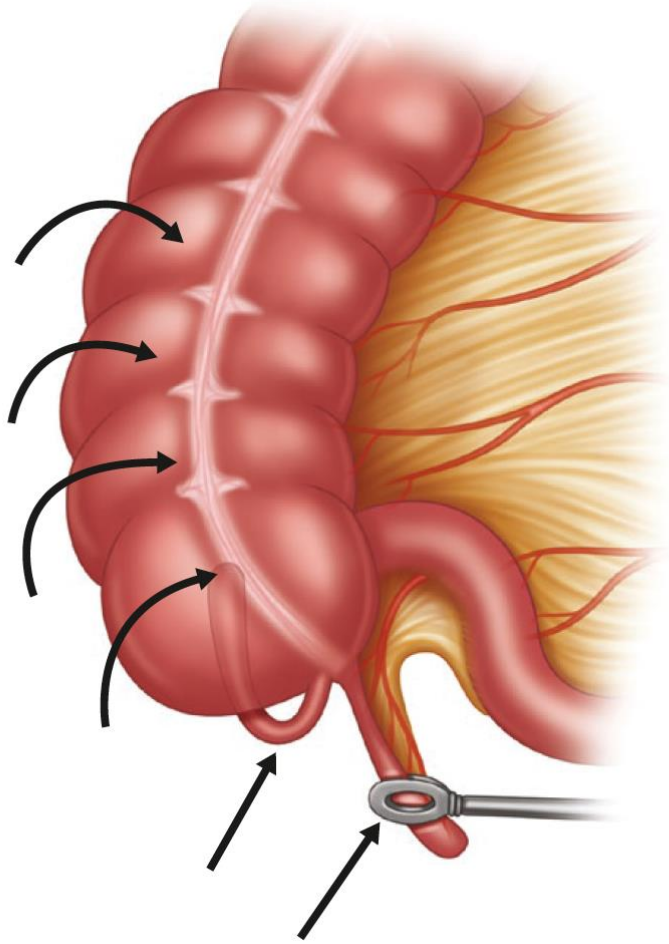
Betennelse i Blindtarmen

Må det opereres om natten ?



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30 oktober 2023

UNIVERSITETET
I OSLO

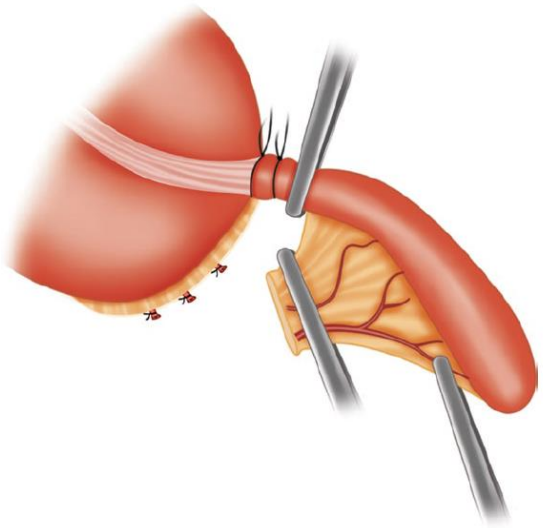
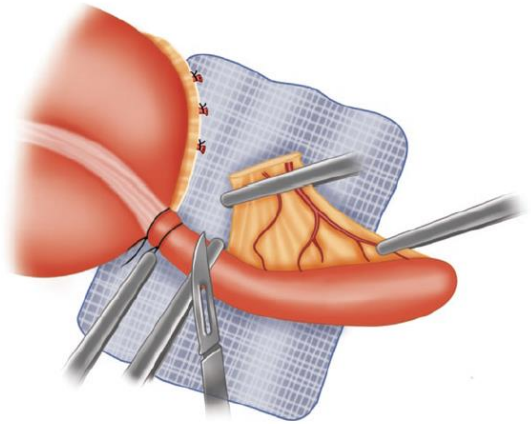


