Chirurgie chronischer entzündlicher Darmerkrankungen

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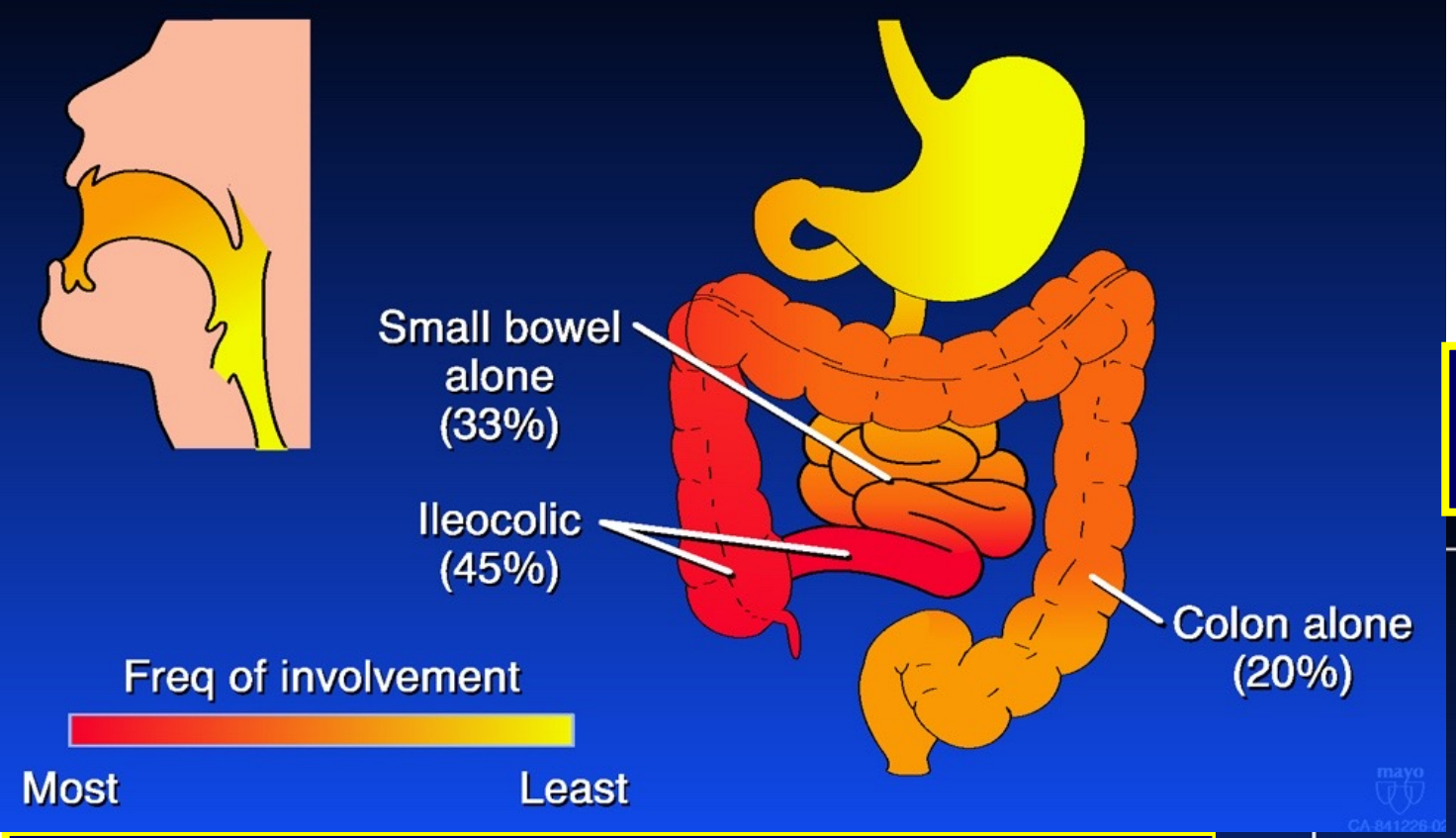
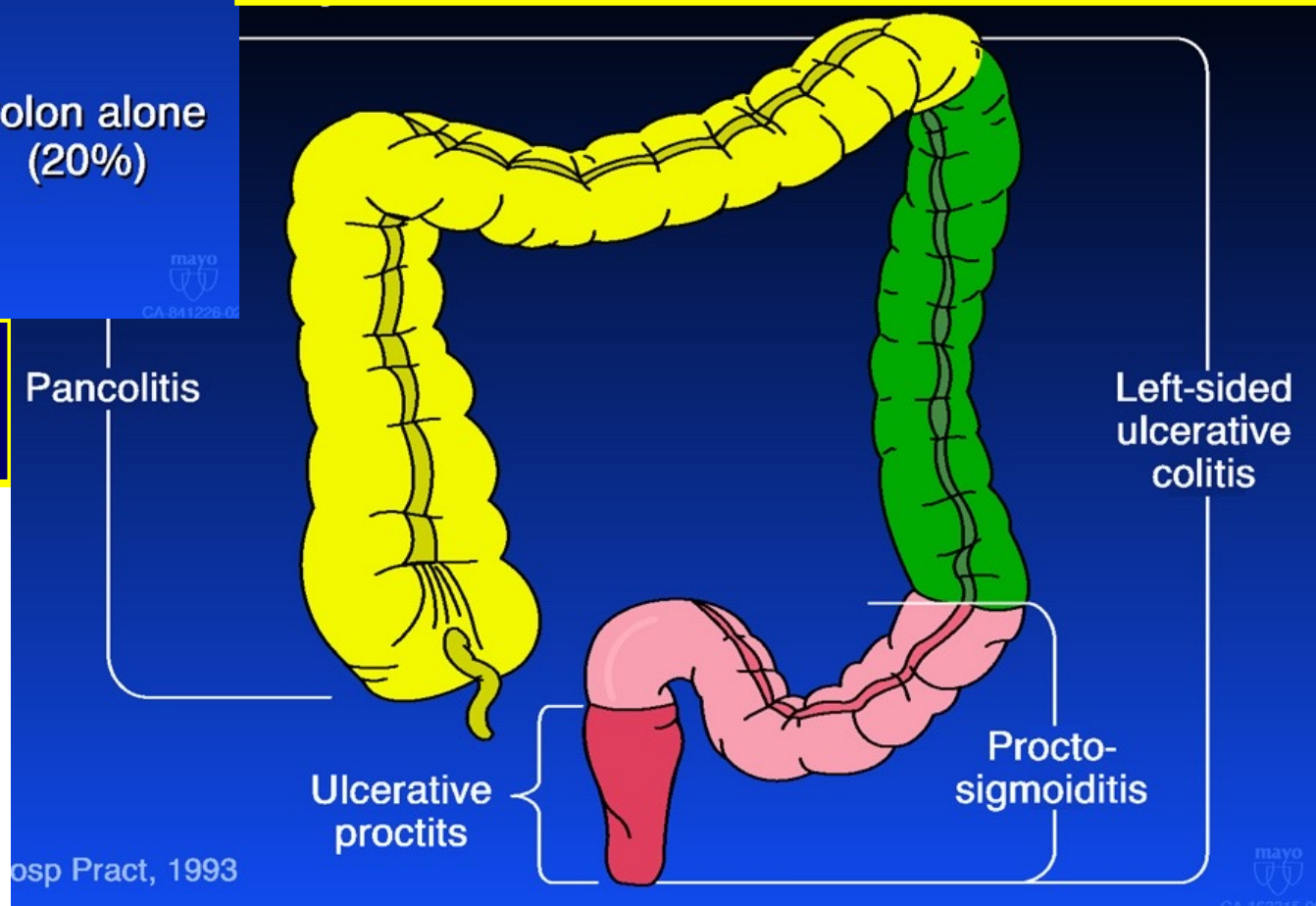


M. Crohn

Kolitis ulzerosa



IBD: Indications for Surgery

Intractability

Complications

Timing ?

M. Crohn

Colitis ulcerosa

1. Kann M. Crohn geheilt werden ?

- Nein
- Ja
- Ich weiss nicht

IBD: Indications for Surgery

Intractability **Complications**

Timing ?

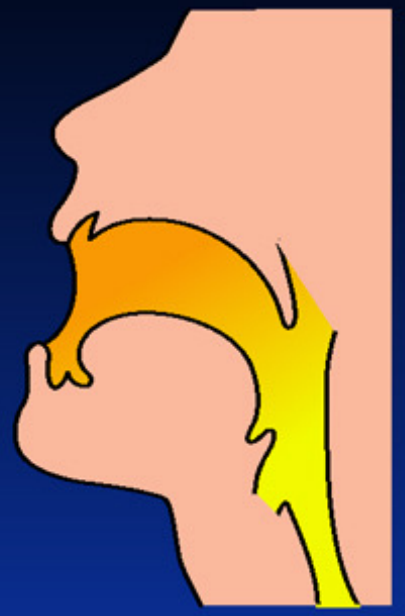
M. Crohn

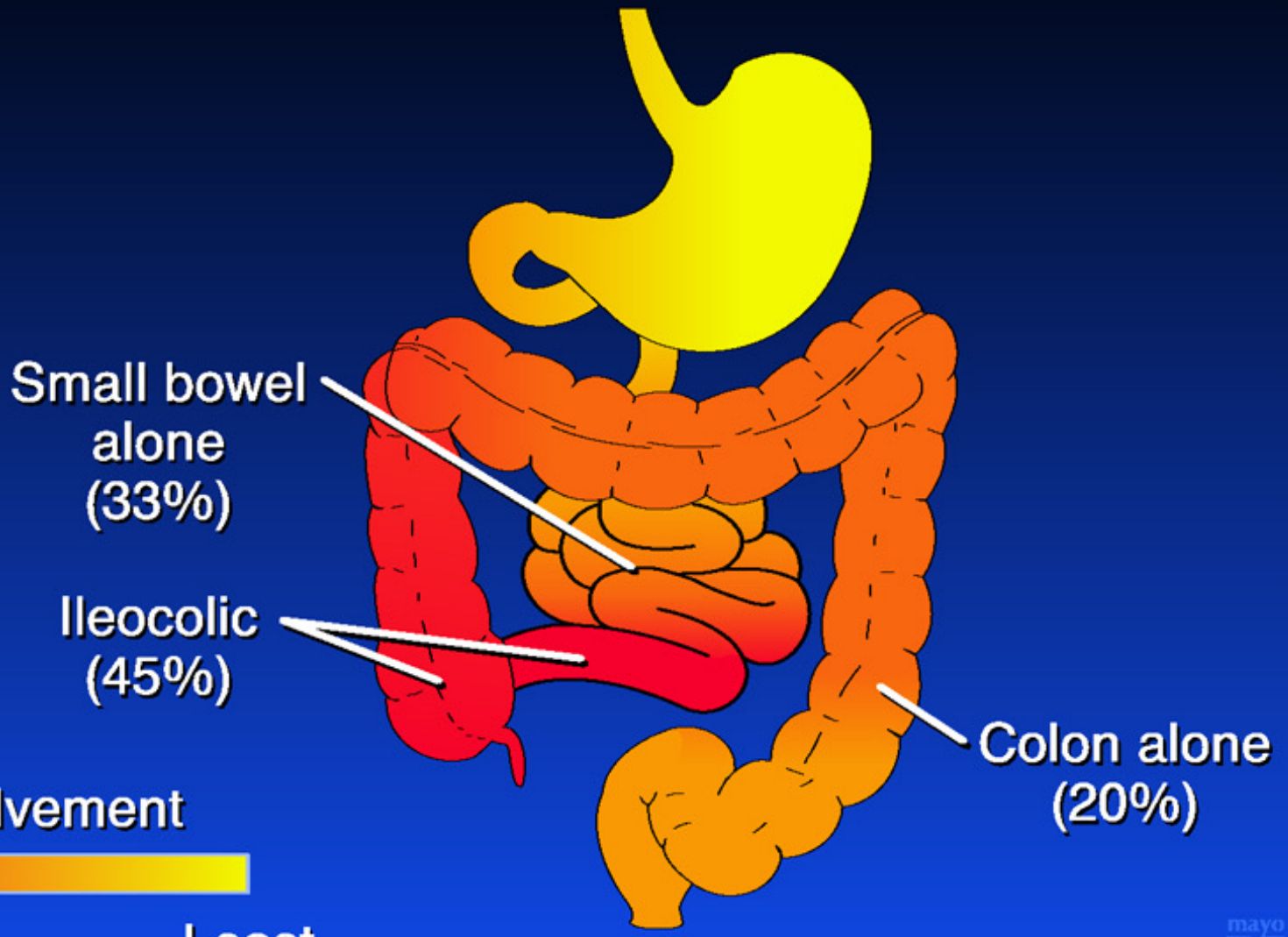
"as little as possible,
as much as necessary"

