Colon Cancer CME

Dieter Hahnloser
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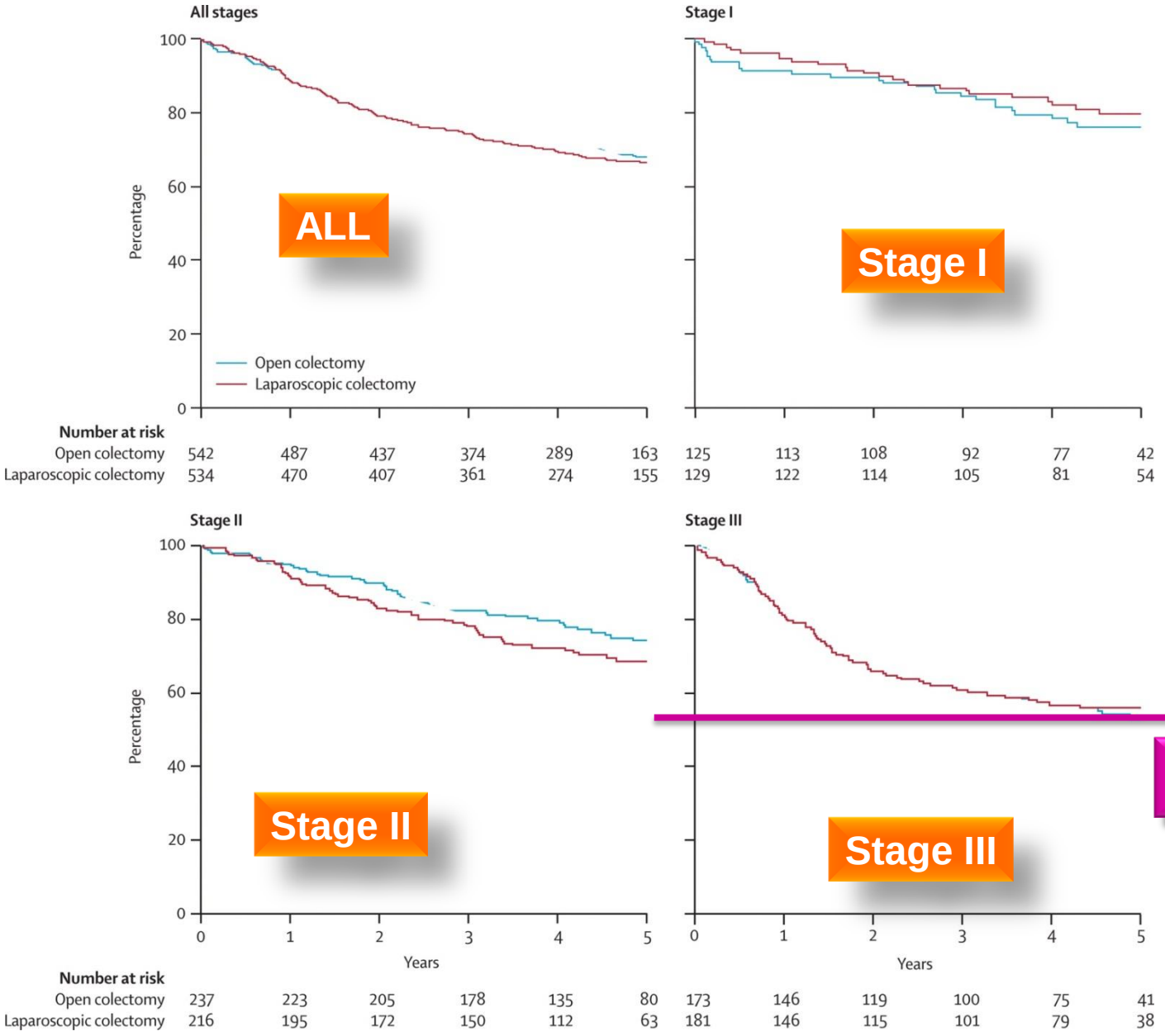
CHUV
University Hospital Lausanne
Switzerland

Disease-free survival

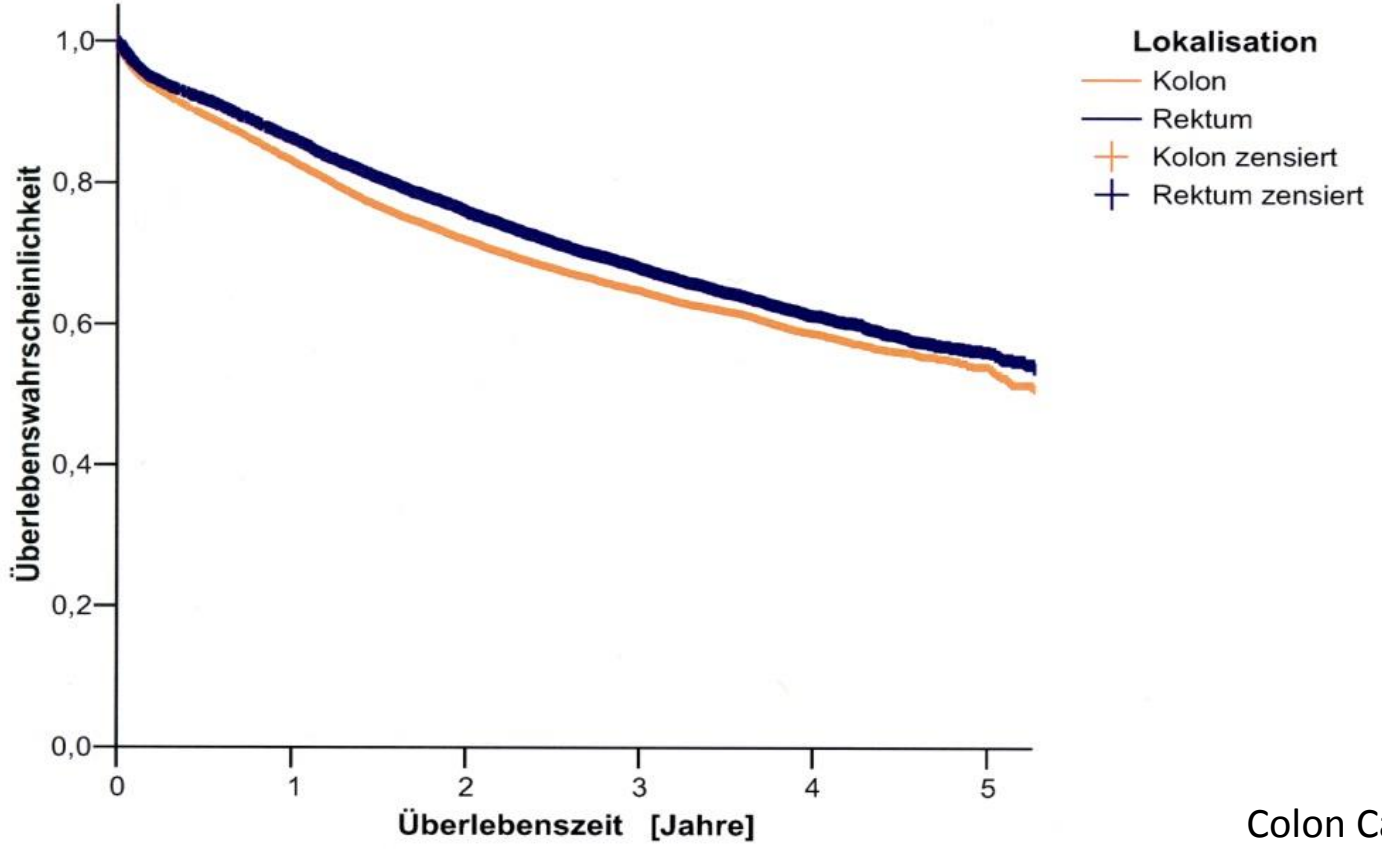


<60%

COLOR Lancet Oncol 2009


NON?! SI!!
WOUAAH!
UN CANCER!

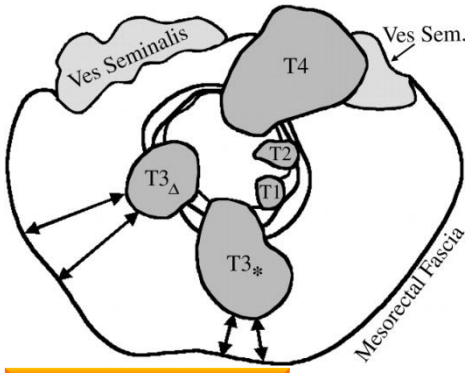
CRC Surgery in Germany



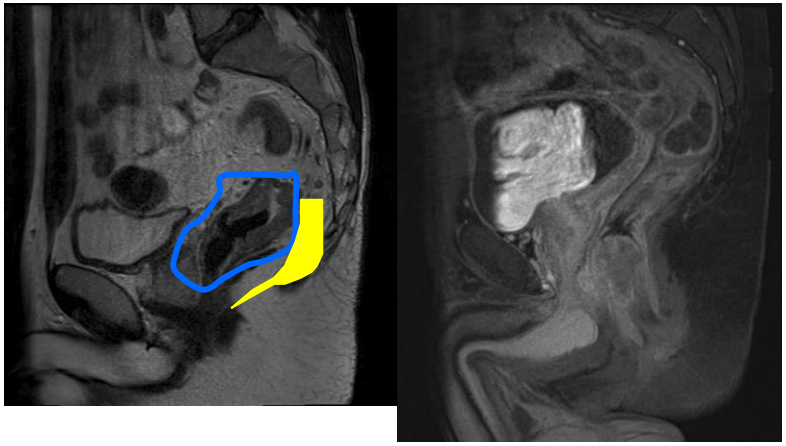
Colon Ca. 30.453 patients
Rectal Ca. 16.983 patients

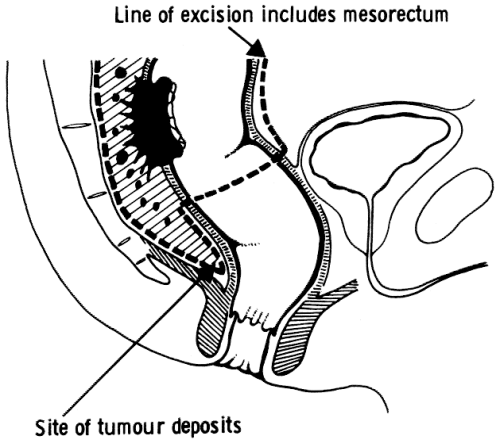
Kube R. Onkologe 2009

Progress in rectal cancer treatment



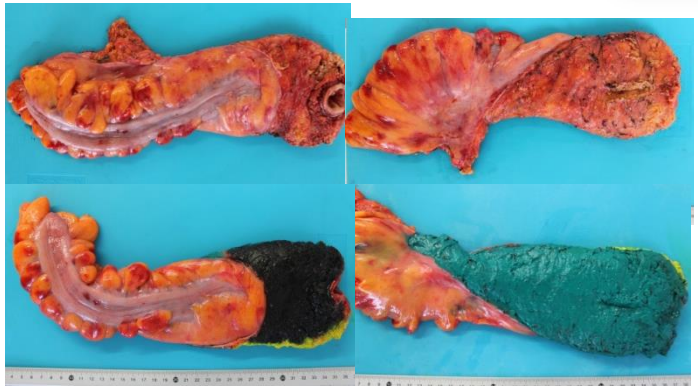
CRM

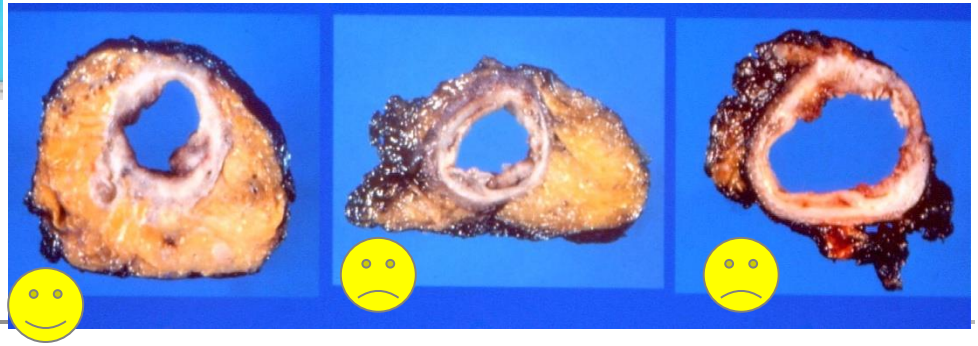




Heald RJ. Br J Surg 1982;69:61

TME





Progress in rectal cancer treatment

TME

taTME

Neoadjuvant radiochemotherapy

Watch and Wait

Robotic pelvic surgery

Extralevator APR

……..