Fig. 11.7 Two ligation sutures placed proximally and clamp distally



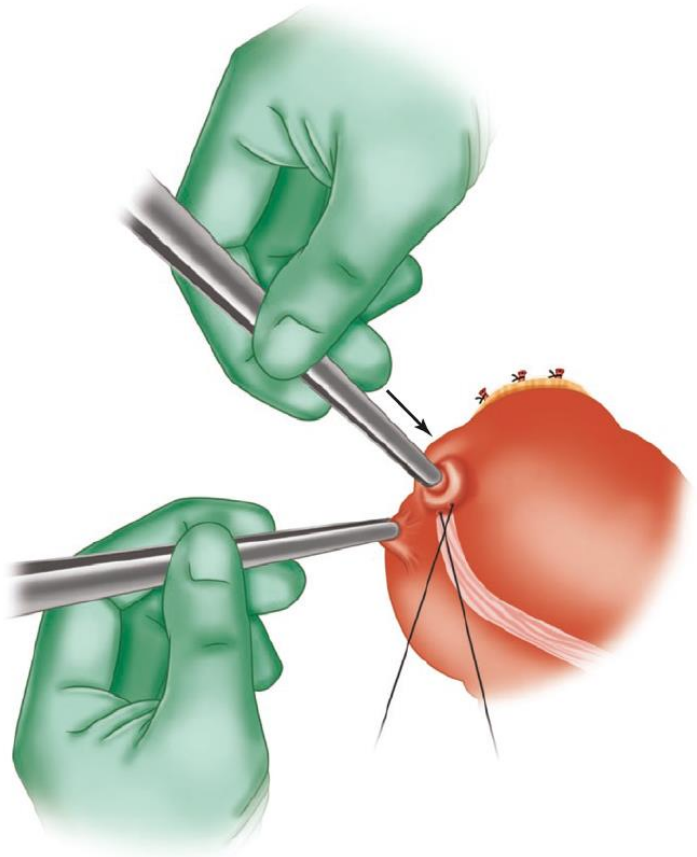
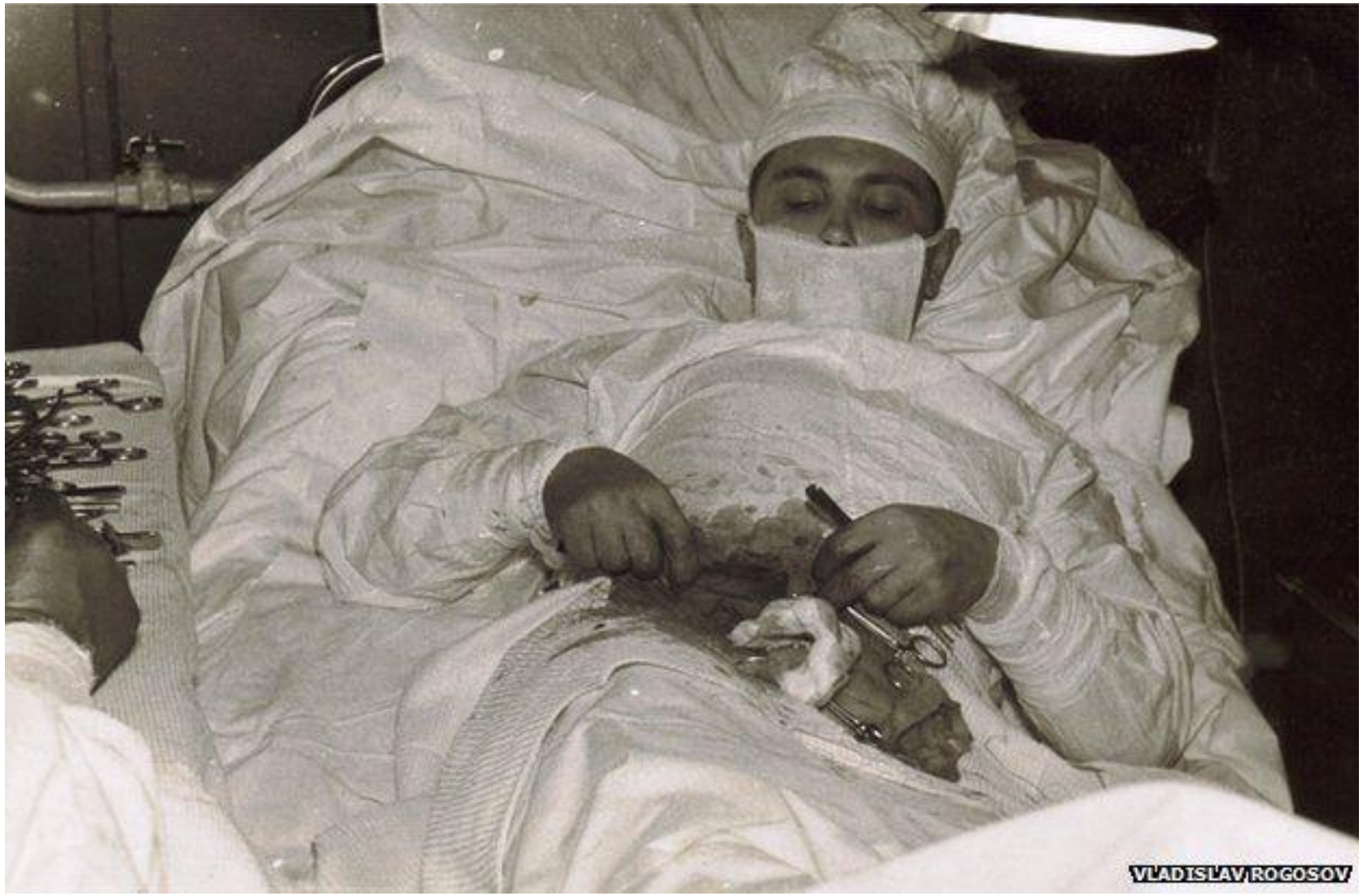