Colitis ulcerosa

= curative potential

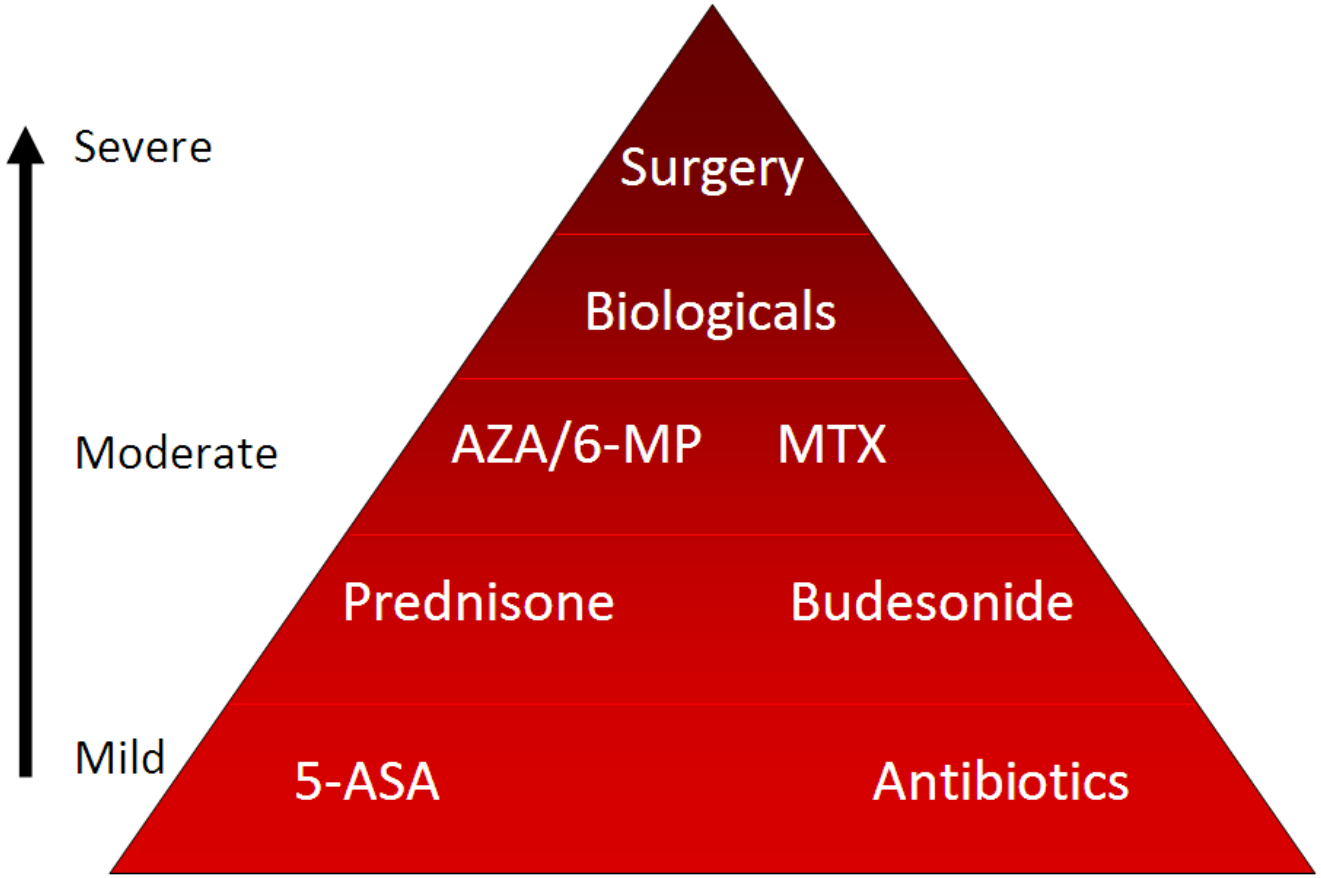
M. Crohn





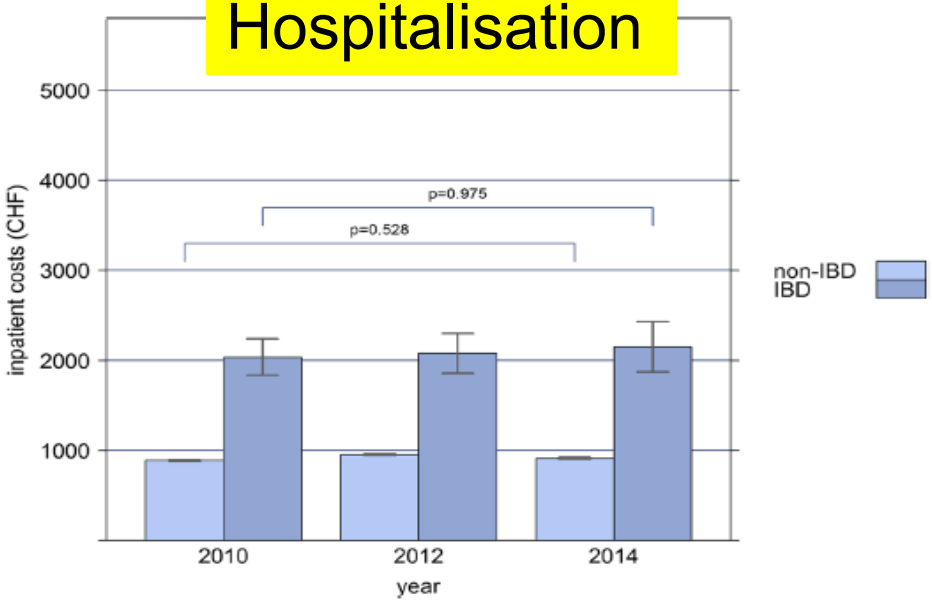
Freq of involvement

Most — Least

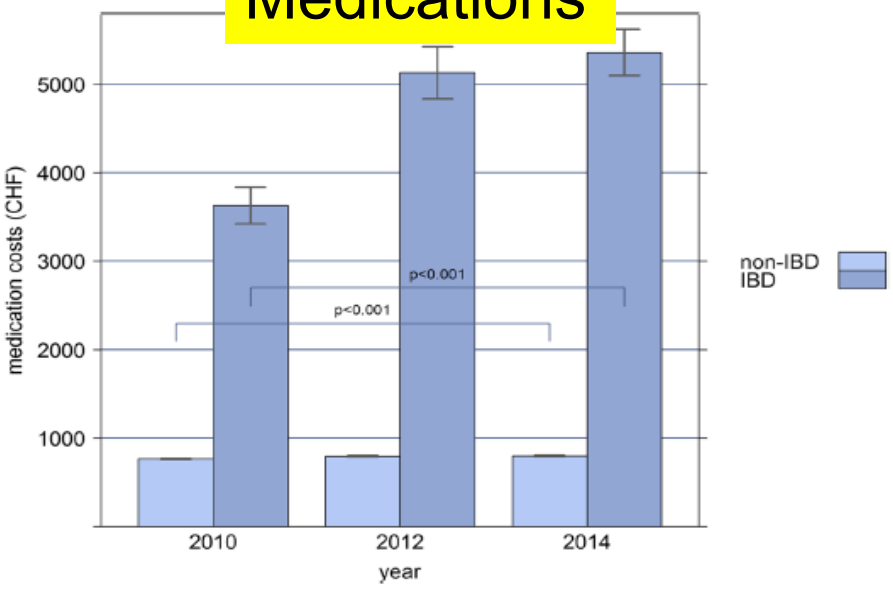


Lancet Gastroenterol Hepatol 2017

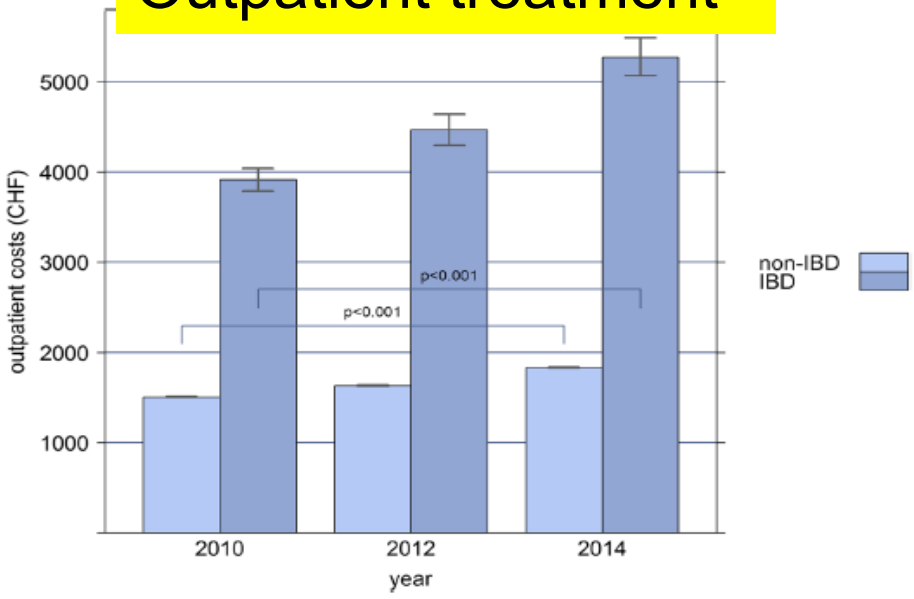
Hospitalisation



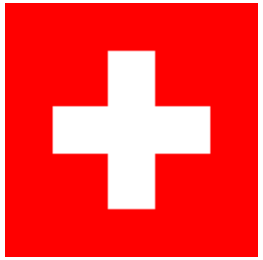
Medications



Outpatient treatment



No biologics	10‘437 CHF	**9‘200 €**
Biologics	28‘265 CHF	**24‘800 €**



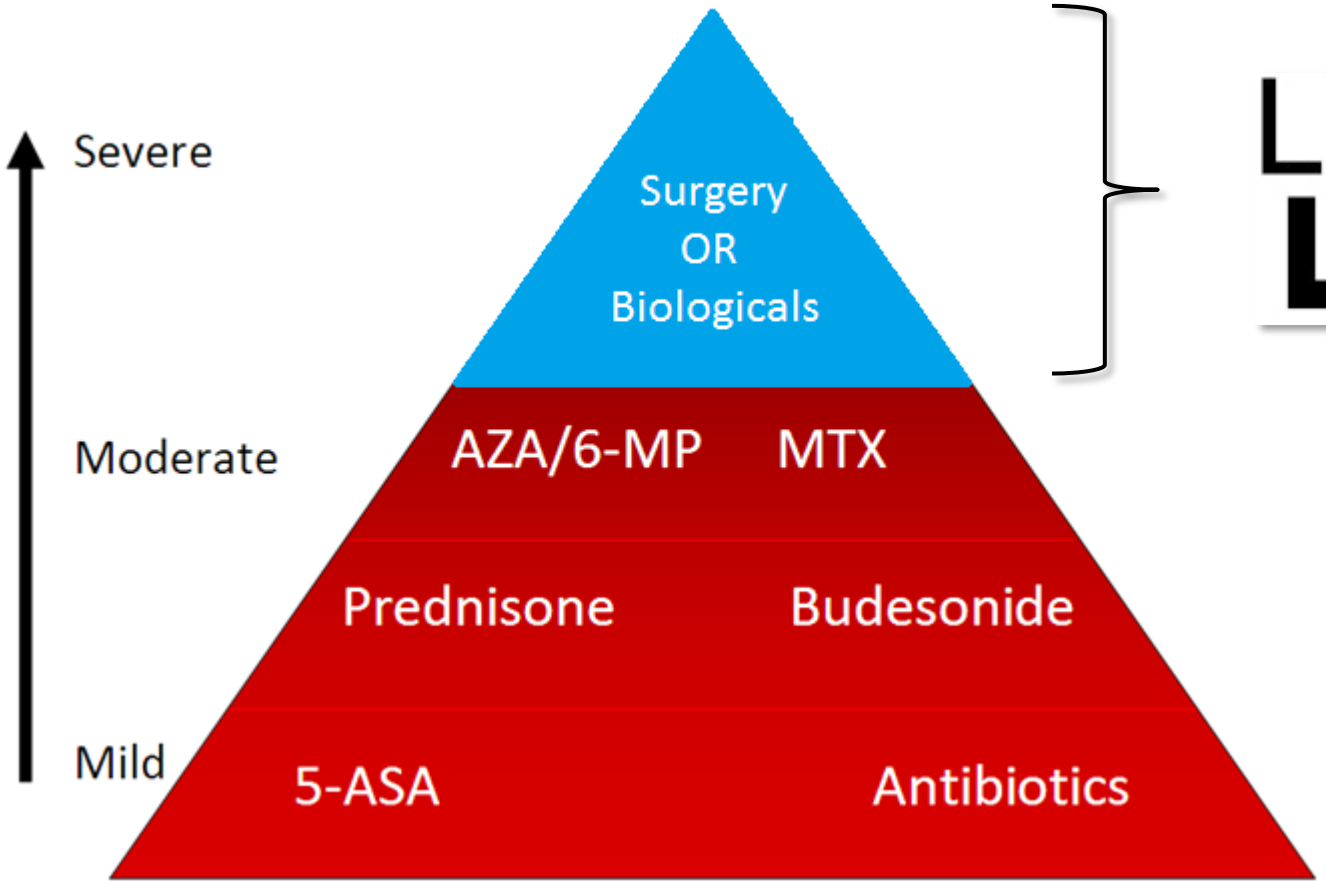
2014
N=4812

Bähler C, Schoepfer A. Eur J Gastroenterol Hepatol 2017

2022 : Surgery ≠ Failure of medical therapy

Laparoscopic ileocaecal resection versus infliximab for terminal ileitis in Crohn's disease: a randomised controlled, open-label, multicentre trial

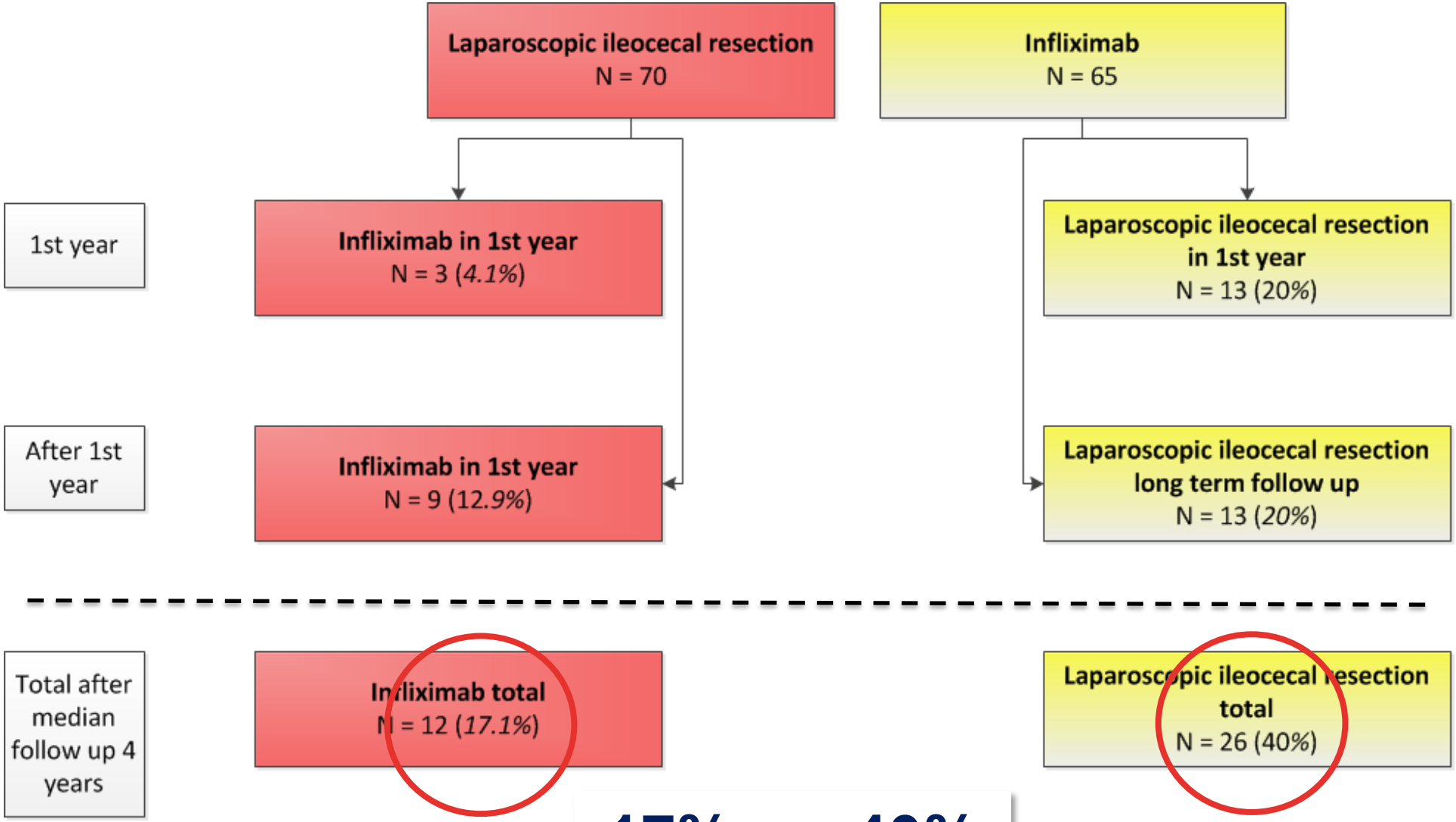
*Cyriel Y Ponsioen, E Joline de Groof, Emma J Eshuis, Tjibbe J Gardenbroek, Patrick M M Bossuyt, Ailsa Hart, Janindra Warusavitarne, Christianne J Buskens, Ad A van Bodegraven, Menno A Brink, Esther C J Consten, Bart A van Wagensveld, Marno C M Rijk, Rogier M P H Crolla, Casper G Noomen, Alexander P J Houdijk, Rosalie C Mallant, Maarten Boom, Willem A Marsman, Hein B Stockmann, Bregje Mol, A Jeroen de Groof, Pieter C Stokkers, Geert R D'Haens, Willem A Bemelman, on behalf of the LIR!C study group**