Progress in rectal cancer treatment

Courtesy of Anna Martling, Stockholm

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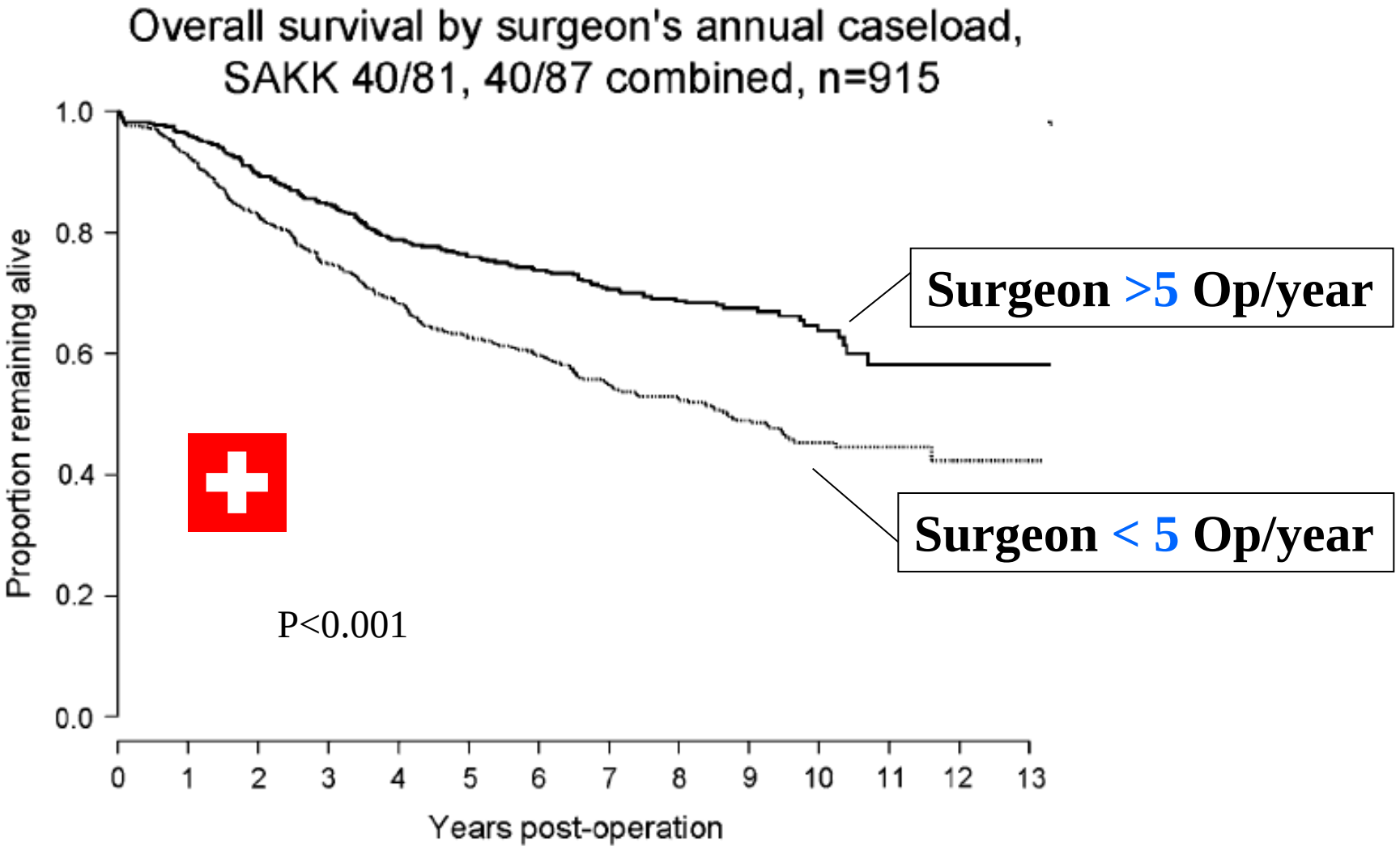
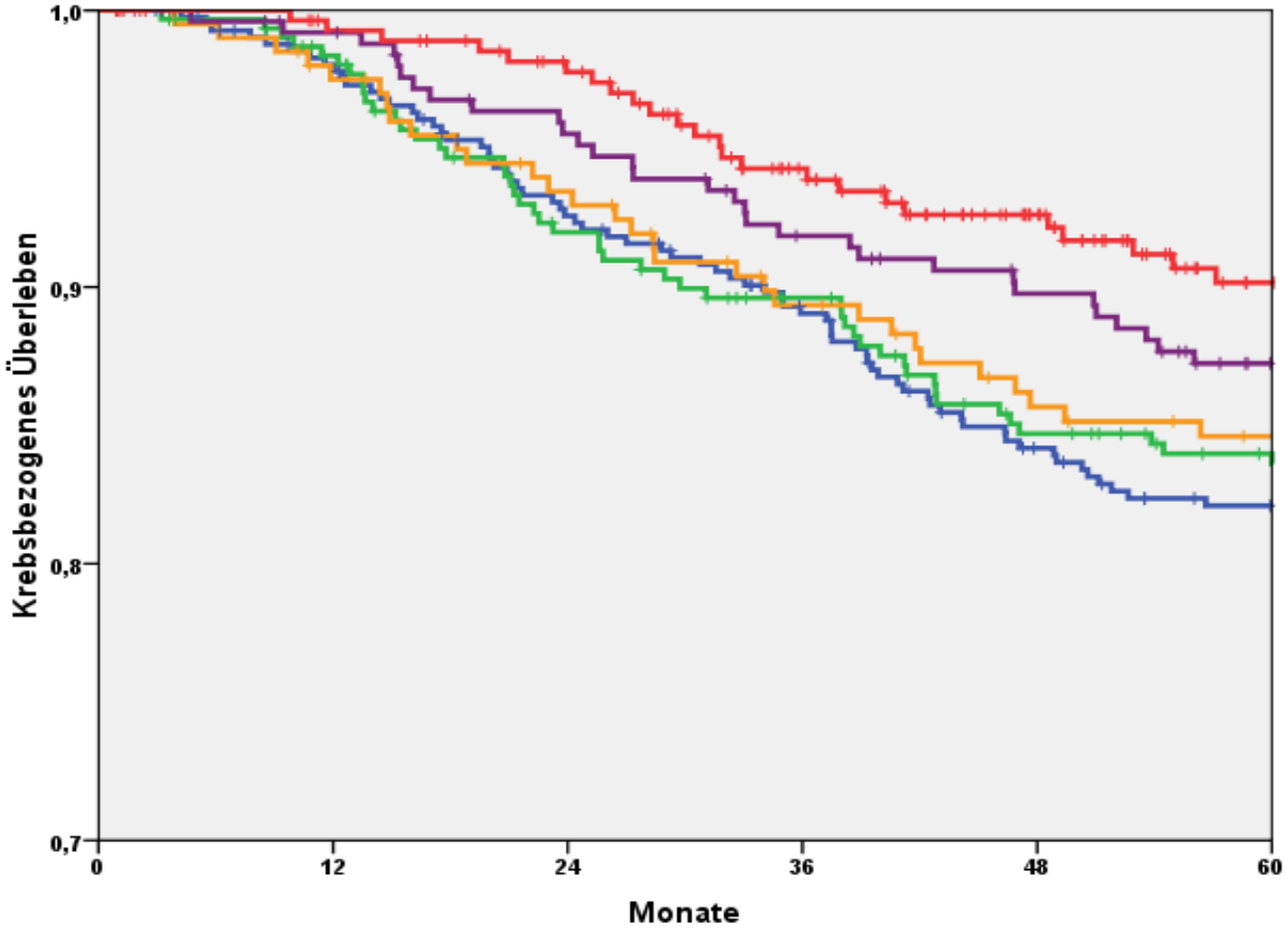
In CH ?



Renzulli P. Surgery 2006

Erlangen

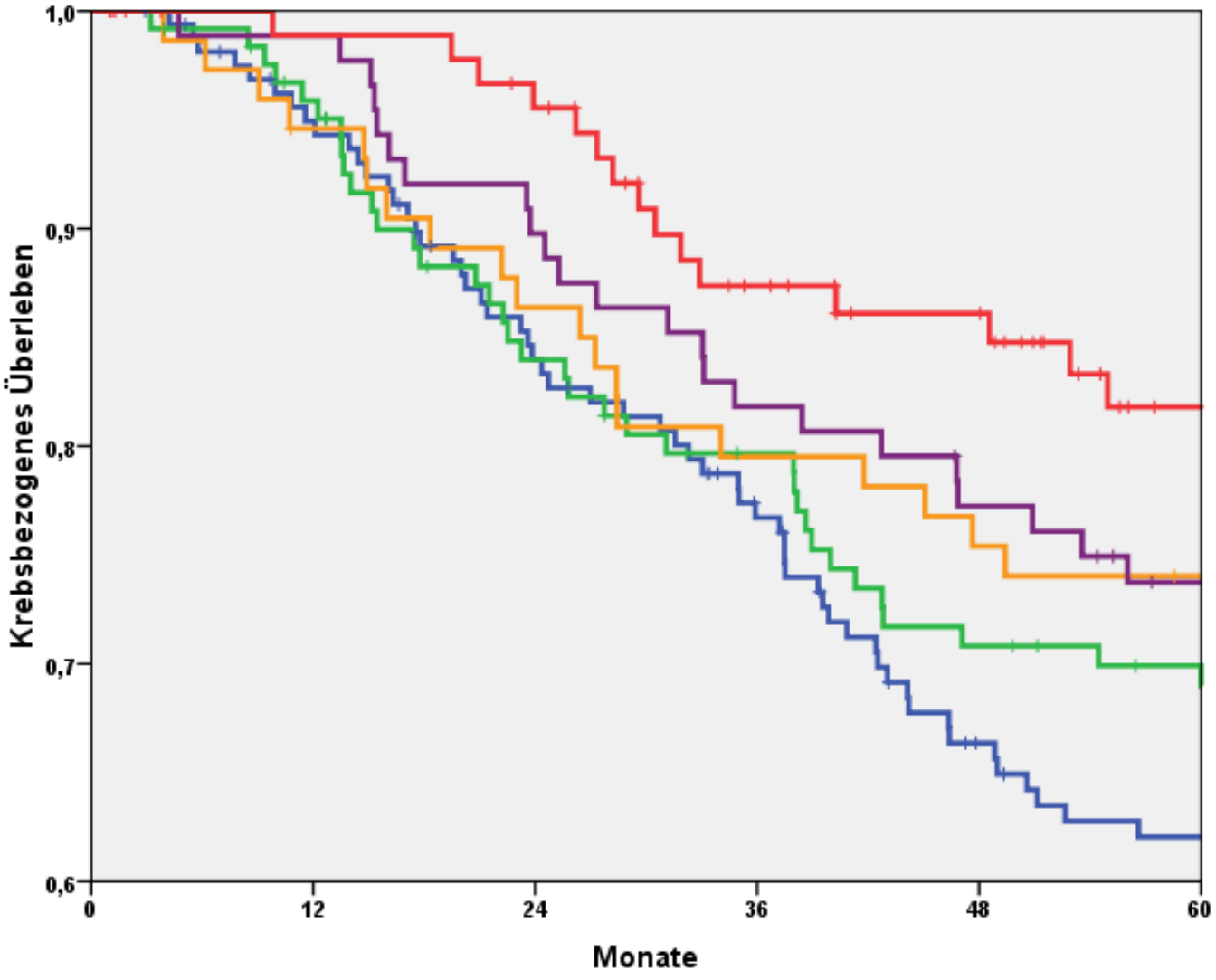


2000-2004: 90,2%
1995-1999: 87,2%
1990-1994: 84,6%
1985-1989: 83,6%
1978-1984: 82,1%

Stages I-III, R0, Erlangen Registry 1978-2004

Courtesy of H.Kessler

Erlangen



Stage III, R0

Erlangen Registry

1978-2004

2000-2004: 81,8%

1995-1999: 73,7%

1990-1994: 74,0%

1985-1989: 69,0%

1978-1984: 62,0 %

Courtesy of H.Kessler

Prognosis of patients with colonic carcinoma before, during and after implementation of complete mesocolic excision

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Correspondence to: Professor S. Merkel, Department of Surgery, University Hospital Erlangen, Krankenhausstrasse 12, 91054 Erlangen, Germany
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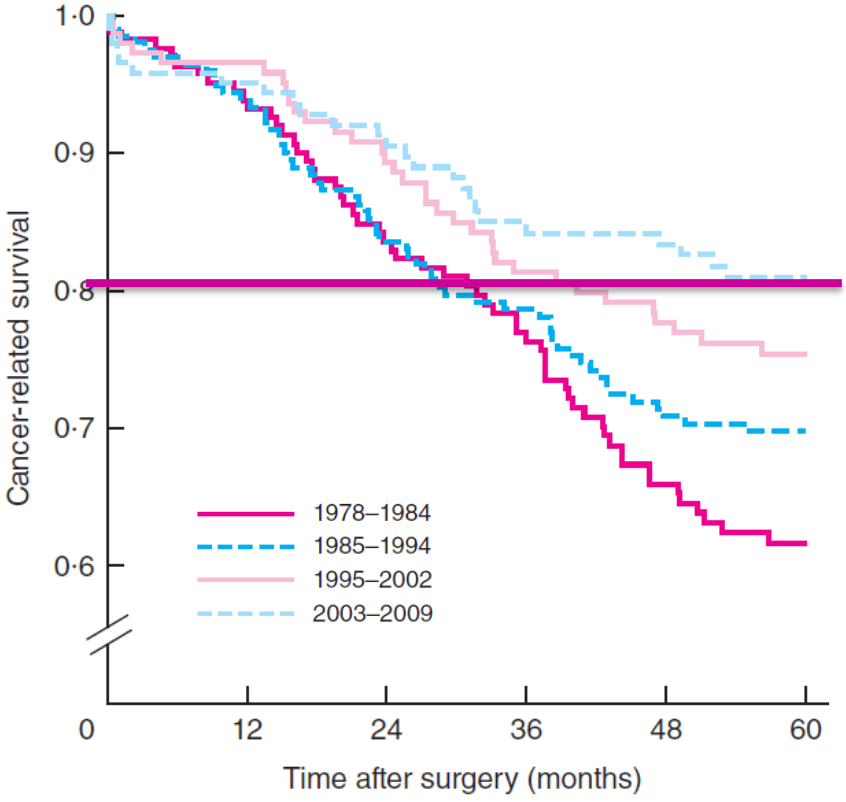