Fig. 11.9 Inversion of appendiceal stump if it is found to be necrotic. Silk purse-string suture is used to close the cecal defect once the stump is inverted



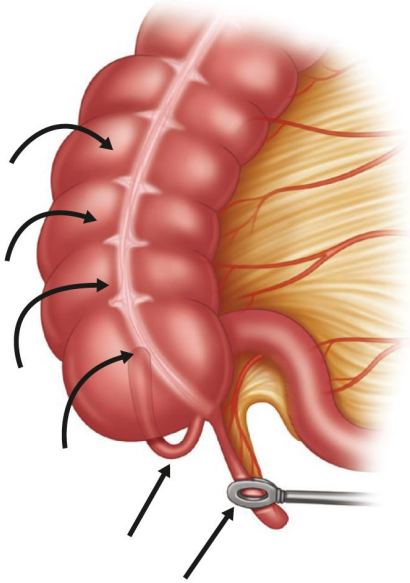
Leoinid Rogozov Antarktis 1961. “ I did not sleep at all last night. It hurts like the devil! A snow storm whipping through my soul, wailing like 100 jackals»

FORSKNINGSSPØRSMÅL

Ca 6000 appendektomier per år

Antibiotika ?

Ulcerøs colitt ?



Kreft utvikling ?

Graviditet ?

Radiologi ?

Scoring scales ?

Komplisert vs ukomplisert appendisitt

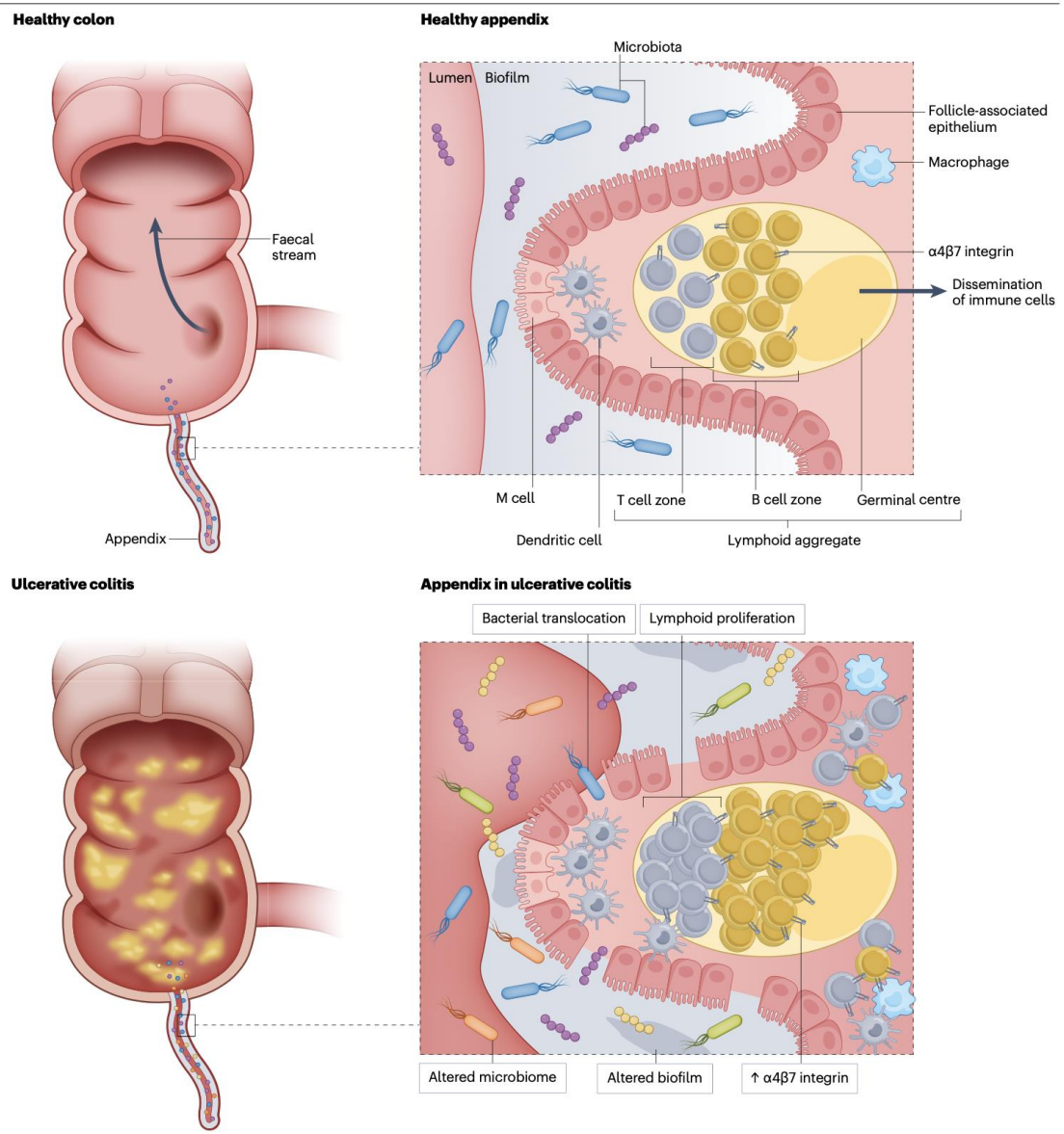
nature reviews gastroenterology & hepatology
https://doi.org/10.1038/s41575-023-00774-3