LIR!C TRIAL

Lancet Gastroenterol Hepatol 2017

Long-term follow-up



17% *vs.* 40%

LIRIC TRIAL

Lancet Gastroenterol Hepatol 2017

Cost-effectiveness of laparoscopic ileocaecal resection versus infliximab treatment of terminal ileitis in Crohn's disease: the LIR!C Trial

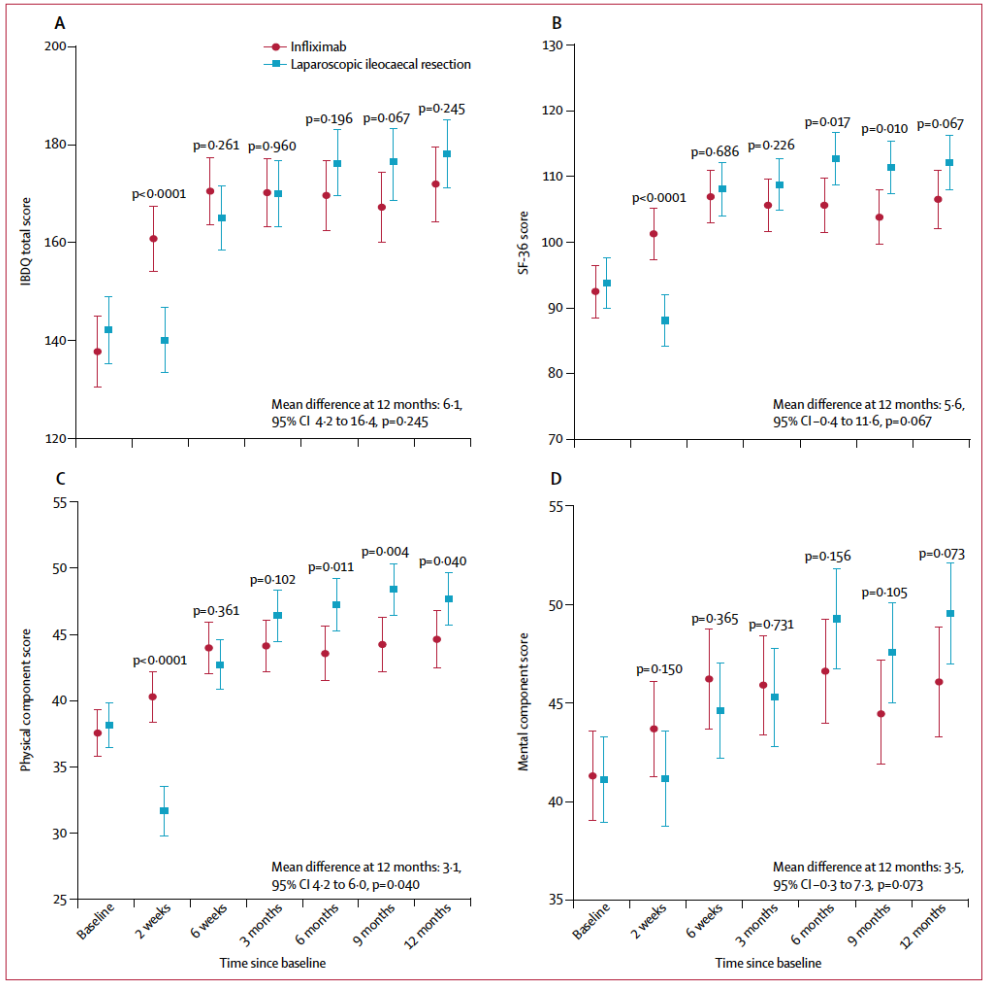
Direct health care costs

Direct healthcare costs	Laparoscopic ileocecal resection	Infliximab		
	N=73	N=70		
	Mean costs	Mean costs	Mean Difference	95% CI
Allocated treatment				
Ileocecal resection	**€4,240**	**€0**	**€4,240**	**€4,025 - €4,421**
Infliximab	**€0**	**€14,197**	**€-14,197**	**€-15,781 - €-12,613**
Admission ward	€3,540	€3,527	€-13	€-652 - €661
Admission ICU	€1,117	€0	€1,117	€215 - €3,365
Surgical re-intervention	€177	€0	€117	€42 - €415
Readmissions & re-interventions				
Readmission ward	€1,056	€923	€133	€-904 - €1,251
Ileocecal resection	€0	€886	€-886	€-1,318 - €497
Surgical (re)intervention	€162	€82	€80	€-36 - €256
Radiological intervention	€19	€0	€19	€3 - €41
Balloon dilatation	€0	€10	€-10	€-36 - €8
Infliximab/Adalimumab	€413	€30	€383	€-27 - €911
Mean total costs at 12 months	**€10,724**	**€19,655**	**€-8,931**	**€-12,087 - €5,097**

LIR!C TRIAL

de Groof EJ. Gut 2019

QoL



	Infliximab (n=70)	Laparoscopic ileocaecal resection (n=73)
Unscheduled admissions		
Number of patients readmitted	15 (21%)	13 (18%)
Time spent in hospital per patient, days	7·0 (3·0–11·0)	5·0 (3·5–10·0)
Total number of days spent in hospital by all patients	122	149
Patients admitted to intensive care unit	0	2 (3%)
Mean time spent in intensive care unit, days*	0	17·0
Scheduled admission		
Time spent in hospital per patient, days	6·8 (3·2)	6·5 (3·8)
Total number of days spent in hospital by all patients	473	471

Data are n (%), median (IQR), or mean (SD) unless otherwise stated. All patients had at least one scheduled admission for either infliximab infusions or surgery. *No SD is available for the mean number of days spent in an intensive care unit because only two patients were admitted.

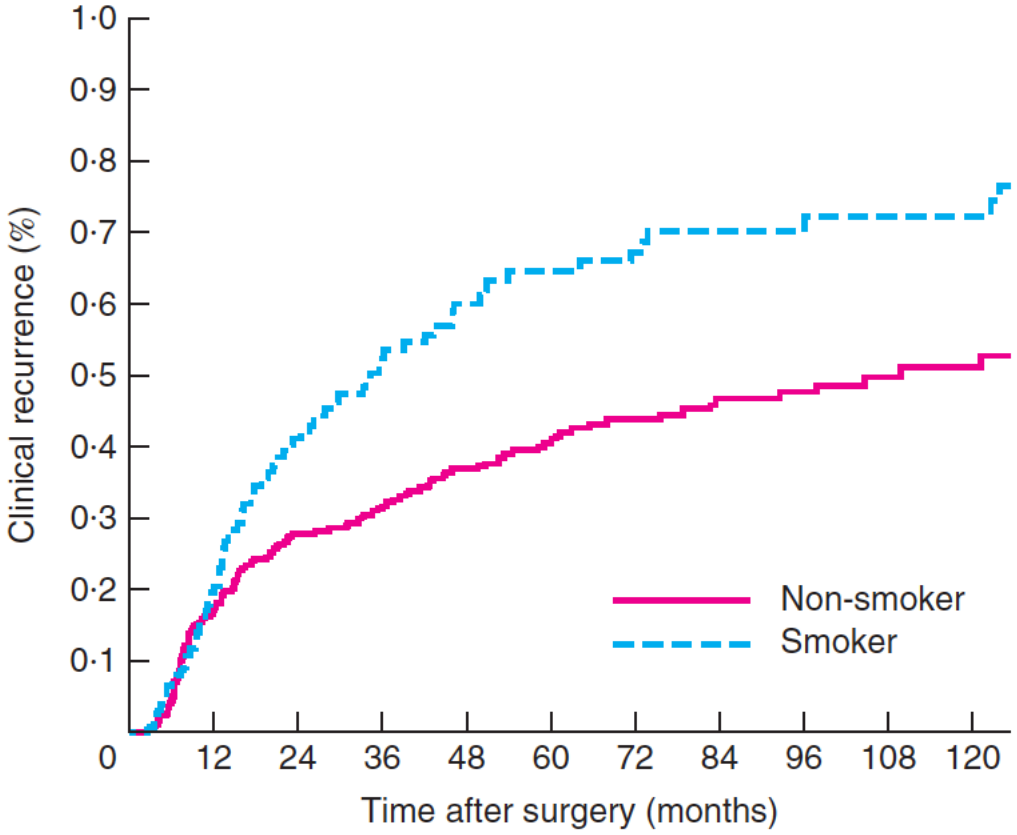
Table 2: **Unscheduled and scheduled admissions**

LIRIC TRIAL

Lancet Gastroenterol Hepatol 2017

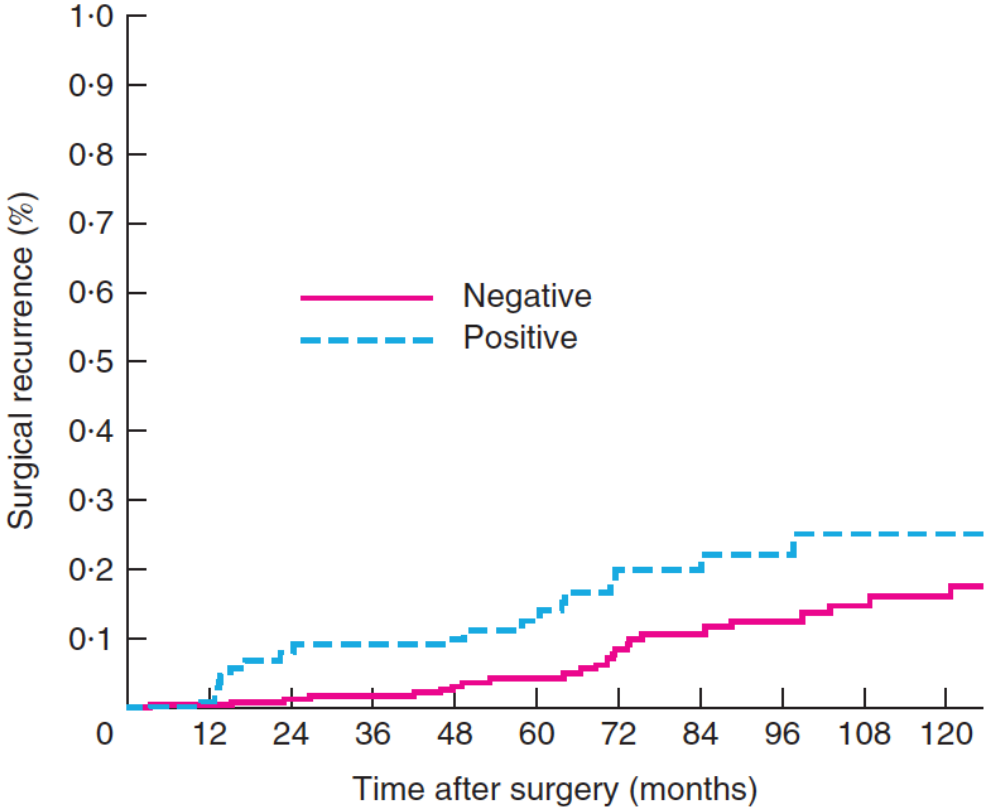
2. Welches ist der wichtigste Risikofaktor eines Rezidives nach Operation?

- Minimal invasive Chirurgie (Lapaorskopie)
- Entzündliche Schnittränder
- Rauchen
- Medikamente regelmässig einnehmen



No. at risk

Non-smoker	365	246	196	168	145	116	86	67	54	41	34
Smoker	136	89	58	45	36	29	23	19	14	13	13



). at risk

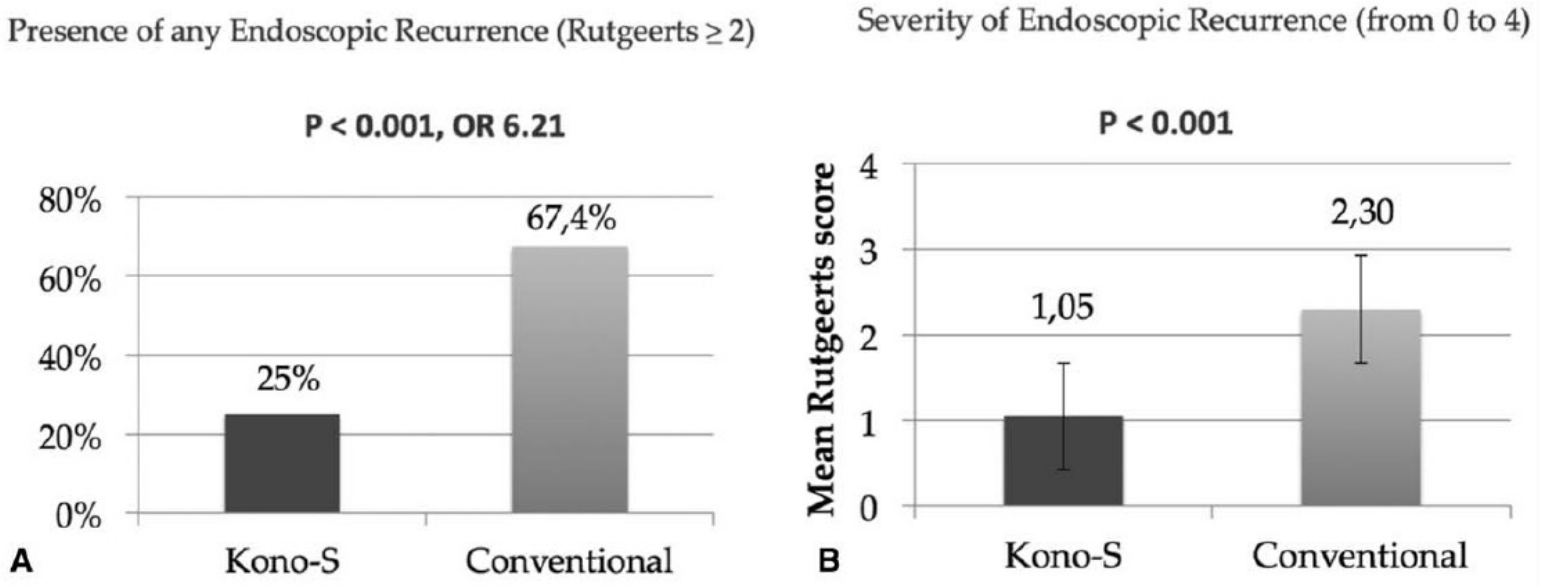
Negative	316	253	222	198	181	158	123	102	85	69	54
Positive	121	102	85	80	75	63	47	36	29	21	19

