



ICCP
Member



Complete Mesocolic Excision

My Dilemma

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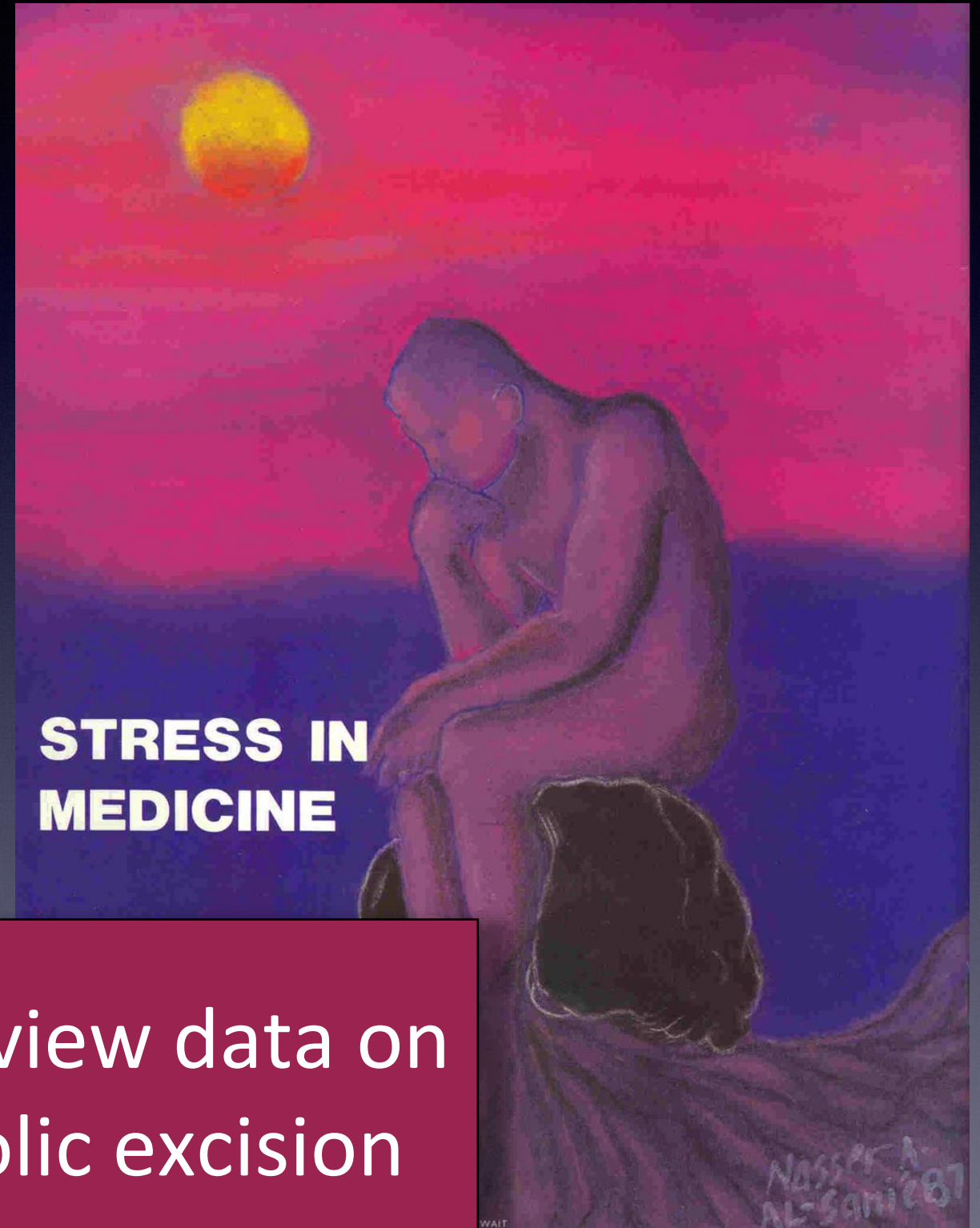
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Acknowledgement



