

MEDICAL PERI-OPERATIVE AND SURGICAL PERSPECTIVES IN IBD

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CENTRE FOR INFLAMMATORY
BOWEL DISEASE (IBD)



Financial Interest Disclosure

(over the past 24 months)

Commercial Interest	Relationship
Abbvie, Takeda, Janssen, Pfizer, Genentech, Roche, Amgen, Lycera, Red Hill Biopharma, Arena	Research Grant / Research Support
Abbvie, Janssen, Takeda, Shire, Novartis, Ferring, Pfizer	Speaker
Abbvie, Shire, Janssen, Pfizer, Merck, Takeda	Advisory Board Member

Objectives

- Reflect on the medical optimization of Crohn's disease patients undergoing surgical resection
- Review evidence on the effect to drug therapy on surgical complications and outcomes in Crohn's disease
- Consider strategies to minimize the risk of recurrence of Crohn's disease after surgery
- Discuss the combined medical and surgical management of fistulizing perianal Crohn's disease

Case 1

- 28 year old woman presenting with 3 year history of CD – ileal involvement
- Multiple courses of prednisone over first 2 years; azathioprine started 1 year after diagnosis
- Infliximab started 6 months before presentation
- Now presents with increased RLQ pain and 30 pound weight loss
- CT – 30 cm of thickened TI with 5 cm segment luminal narrowing; prestenotic dilatation; associated phlegmon/?abscess

Surgery for Luminal Crohn's Disease

- Surgical rates have decreased over past 60 years but are still significant¹
 - 16% at 1 year
 - 33% at 3 years
 - 46% at 10 years
- Increased mortality in CD is primarily due to deaths within 30 days of surgery²
- High risk of recurrence following resection
- Risk of short bowel with multiple resections

What factors impact risk of surgical complications in luminal CD?

- Patient age
- Nutritional status
- Cardiopulmonary/general medical condition (ASA Class)
- Sepsis
- ?obstruction (dilated bowel)
- Medications
 - steroids
 - immune suppression?
 - biologic therapy?
- Surgical factors

Pre-operative Management of Luminal CD

- Disease staging
- Control of sepsis
 - percutaneous drainage of abscesses
 - antibiotics
- Nutritional support
- Decompression of obstruction
- Optimize general medical condition (treatment of anemia, thromboembolic prophylaxis)
- Medical therapy of CD
 - wean steroids
 - immune suppression and biologic therapy (?)
- Timing of surgery

Pre-operative Nutritional Support

- Multiple definitions of malnutrition:
 - low BMI (<18.5 kg/m²)
 - >10% unintentional weight loss
 - anthropometric measurement abnormalities
 - reduced grip strength
- Approximately 75% of CD patients undergoing surgery are malnourished
- Retrospective studies suggest reduced post-operative complications when pre-operative nutritional support is provided^{1,2}
- Relative merit of PN vs. EN has not been studied

1. Jacobson S. Scand J Gastro 2012;47:170-177

2. Li G, et al. Eur J Clin Nutr 2014;68:441-6

Pre-operative CD Management: Outcomes

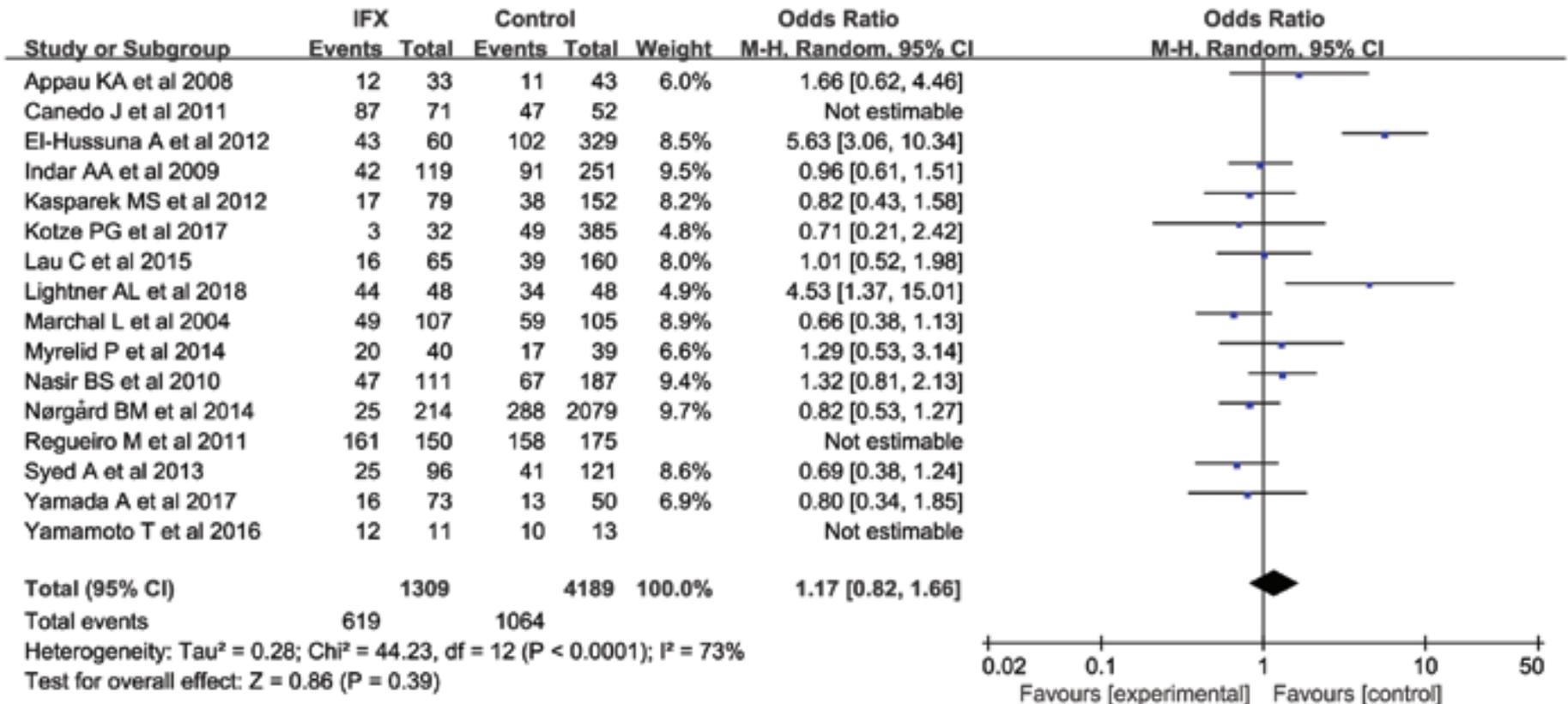
- 78 patients with penetrating ileal CD (37 with abscess) undergoing first ileocecal resection
- Nutrition support (n=50), abscess drainage (n=11), broad spectrum antibiotics and weaning of steroids, immunosuppressives and anti-TNF
- Uncomplicated operative course (n=58; 74%); major complication (n=4; 5%); minor complications (n=10; 13%)

Pre-operative CD Management: Effect of Optimization

- Retrospective study of 237 CD patients undergoing surgery at 3 centres
- No difference between patients who did and did not receive optimization (nutrition support for ≥ 1 week and/or optimization of medication*) with respect to:
 - overall complications
 - surgical site infections
 - re-operation
 - intra-abdominal septic complications
 - length of stay