Perspective

Check for updates

The appendix and ulcerative colitis — an unsolved connection

Manasi Agrawal[1,2], Kristine H. Allin[2,3], Saurabh Mehandru[1,4], Jeremiah Faith[4,5], Tine Jess[2,3] & Jean-Frederic Colombel[1]



ARTICLE OPEN

Check for updates

Altered gut microbiome composition by appendectomy contributes to colorectal cancer

Feiyu Shi[1,2,3,6], Gaixia Liu[1,2,3,6], Yufeng Lin[4,6], Cosmos liutao Guo[4,6], Jing Han[2,3], Eagle S. H. Chu[4], Chengxin Shi[1,2,3], Yaguang Li[1,2,3], Haowei Zhang[1,2,3], Chenhao Hu[1,2,3], Ruihan Liu[2,3], Shuixiang He[5], Gang Guo[2,3], Yinnan Chen[2,3], Xiang Zhang[4], Olabisi Oluwabukola Coker[4], Sunny Hei Wong[4], Jun Yu[2,4]✉ and Junjun She[1,2,3]✉

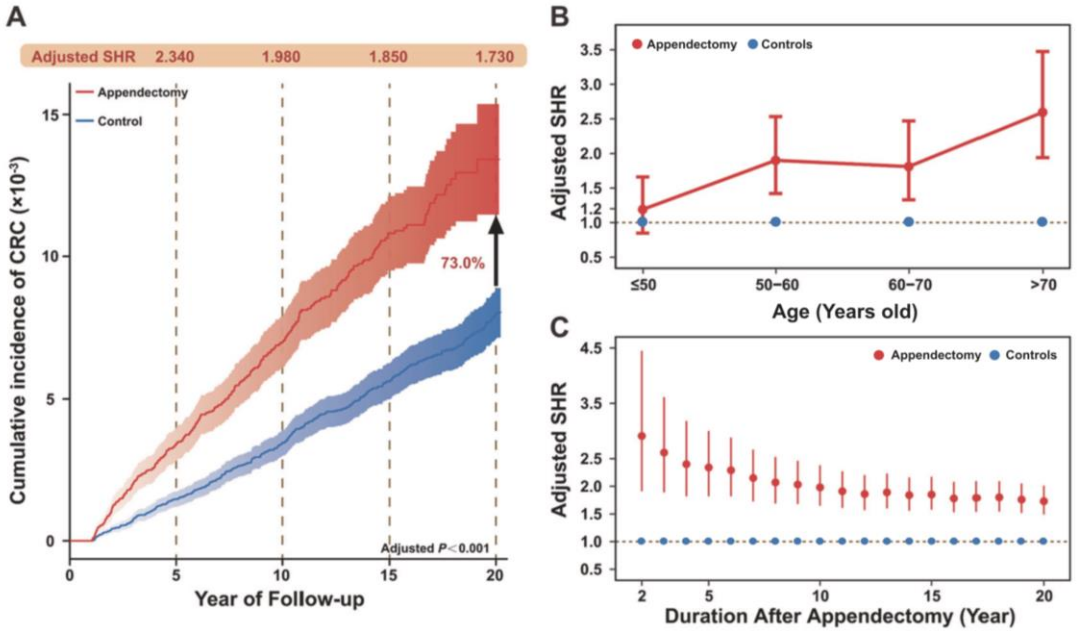
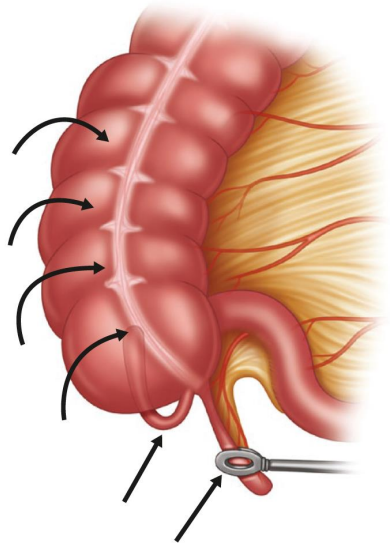