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Stage III colon cancer

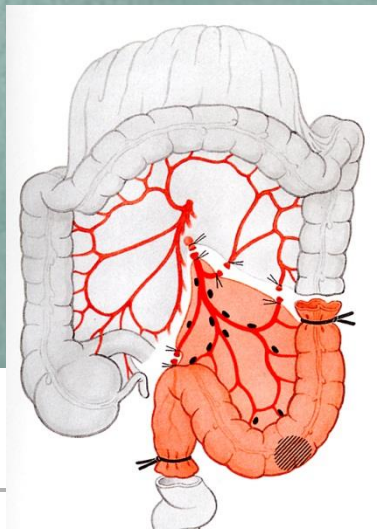
>80%

Concept of CME

Complete Mesocolic Excision

- Awareness of parietal and mesocolic planes with separation of both planes and leaving surfaces intact
- Dissection of regional and central lymph nodes with high vascular tie of supplying arteries
- Removal of specimen as a „package“

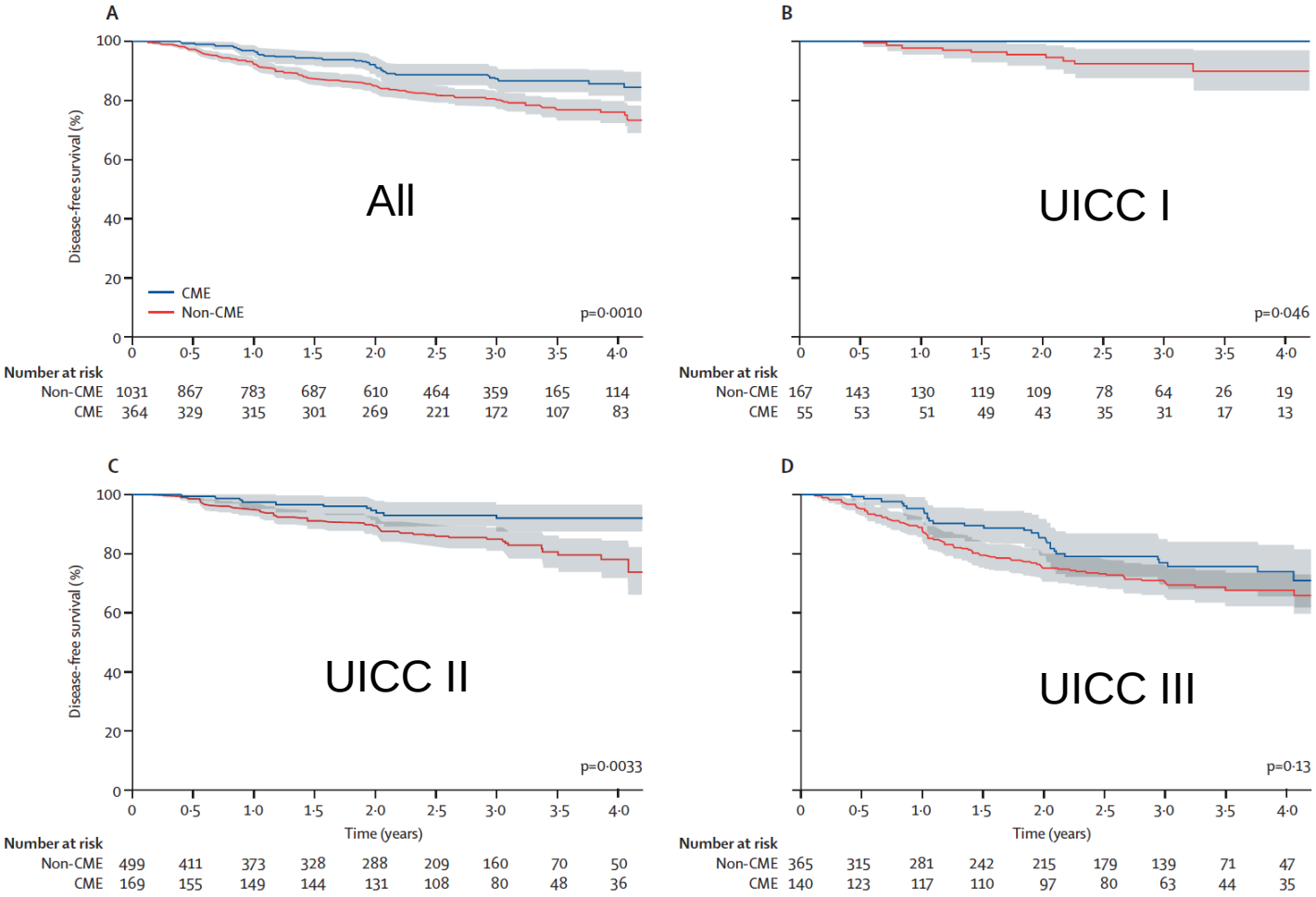

0 1 2 3 4 5 6 7 8 9 10



Disease-free survival after complete mesocolic excision compared with conventional colon cancer surgery: a retrospective, population-based study

Claus Anders Bertelsen, Anders Ulrich Neuenschwander, Jens Erik Jansen, Michael Wilhelmsen, Anders Kirkegaard-Klitbo, Jutaka Reilin Tenma, Birgitte Bols, Peter Ingeholm, Leif Ahrenst Rasmussen, Lars Vedel Jepsen, Else Refsgaard Iversen, Bent Kristensen, Ismail Gögenur, on the behalf of the Danish Colorectal Cancer Group

Lancet Oncol 2015



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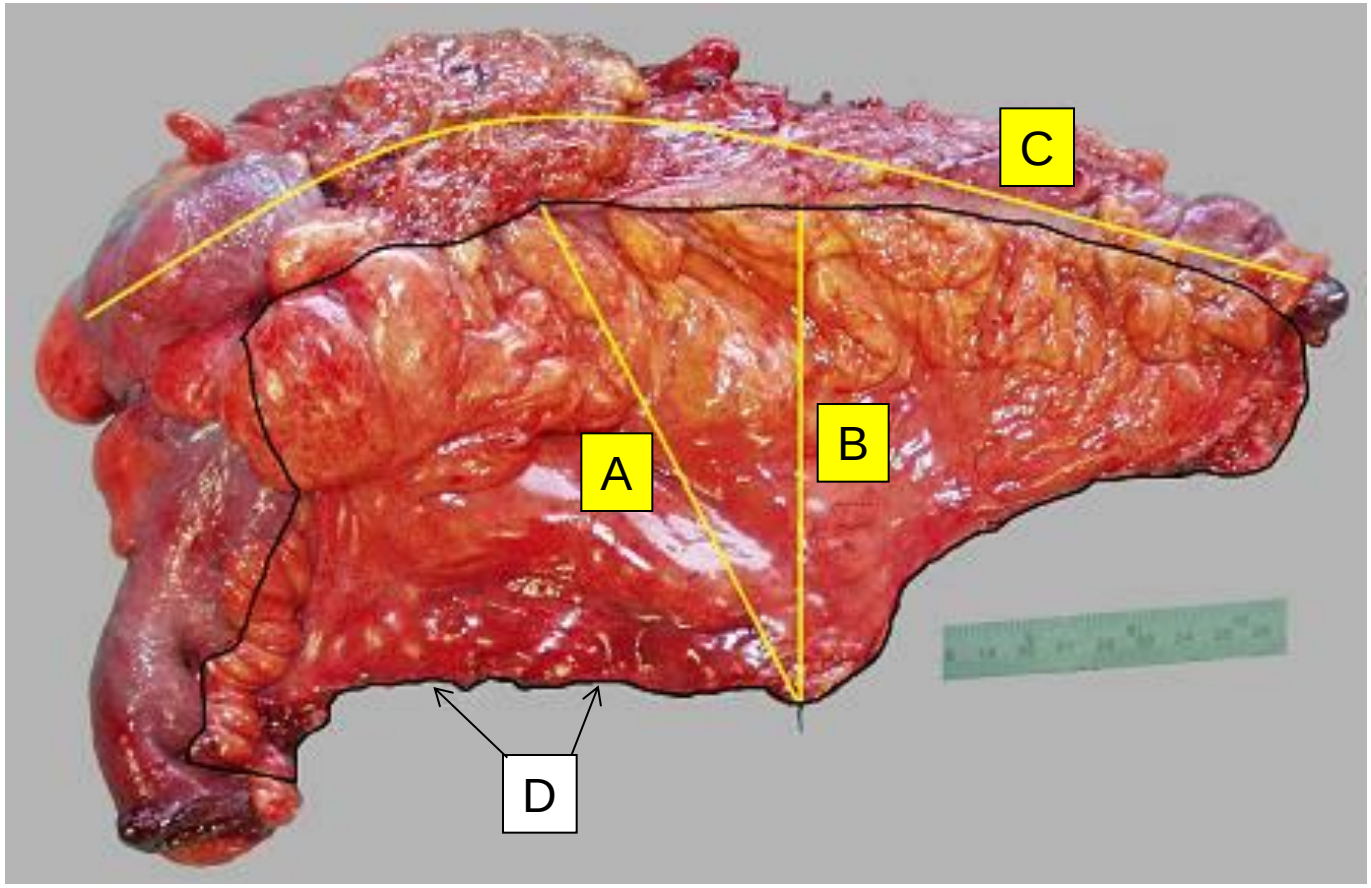
Tissue morphometry