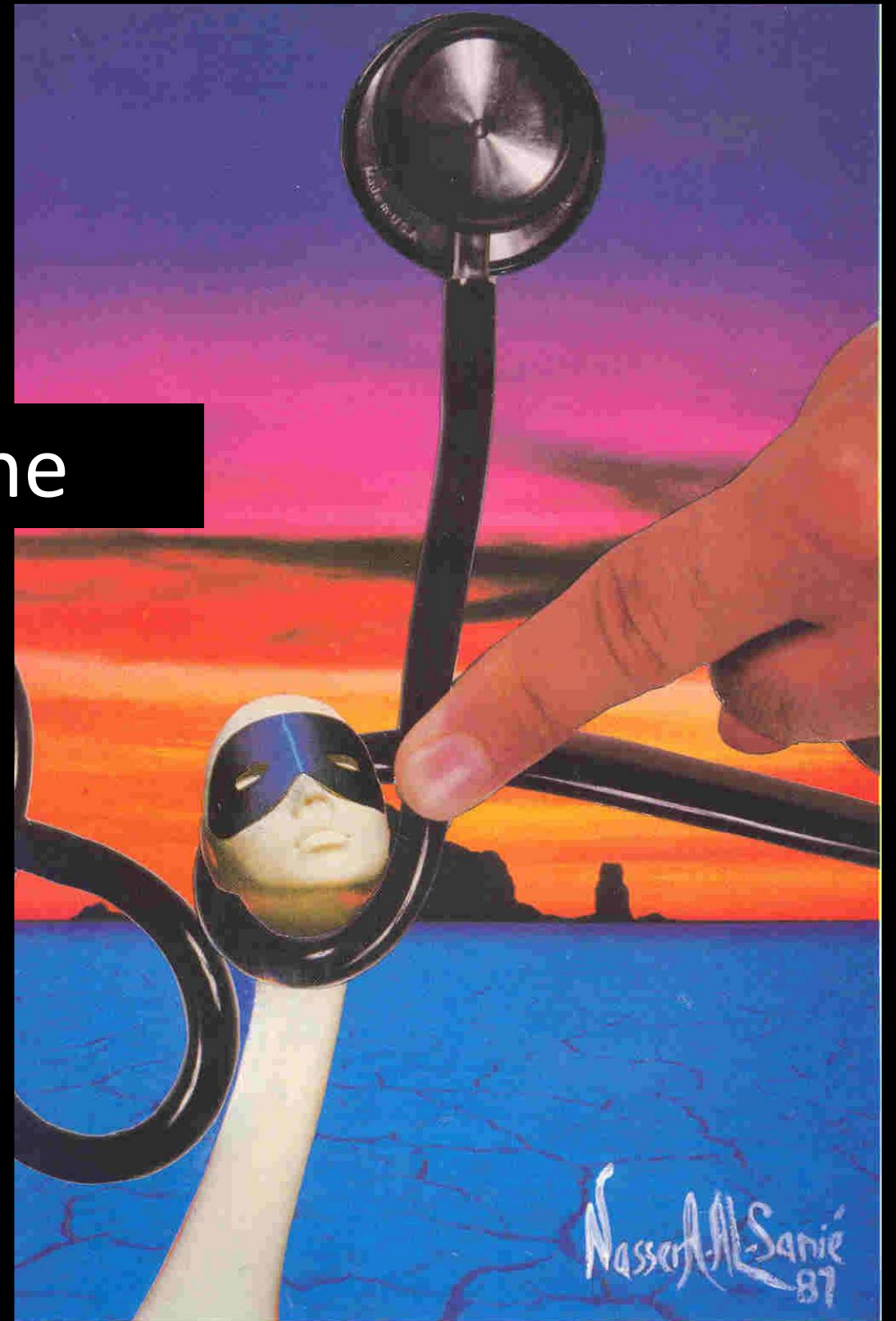
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Systematic review data on
total mesocolic excision