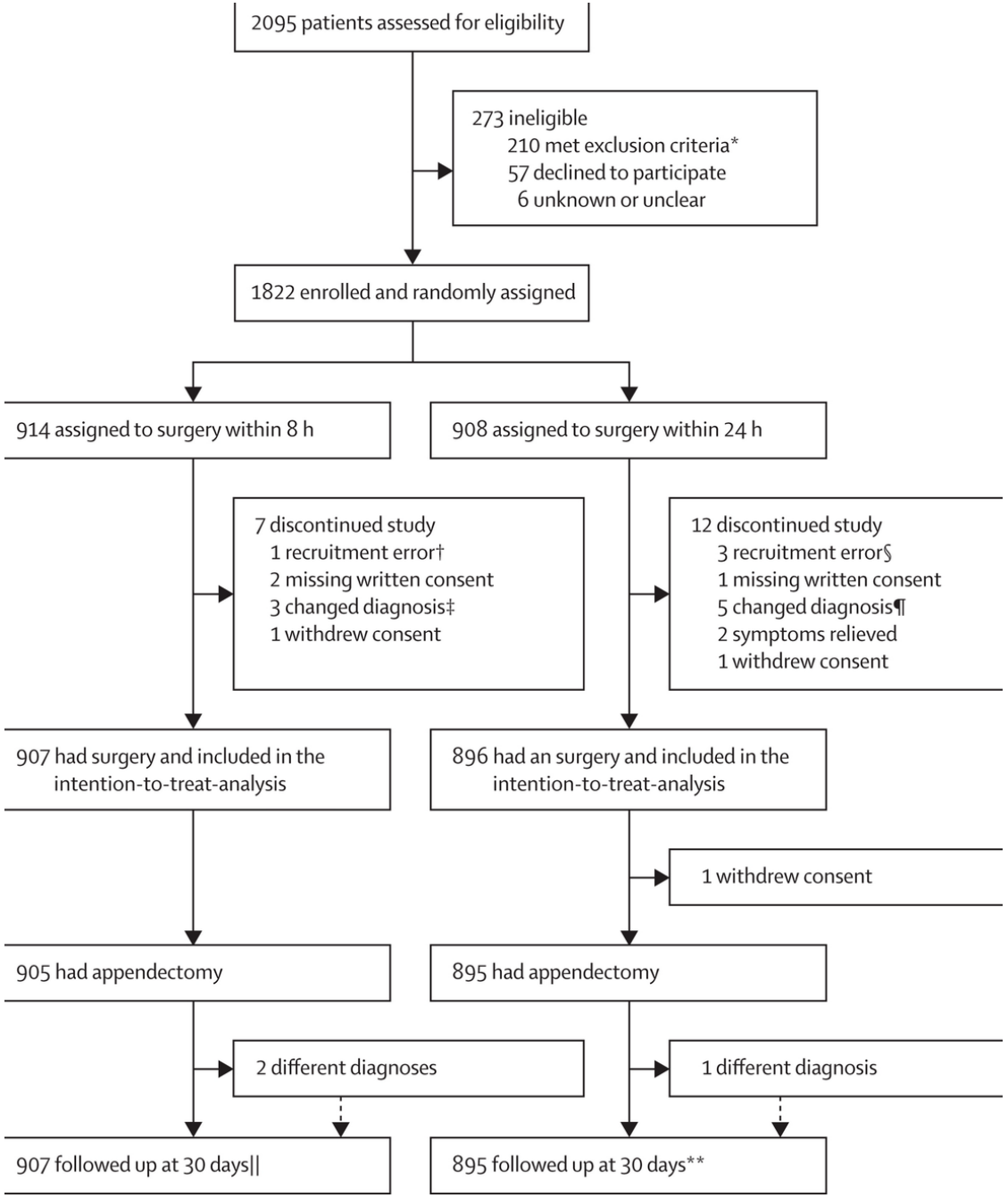
Fig. 1 The appendectomy increased the overall cumulative risk of colorectal cancer development based on the longitudinal epidemiological study on Hong Kong Cohort. A The cumulative incidence of colorectal cancer (CRC) was increased by 73% in appendectomy cases compared with controls during the 20 years follow-up. **B** The adjusted sub-distribution hazard ratio (SHR) for CRC development stratified by age (≤50 years old, 50–60 years old, 60–70 years old, and >70 years old). **C** The temporal trends of the adjusted SHR for CRC development over the 20 follow-up years in appendectomy cases compared with controls.