*D/C steroids, immunosuppressives and anti-TNF

Impact of Pre-operative Infliximab on Post-operative Complications in CD



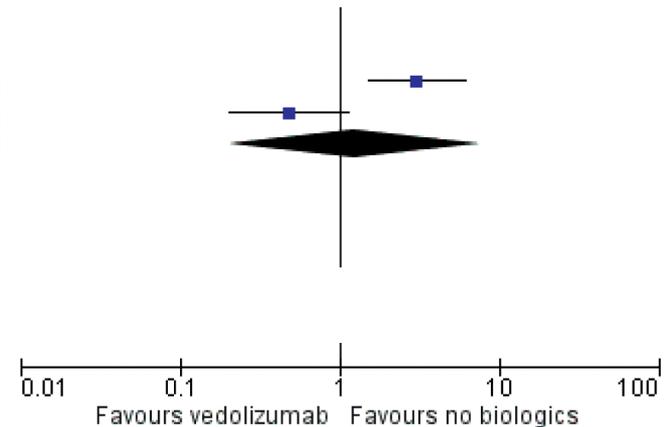
No difference in major complications, infectious complications, non-infectious complications or surgical complications

Impact of Pre-operative Vedolizumab on Post-operative Complications in CD

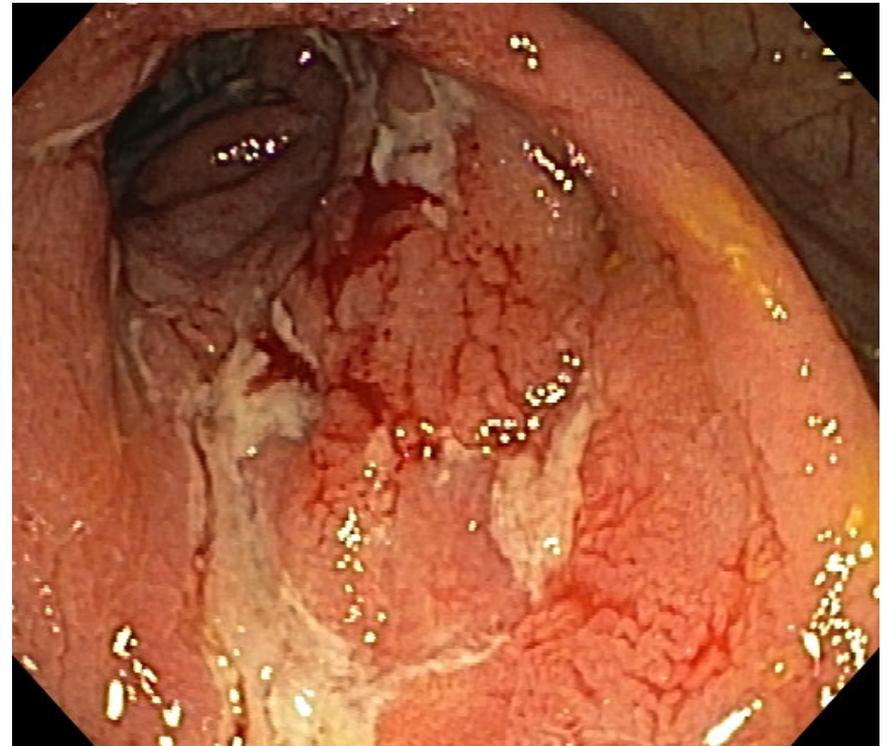
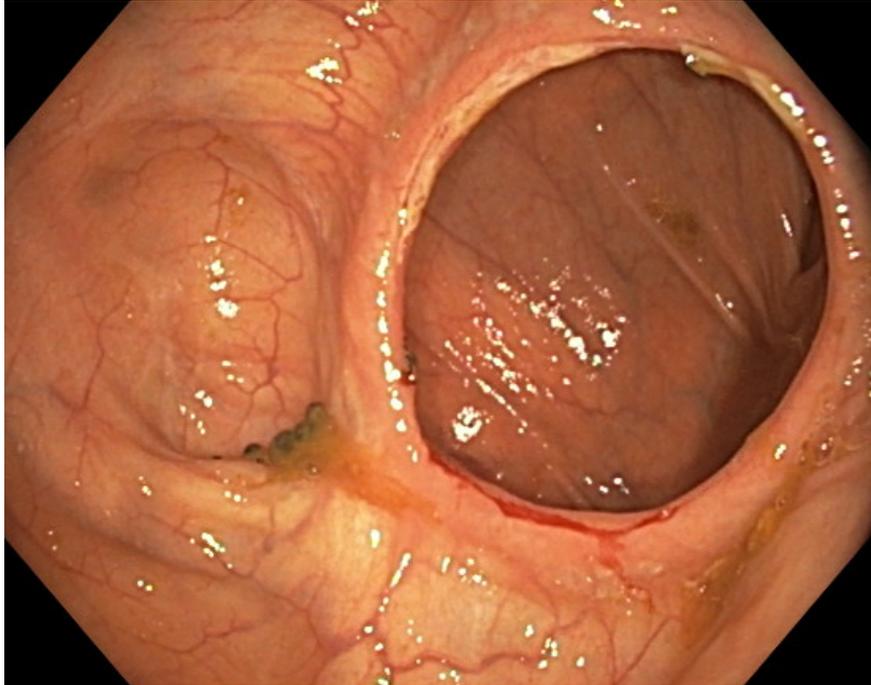
Study or Subgroup	Vedolizumab		No biologics		Weight	Odds Ratio	Odds Ratio
	Events	Total	Events	Total		M-H, Random, 95% CI	M-H, Random, 95% CI