538 patients
6yrs median FU
BJS 2018

Kono-S anastomosis

Surgical Prevention of Anastomotic Recurrence by Excluding Mesentery in Crohn's Disease: The SuPREMe-CD Study - A Randomized Clinical Trial

Gaetano Luglio, MD,✉ Antonio Rispo, MD, PhD,† Nicola Imperatore, MD,† Mariano Cesare Giglio, MD,* Alfonso Amendola, MD,* Francesca Paola Tropeano, MD,* Roberto Peltrini, MD,* Fabiana Castiglione, MD,† Giovanni Domenico De Palma, Prof,‡ and Luigi Bucci, Prof**

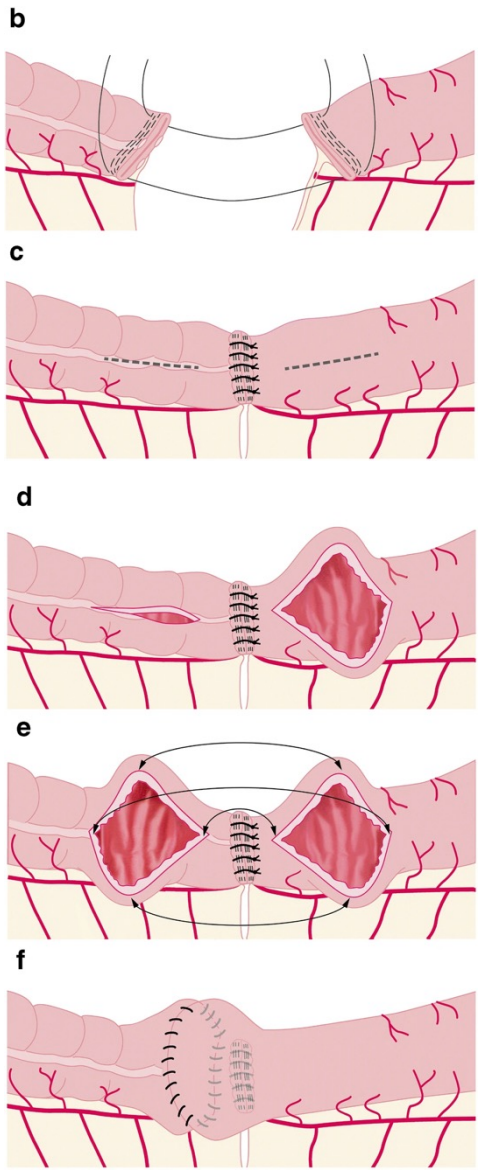


@18month

Surgical recurrence@24 month : 0% vs. 4.6% (ns)

36 Kono-S. vs. 43 Side-to-sided stapled

Ann Surg 2020



Langenbecks Arch Surg 2021

Short- and medium-term outcomes following primary ileocaecal resection for Crohn's disease in two specialist centres

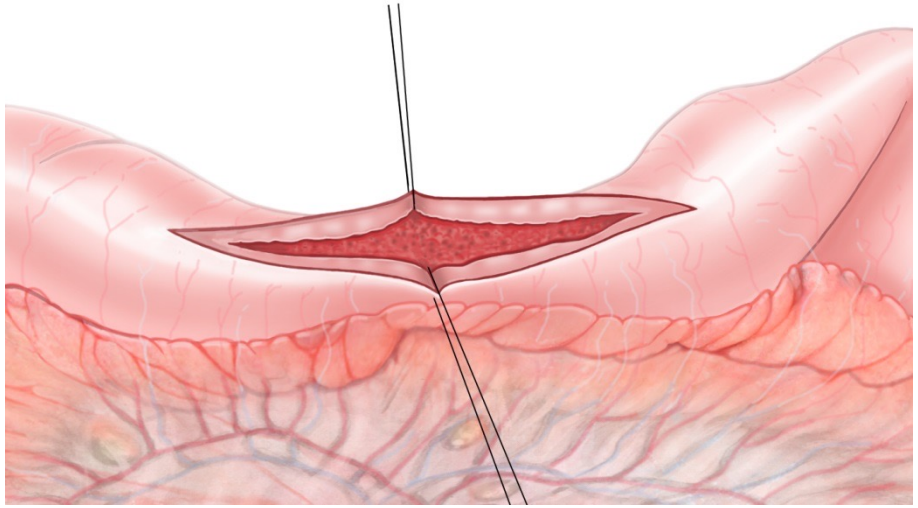
A. de Buck van Overstraeten[1], E. J. Eshuis[4], S. Vermeire[2], G. Van Assche[2], M. Ferrante[2], G. R. D'Haens[4], C. Y. Ponsioen[4], A. Belmans[3], C. J. Buskens[5], A. M. Wolthuis[1], W. A. Bemelman[5] and A. D'Hoore[1]

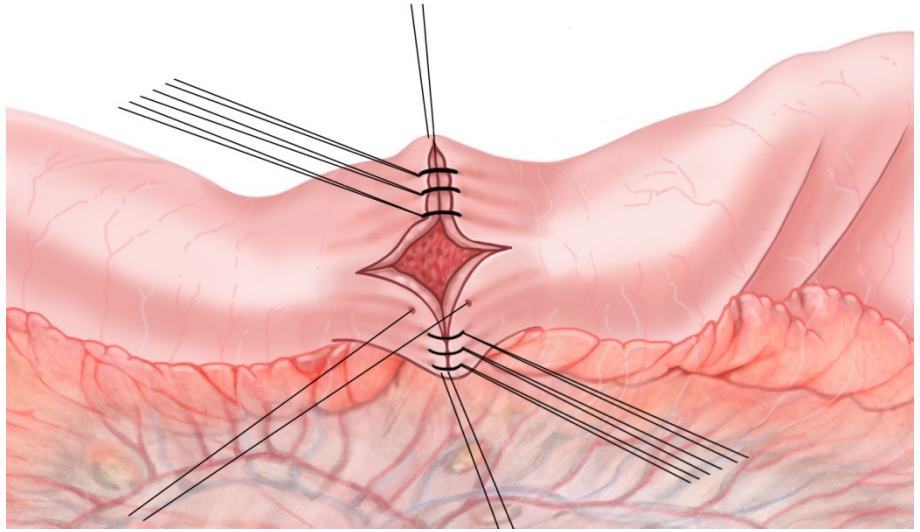
- 71% laparoscopic resection
- 7 days hospitalisation
- 78% no complications
  - 2.4% required re-surgery
  - 0.7% ICU
- 3% anastomotic leak

Laparoscopic resection is safe

538 patients
6yrs median FU
BJS 2018

Stricturoplasty



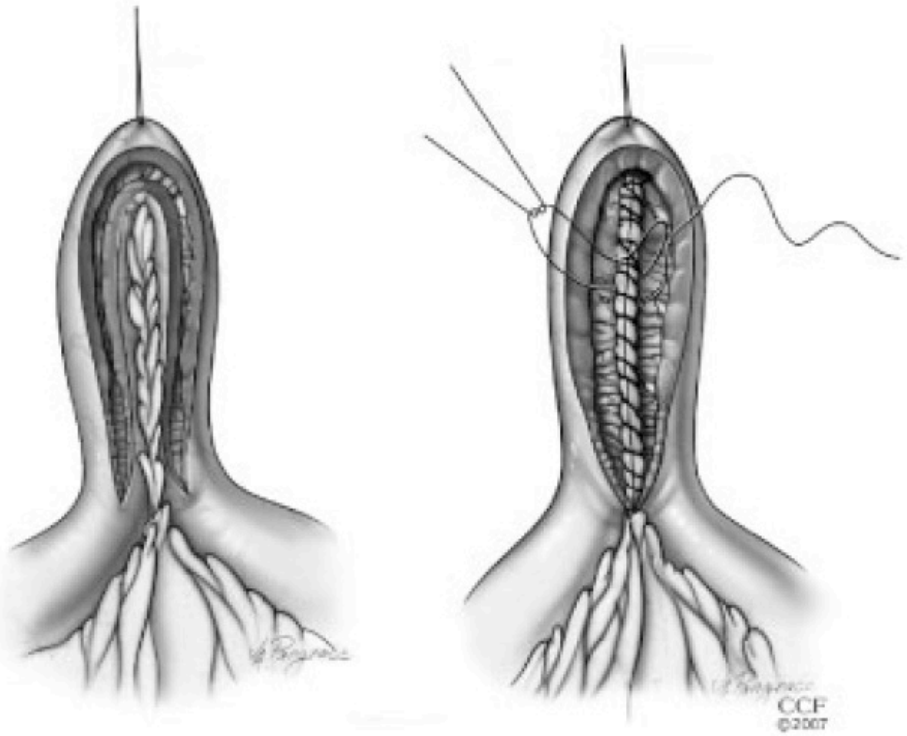


<10 cm

Heineke-Mikulicz

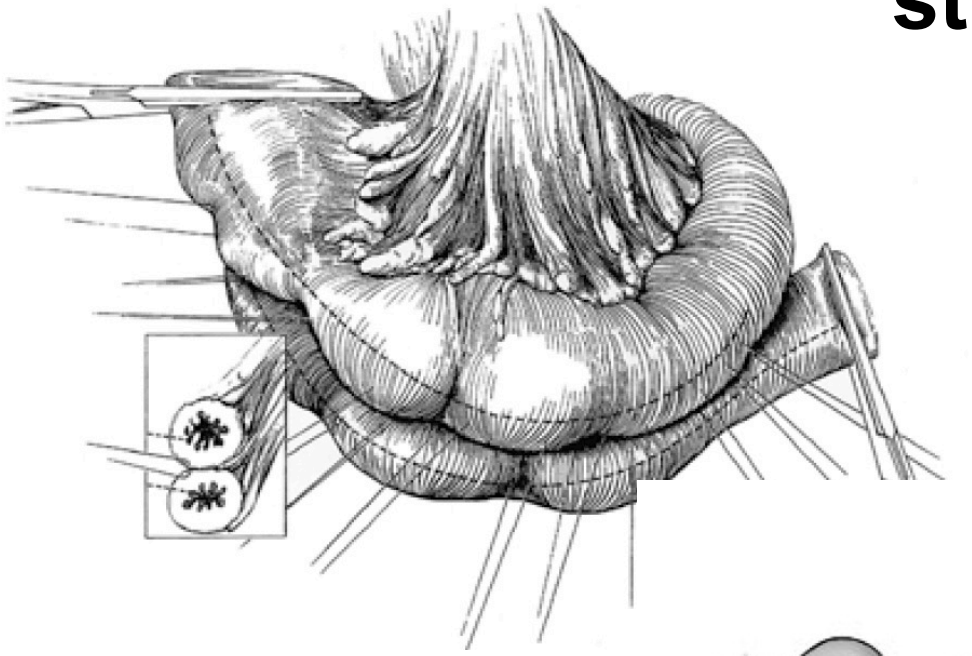
Stricturoplasty

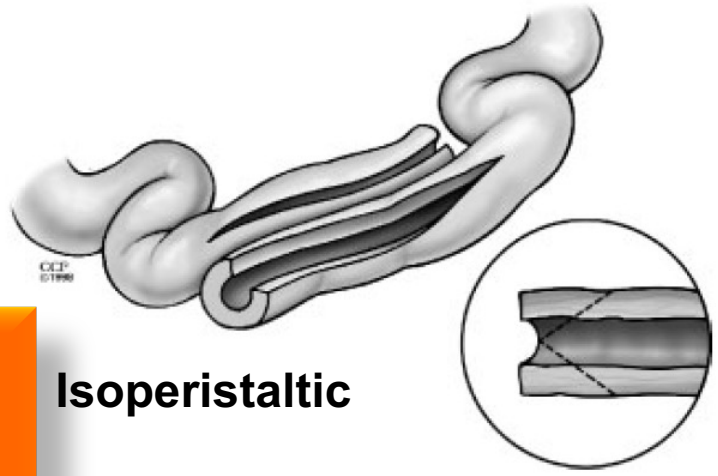
10-20cm stricture



Finney

>20 cm stricture





Side-to-side (Michelassi)

Isoperistaltic

Stricturoplasty

- 90% strictures <10cm
  → in 85% Heineke-Mikulicz

Meta-analysis 1‘825 stricturoplasties in n=506 patients

Tichansky D. Dis Colon Rectum 2000

- Morbidity 18%
  - Septic complications 5%
  - Hemorrhage 9%
- 34% recurrence (median FU 7.5 yrs)

N=1‘124 stricturoplasties in n=314 patients

Dietz DW. J Am Coll Surg 2001

Morbidity (%)	Recurrence (%)	Reoperation (%)
23	24	15
19	40	33
18	54	44
12	22	12
7	44	23
18	37	34
10	n/a	44
23	n/a	56
20%	**35%**	**30%**

Review

Jobanputra S. Clinics Colon Rectum 2007

Entero-Cutaneous Fistula

- 75-85% post-operative
- 15-25% spontaneously (most often Crohn)

Lloyd DA. BJS 2006

- 111/277 Crohn's related
  - 68% post-operative
  - 30% spontaneous
  - 2% after radiological drainage

St. Marks *Hollington P. BJS 2004*

Most often occur post-operatively

Pre-Surgery treatment

S
N
A
P

Sepsis and **S**kin care

Nutritional support

definition of intestinal **A**natomy

surgical **P**rocedure/**P**lan

SNAP

Improve nutritional status

- **Malnutrition** (weight loss >10%) independant risk facotor for postoperative abdominal septic complications

Retrospective review prospective database, n=161 ileocolic resections

Alves A. Dis Colon Rectum 2007

- Enteral or parenteral?
  - Enteral: less mucosal atrophy
    - 85% switched to exclusice enteral

n=234, *Levy E. BJS 1989*

- Immunoturition : ↓ infectious complicaitons

SNAP

Surgery: when?