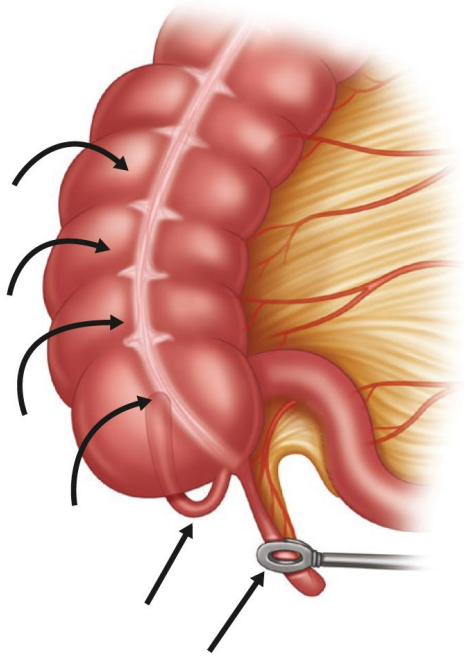
Role of preoperative in-hospital delay on appendiceal perforation while awaiting appendicectomy (PERFECT): a Nordic, pragmatic, open-label, multicentre, non-inferiority, randomised controlled trial

Karoliina Jalava, Ville Sallinen, Hanna Lampela, Hanna Malmi, Ingeborg Steinholt, Knut Magne Augestad, Ari Leppäniemi, Panu Mentula

1. Vil pasienter som venter 24 timer ha økt risiko for perforasjon (sprukken blindtarm) ?
2. Kan pasienter som venter opptil 24 timer klare seg uten antibiotika i ventetiden ?



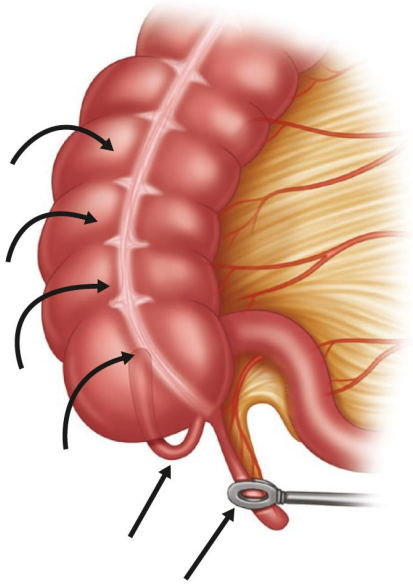

2095 patients assessed for eligibility
273 ineligible
210 met exclusion criteria*
57 declined to participate
6 unknown or unclear
1822 enrolled and randomly assigned
914 assigned to surgery within 8 h
908 assigned to surgery within 24 h
7 discontinued study
1 recruitment error†
2 missing written consent
3 changed diagnosis‡
1 withdrew consent
12 discontinued study
3 recruitment error§
1 missing written consent
5 changed diagnosis¶
2 symptoms relieved
1 withdrew consent
907 had surgery and included in the intention-to-treat-analysis
896 had an surgery and included in the intention-to-treat-analysis
1 withdrew consent
905 had appendectomy
895 had appendectomy
2 different diagnoses
1 different diagnosis
907 followed up at 30 days||
895 followed up at 30 days**



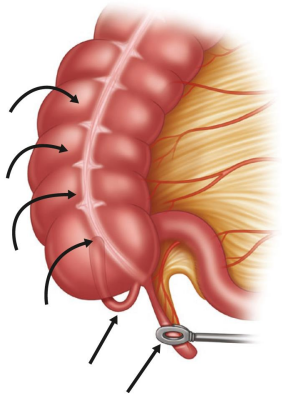
	Red group, <8 h (n=907)	Orange group, <24 h (n=896)
Sex		
Male	514 (57%)	471 (53%)
Female	393 (43%)	425 (47%)
Age, years	35 (28–46)	35 (28–47)
ASA score		
1	481 (53%)	463 (52%)
2	368 (41%)	353 (39%)
3	58 (6%)	78 (9%)
4	0	2 (<1%)
CACI	0	0 (0–1)
CACI ≥2	104 (12%)	121 (14%)
BMI	25·7 (23·1–29·3)	26·0 (23·4–29·4)
Missing	97 (11%)	95 (11%)
Asthma	44 (5%)	43 (5%)
Hypertension	82 (9%)	94 (10%)
Immunosuppressive medication	26 (3%)	30 (3%)
C-reactive protein, mg/L	24 (6–49)	25 (8–50)
White blood cell count, ×10⁹ per L	12·3 (4·0)	12·4 (3·8)
Fever, °C	37·1 (0·5)	37·1 (0·6)
Adult Appendicitis Score	14 (3)	14 (3)
Imaging verified	742 (82%)	779 (87%)
CT	605 (67%)	619 (69%)
Appendicolith on CT*	209 (35%)	202 (33%)
Ultrasound	135 (15%)	159 (18%)
MRI	2 (<1%)	1 (<1%)
Appendix thickness,† mm	11 (9–12)	11 (9–13)
Received antibiotics while waiting for surgery	466 (51%)	432 (48%)
Duration of symptoms before randomisation, h	24 (15–35)	24 (16–36)
1–12	120 (13%)	140 (16%)
>12 and ≤24	359 (40%)	326 (36%)
>24 and ≤36	213 (24%)	207 (23%)
>36 and ≤48	89 (10%)	101 (11%)
>48 and ≤72	70 (8%)	71 (8%)
>72	56 (6%)	50 (6%)
Missing	0	1 (<1%)