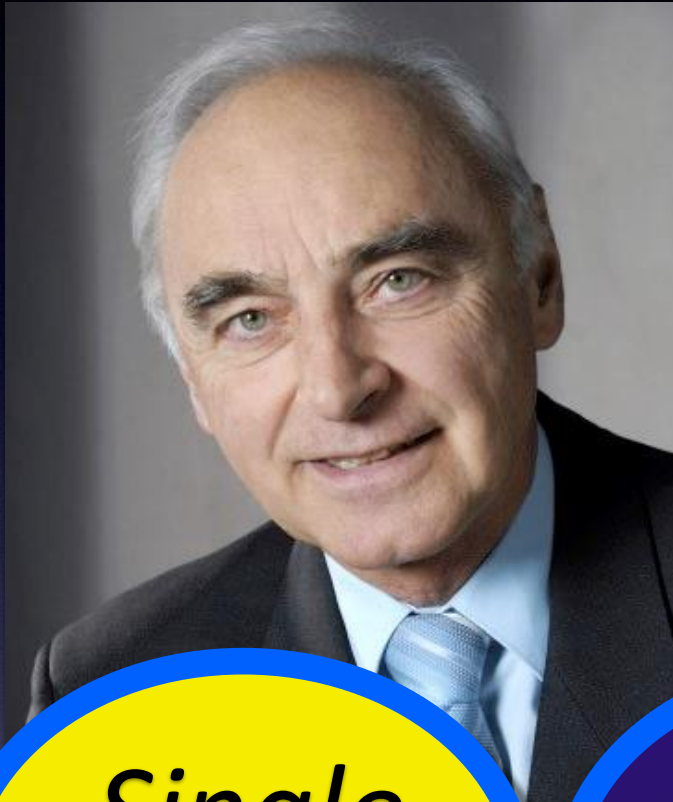
Financial Disclosures

None



Complete Mesocolic Excision (CME)

History Repeats Itself



*Single
Center*

Retrospective

No RCT

*Case-mix
62% I-II*

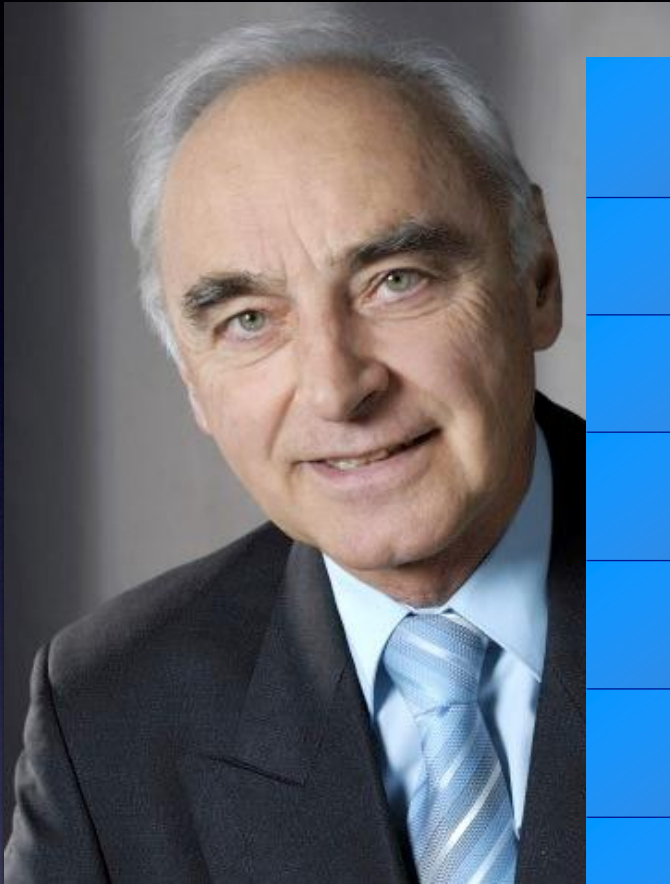


Colorectal Dis. 2009 May;11(4):354-64; discussion 364-5. doi: 10.1111/j.1463-1318.2008.01735.x. Epub 2009 Nov 5.

Standardized surgery for colonic cancer: complete mesocolic excision and central ligation--technical notes and outcome.

Hohenberger W1, Weber K, Matzel K, Papadopoulos T, Merkel S.