76/277 Crohn ECF

- Surgery delayed : **8 month** (1-180)
- Spontaneous helaing: 20%
- After Surgery: 64%
- Overall healing: 69%

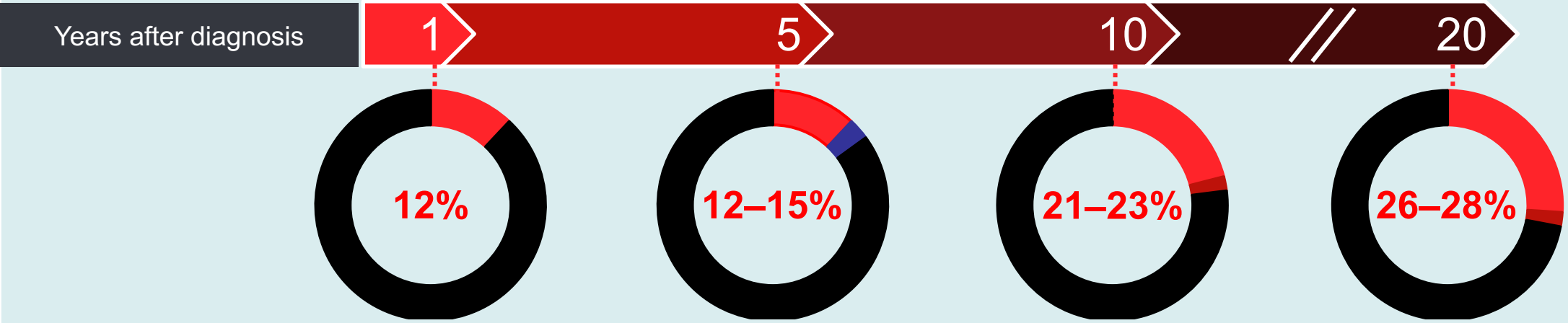
After **repeated surgery:** 82% healing

St. Marks *Hollington P. BJS 2004*

3. Erstmanifestation eines M. Crohn ist in ca. 25%?

- Ileus (Stenose)
- Fistel enterokutan
- Fistel anal
- Karzinom

Cumulative incidence of Crohn's fistula since CD diagnosis



Abscess

“ubi pus ibi evacua”

Claudius Galenos

Born in Pergamon: 129 p.Chr.n.

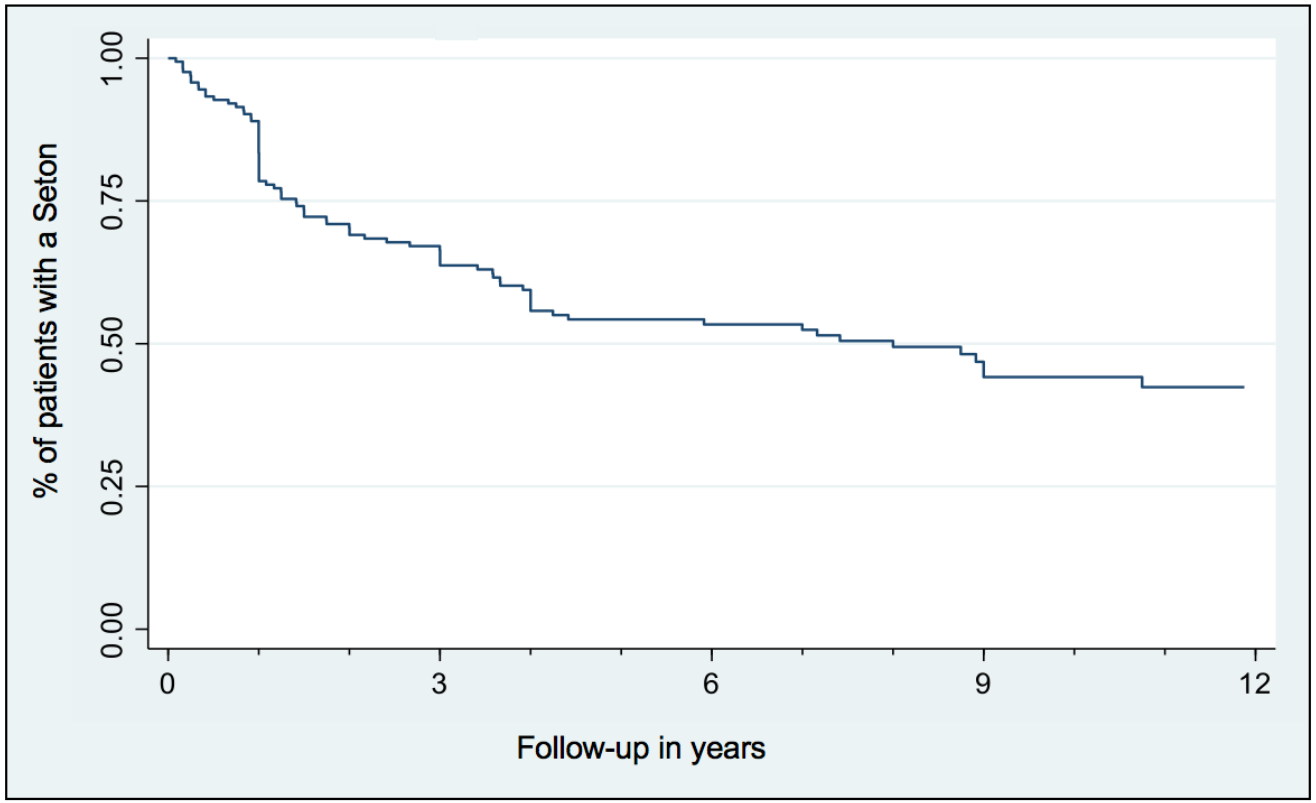
Died in Rome: 199 p.Chr.n.

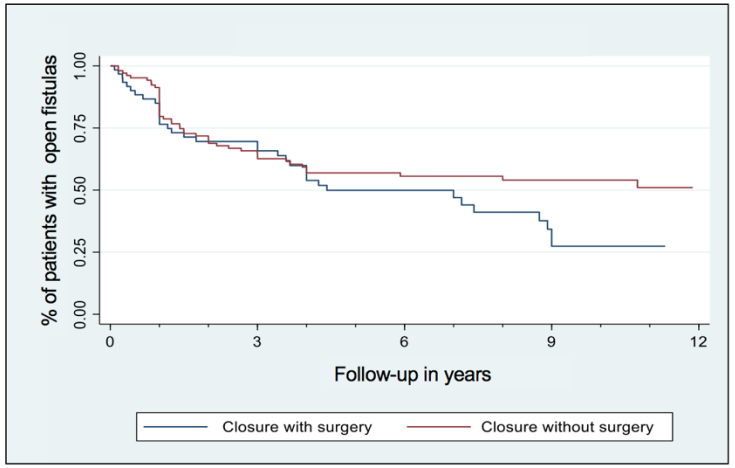
Goals in Treatment

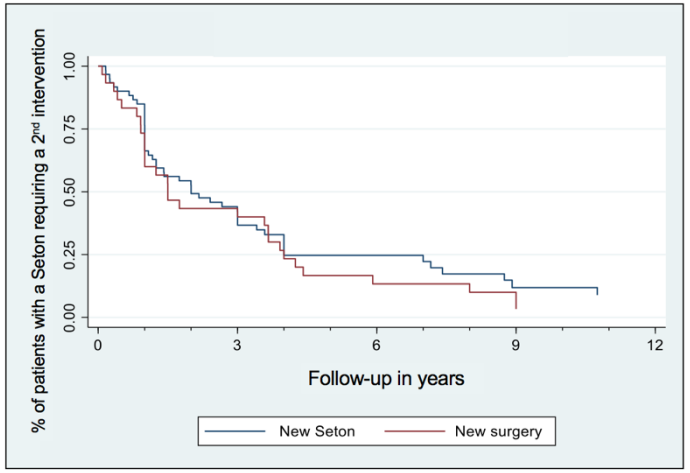
- **Relieve pain and discomfort**
- **Do no harm !**
- **Preserve Continence**

- Operate only if symptomatic
- Ideally operative while disease is quiescent
- Rectal disease may lead to poor results

Seton : what next?

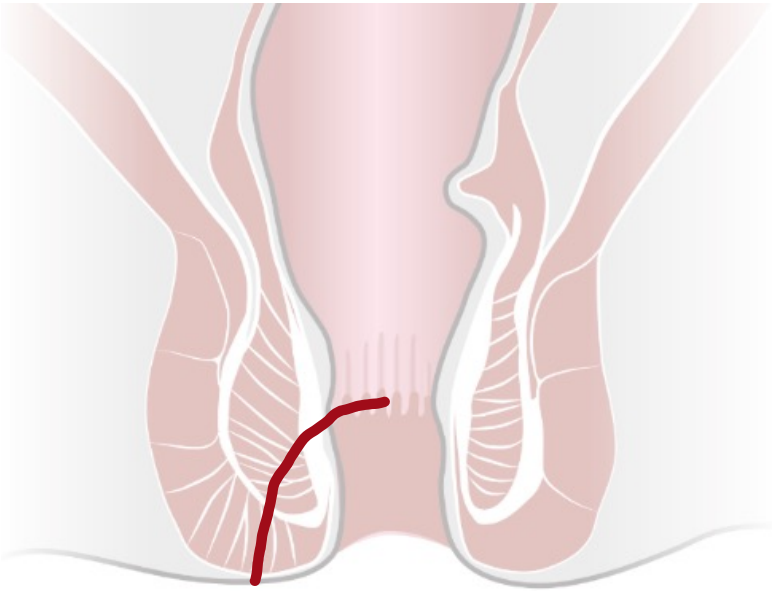




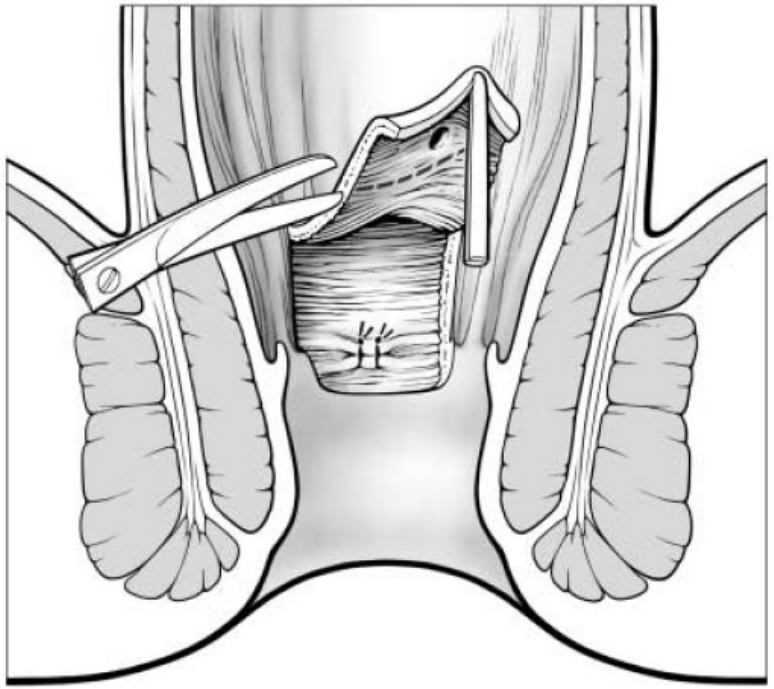


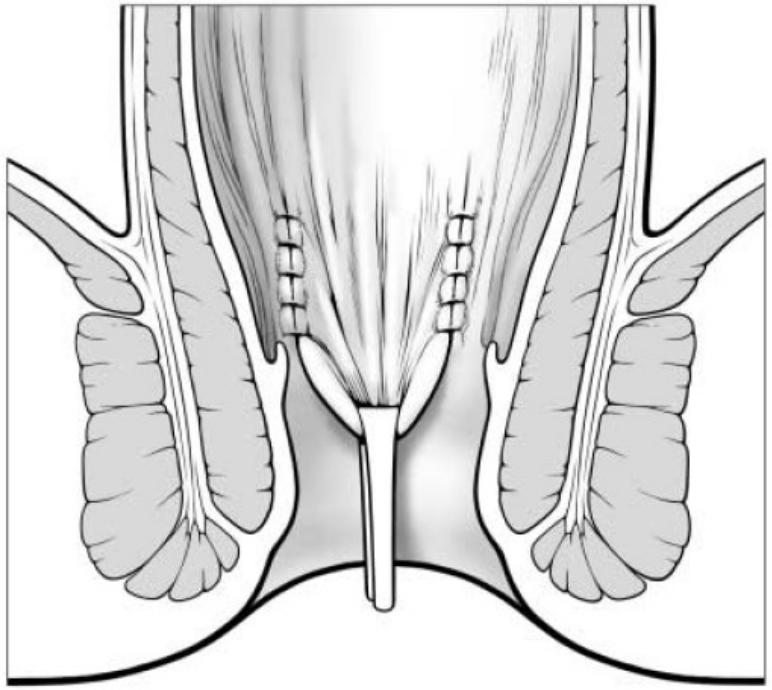
50% remain with Seton
50% require more than one additional surgery/Seton

SIBD cohort
365 patients, 576 interventions
submitted



Endorectal Advancement Flap





Endorectal Advancement Flap

- Initial healing rate 64%–89%
- **Recurrence high – up to 50%**
- Success of second flap only 25%
- Factors ass. w. flap failure:
  - Crohn‘s colitis
  - Small bowel Crohn‘s disease
  - Proctitis

Makowiec F. BJS 1995 Joo JS. Am Surg 1998 Hyman N. Am J Surg 1999

Cure rate 64% (incontinence 9.4%)