A = Distance from tumour to high tie

B = Distance from nearest bowel wall to high tie

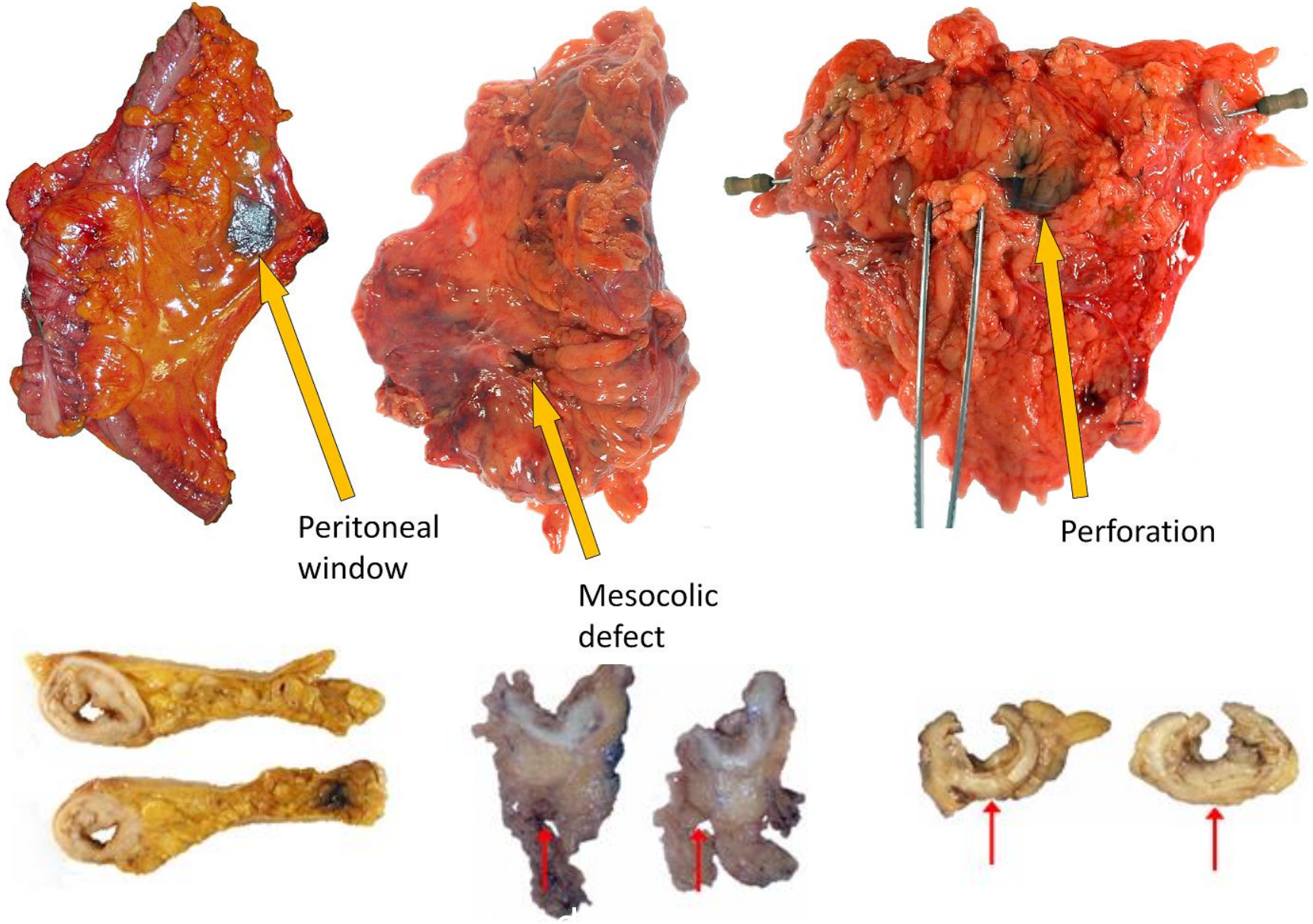
C = Length of large intestine

D = Cross sectional area of mesentery

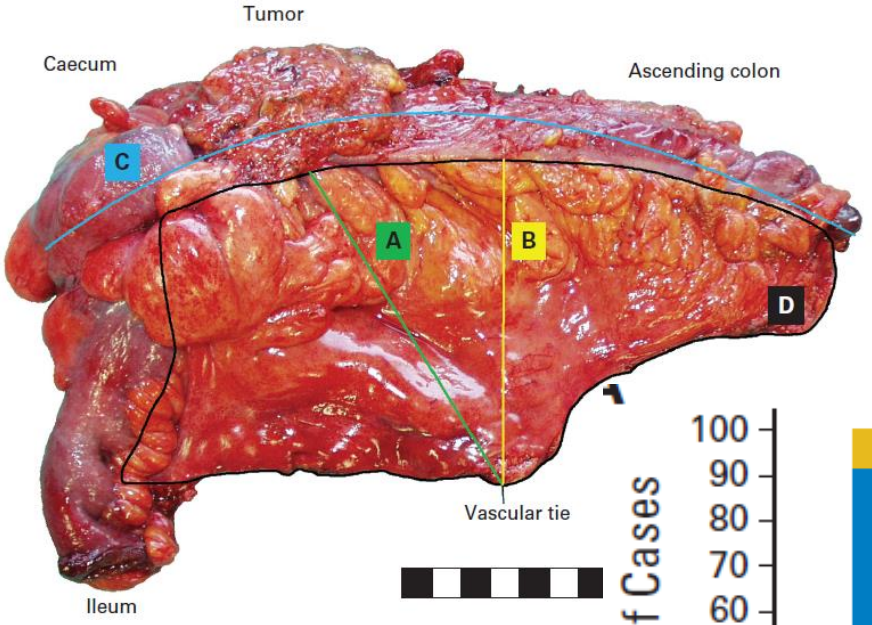
(a) Mesocolic plane

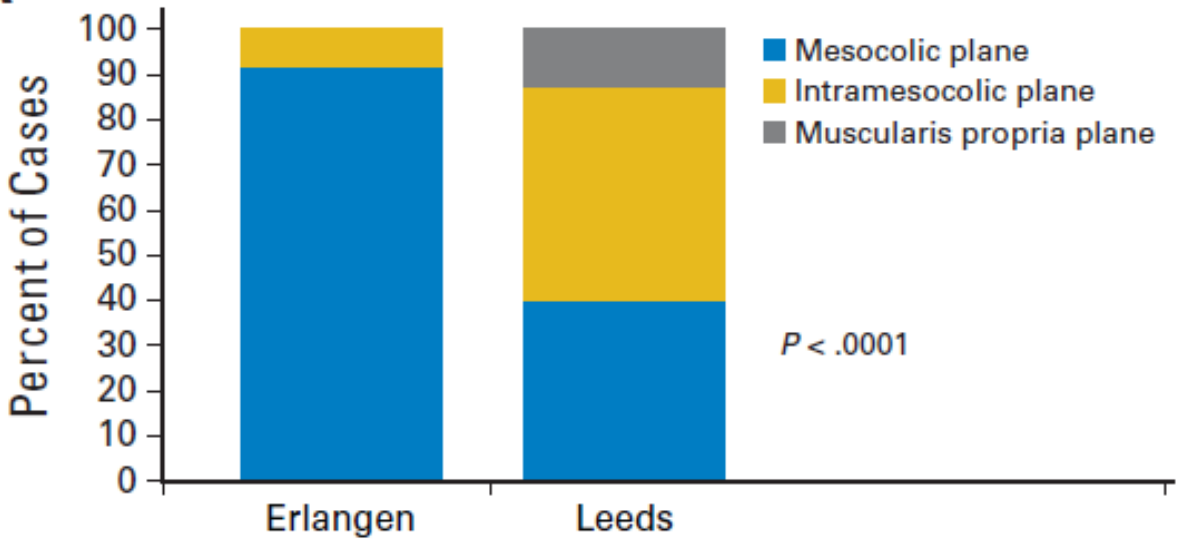
(b) Intramesocolic plane

(c) Muscularis propria plane



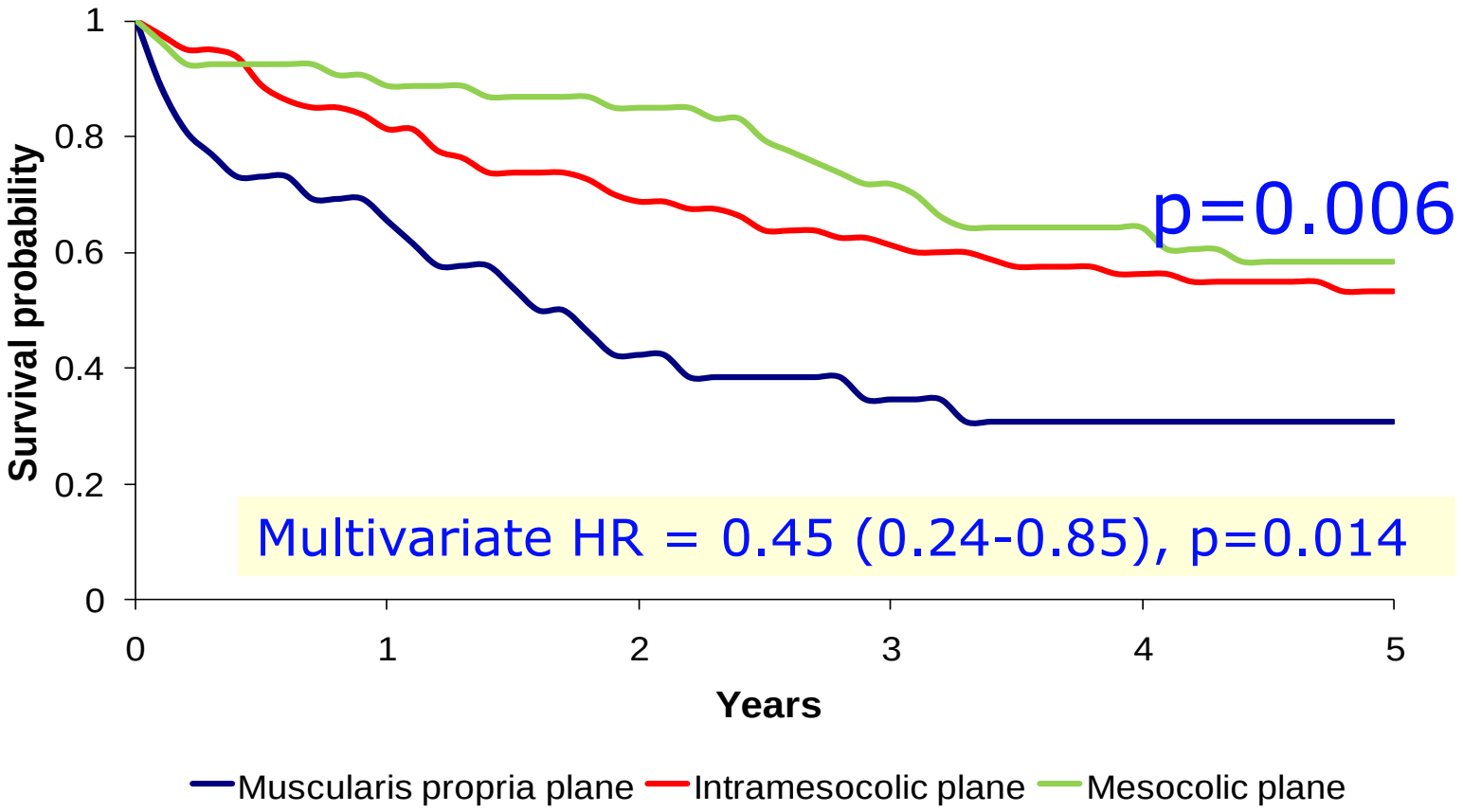
CME (complete mesocolic exsision)





West P. J Clin Oncol 2010

Erlangen: Survival stage III



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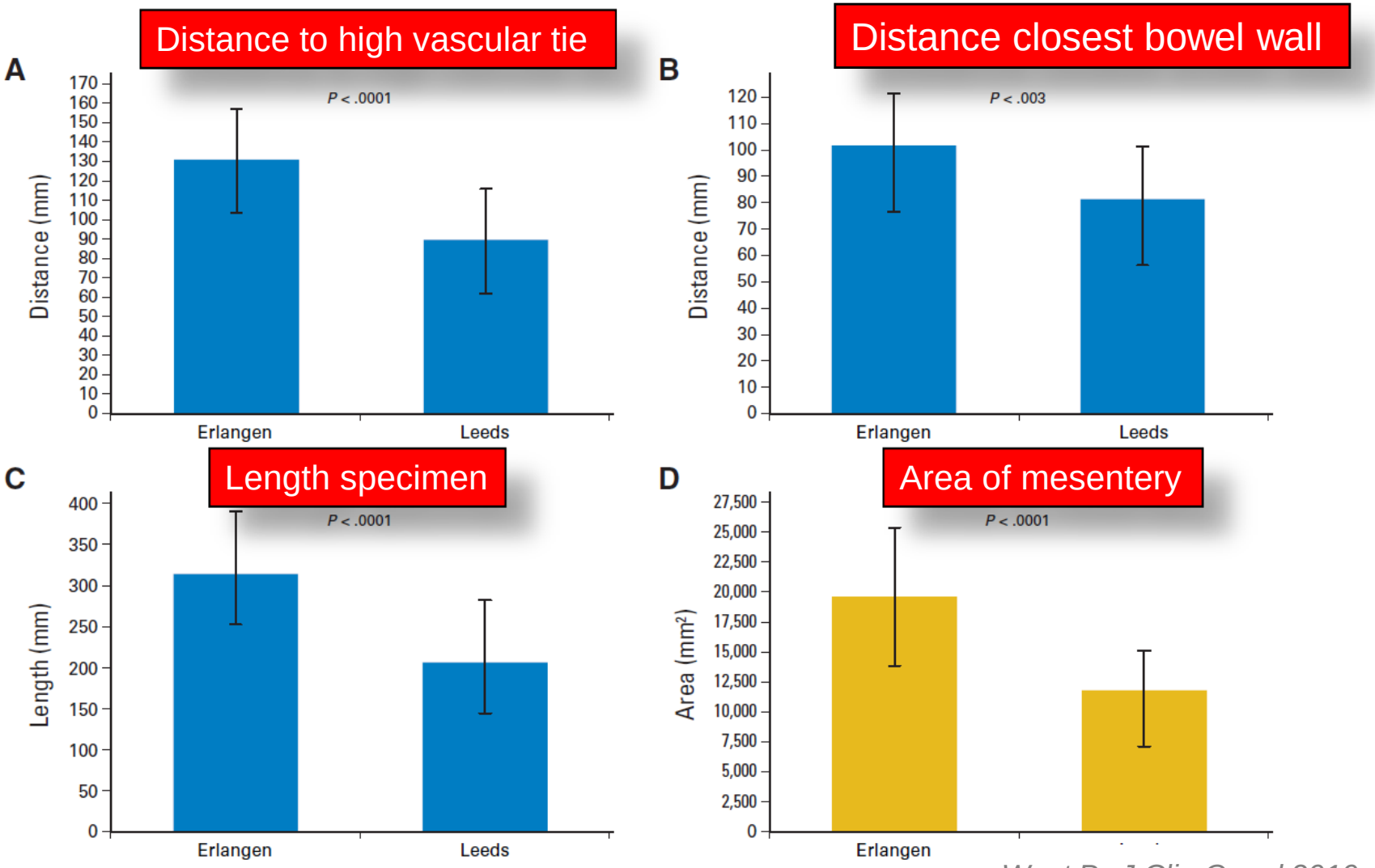

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THE LYMPHATICS OF THE COLON.

WITH SPECIAL REFERENCE TO THE OPERATIVE TREATMENT OF CANCER OF THE COLON.

BY J. KAY JAMIESON, M.B.,

Demonstrator of Anatomy in the University of Leeds.