Complete Mesocolic Excision (CME)



Stage	5-Yr Survival (%)	Stage
I	93	
IIA	85	
IIB	72	T4a
IIIA	83	
IIIB	64	T4a
IIIC	44	T4b
IV	8	

5-Yr Surv.
89.1%

Case-mix
62% I-II

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Complete Mesocolic Excision (CME)



Stage	5-Yr Survival (%)	Saudi
I	93	94
IIA	85	80
IIB	72	
IIIA	83	75
IIIB	64	
IIIC	44	
IV	8	50

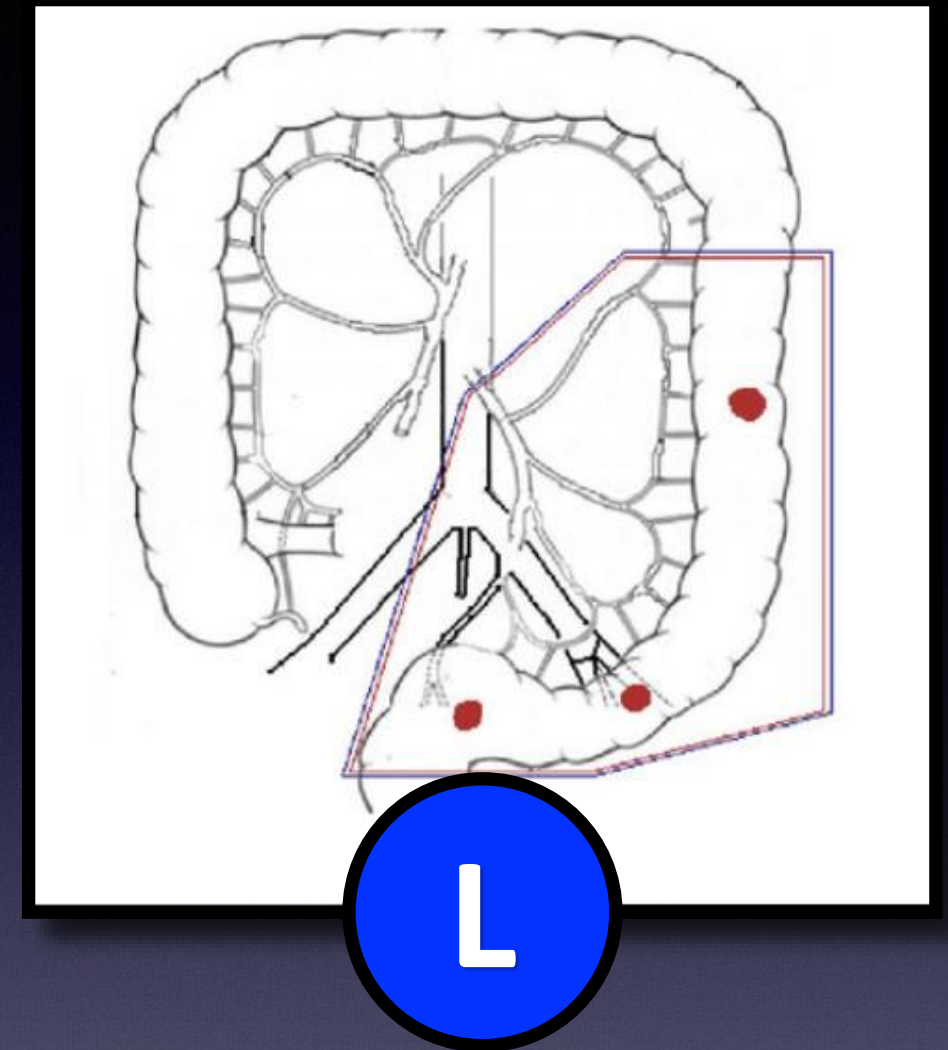
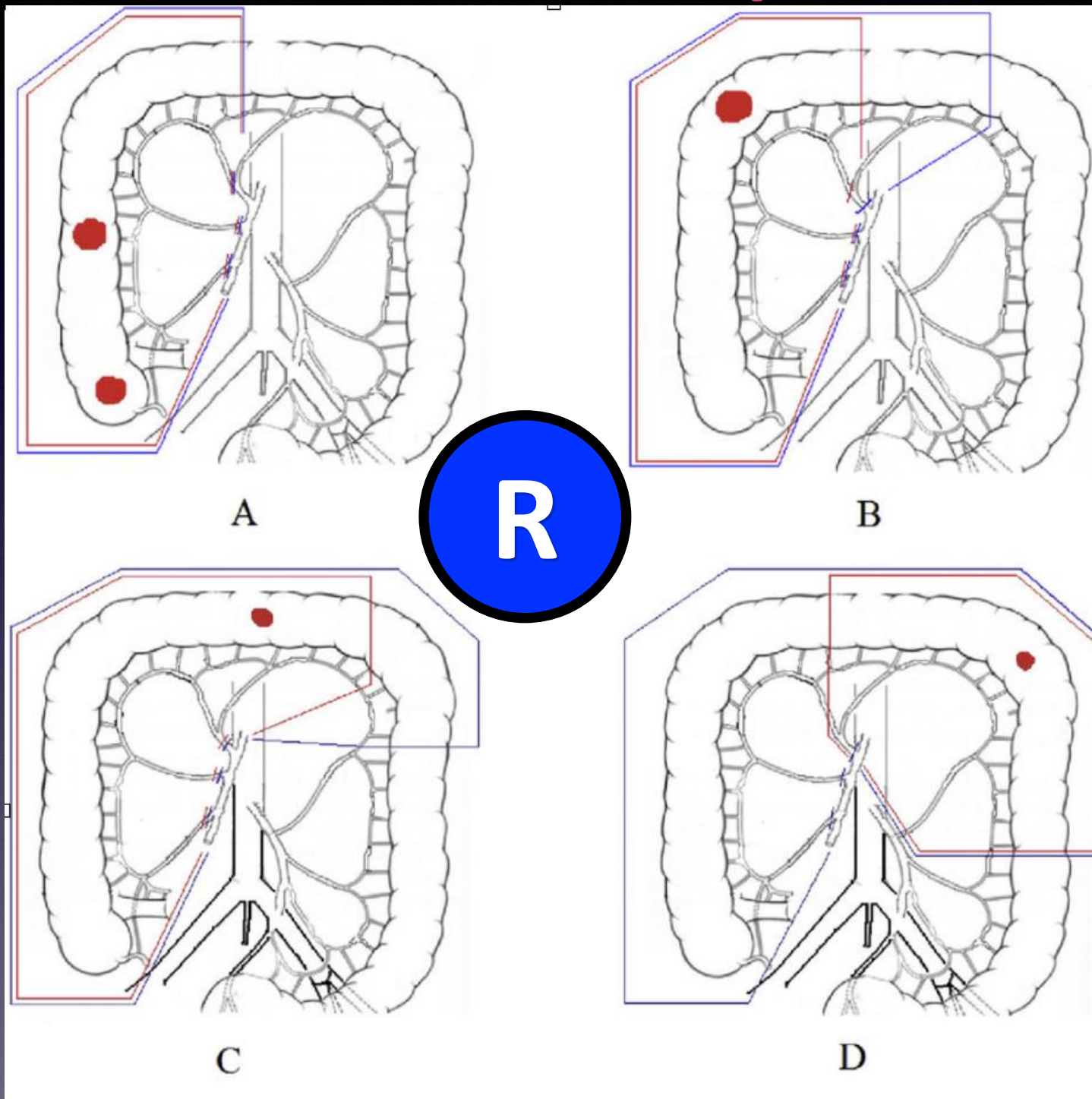
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Hohenberger W1, Weber K, Matzel K, Papadopoulos T, Merkel S.