Data are n (%), median (IQR), or mean (SD). Due to rounding, percentages might not total 100. ASA=American Society of Anesthesiology. CACI=Charlson age comorbidity index. *Percentages are calculated from patients imaged with CT. †Measured from the images.

Table 1: **Baseline characteristics and clinical findings on admission**



	Red group, <8 h (n=907)	Orange group, <24 h (n=896)	p value	Effect size (95% CI)
Primary outcomes				
Perforated appendicitis (AAST 3–5)	77 (8%)	81 (9%)	0·68*	Difference 0·6% (–2·1 to 3·2)
AAST 0—normal appendix	23 (3%)	16 (2%)	NA	NA
AAST 1—acutely inflamed appendix, intact	682 (75%)	689 (77%)	NA	NA
AAST 2—gangrenous appendix, intact	125 (14%)	110 (12%)	NA	NA
AAST 3—perforated, local contamination	39 (4%)	29 (3%)	NA	NA
AAST 4—perforated with peri-appendiceal phlegmon or abscess	23 (3%)	29 (3%)	NA	NA
AAST 5—perforated with generalised peritonitis	15 (2%)	23 (3%)	NA	NA
Secondary outcomes				
Geometric mean duration of hospital stay, h	31 (1·7)	39 (1·6)	<0·0001†	Geometric mean ratio 0·8 (0·7 to 0·8)
Laparoscopic procedure	902 (99%)	892 (<100%)	1·0‡	Difference 0·1% (–0·5 to 0·8)
Conversion	5 (1%)	4 (<1%)	1·0‡	Difference –0·1% (–0·8 to 0·5)
SAGS	NA	NA	0·70*	0·03§
0—no appendicitis	23 (3%)	16 (2%)	NA	NA
1—simple appendicitis	667 (74%)	665 (74%)	NA	NA
2 and 3—purulent discharge locally or in four quadrants¶	140 (15%)	134 (15%)	NA	NA
Pathological verification‖	NA	NA	0·28*	0·04§
Non-perforated gangrenous appendix	79 (9%)	60 (7%)	NA	Difference –2·0% (–4·5 to 0·4)
Perforated appendix	80 (9%)	81 (9%)	NA	Difference 0·2% (–2·4 to 2·9)
30 day follow-up**				
Complication rate ≤30 days	66 (7%)	56 (6%)	0·39*	Difference –1·0% (–3·3 to 1·3)
Clavien–Dindo grade 1	14 (2%)	12 (1%)	NA	NA
Clavien–Dindo grade 2	43 (5%)	34 (4%)	NA	NA
Clavien–Dindo grade 3a + b and 4a	9 (1%)	10 (1%)	NA	NA
Surgical site infection	24 (3%)	22 (2%)	0·80*	Difference –0·2% (–1·6 to 1·3)
Superficial and deep incisional infection	11 (1%)	10 (1%)	NA	NA
Intra-abdominal infection	13 (1%)	12 (1%)	NA	NA
Positive blood culture	4 (<1%)	6 (1%)	0·55‡	Difference 0·2% (–0·5 to 0·9)
NRS for pain				
NRS average value per h	4·0 (2·3)	3·9 (2·2)	0·46††	Difference 0·2 (–0·2 to 0·5)
Area under NRS curve	18 (9–36)	45 (19–76)	<0·0001‡‡	–0·4§§
Incompletely filled or unreturned NRS forms	610 (67%)	610 (68%)	NA	NA
Other details				
Preoperative delay, h¶¶	6 (3–10)	14 (8–20)	NA	NA
Operating time, min	44 (34–61)	44 (33–59)	NA	NA
Histopathological examination				
No appendicitis	24 (3%)	17 (2%)	NA	NA
Simple appendicitis	768 (85%)	782 (87%)	NA	NA
Gangrenous appendix	104 (11%)	89 (10%)	NA	NA
Chronic appendicitis	6 (1%)	2 (<1%)	NA	NA
Other findings	2 (<1%)	2 (<1%)	NA	NA
Missing	3 (<1%)	4 (<1%)	NA	NA
Malignant or premalignant tumour	21 (2%)	18 (2%)	NA	NA
Other diagnoses‖‖	17 (2%)***	11 (1%)†††	NA	NA