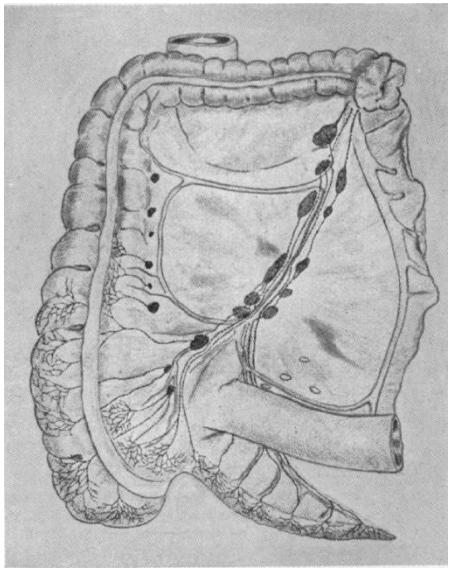
AND

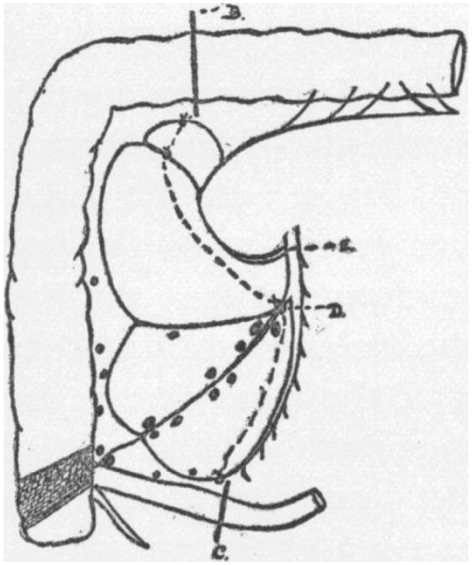
J. F. DOBSON, M.S., F.R.C.S.,

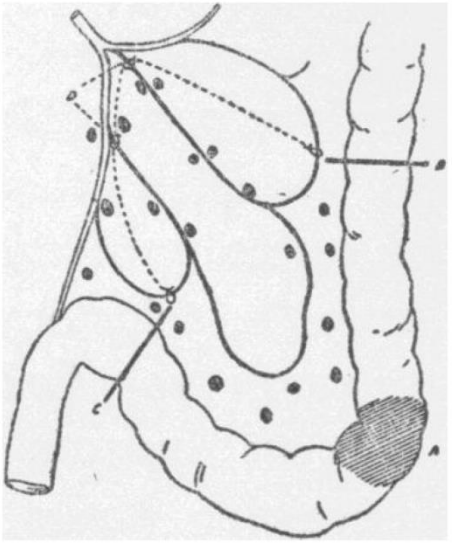
Senior Assistant Surgeon to the Leeds General Infirmary.