Alharbi RA, Hakami R, Alkhayal KA, Al-Obeed OA, Traiki TAB, Zubaidi A, Al Homoud S, Ashari L, Abduljabbar A, Alsanea N. Long-term outcomes after complete mesocolic excision for colon cancer at a tertiary care center in Saudi Arabia. *Ann Saudi Med.* 2020 May-Jun;40(3):207-211. doi: 10.5144/0256-4947.2020.207. Epub 2020 Jun 4. PMID: 32493101; PMCID: PMC7270623.

Not As **Rosy** As You Might Think



Different Scenarios

Pattern of Metastasis

N	Metastasis	Rank
5671	1042 (18%)	
Liver	625 (60%)	1
Lung	406 (39%)	2
Extra-Regional LN	229 (22%)	3
Peritoneum	198 (19%)	4

41

Cancer Epidemiol. 2014 Aug;38(4):448-54. doi: 10.1016/j.canep.2014.04.004. Epub 2014 May 17.
 Patterns of metachronous metastases after curative treatment of colorectal cancer.
 van Gestel YR1, de Hingh IH2, van Herk-Sukel MP3, van Erning FN4, Beerepoot LV5, Wijsman JH6, Slooter GD7, Rutten HJ8, Creemers GJ9, Lemmens VE10.

CME: Population Based Study

Denmark	Non-CME	CME	P-value
N	1031	364	
4-Yr Survival (%)	73	85.8	0.0014
I	89.8	100	0.046
II	77.9	91.9	0.0033
III	67.5	73.5	0.13

Lancet Oncol. 2015 Feb;16(2):161-8. doi: 10.1016/S1470-2045(14)71168-4. Epub 2014 Dec 31.
Disease-free survival after complete mesocolic excision compared with conventional colon cancer surgery: a retrospective, population-based study.
 Bertelsen CA1, Neuenschwander AU2, Jansen JE2, Wilhelmsen M3, Kirkegaard-Klitbo A4, Tenma JR5, Bols B6, Ingeholm P6, Rasmussen LA2, Jepsen LV2, Iversen ER2, Kristensen B7, Gögenur I8; Danish Colorectal Cancer Group.

CME & Obesity

N 129		P-value
Mean Visceral fat	115.7 cm ²	
Postop. complications		0.043
Anastomotic leak		0.009
Re-operation		0.005
↑ VF = ↓ LN		0.027

Dig Surg. 2019;36(1):33-40. doi: 10.1159/000486143. Epub 2018 Mar 22.

Influence of Visceral Fat in the Outcomes of Colorectal Cancer.
Goulart A1,2, Malheiro N3, Rios H4, Sousa N3, Leão P4,3.

CME: RCT

Japan	Open D3	Lap D3	P-value
N	524	533	
Stage	II-III	II-III	
5-Yr Survival	67%	70.4%	NS
5-Yr Recurrence	9.1%	8.6%	NS

Ann Surg 2014 Jul;260(1):23-30. doi: 10.1097/SLA.0000000000000499. Short-term surgical outcomes from a randomized controlled trial to evaluate laparoscopic and open D3 dissection for stage II/III colon cancer: Japan Clinical Oncology Group Study JCOG 0404. Yamamoto S1, Inomata M, Katayama H, Mizusawa J, Etoh T, Konishi F, Sugihara K, Watanabe M, Moriya Y, Kitano S; Japan Clinical Oncology Group Colorectal Cancer Study Group.

CME: Systematic Review

Survival data

Saudi-Canada	Non-CME	CME	P-value
DFS	3-Yr	3-Yr	
Storli 2014	74.3	82.1	<0.05
Olofosson 2016	69.4	71.8	NS

Conflicting results

Surg Endosc. 2019 Jan;33(1):8-18. doi: 10.1007/s00464-018-6419-2. Epub 2018 Sep 12. Comparison between conventional colectomy and complete mesocolic excision for colon cancer: a systematic review and pooled analysis : A review of CME versus conventional colectomies. Alhassan N1,2,3, Yang M4, Wong-Chong N4, Liberman AS4,5, Charlebois P4,5, Stein B4,5, Fried GM5, Lee L4,5.

CME: Systematic Review

Survival data

Saudi-Canada	Non-CME	CME	P-value
DFS	5-Yr	5-Yr	
Bertelsen 2015	69.8	74.9	<0.05
Kotake 2015	90.6	91.9	NS

Surg Endosc. 2019 Jan;33(1):8-18. doi: 10.1007/s00464-018-6416-1.

Different Case-mix

Wong, German AS4,5, Charlebois P4,5, Stein B4,5, Fried GM5, Lee L4,5.