2.4.2 Crohn's Disease

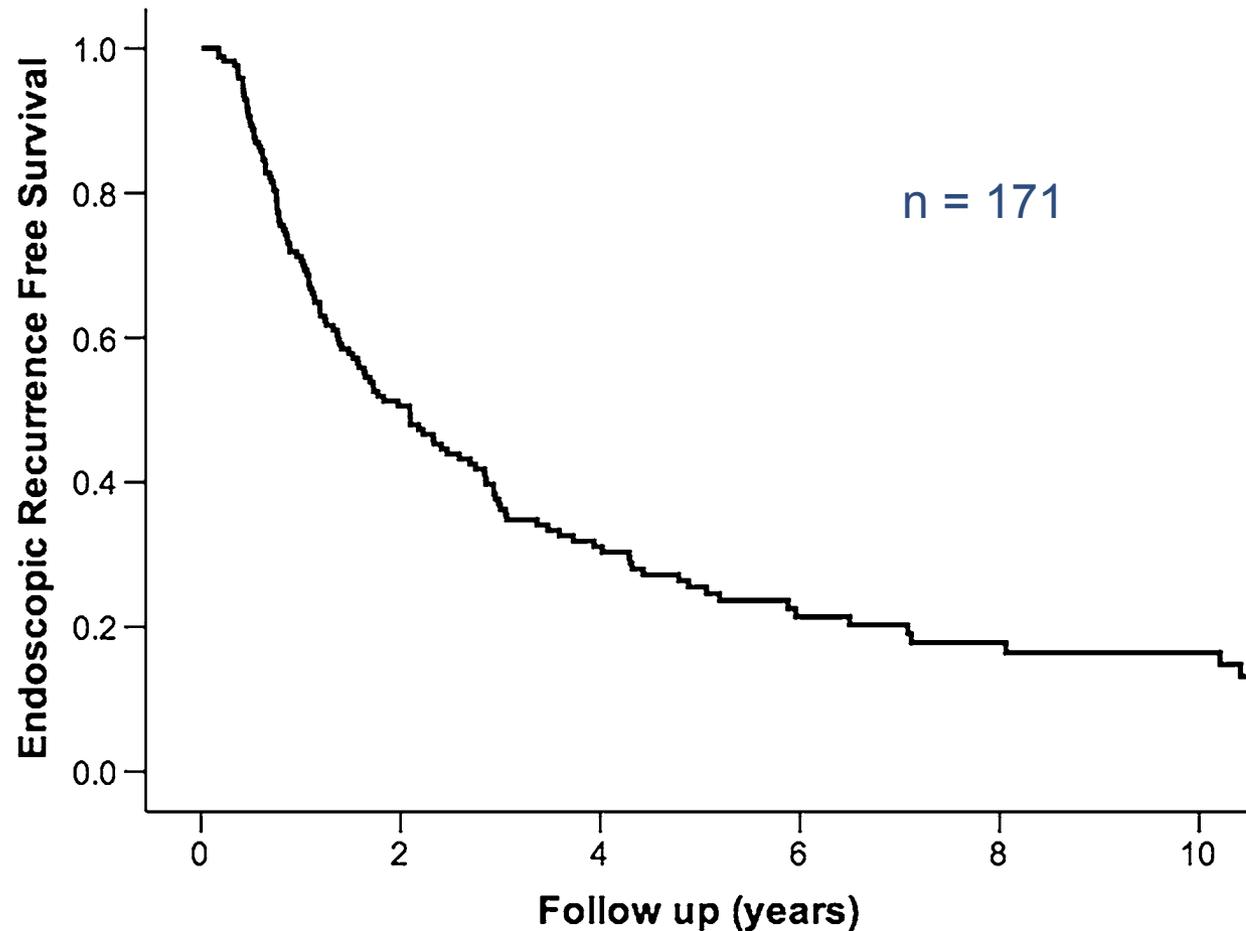
Lightner 2017 (CD)	32	100	14	105	26.7%	3.06 [1.52, 6.17]
Yamada 2017	8	40	41	121	24.8%	0.49 [0.21, 1.15]
Subtotal (95% CI)		140		226	51.5%	1.24 [0.21, 7.52]
Total events	40		55			
Heterogeneity: $\tau^2 = 1.53$; $\chi^2 = 10.50$, $df = 1$ ($P = 0.001$); $I^2 = 90\%$						
Test for overall effect: $Z = 0.24$ ($P = 0.81$)						



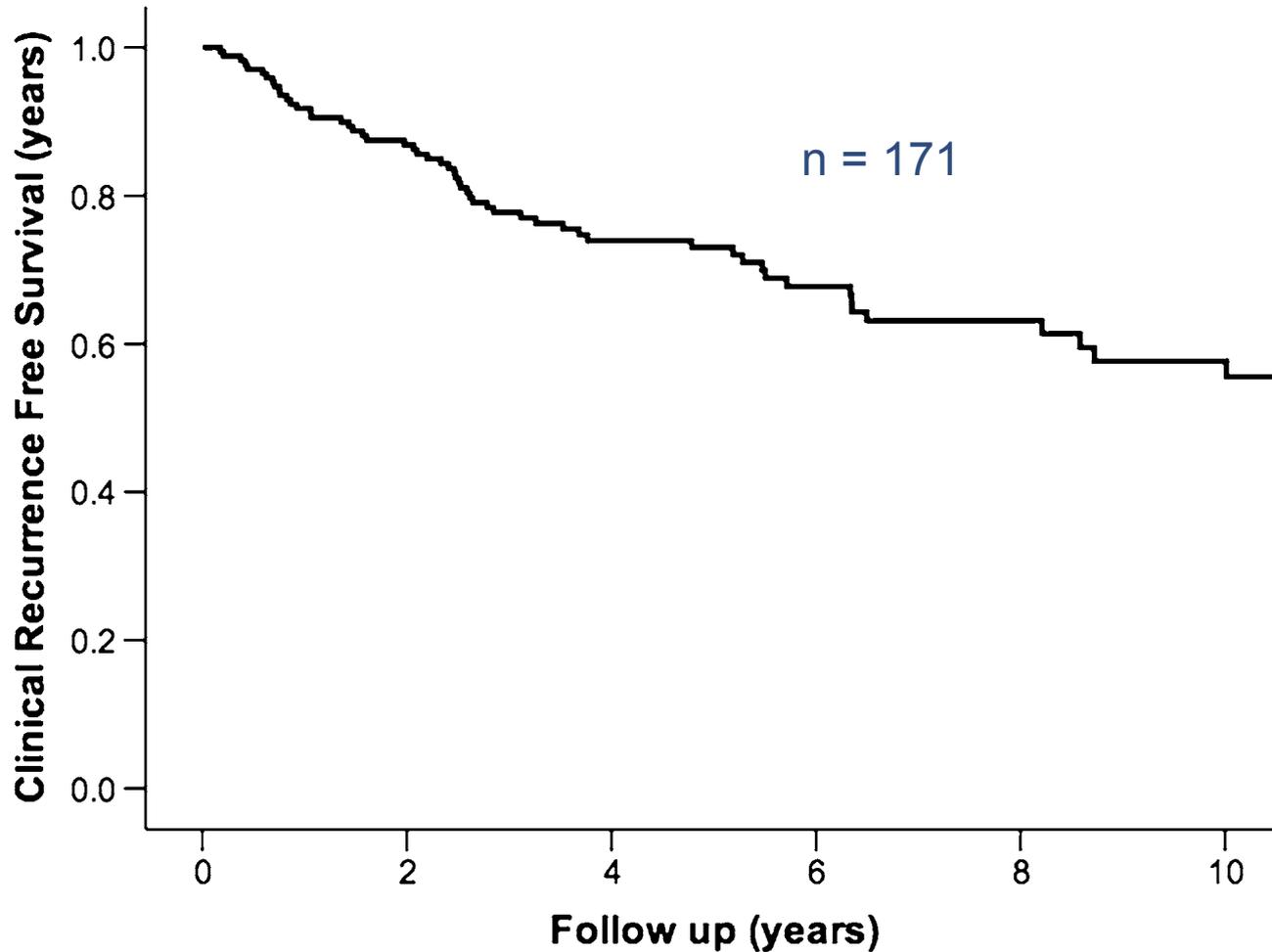
Prevention of Post-operative Recurrence of Crohn's Disease



Post-operative Crohn's Disease: Endoscopic Recurrence Following Primary Ileocolic Resection



Post-operative Crohn's Disease: Clinical Recurrence Following Primary Ileocolic Resection



Post-operative CD Recurrence

- Endoscopic recurrence occurs in 35 – 80% by 1 year
- Endoscopic recurrence frequently precedes clinical recurrence
- Clinical recurrence:
 - 28 to 36% at 5 years
 - 45 to 61% at 10 years
- Length of recurrent segment is correlated with the length of resected segment
- Severity of endoscopic lesions is predictive of need for another resection

1. Rutgeerts P, et al. Gastro 1994;108:1617-1621
2. Fortinsky KJ, et al. Dig Dis Sci 2017;62:188-96
3. Regueiro M, et al. Gastro 2017;152:277-295
4. D'Haens, GR, et al. Gut 1995;715-717

What factors affect risk of post-operative CD recurrence?