Review n=35 studies, 1654 patients. Soltani A. DCR 2010

Alofisel

CX601 : DarVadstrocel

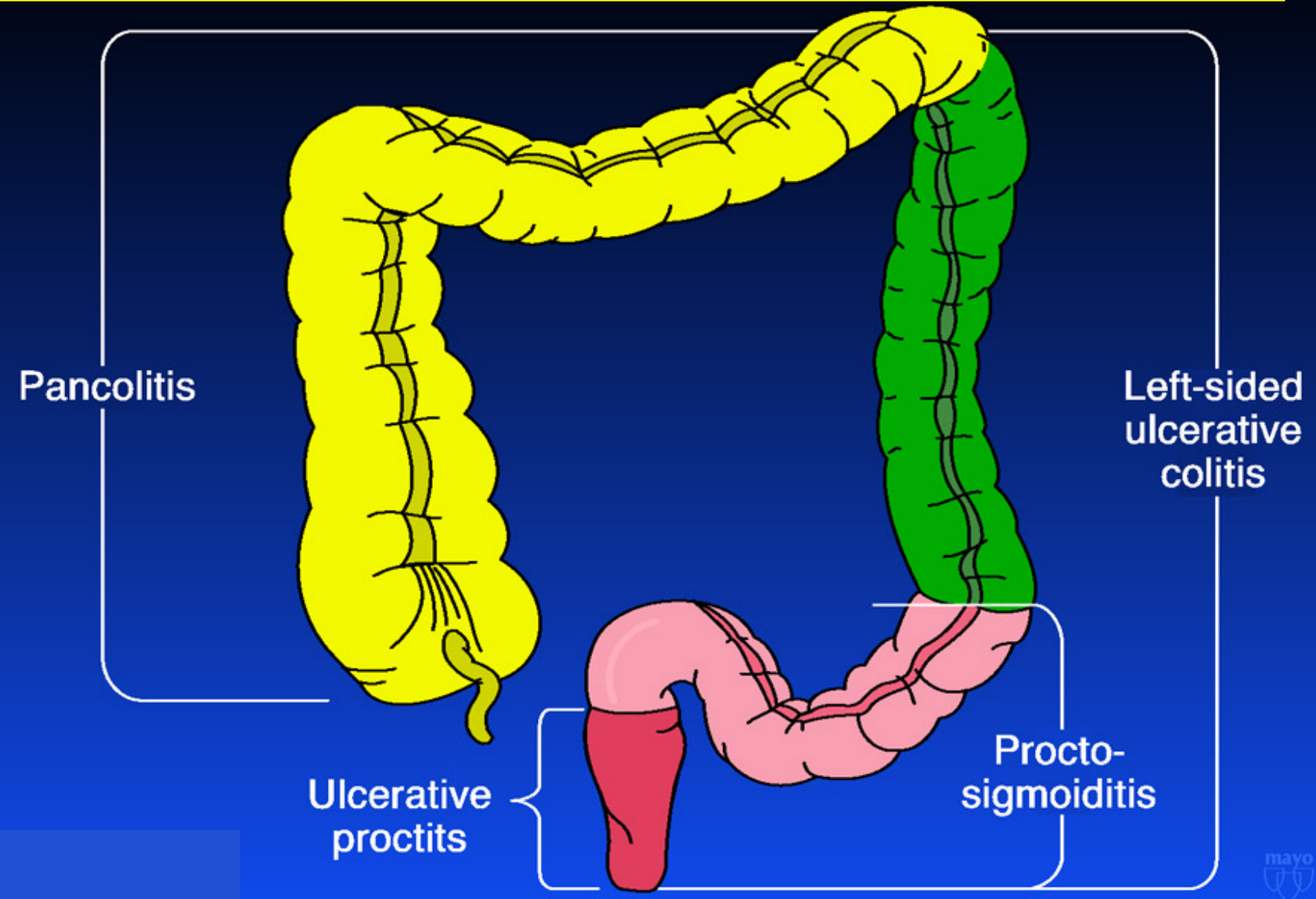
ALOFISEL®

May the Force be with you!

Chirurgie für Crohn

- Symptome mindern
- Operation mit den geringsten Komplikationen
- Optimierung der Patienten
- Timing
- Dünndarm: so wenig wie möglich entfernen
- Laparoskopische Resektion
- Anale Fisteln rezidivieren häufig

Colitis ulcerosa



Chronic Ulcerative Colitis (CUC)

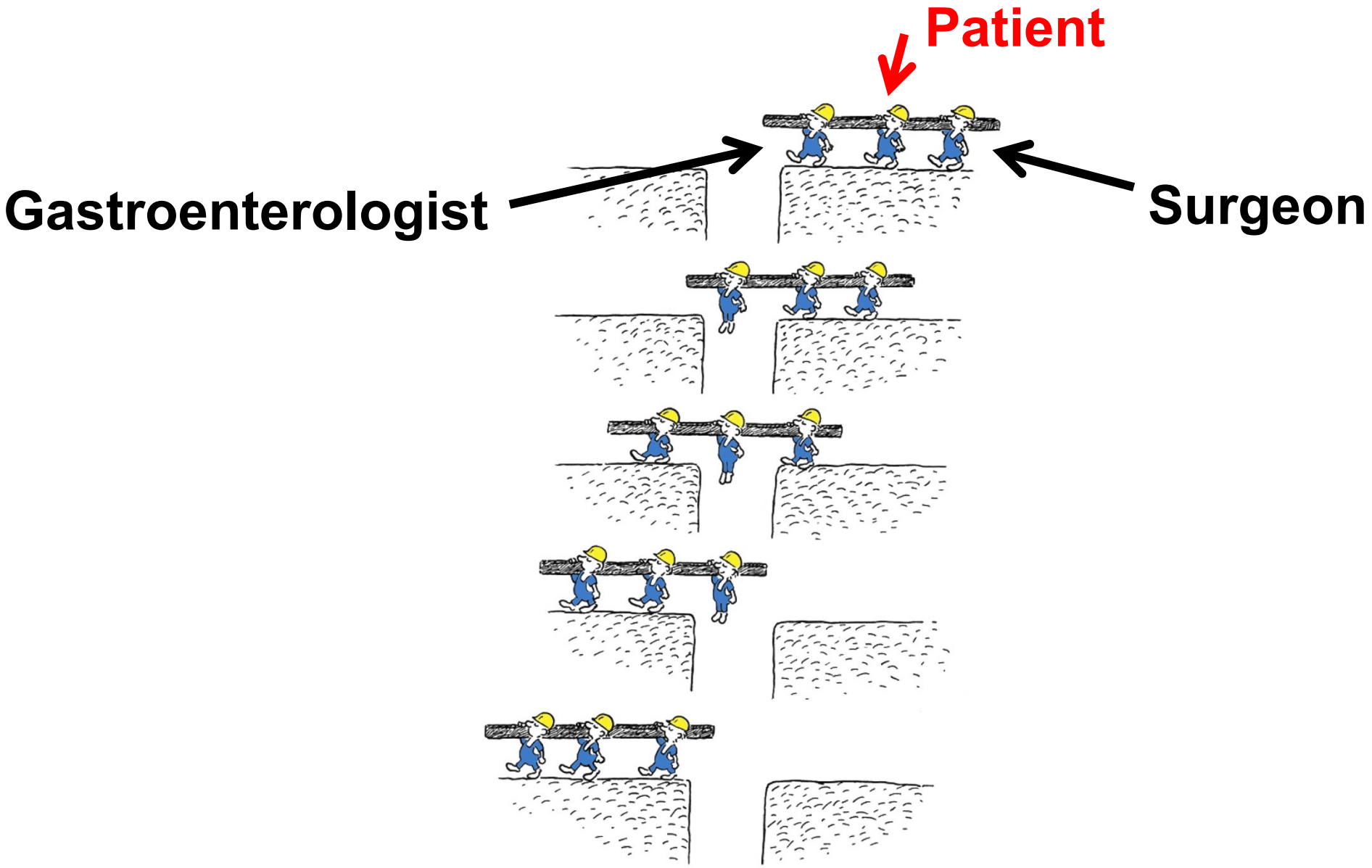
Intractability

Complications

25-35% of patients

Wexner SD. Dis Colon Rectum 1997 Berg DF. Am j Surg 2002

Acute fulminant colitis



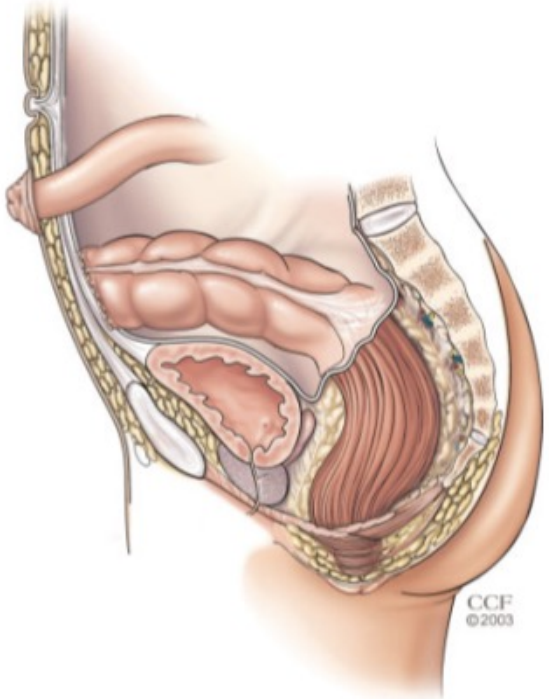
1. Conservative Treatment

- Confirm diagnosis, exclude enteric infection
- Methylprednisolon 60mg/d or hydrocortisone 100mg 4x/d
  - >7 days = no benefit
  - Response 67% (2/3), 1/3 surgery
- Nutritional support if malnusrished (no bowel rest)
- Thrombosis prophylaxis
- No opiods, no NSAR
- Blood transfusions

Acute fulminant colitis

2. Emergency surgery

→ Total colectomy + end-ileostomy

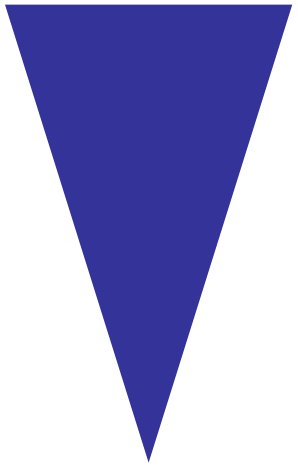


Chronic Ulcerative Colitis

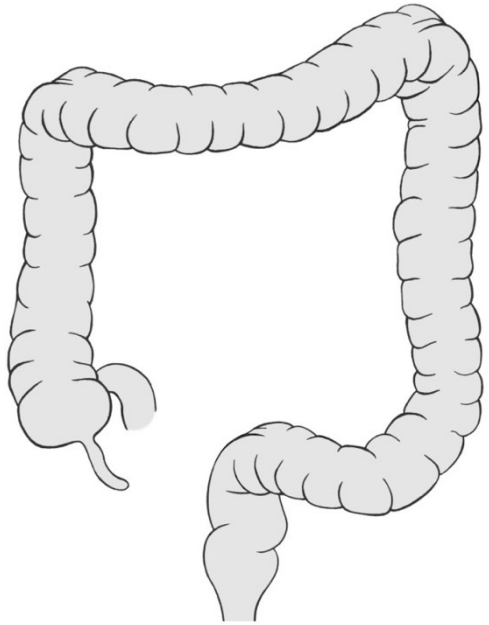
Elective surgery

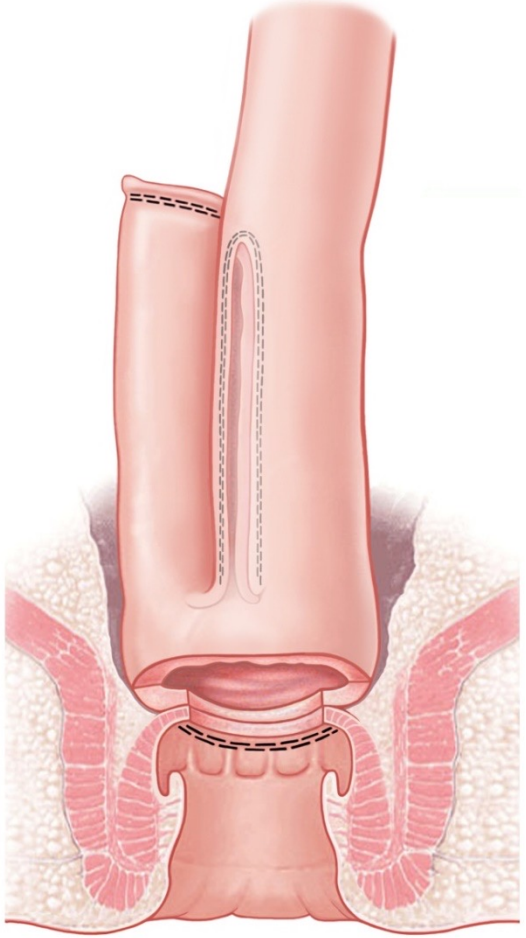
= Curative treatement

- **Failure of medical management**
- **Risk of cancer**
- **Cancer**



Total proctocoloectomy and IPAA (Ileo-Pouch Anal Anastomose)





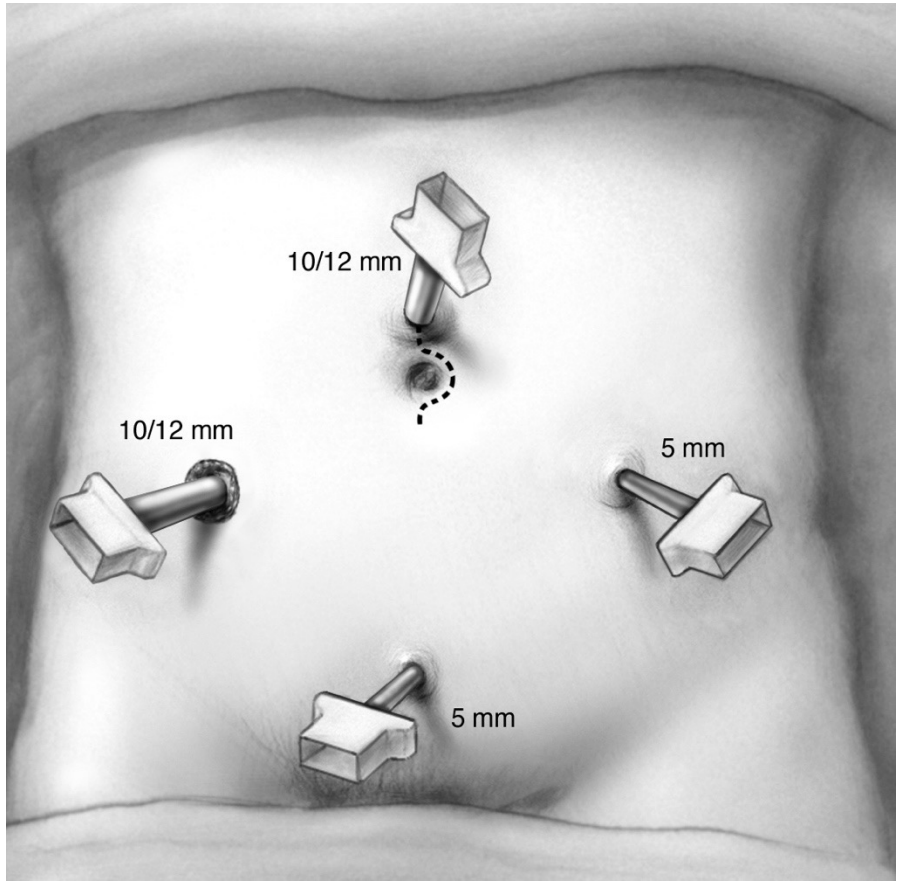
4.1.Statement 4.1.