OF LEEDS, ENG.,

Ann Surg 1909







Surgical Anatomy of the Colon and Rectum

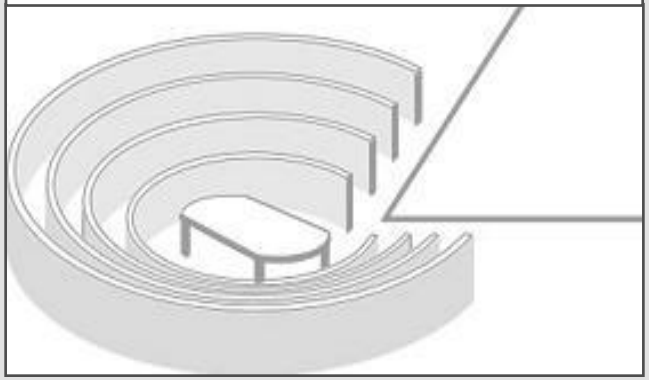
C | A | U

Christian-Albrechts-University of Kiel

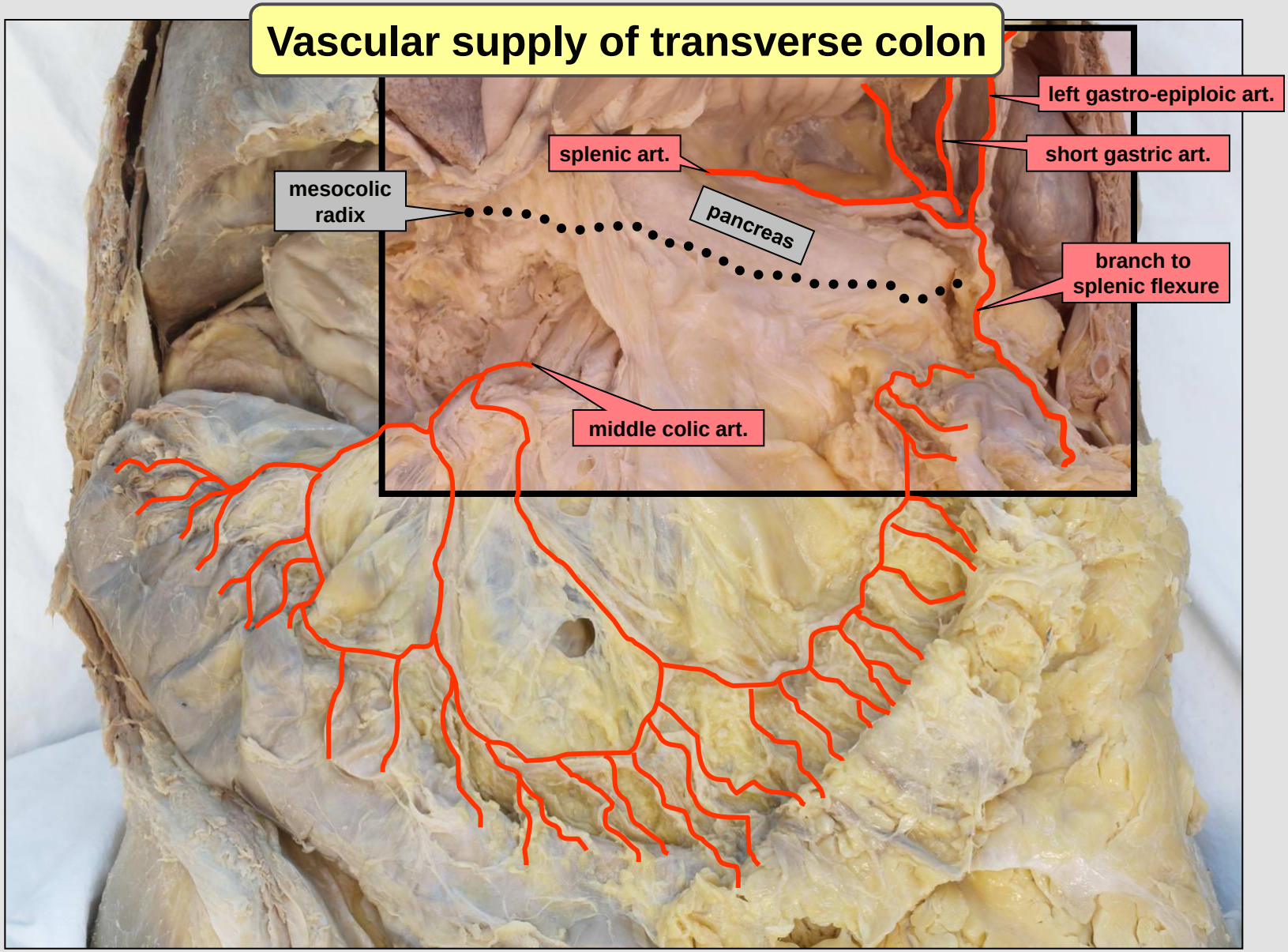
Institute of Anatomy

Prof. Dr. med. Thilo Wedel

Center of Clinical Anatomy

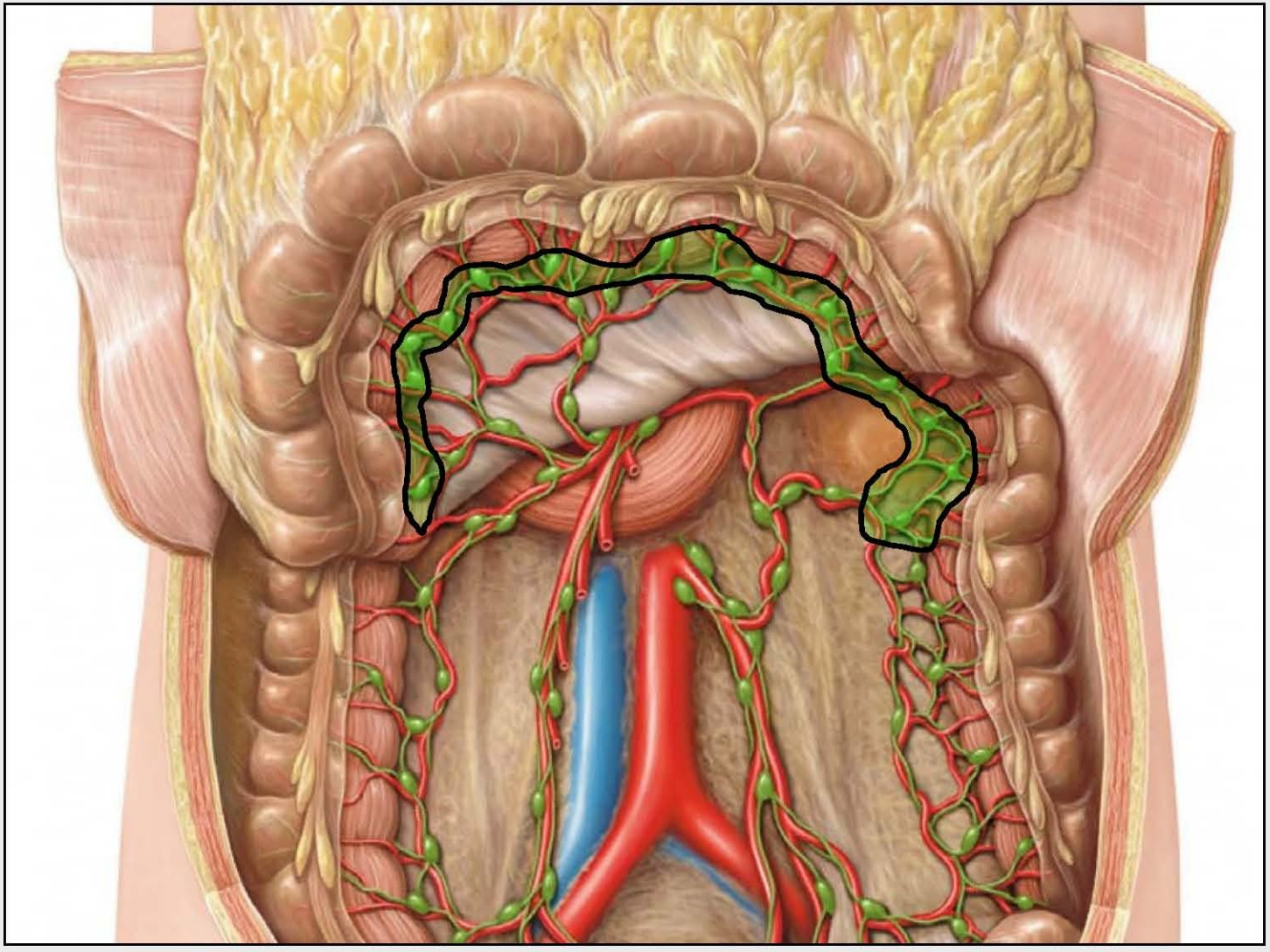


Surgical anatomy



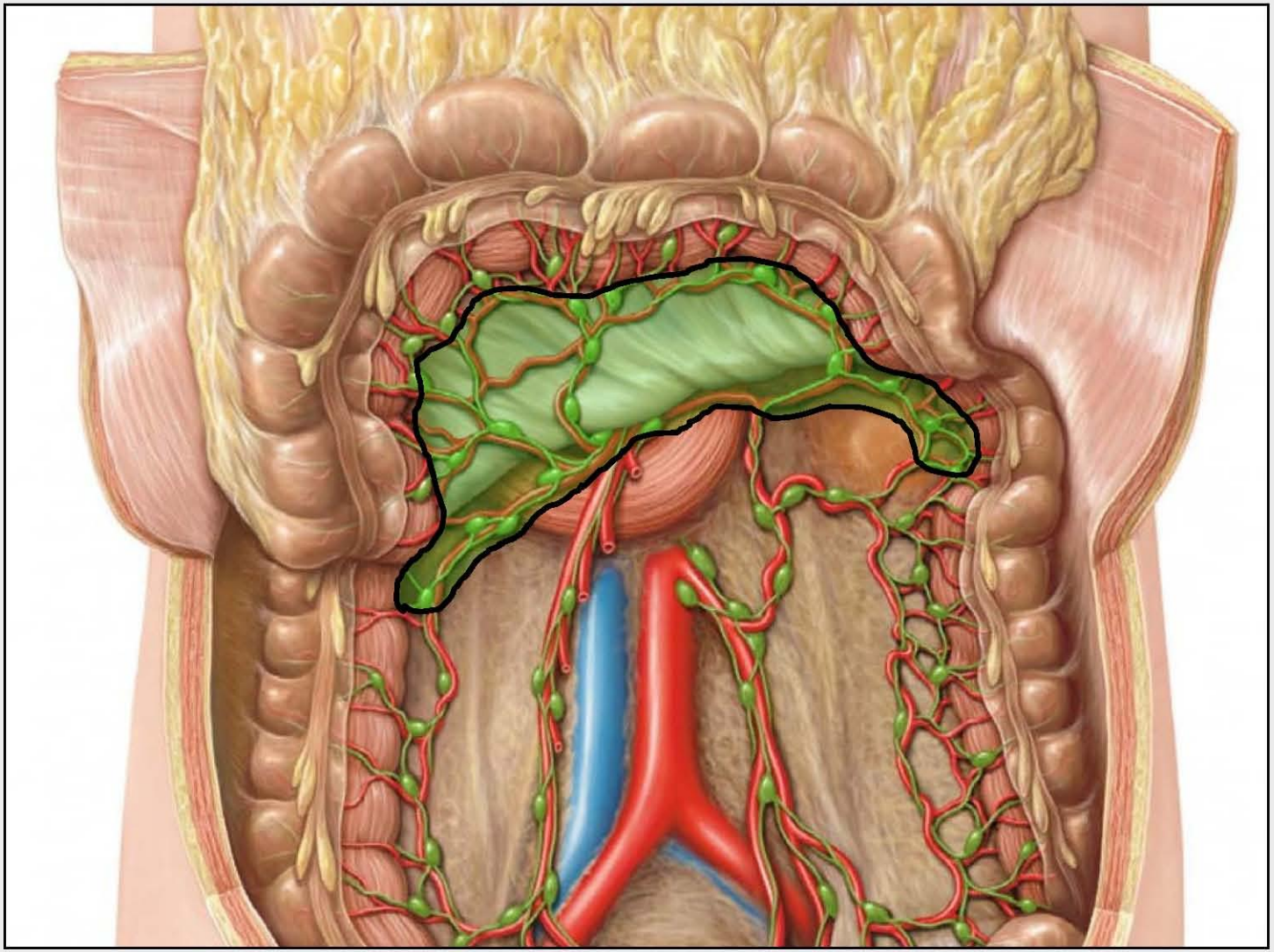
Dissection of lymph nodes

Paracolic lymph nodes



Dissection of lymph nodes

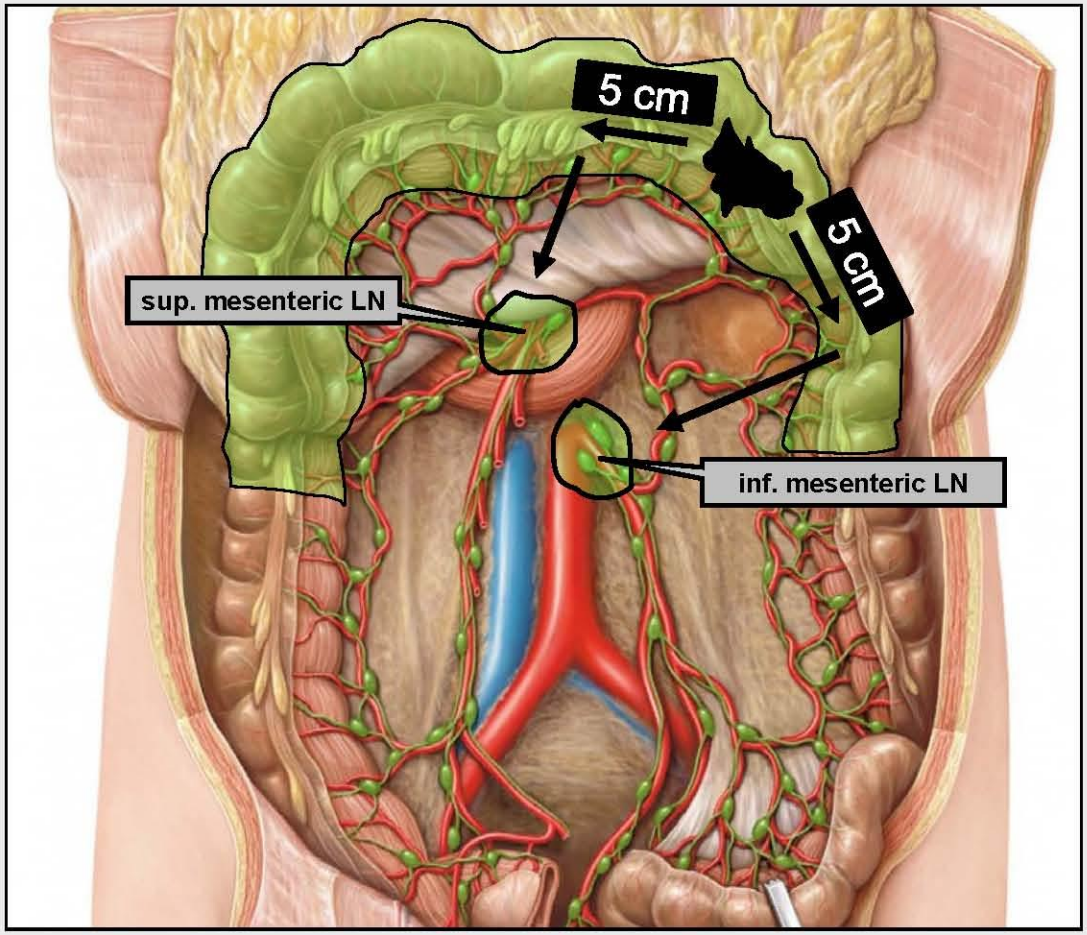
Mesocolic lymph nodes

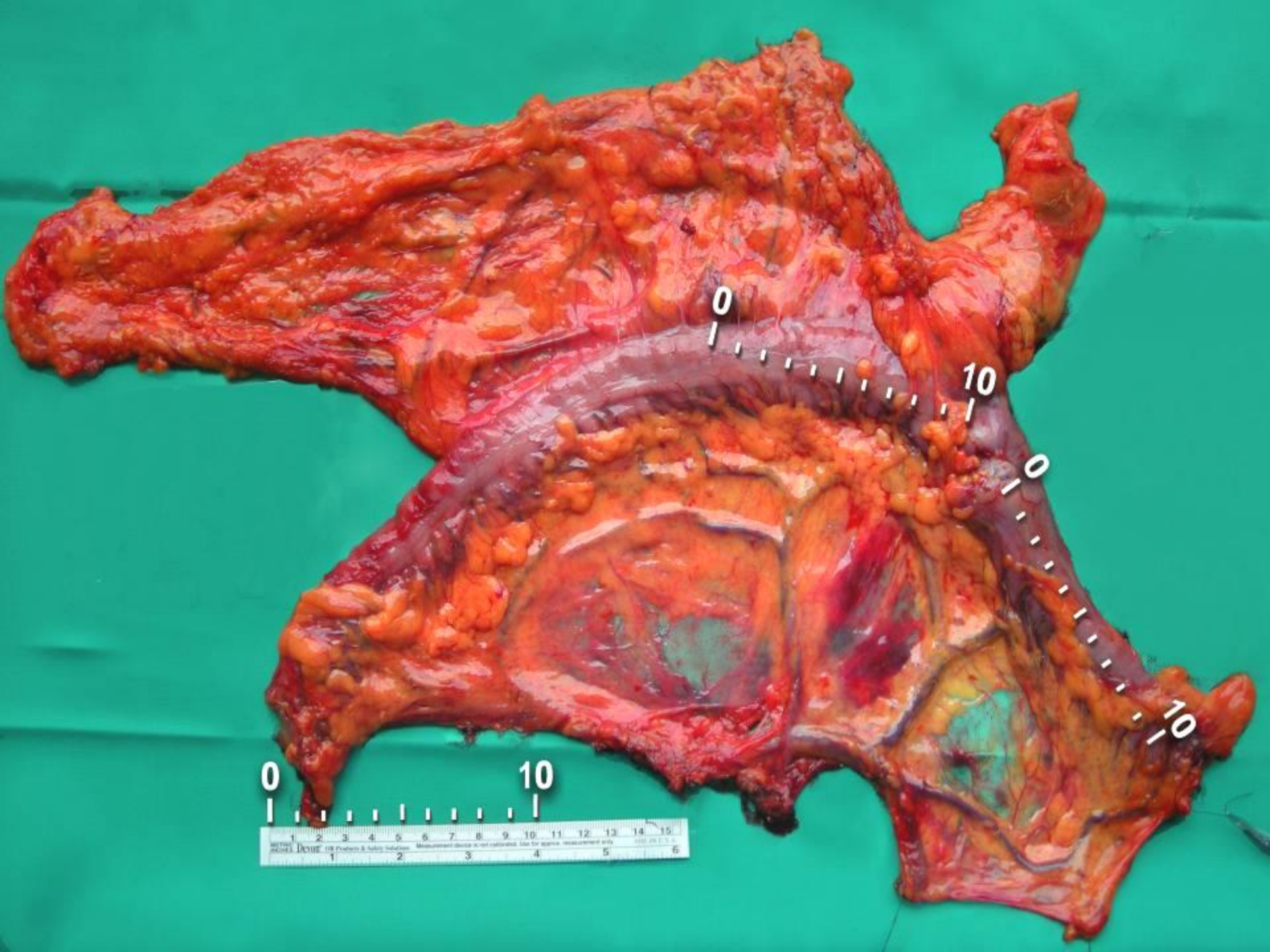


Dissection of lymph nodes

Potential lymphatic spread of transverse colon cancer

bi-directional spread !

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10
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Prognosis of patients with colonic carcinoma before, during and after implementation of complete mesocolic excision

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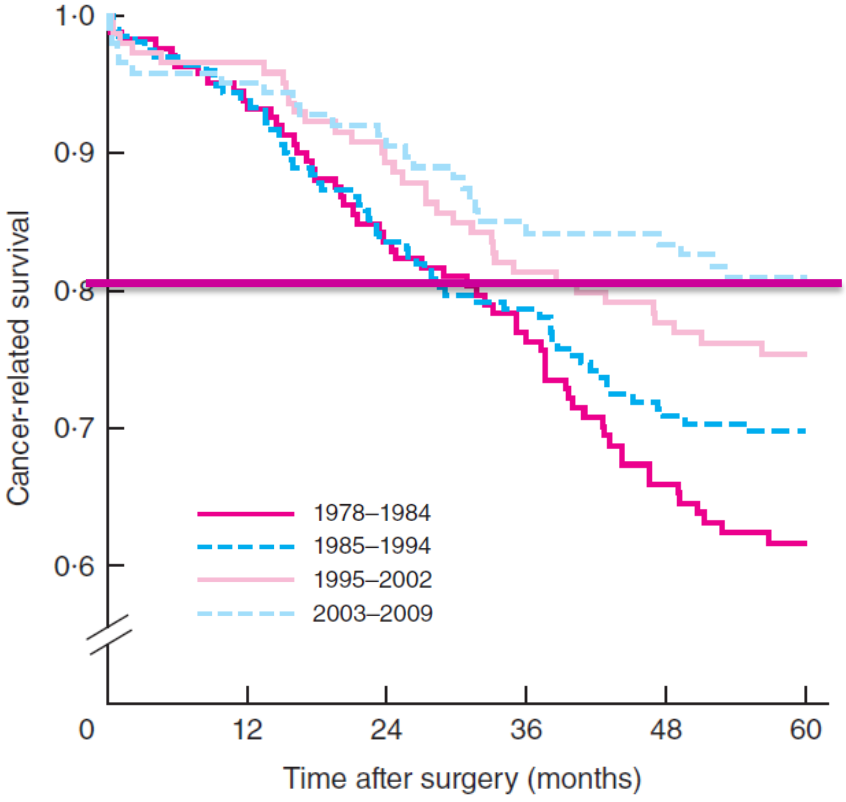
BJS 2016



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BJS 2016

Table 2 Indicators of process quality

	1978–1984 (pre-CME) ($n = 429$)	1985–1994 (CME development) ($n = 491$)	1995–2002 (CME implementation) ($n = 414$)	2003–2009 (CME) ($n = 432$)	2010–2014 (CME) ($n = 253$)	P‡
Lymph nodes examined (pN0, standard resection)						
Median (range)	25 (4–100)	32 (2–106)	27 (3–86)	28 (1–92)	25 (12–61)	< 0·001§
≥ 12 lymph nodes examined	184 of 217 (84·8)	221 of 236 (93·6)	197 of 211 (93·4)	223 of 232 (96·1)	139 of 139 (100)	< 0·001
R0 resection	416 (97·0)	485 (98·8)	410 (99·0)	431 (99·8)	253 (100)	0·001
Intraoperative tumour cell dissemination*	10 of 416 (2·4)	8 of 485 (1·6)	7 of 410 (1·7)	3 of 431 (0·7)	0 of 253 (0)	0·046
Adjuvant chemotherapy in stage III	0 of 167 (0)	12 of 189 (6·3)	72 of 138 (52·2)	104 of 136 (76·5)	62 of 78 (79)	< 0·001
Anastomotic leak†	18 of 417 (4·3)	9 of 480 (1·9)	11 of 404 (2·7)	18 of 424 (4·2)	3 of 246 (1·2)	0·047
Postoperative morbidity	74 (17·2)	69 (14·1)	85 (20·5)	95 (22·0)	54 (21·3)	0·013
In-hospital mortality	16 (3·7)	9 (1·8)	14 (3·4)	10 (2·3)	6 (2·4)	0·383