- Smoking
- Penetrating or stricturing disease type
- Family history of IBD
- Genetics
- Microbiome
- Time from CD diagnosis to resection
- Number of prior resections
- Surgical technique and pathologic findings
- Medical prophylaxis^{2,3}

1. Khoury W, et al. J Gastrointest Surg 2011;15:1354-60

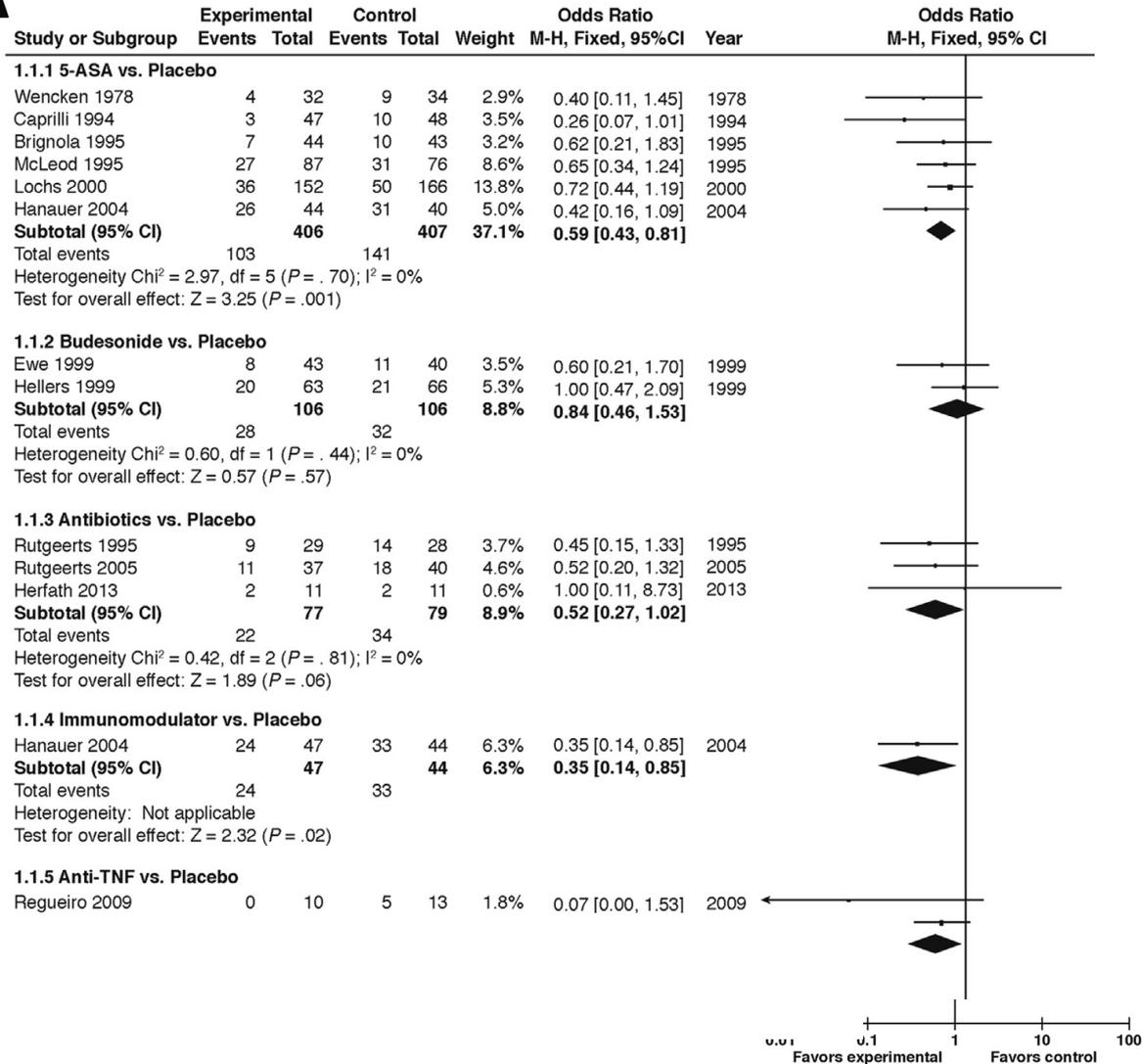
2. Fortinsky KJ, et al. Dig Dis Sci 2017;62:188-96

3. Regueiro M, et al. Gastro 2017;152:277-295

Post-operative CD Prophylaxis

5-ASA vs Placebo

A



Post-operative Management of CD: ECCO Guidelines

ECCO statement 8B

The following are considered predictors of early post-operative recurrence after ileocolonic resection: smoking, prior intestinal surgery, absence of prophylactic treatment [EL1], penetrating disease at index surgery, perianal location [EL2], granulomas in resection specimen [EL2], and myenteric plexitis [EL3]

ECCO statement 8G

Prophylactic treatment is recommended after ileocolonic intestinal resection in patients with at least one risk factor for recurrence [EL2]. To prevent post-operative recurrence the drugs of choice are thiopurines [EL2] or anti-TNFs [EL2]. High dose mesalazine is an option for patients with an isolated ileal resection [EL2]. Imidazole antibiotics have been shown to be effective after ileocolic resection but are less well tolerated [EL1]

Post-operative Management of CD: One Size Does Not Fit All

- Risk of Recurrent CD
- Potential Impact of CD Recurrence
- Potential Impact of Post-operative Therapy
- Patient Preference
- Access to Therapy

Post-operative Management of CD: One Size Does Not Fit All

- Risk of recurrent CD:
 - patient age
 - number of previous resections
 - smoking
 - presence of residual disease (macroscopic)
 - time from diagnosis to first resection

Post-operative Management of CD: One Size Does Not Fit All

- Potential Impact of CD Recurrence:
 - patient age
 - co-morbidities
 - number, length and location of previous resections
- Potential Impact of Post-op Therapy:
 - patient age
 - co-morbidities
 - response to prior therapy
 - efficacy
 - side effects and complications

Post-operative Management of CD: One Size Does Not Fit All

- Patient Preference:
 - minimization or fear of medication risk
 - experience with previous medical therapy
 - concerns about specific classes of therapy
 - minimization or fear of recurrence risk
 - monitoring procedures
 - clinical
 - lab (e.g. CRP, fecal calprotectin)
 - endoscopic
 - radiologic

Post-operative Management of CD: One Size Does Not Fit All

- Access to Therapy:
 - ability to pay
 - insurance coverage
 - prior therapy and response to therapy

Post-operative Management of CD: AGA Guidelines

1. In patients with surgically induced remission of CD, the AGA suggests early pharmacological prophylaxis over endoscopy-guided pharmacological treatment. *Conditional recommendation, very low quality of evidence.*

2. In patients with surgically induced remission of CD, the AGA suggests using anti-TNF therapy and/or thiopurines over other agents. *Conditional recommendation, moderate quality of evidence.*