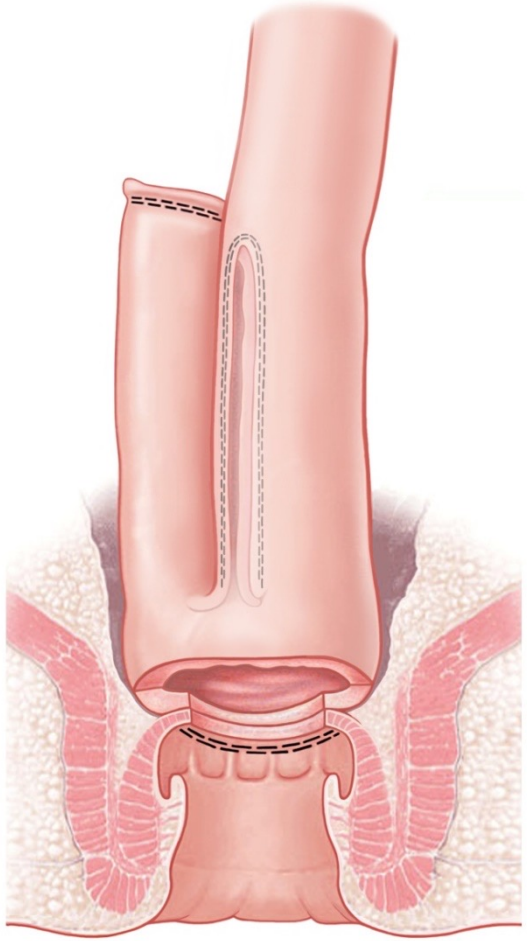
After total proctocolectomy for medically refractory UC, IPAA is the procedure of choice, but permanent end-ileostomy is also a reasonable option for some patients. A shared decision-making approach should be used to tailor procedure selection to the patient's preference [EL3]

2022

© Mayo Clinic

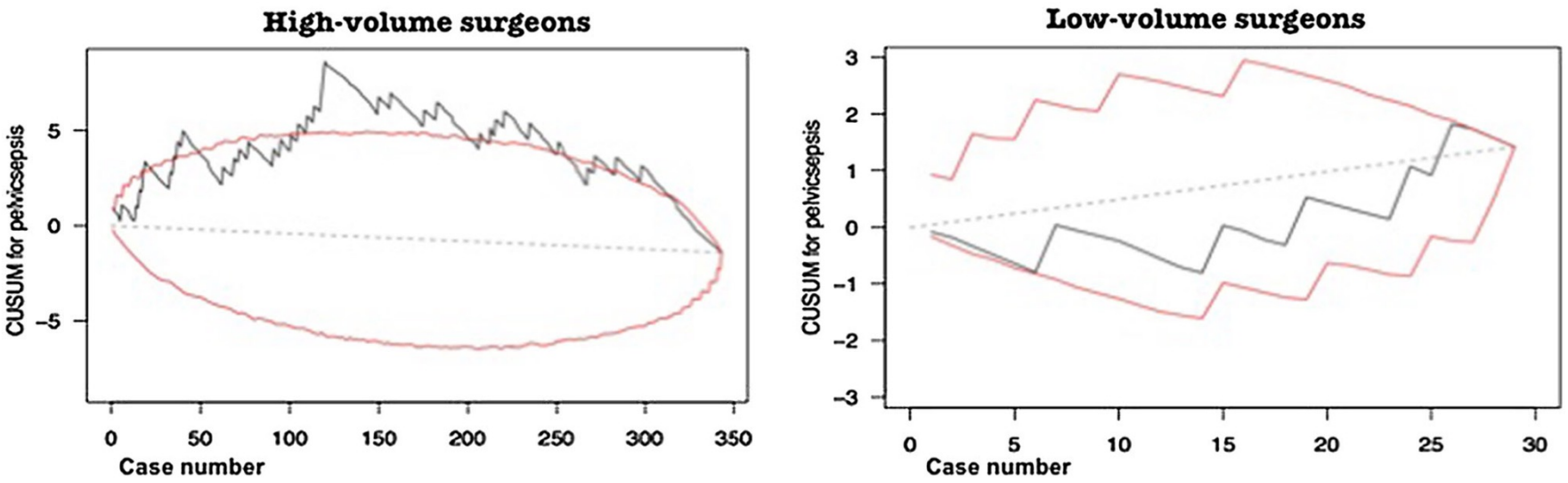
Total proctocoloectomy and IPAA (Ileo-Pouch Anal Anastomose)





Characteristics of learning curve in minimally invasive ileal pouch-anal anastomosis in a single institution

Ahmet Rencuzogullari[1] · Luca Stocchi[1] · Meagan Costedio[1] · Emre Gorgun[1] · Hermann Kessler[1] · Feza H. Remzi[1]



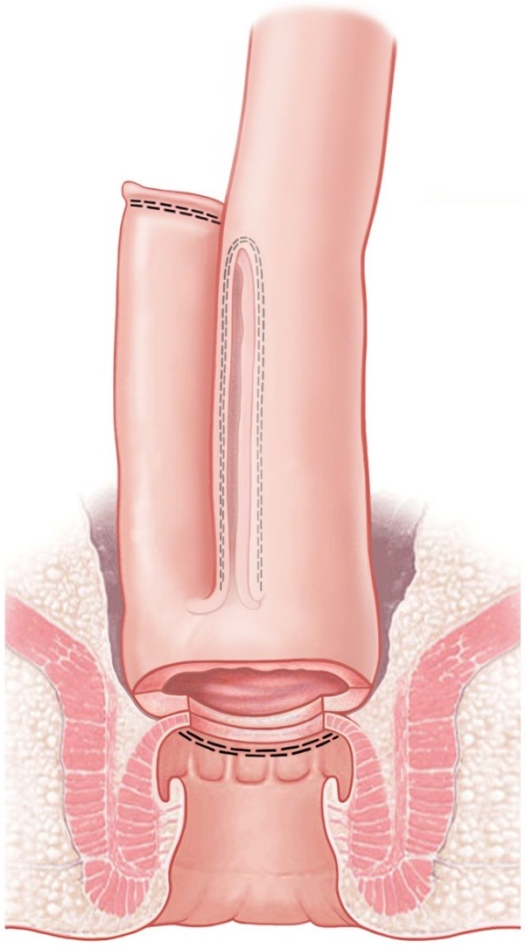
- Pelvic sepsis 10.8% vs. 17.2%
- Conversion 5.5% vs. 13.8%
- OR time 268 vs. 317 min

372 lap IPAA

Surg Endosc 2016

4. Wie häufig Stuhlgang mit IPAA ?

- 2x täglich
- 4x täglich
- 6x täglich
- 8x täglich



	Follow-up (years)					
	1	5	10	15	20	*P**
Mean stool frequency						
Per day	5·7	5·7	5·8	6·2	6·4	< 0·001
Per night	1·5	1·5	1·7	2·0	2·0	< 0·001
Pad use (%)	34	29	31	43	50	< 0·001
Medication use (%)	53	47	44	44	49	< 0·001

N=1885 IPAA

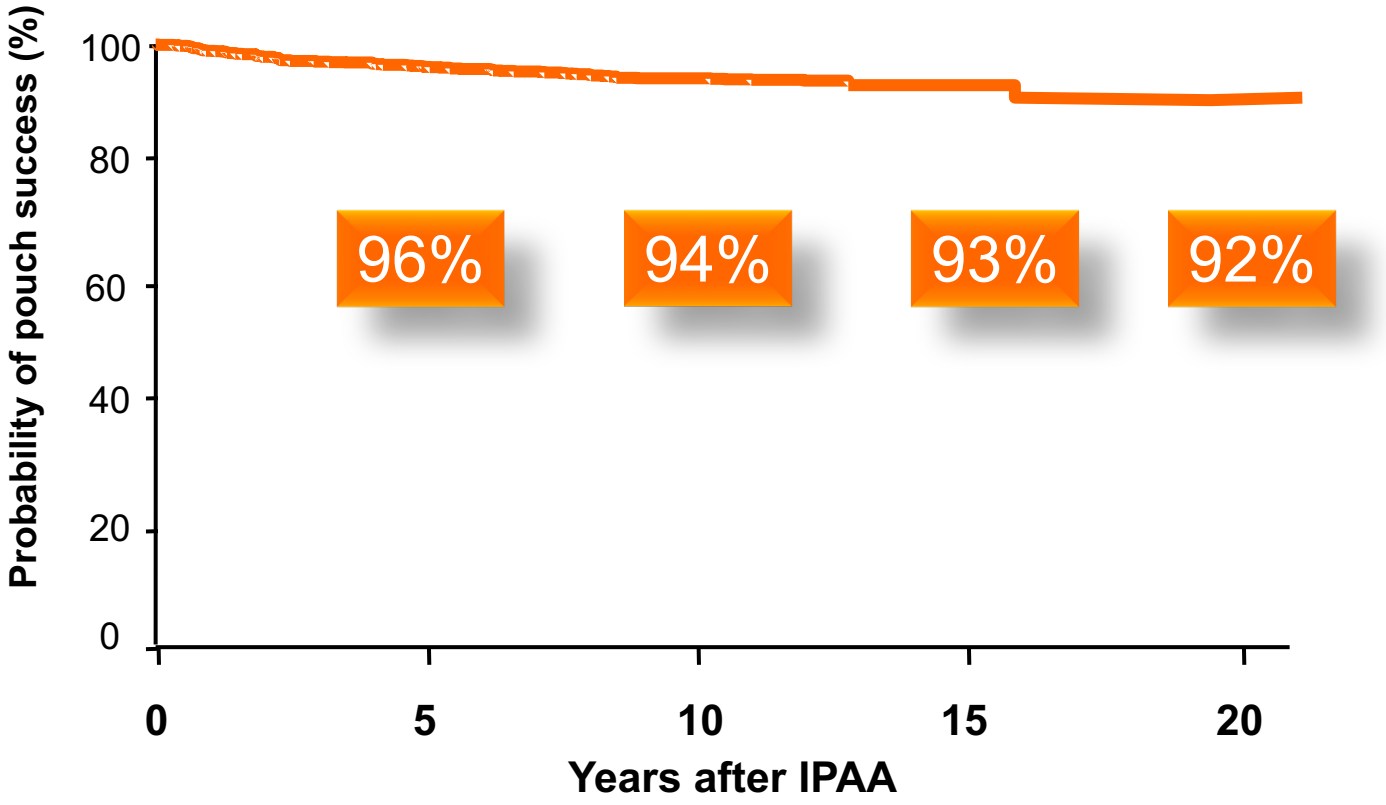
Hahnloser D. BJS 2007

2.9.4.1. ECCO Statement 6H

Loperamide is an effective drug to reduce the stool frequency in patients with an ileoanal pouch (EL 1b). Cholestyramine and psyllium may be useful in reducing stool frequency (EL 5)

ECCO guidelines on surgery for UC. J Crohn's Colitis 2015

IPAA: pouch failure is rare !



N=1885 IPAA *Hahnloser D. BJS 2007*

	Reported incidence (%)
Ultimate failure of pouch[16]	4
Permanent diversion	1
Pouch excision	3

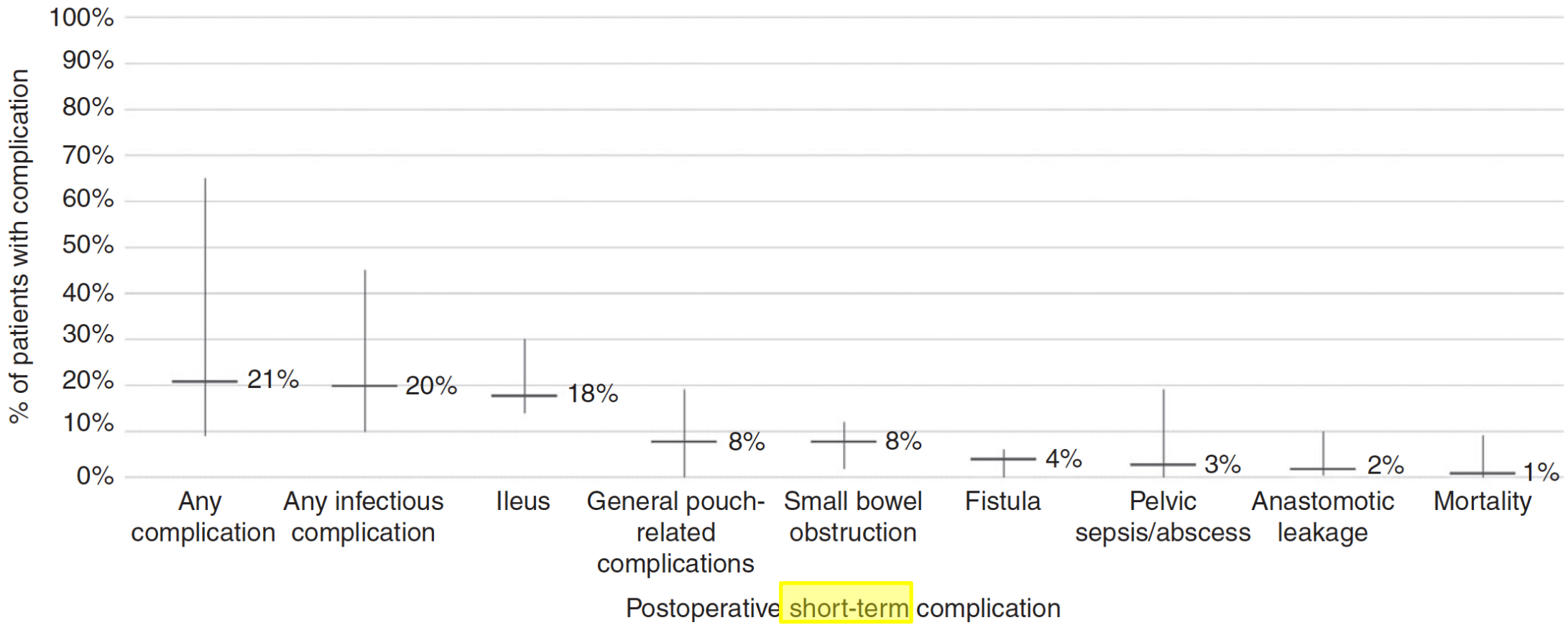
Sagar P. BJS 2012

→ 96% success!

IPAA complications ?