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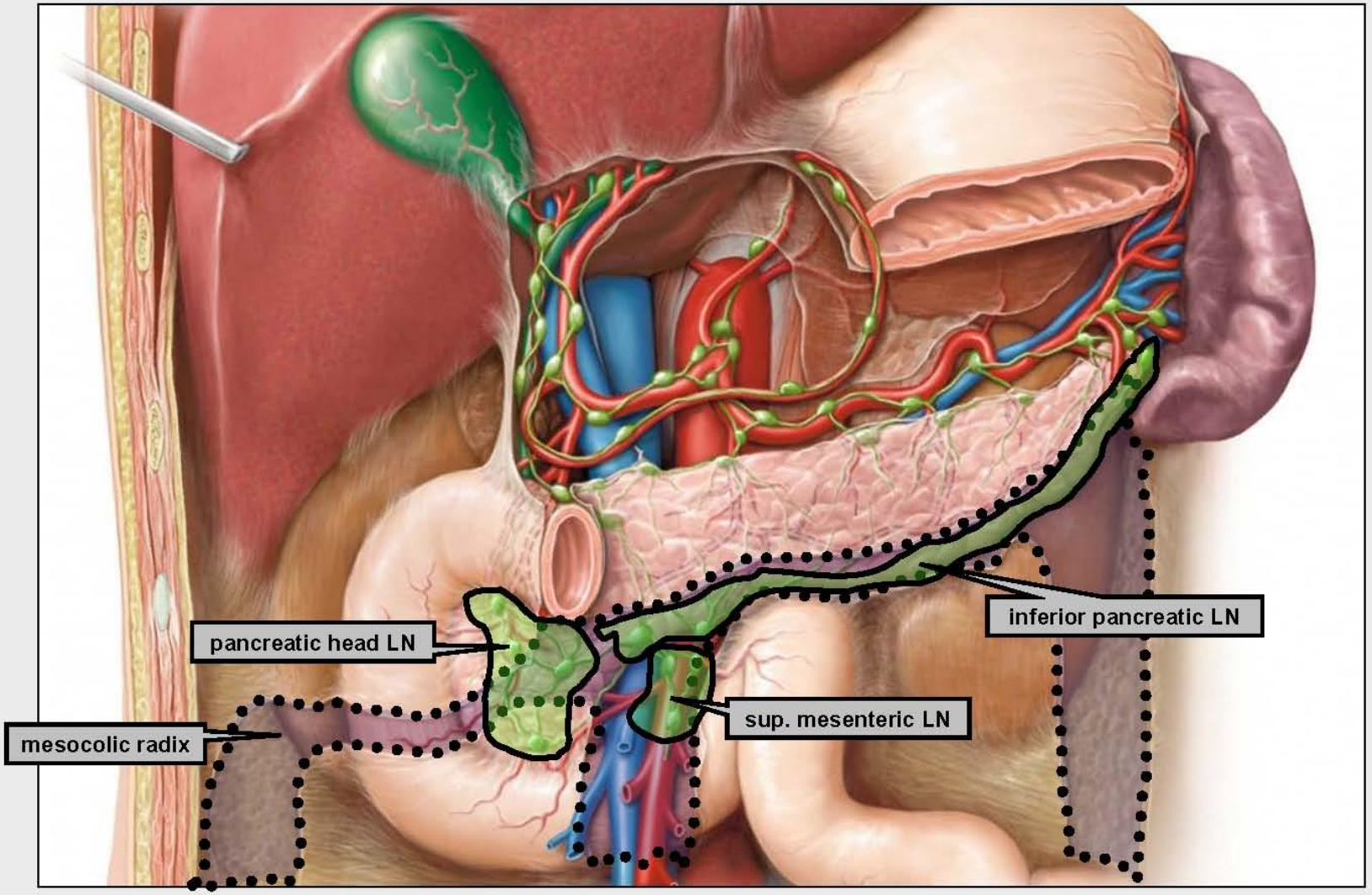
Postoperative morbidity	74 (17·2)	69 (14·1)	85 (20·5)	95 (22·0)	54 (21·3)	0·013
In-hospital mortality	16 (3·7)	9 (1·8)	14 (3·4)	10 (2·3)	6 (2·4)	0·383

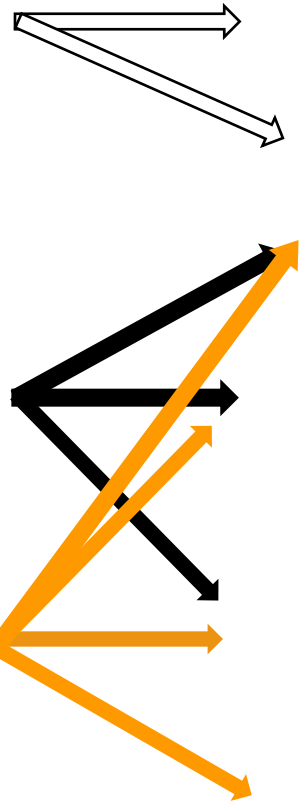
Dissection of lymph nodes

Potential lymphatic spread of transverse colon cancer



Transverse colon cancer

Potential Lymphatic Spread



Hepatic flexure

pancreatic head

right gastroepiploic a.

Transverse colon

inferior aspect left pancreas

Splenic flexure

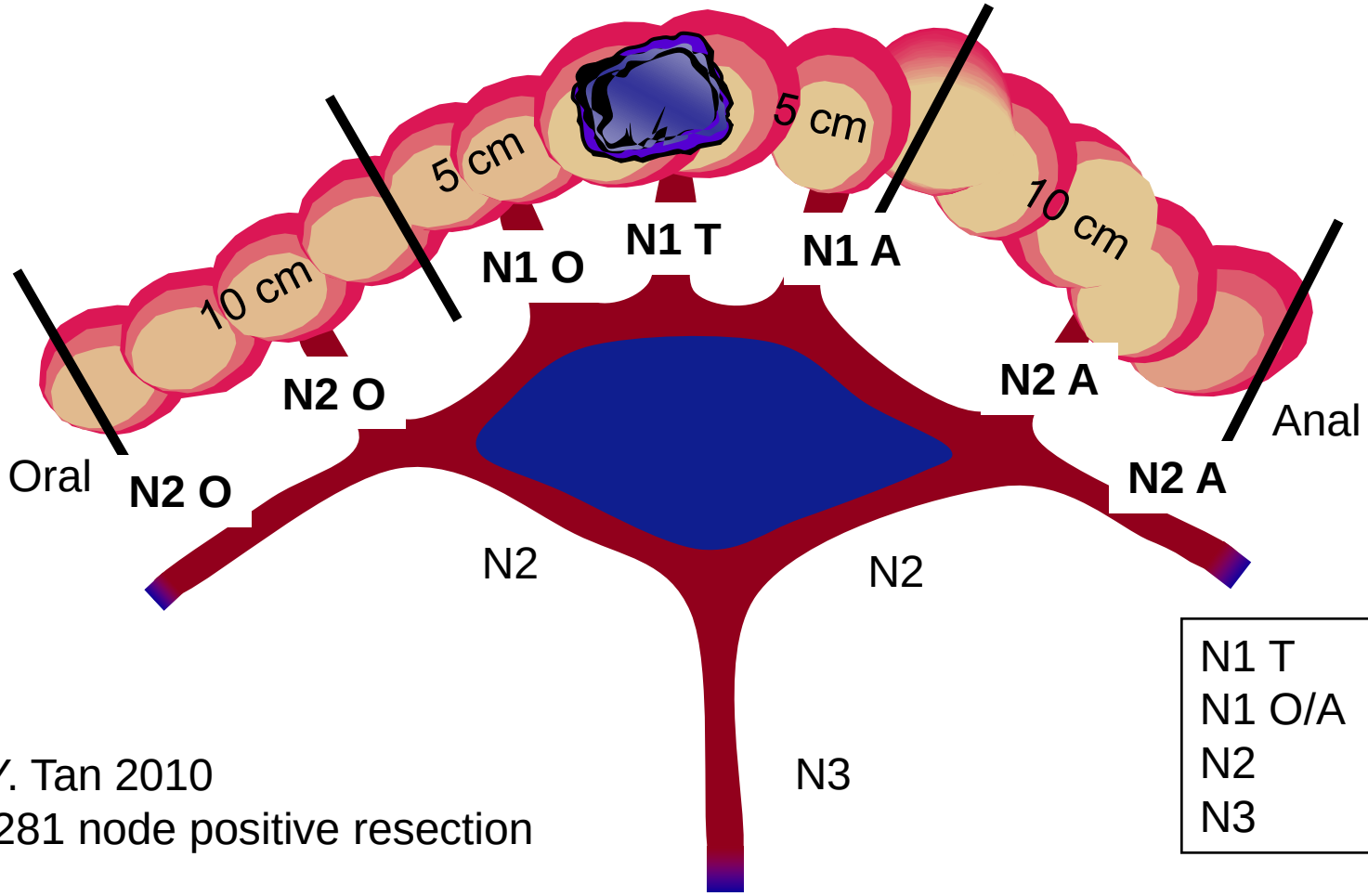
mesenteric root

inf. mesent. a.

Lymph Node metastasis

- Where ?
- More LN = upstaging ?
- In a stepwise fashion (skip lesions) ?
- Micrometastasis?

Location of N+



N1 T	52 %
N1 O/A	30 %
N2	16 %
N3	2 %

K.Y. Tan 2010
n=281 node positive resection

Disease-free survival after complete mesocolic excision compared with conventional colon cancer surgery: a retrospective, population-based study

Claus Anders Bertelsen, Anders Ulrich Neuenschwander, Jens Erik Jansen, Michael Wilhelmsen, Anders Kirkegaard-Klitbo, Jutaka Reilin Tenma, Birgitte Bols, Peter Ingeholm, Leif Ahrenst Rasmussen, Lars Vedel Jepsen, Else Refsgaard Iversen, Bent Kristensen, Ismail Gögenur, on the behalf of the Danish Colorectal Cancer Group

Lancet Oncol 2015

	Non-CME (n=1031)	CME (n=364)	p value
Lymph nodes resected			<0·0001†
Mean (SD)	20·9 (10)	36·5 (15·9)	..
Median (IQR)	19 (14–26)	34 (25–45)	..
Specimens with 12 or more lymph nodes	913 (89%)	362 (99%)	<0·0001†
Lymph node metastases			0·0006†
Mean (SD)	1·3 (2·9)	2·2 (4·7)	..
Median (IQR)	0 (0–1)	0 (0–2)	..
Lymph node ratio, mean (SD)	0·07 (0·14)	0·07 (0·14)	0·94†
N stage			0·0003*
pN0	667 (65%)	224 (62%)	..
pN1	249 (24%)	70 (19%)	..
pN2	116 (11%)	70 (19%)	..
Resection plane‡			<0·0001*
Mesocolic	432 (60%)	296 (82%)	..
Intramescolic	261 (36%)	58 (16%)	..
Muscularis	28 (4%)	8 (2%)	..