3. In patients with surgically induced remission of CD, the AGA suggests against using mesalamine (or other 5-aminosalicylates), budesonide, or probiotics. *Conditional recommendation, low quality of evidence and very low quality of evidence.*

Risk Stratification of Post-operative Crohn's Disease Patients

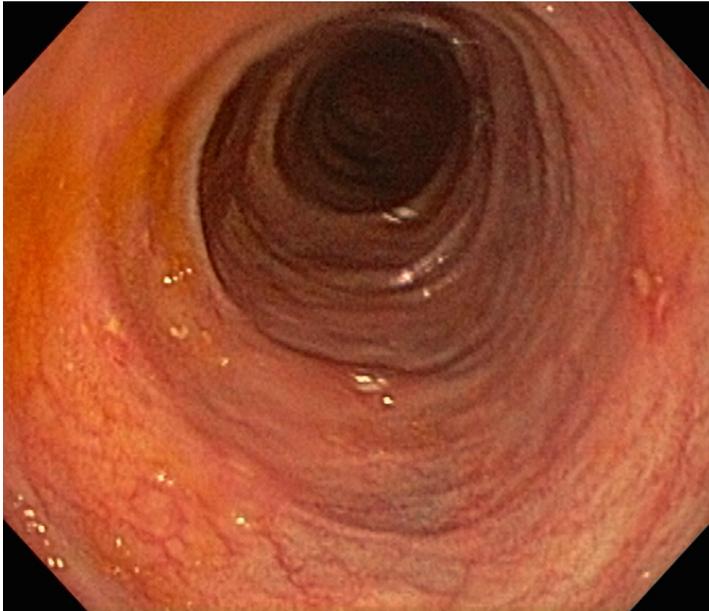
- Low risk

- 1st resection
- short segment resected
- non-perforating
- non-smoker
- older age (?definition)
- long duration from diagnosis to resection

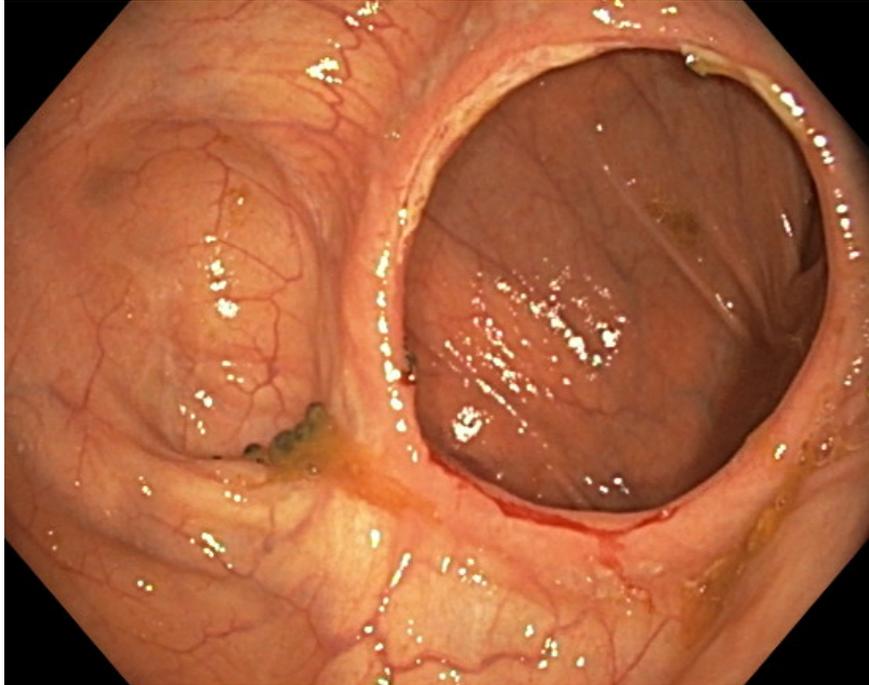
- High risk

- 2 or more resections
- long segment(s) resected
- perforating disease
- smoker at time of OR
- younger age
- short duration from diagnosis to resection (+ exposure to potentially effective medical therapy)

Risk Stratification of Post-op CD: Use of Endoscopy

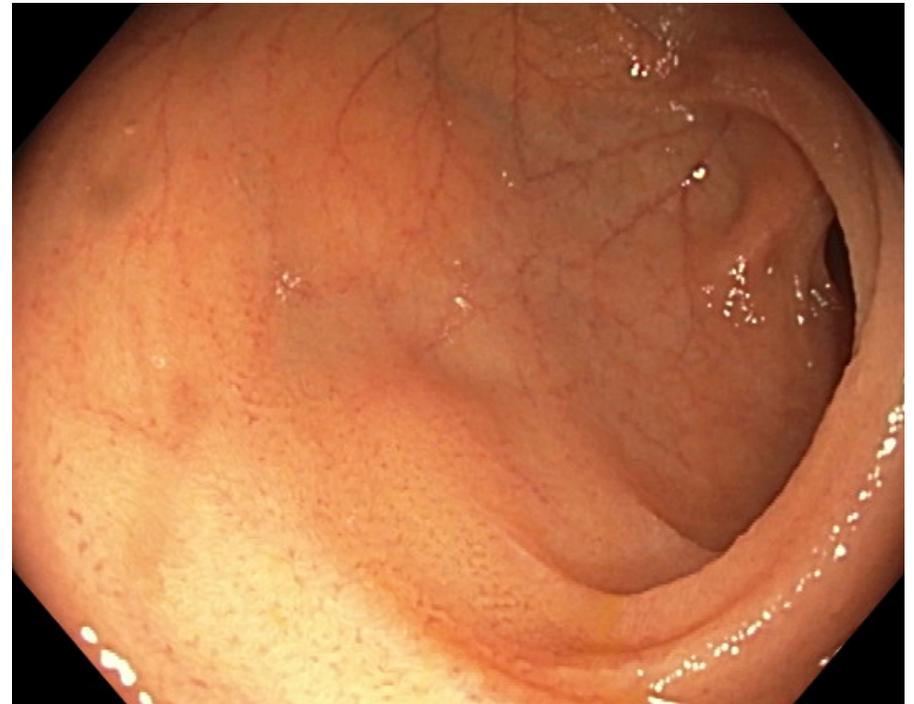


Ileocolic Anastomosis



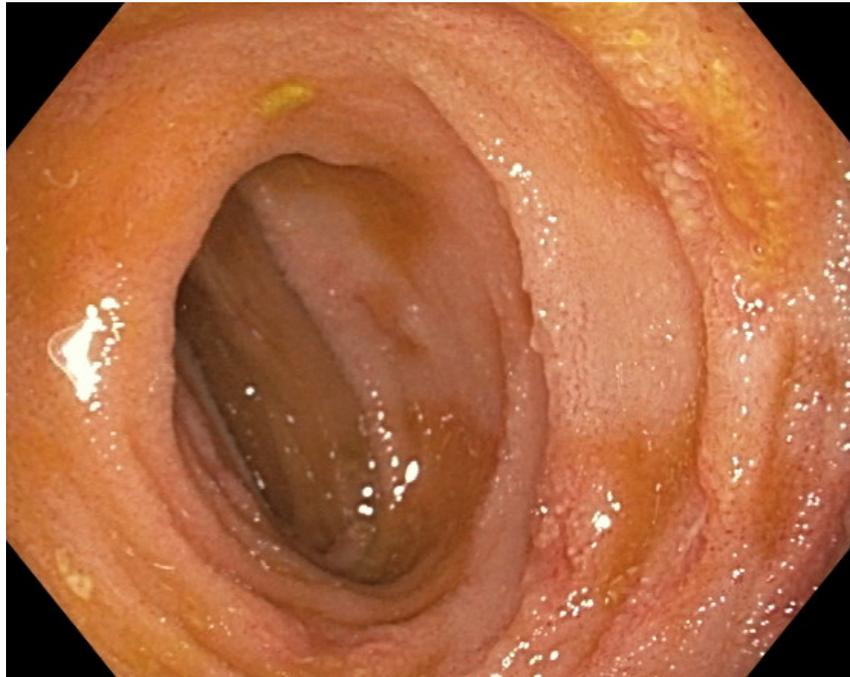
Anastomotic line friability
and erosions

