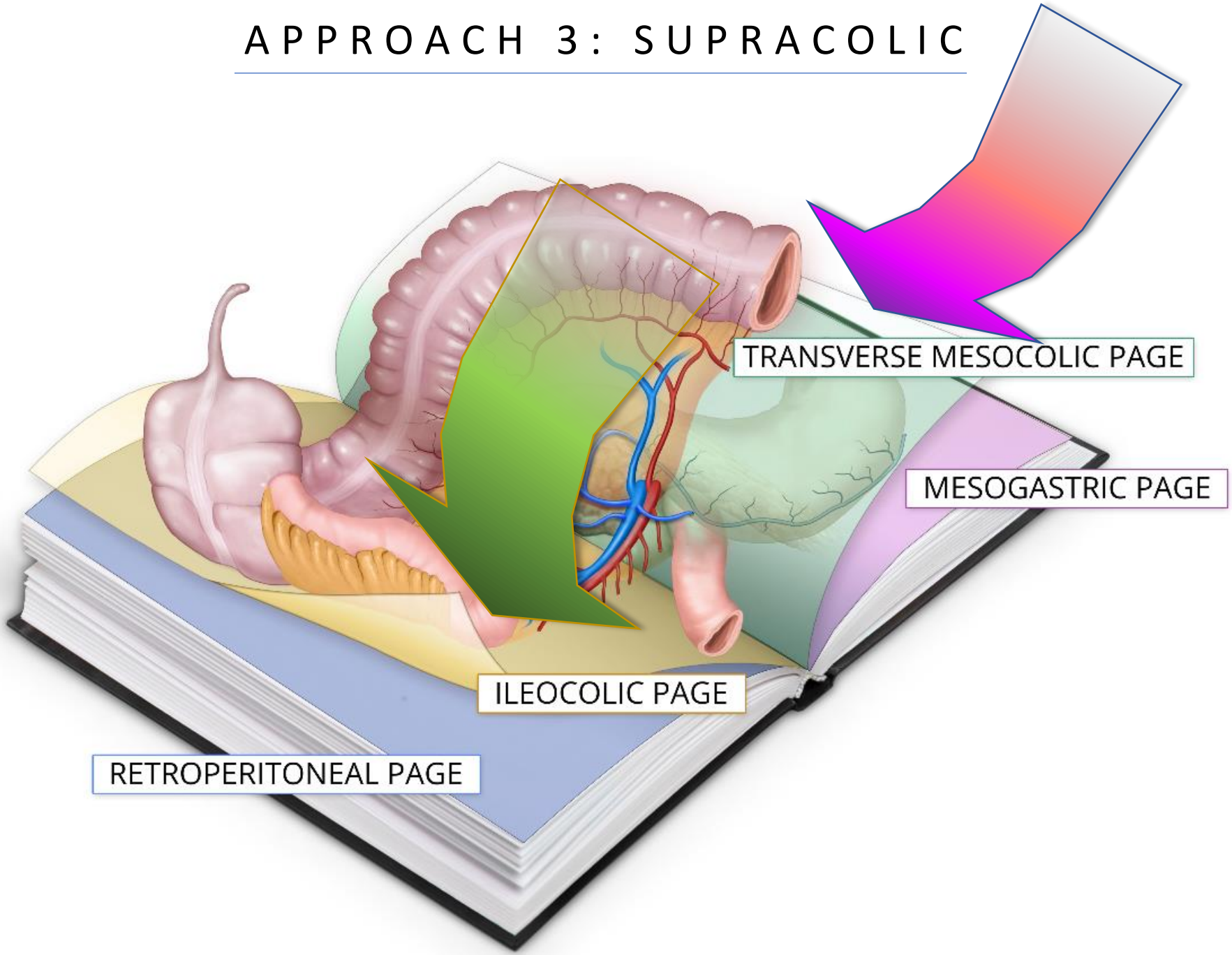

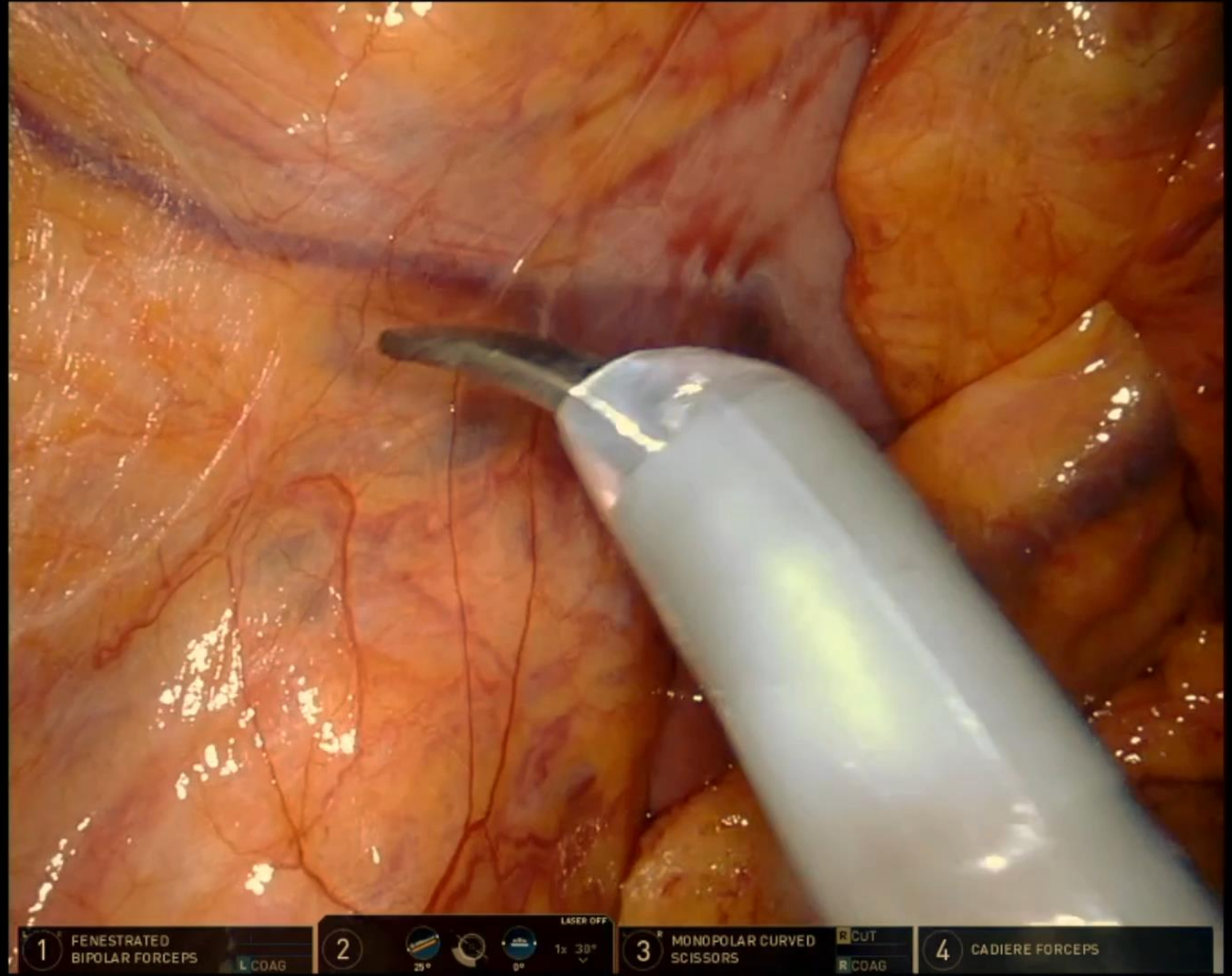
1
FENESTRATED
BIPOLAR FORCEPS
L COAG
2
LASER OFF
25°
0°
1x 30°
3
MONOPOLAR CURVED
SCISSORS
R CUT
R COAG
4
CADIERE FORCEPS

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Thank you