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Lancet Oncol 2015

	Hazard ratios (95% CI)	p value
UICC stage II (n=667)		
Complete mesocolic excision	0·44 (0·23–0·86)	0·018
Perineural invasion	2·50 (1·22–5·08)	0·011
R1 resection	1·99 (0·94–4·23)	0·072
Laparoscopic	0·65 (0·40–1·07)	0·089
UICC stage III (n=504)		
Complete mesocolic excision	0·64 (0·42–1·00)	0·048
Mucinous or signet ring cell carcinoma	1·59 (1·02–2·49)	0·042
Serosal involvement	2·21 (1·51–3·23)	<0·0001
Perineural invasion	2·20 (1·49–3·25)	<0·0001
Lymph node ratio	10·9 (4·81–24·5)	<0·0001
Fixation of tumour	1·75 (1·13–2·69)	0·0112
Adjuvant chemotherapy	0·62 (0·41–0·93)	0·020
Laparoscopic	1·40 (0·94–2·08)	0·095

Table 4: Reduced multivariable Cox regression model analyses of disease-free survival in UICC stage II and III patients

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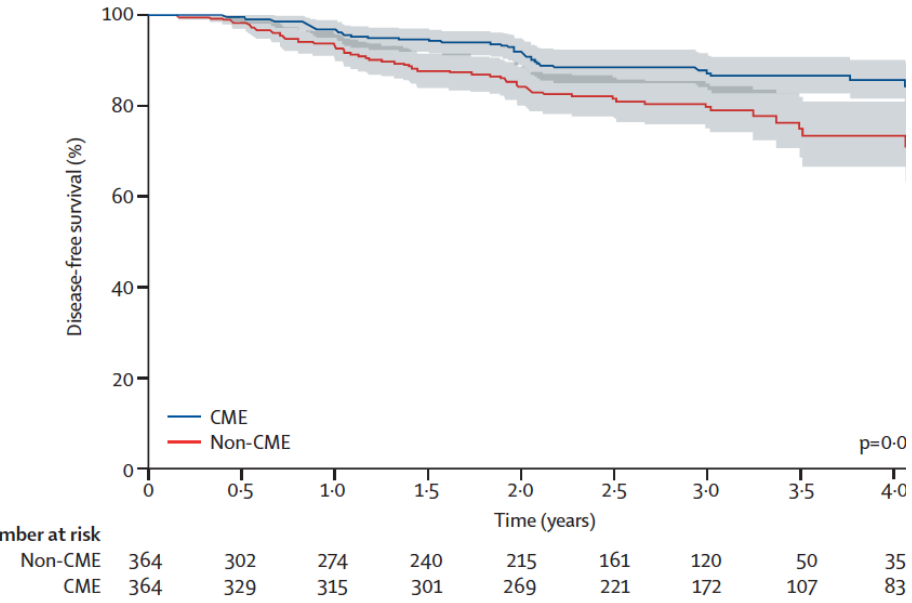
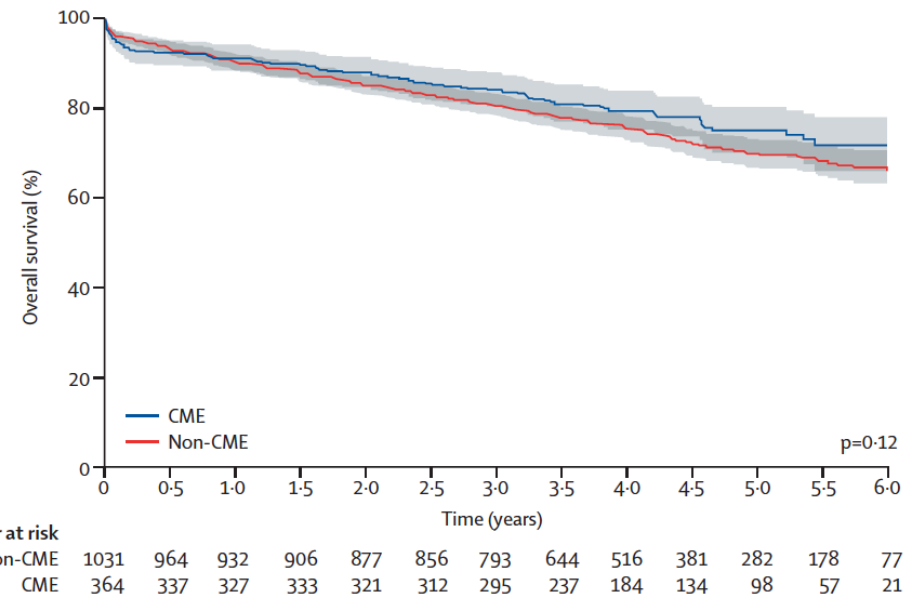
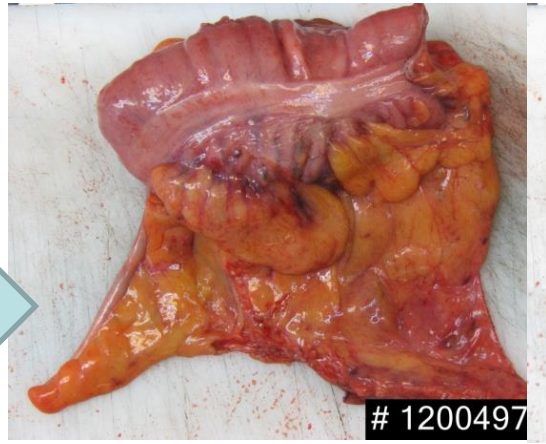
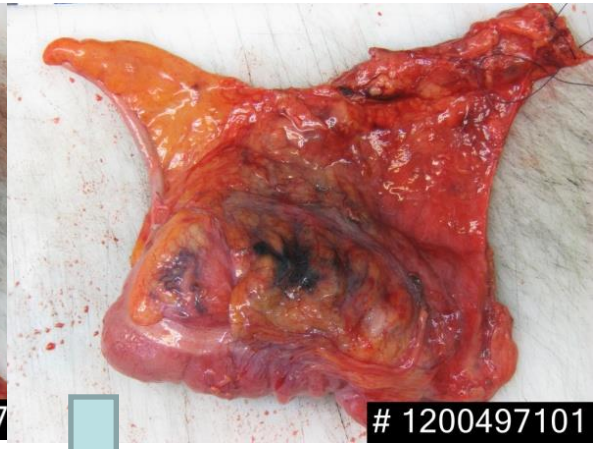




matched pairs after propensity scoring

MDT workshops





Improved survival after an educational project on colon cancer management in the county of Stockholm – A population based cohort study

R. Bernhoff [a,b,*], A. Martling [a,b], A. Sjövall [a,b], F. Granath [c], W. Hohenberger [d], T. Holm [a,b]

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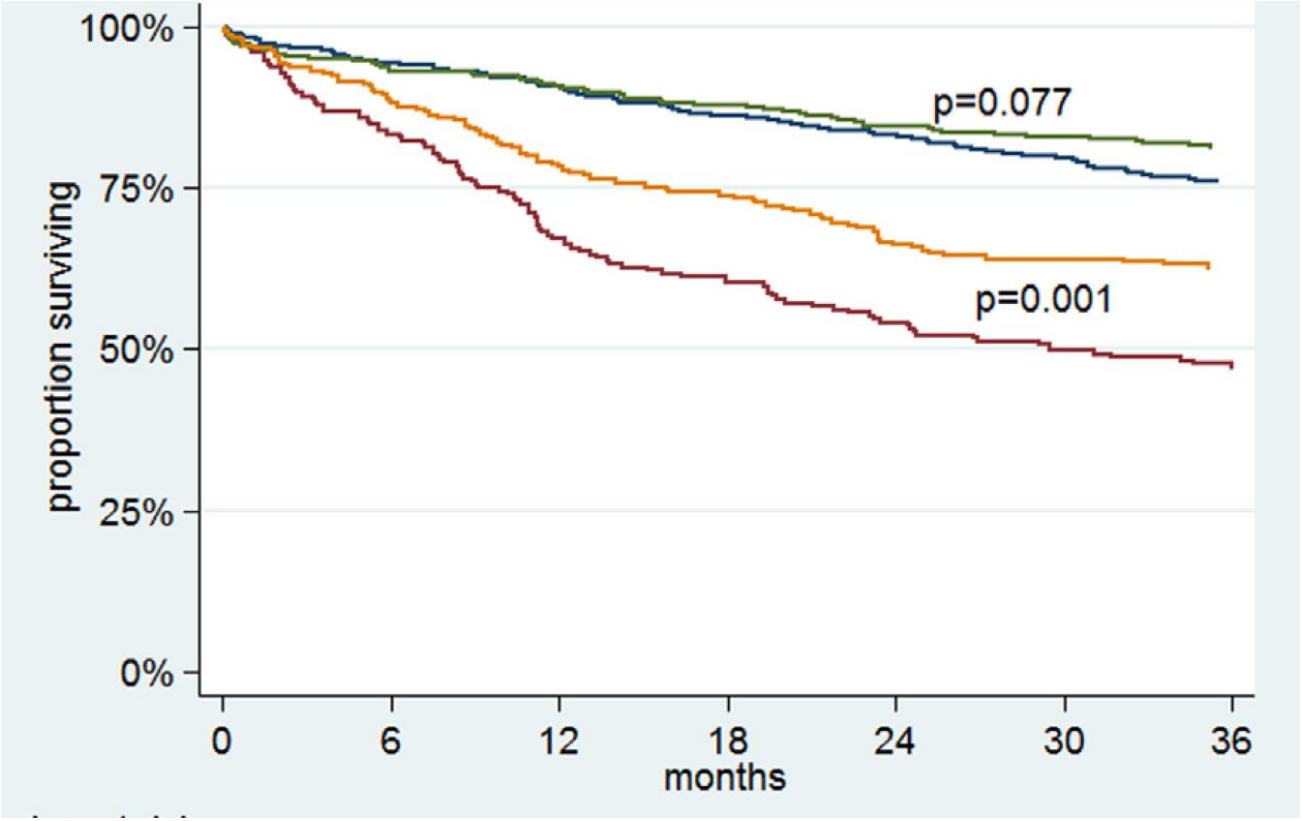
[b] *Section of Coloproctology, Center of Digestive Diseases, Karolinska University Hospital, Stockholm, Sweden*
[c] *Unit of Clinical Epidemiology, Department of Medicine, Karolinska Institutet, Stockholm, Sweden*
[d] *Department of Surgery, University of Erlangen, Erlangen, Germany*

EJSO 2015

2001-03 before
2006-08 after

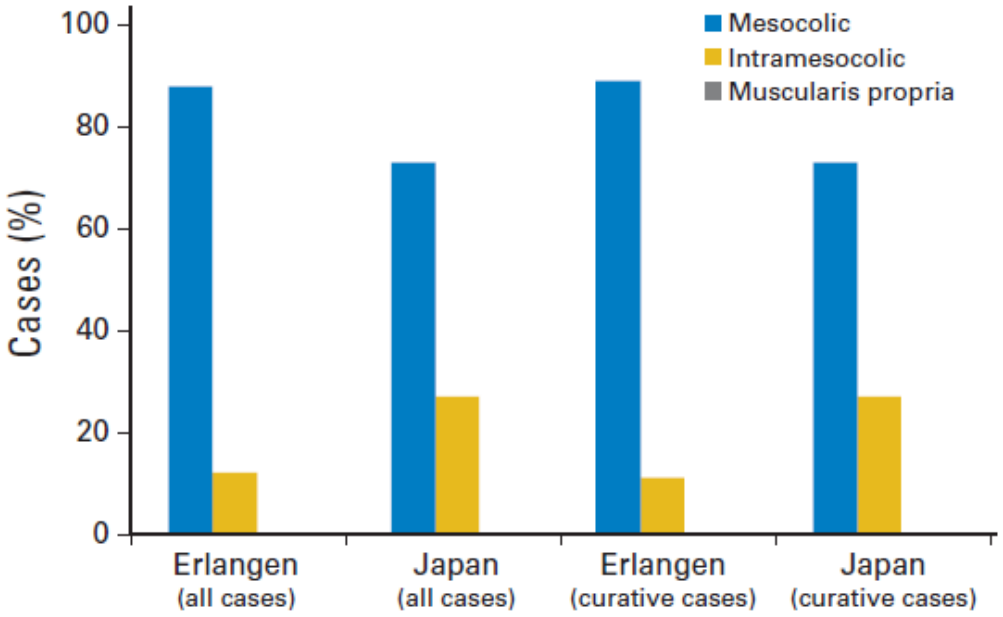


Stage I-II after / before

Stage III after / before

CME (complete mesocolic exsision)

Tokio vs. Erlangen



Laparoscopy :

- same mesocolic plane rate
- greater distance high tie
- shorter specimen

West P. J Clin Oncol 2012

Robotic Right Colectomy with Modified Complete Mesocolic Excision: Long-Term Oncologic Outcomes

Giuseppe Spinoglio, MD[1], Alessandra Marano, MD[2], Paolo Pietro Bianchi, PhD[3], Fabio Priora, MD[4], Luca Matteo Lenti, PhD[4], Ferruccio Ravazzoni, PhD[4], and Giampaolo Formisano, MD[3]

Ann Surg Oncol 2016

	mCME or CME						Not CME	
	Our series	Cho et al.[28]	Bertelsen et al.[23]	Shin et al.[56]	Hohemberger et al.[8]	Bokey et al.[38]	CLASSIC[55]	COLOR[5]
Patients (*n*)	100	773	364	168	1329	779	794	1248
Type of surgery	Right colectomy	Right colectomy	Colectomy	Colectomy	Colectomy	Colectomy	Colectomy	Colectomy
Type of approach	Robotic	Open + MIS	Open + lap	Lap	Open	Open + lap	Open + lap	Open + lap
Mean FUP (years)	4	5	4	4.8	5	5	5	5
DFS[a] (%)	91.4	82 Open/82.9 MIS/ 82.8 all	85.8	88.3	–	–	64 Open/57.6 lap	67.9 Open/ 66.5 lap
DSS[a] (%)	94.5	84.2 Open/90.8 MIS/ 85.8 all	–	95.5	89.1	89.8	–	–
OS[a] (%)	90.3	82.4 Open/89.8 MIS/ 84 % all	74.9	89.6	–	76.2	62.7 Open/ 55.7 lap	74.2 Open/ 73.8 lap

CME for Colon cancer

(CME for Colon cancer)

Quality control and standardisation of colinic surgery

- **Respect mesocolic plane**
- High lymphovasular resection (cave morbidity)
- **MDT: pathology feedback of specimens**
- Team training

18th ALPINE COLORECTAL MEETING

22th-24th January 2017
Villars, Switzerland

www.alpinecolorectal.org

Video Session: Transanal Surgery

Watch and wait strategy

Prevention of complications

Inherited colorectal cancer

Debate on ventral mesh rectopexy

Hot topics in IBD

Trial update