Systematic review: outcomes and post-operative complications following colectomy for ulcerative colitis

L. Peyrin-Biroulet*, A. Germain†, A. S. Patel‡ & J. O. Lindsay§



Review, 28 studies
20‘801 patients

AP&T 2016

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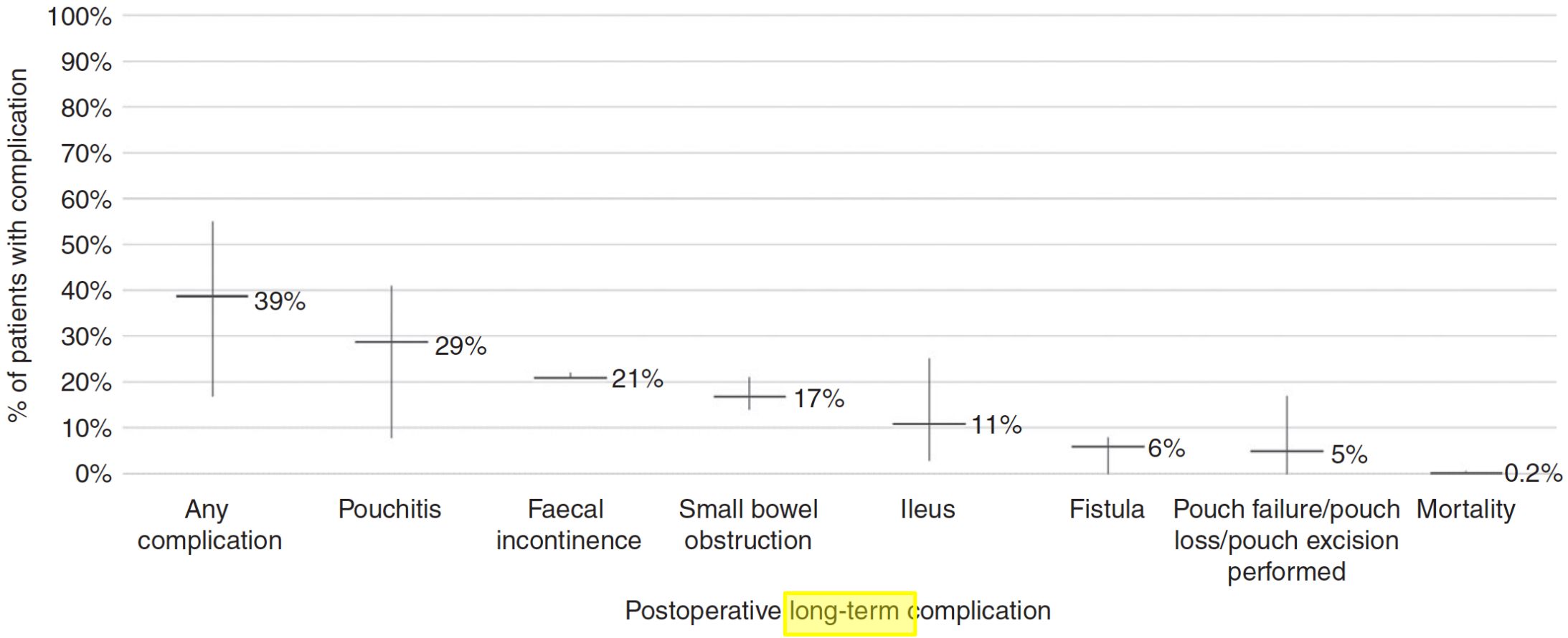
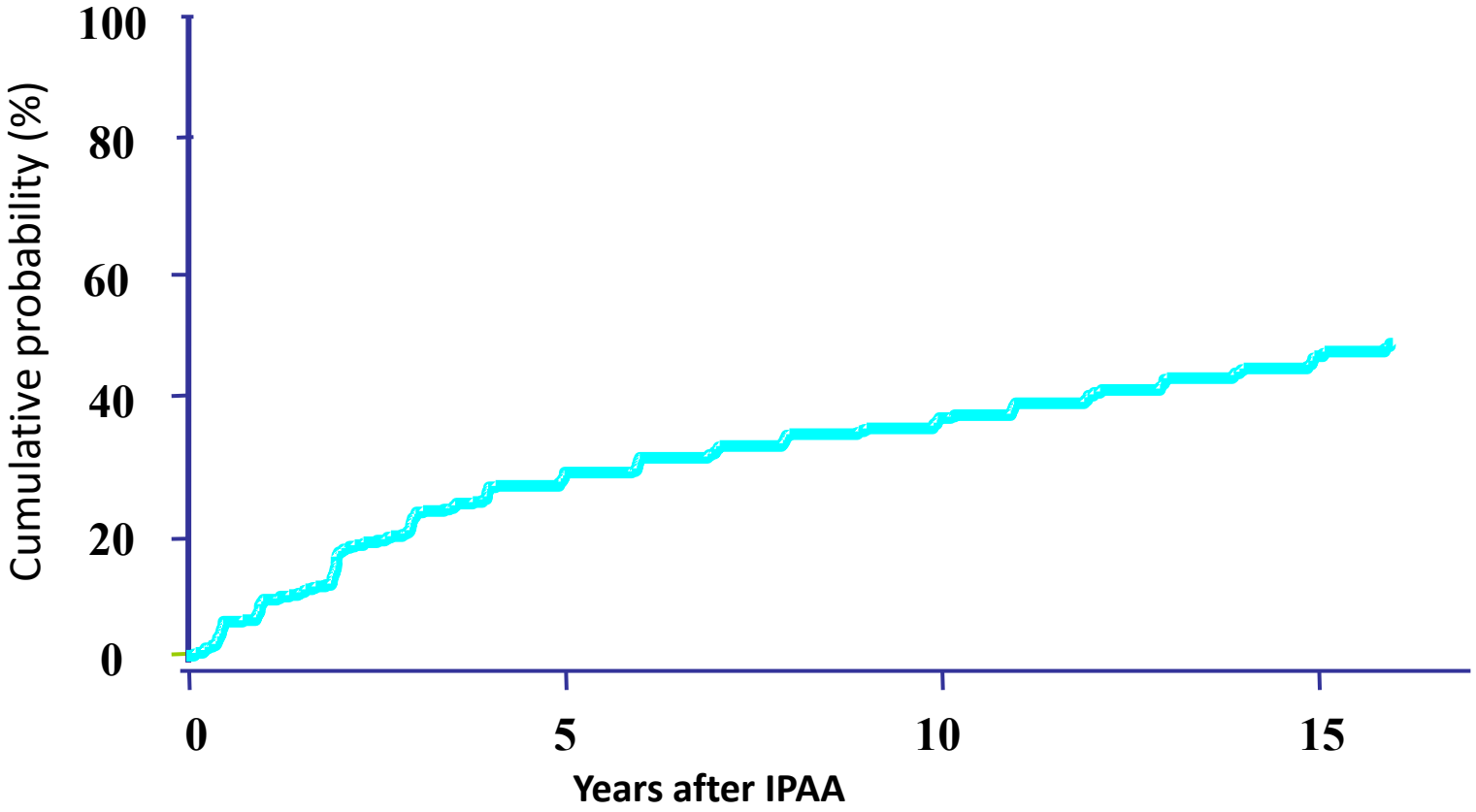


Review, 28 studies
20‘801 patients

AP&T 2016

Pouchitis



N=1885 IPAA

Hahnloser D. BJS 2007

IPAA and Fertility

Study	UC Infertile	UC Fertile	Medical Infertility Rate (%)	IPAA Infertile	IPAA Fertile	IPAA Infertility Rate (%)
Overall (without Gorgun)	60	351	14.6	231	250	48.0

Meta-analysis *Waljee A. Gut 2006*

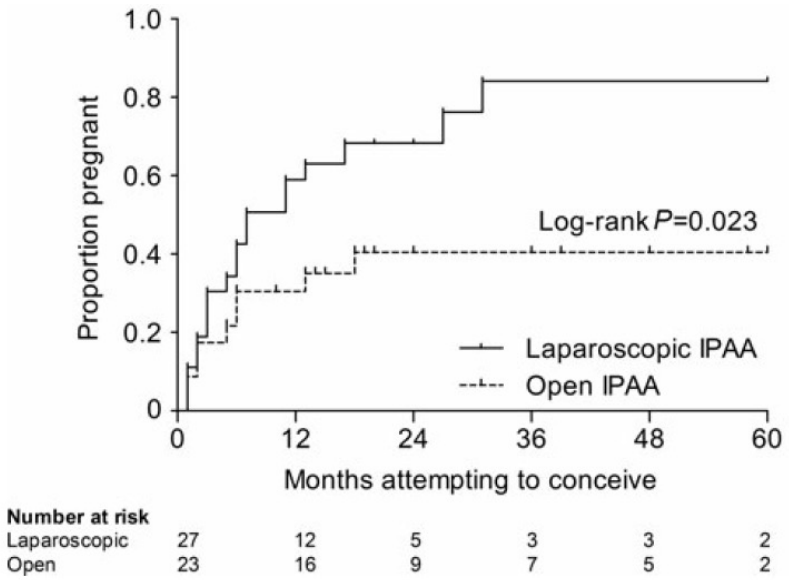
Infertility after open IPAA 3x ↑

fallopian tube adhesions and scarring

Laparoscopic IPAA

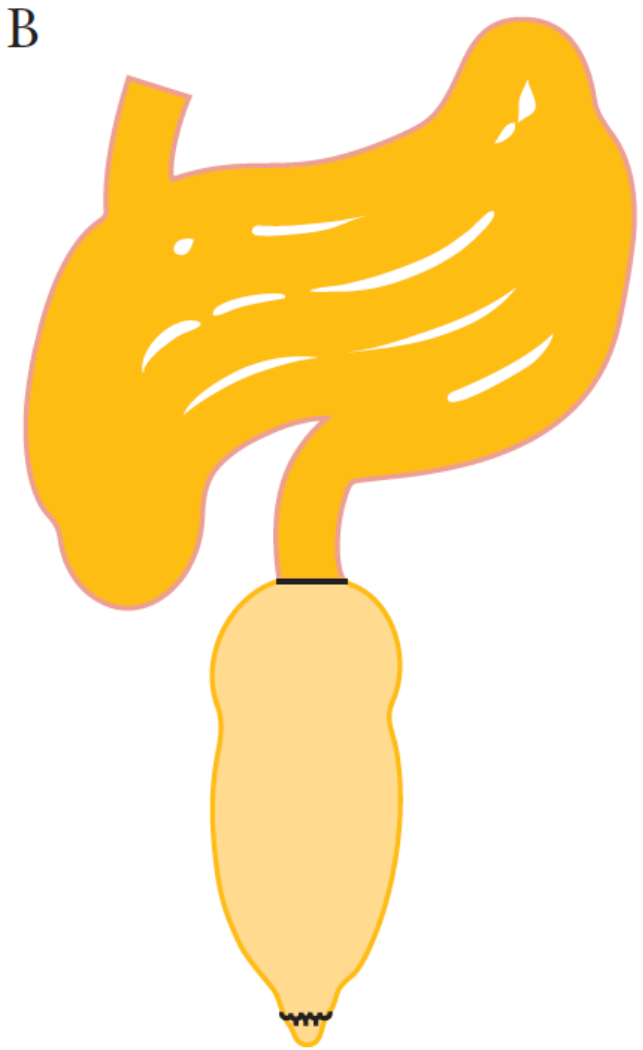
Infertility rate **27%** (68 month FU, 2 centers)

Beyer-Berjot L. Ann Surg 2013



Bartels S. Ann Surg 2012

IRA vs. IPAA ?



Total Colectomy and IRA ?

…in selected patients with

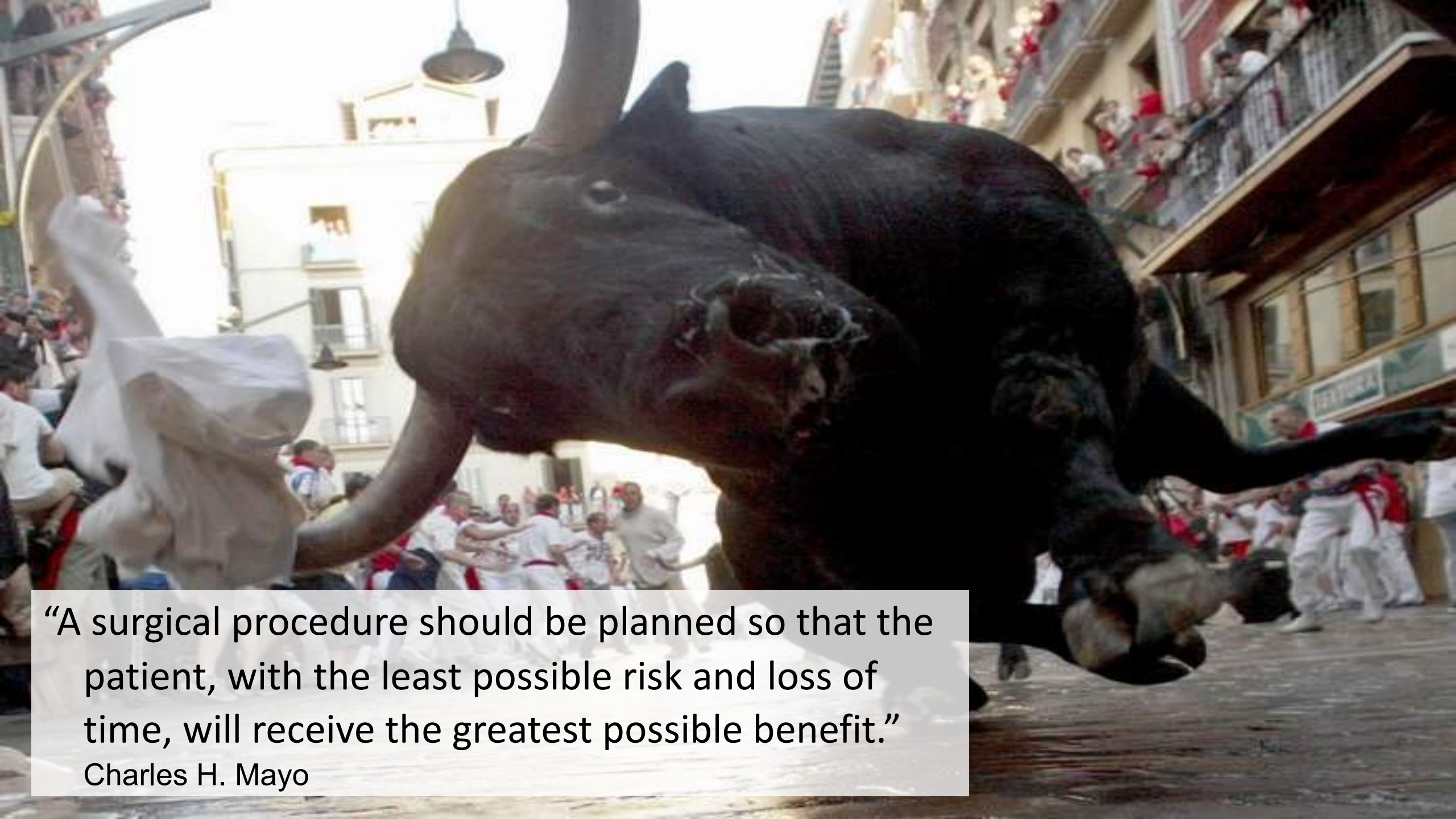
low grade rectal inflammation

- Females with longing for a child
- Males in the reproductive phase
- Social and cultural aspects

Malignant degeneration is real !
→surveillance is mandatory

Chirurgie bei Kolitis ulzerosa

- Chirurgisch heilbar
- IPAA hat gute Funktion über Jahre
- Laparoscopische IPAA!
- Pouchitis ist häufig aber gut behandelbar
- IRA (Ileorektale Anastomose) ist eine gute (vorübergehende Lösung)



"A surgical procedure should be planned so that the patient, with the least possible risk and loss of time, will receive the greatest possible benefit."

Charles H. Mayo