Konklusjon: Ukompliserte appendisitter kan trygt vente i opptil 24 timer uten at det øker risiko for perforasjon

Hvorfor er dette viktig

1. Man bør unngå nattarbeide – kirurg og pasient perspektiv
2. Man kan allokere pasienter til dagtid
3. Man genererer nye forskningshypoteser

Ingeborg Steinholt

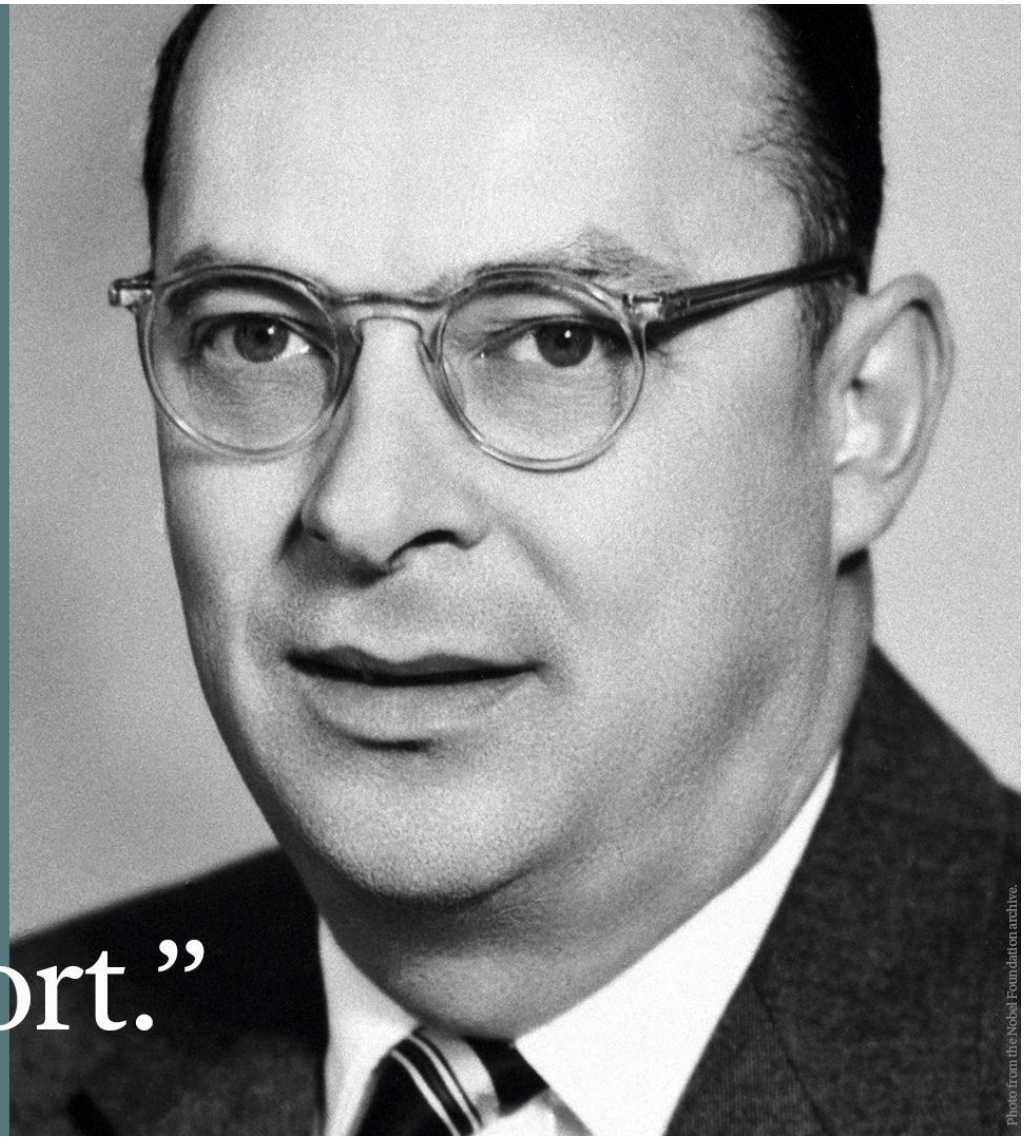
Panu Mentula

Ville Sallinen

Hanna Lampela

Ari Leppaniemi

JOHN BARDEEN
Nobel Prize in Physics 1956
Nobel Prize in Physics 1972



"Science is a collaborative effort."