Rutgeerts i0



6% risk of clinical recurrence at 5 years

Post-surgical CD Recurrence



Rutgeerts i1

6% risk of clinical recurrence at 5 years

Post-surgical CD Recurrence

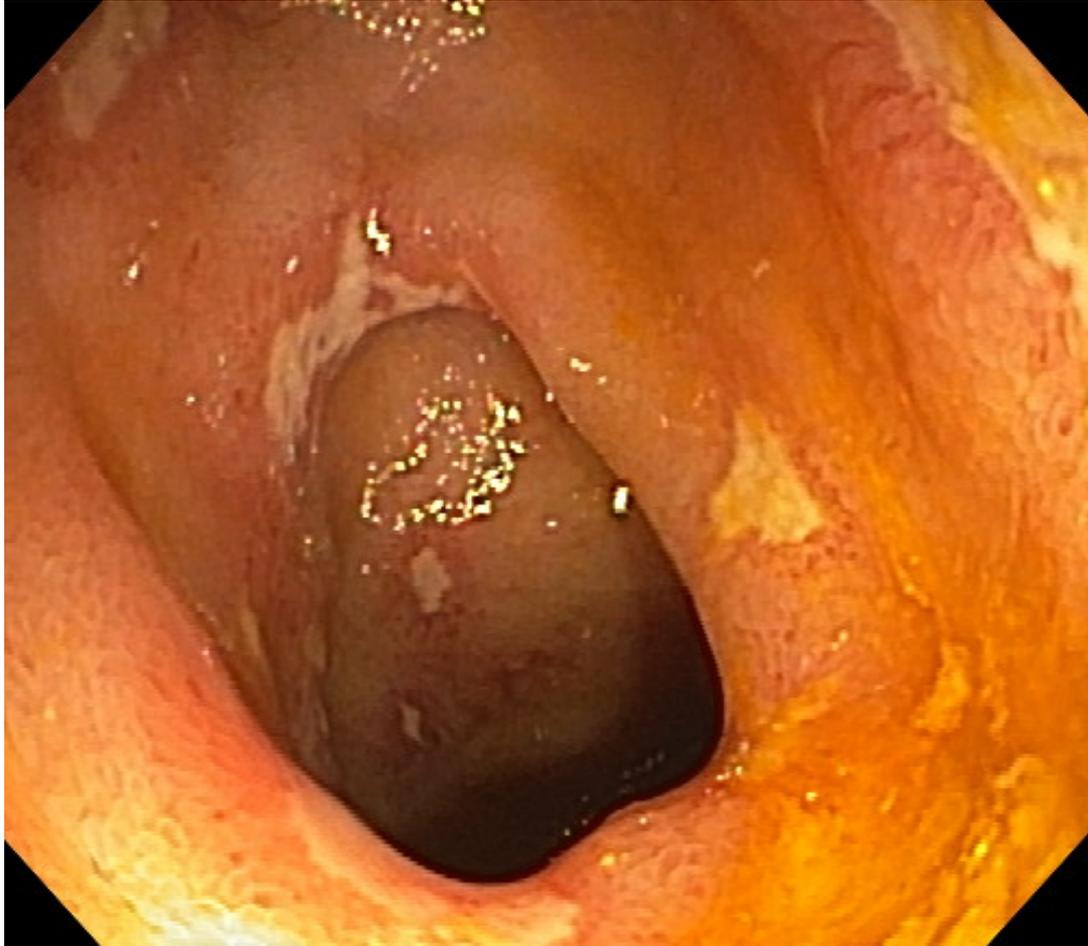


Rutgeerts i2



27% risk of clinical recurrence at 5 years

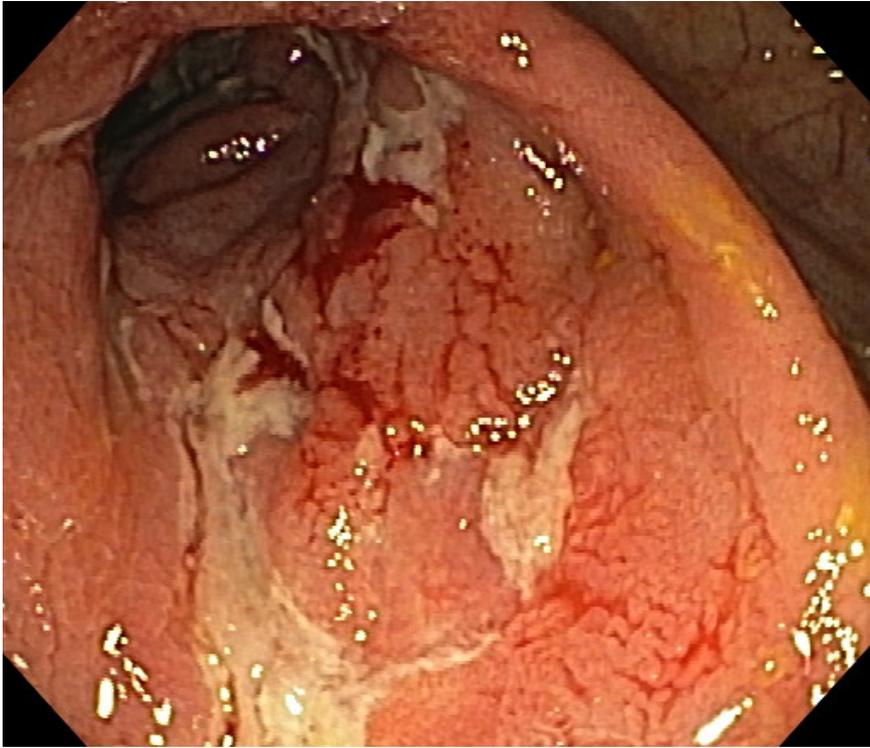
Post-surgical CD Recurrence



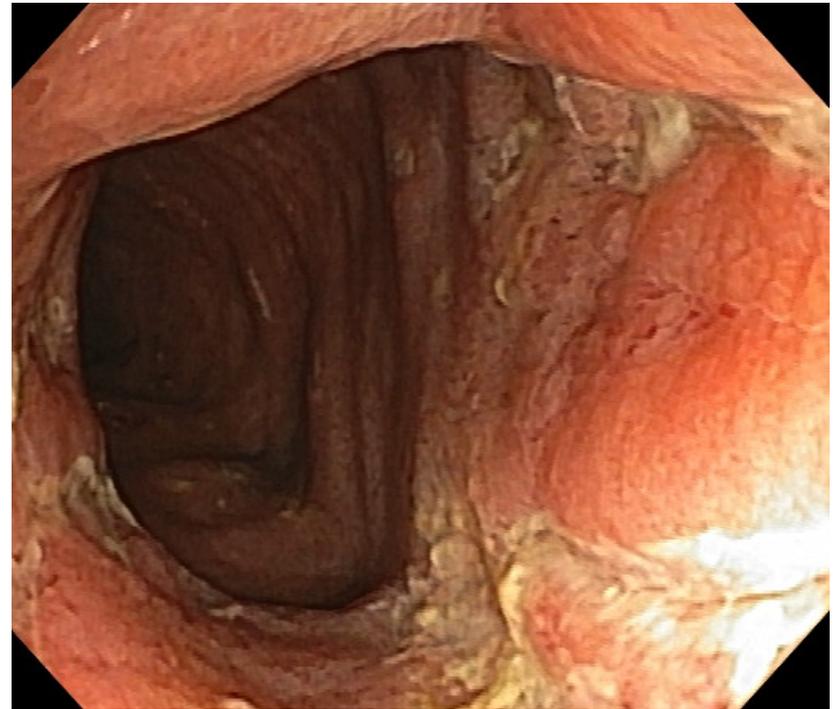
Rutgeerts i3

63% risk of clinical recurrence at 5 years

Post-surgical CD Recurrence

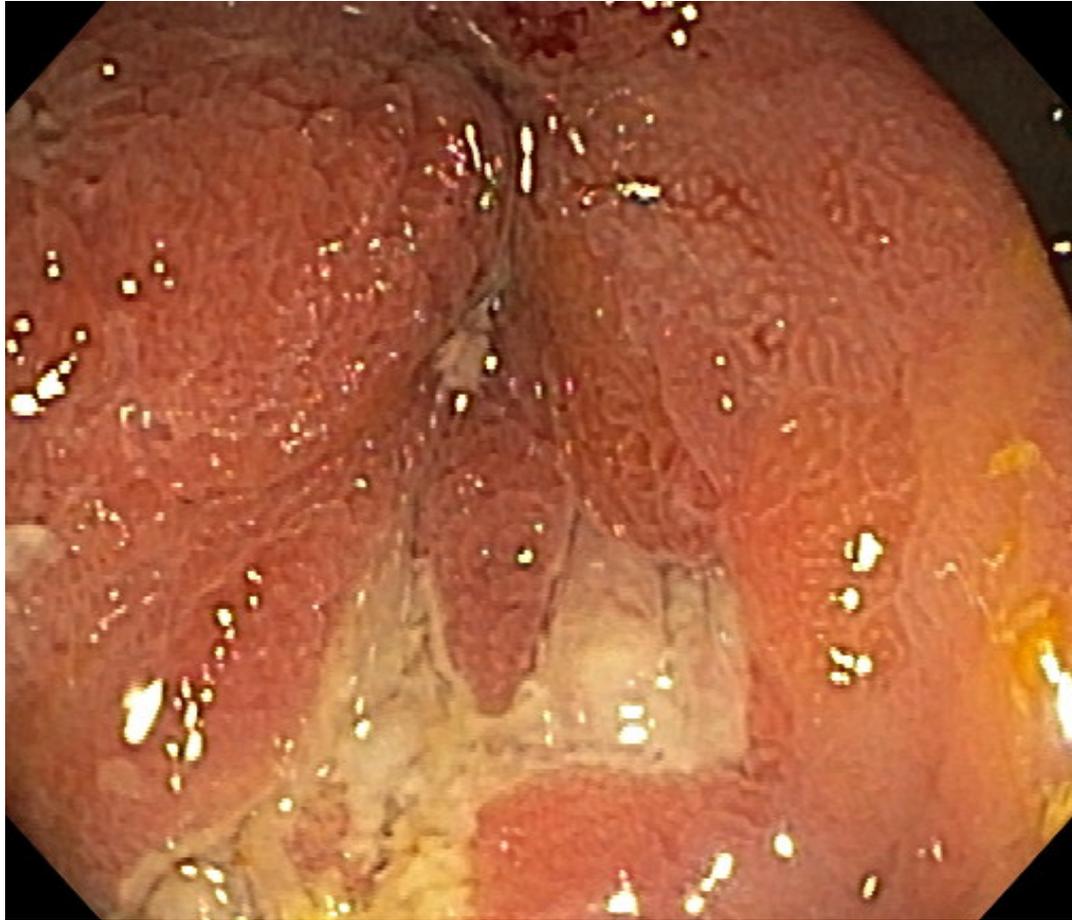


Rutgeerts i4



100% risk of clinical recurrence at 5 years

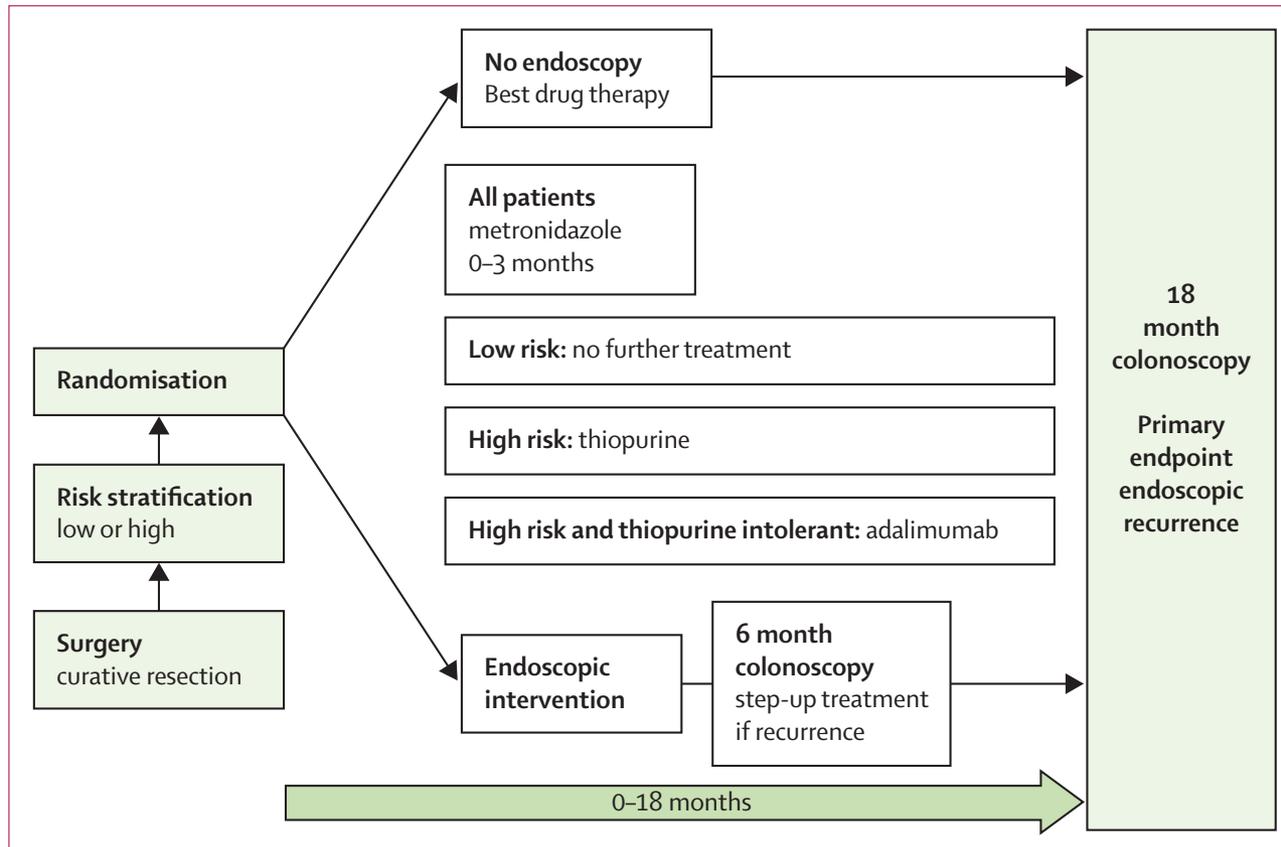
Post-surgical CD Recurrence



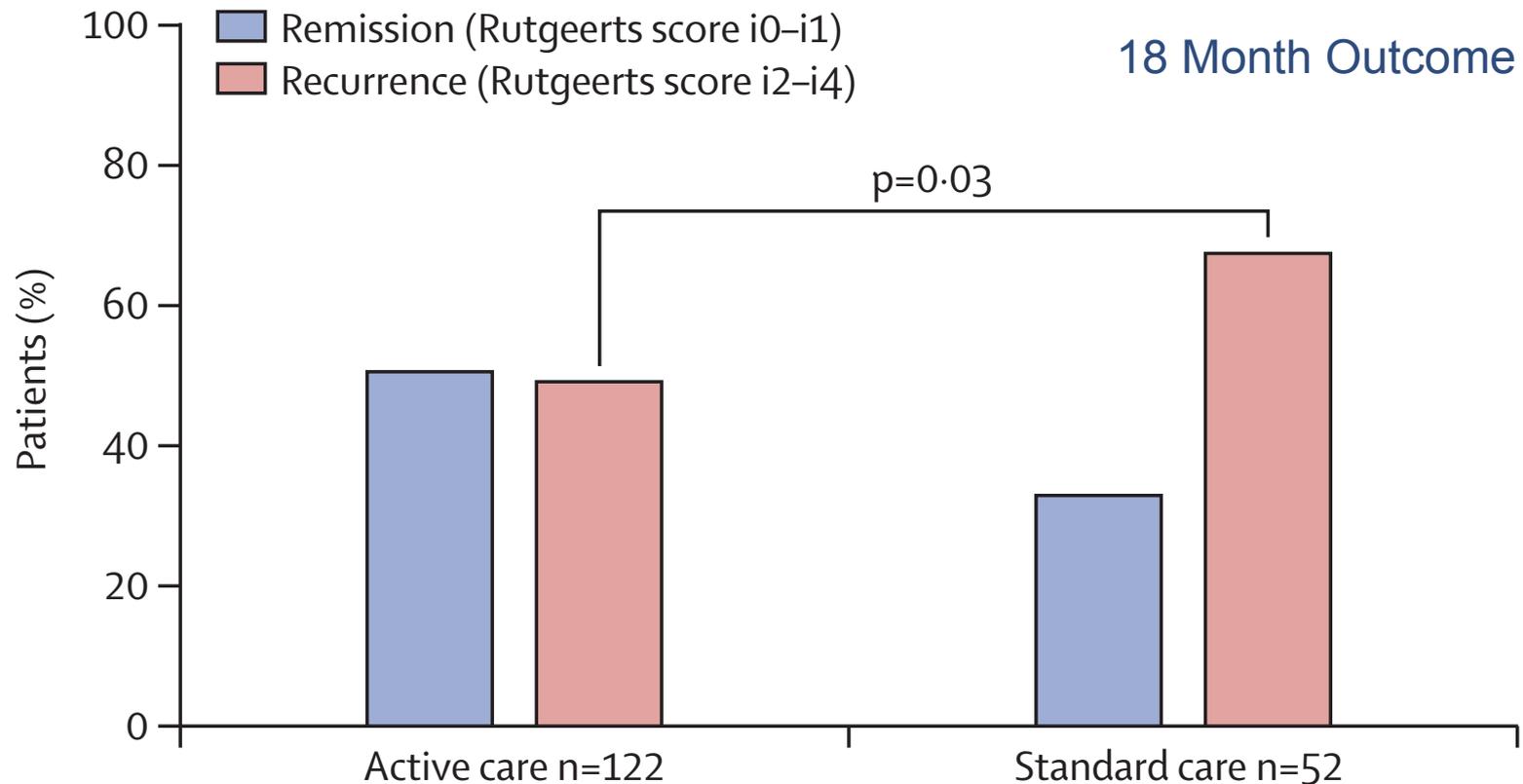
Rutgeerts i4

Crohn's disease management after intestinal resection: a randomised trial