CME: Systematic Review

Recurrence data

Saudi-Canada	Non-CME	CME	P-value
Local Recurrence	5-Y5	5-Yr	
Bertelsen 2015	-	-	-
Kotake 2015	-	-	
DFS	3-Yr	3-Yr	
Storli 2014	2.9	1.2	NS
Olofosson 2016	2.3	2.7	NS

KPI of good CME

*Surg Endosc. 2019 Jan;33(1):8-18.
doi: 10.1007/s00464-018-6419-2.
Epub 2018 Sep 12.
Comparison between conventional colectomy and complete mesocolic excision for colon cancer: a systematic review and pooled analysis : A review of CME versus conventional colectomies.
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CME: Ongoing Trials

Trial	Non-CME	CME	Site	Year
PIONEER	-	Modified lap	Right	2020
RELARC	D2	CME	Right	2017
HALS vs LAP	HALS-CME	LAP-CME	Right	2016

Trials. 2016 Dec 8;17(1):582.

The Radical Extent of lymphadenectomy - D2 dissection versus complete mesocolic excision of Laparoscopic Right Colectomy for right-sided colon cancer (RELARC) trial: study protocol for a randomized controlled trial.

Lu JY1, Xu L1, Xue HD2, Zhou WX3, Xu T4, Qiu HZ1, Wu B1, Lin GL1, Xiao Y5.

Trials. 2017 Jul 26;18(1):355. doi: 10.1186/s13063-017-2084-3.

A novel hand-assisted laparoscopic versus conventional laparoscopic right hemicolectomy for right colon cancer: study protocol for a randomized controlled trial.

Yang X1, Wu Q1, Jin C2, He W1, Wang M1, Yang T1, Wei M1, Deng X1, Meng W1, Wang Z3.

Yang SY, Kim MJ, Kye BH, Han YD, Cho MS, Jeong SY, Cho HM, Kim H, Kang GH, Song SH, Park JS, Kim JS, Park SY, Kim J, Min BS. Prospective study of oncologic outcomes after laparoscopic modified complete mesocolic excision for non-metastatic right colon cancer (PIONEER study): study protocol of a multicentre single-arm trial. *BMC Cancer*. 2020 Jul 14;20(1):657. doi: 10.1186/s12885-020-07151-2. PMC7362526.

RELARC Trial

Short-Term Outcomes

	CME	D2	P-value
N	495	500	
Postop. Complications	20%	22%	0.39
Mortality	-	-	
Vascular injury	3% (15)	1% (6)	0.045
Mets Central LN	3% 13/394	-	
5-yr Survival	-	-	No data

Xu L, Su X, He Z, Zhang C, Lu J, Zhang G, Sun Y, Du X, Chi P, Wang Z, Zhong M, Wu A, Zhu A, Li F, Xu J, Kang L, Suo J, Deng H, Ye Y, Ding K, Xu T, Zhang Z, Zheng M, Xiao Y; RELARC Study Group. Short-term outcomes of complete mesocolic excision versus D2 dissection in patients undergoing laparoscopic colectomy for right colon cancer (RELARC): a randomised, controlled, phase 3, superiority trial. *Lancet Oncol.* 2021 Mar;22(3):391-401. doi: 10.1016/S1470-2045(20)30685-9. Epub 2021 Feb 12. PMID: 33587893.

Sigmoid Ca RCT

CME standard vs Extended

	ExtendedC ME	Standard CME	P-value
N	46	47	
LN	21 (IQR, 14-29)	20 (IQR, 15-27)	0.837
Mortality	-	-	
Morbidity	-	-	0.829
DFS	-	-	0.926
OS	-	-	0.564

Planellas P, Marinello F, Elorza G, Golda T, Farrés R, Espín-Basany E, Enríquez-Navascués JM, Kreisler E, Cornejo L, Codina-Cazador A. Extended Versus Standard Complete Mesocolon Excision in Sigmoid Colon Cancer: A Multicenter Randomized Controlled Trial. *Ann Surg.* 2022 Feb 1;275(2):271-280. doi: 10.1097/SLA.0000000000005161. PMID: 34417367.S1470-2045(20)30685-9. Epub 2021 Feb 12. PMID: 33587893.

Conclusions

Sound technique,
but no RCT to
support it

Systematic reviews
are conflicting and
no benefit on local
recurrence

The benefit
supposed to be in
Stage III, but
populations studies
do not support it

Case-mix affects
the results to a
huge extent

No survival benefit
in 40% of tumors (T4
tumors or Extra-
regional LN
metastasis)

↑ BMI make = less
LN

Impact on survival?

We must wait for
RCT's which are
ongoing