Peter De Cruz, Michael A Kamm, Amy L Hamilton, Kathryn J Ritchie, Efrosinia O Krejany, Alexandra Gorelik, Danny Liew, Lani Prideaux, Ian C Lawrance, Jane M Andrews, Peter A Bampton, Peter R Gibson, Miles Sparrow, Rupert W Leong, Timothy H Florin, Richard B Geary, Graham Radford-Smith, Finlay A Macrae, Henry Debinski, Warwick Selby, Ian Kronborg, Michael J Johnston, Rodney Woods, P Ross Elliott, Sally J Bell, Steven J Brown, William R Connell, Paul V Desmond



Impact of 6 Month Post-op Endoscopic Risk Stratification



Surgical Management of Ileocolic Crohn's Disease

November 2, 2018

Erin Kennedy, MD, PhD
Associate Professor
Department of Surgery
University of Toronto



Surgical management of ileocolic Crohn's disease

- Role and timing of surgery
- Surgical considerations
 - Type of anastomosis
 - Extent of mesenteric resection
 - Microbiome



LIR!C Study

- RCT, 29 hospitals
 - Short segment ileocolic CD
 - Failed 3 months conventional therapy (steroids, thiopurines, methotrexate)
 - No previous resection
 - No evidence of obstruction on imaging
- Infliximab versus laparoscopic ICR
- Primary outcome QoL on IBDQ @ 12 months
- Endoscopic recurrence @ 12 months

Ponsioen C. Lancet Gastroenterol Hepatol 2017;2:785-92



LIR!C Results

	IFX (n=70)	ICR (n=73)
IBDQ @ 1 year	178.1	172.0
Endoscopic remission @ 1 year	84% (38/45)	79% (49/53)
Readmission	21% (15)	18% (13)
Time spent in hospital per patient, days (range)	7.0 (3.0-11.0)	5.0 (3.5-10.0)
Not able to participate in social life, days (SD)	1.1 (4.5)	1.8 (6.3)
Days on sick leave, days (SD)*	1.4 (4.7)	3.4 (7.1)

*p<0.05

LIR!C Study

- 20% (13/65) IFX → ICR
- 4% (3/73) ICR → IFX
- ICR excellent option for short segment ileocolic CD
- Similar quality of life both options
- Consider offering surgery early(ier)
- Cost effective

Ponsioen C. Lancet Gastroenterol Hepatol 2017;2:785-92

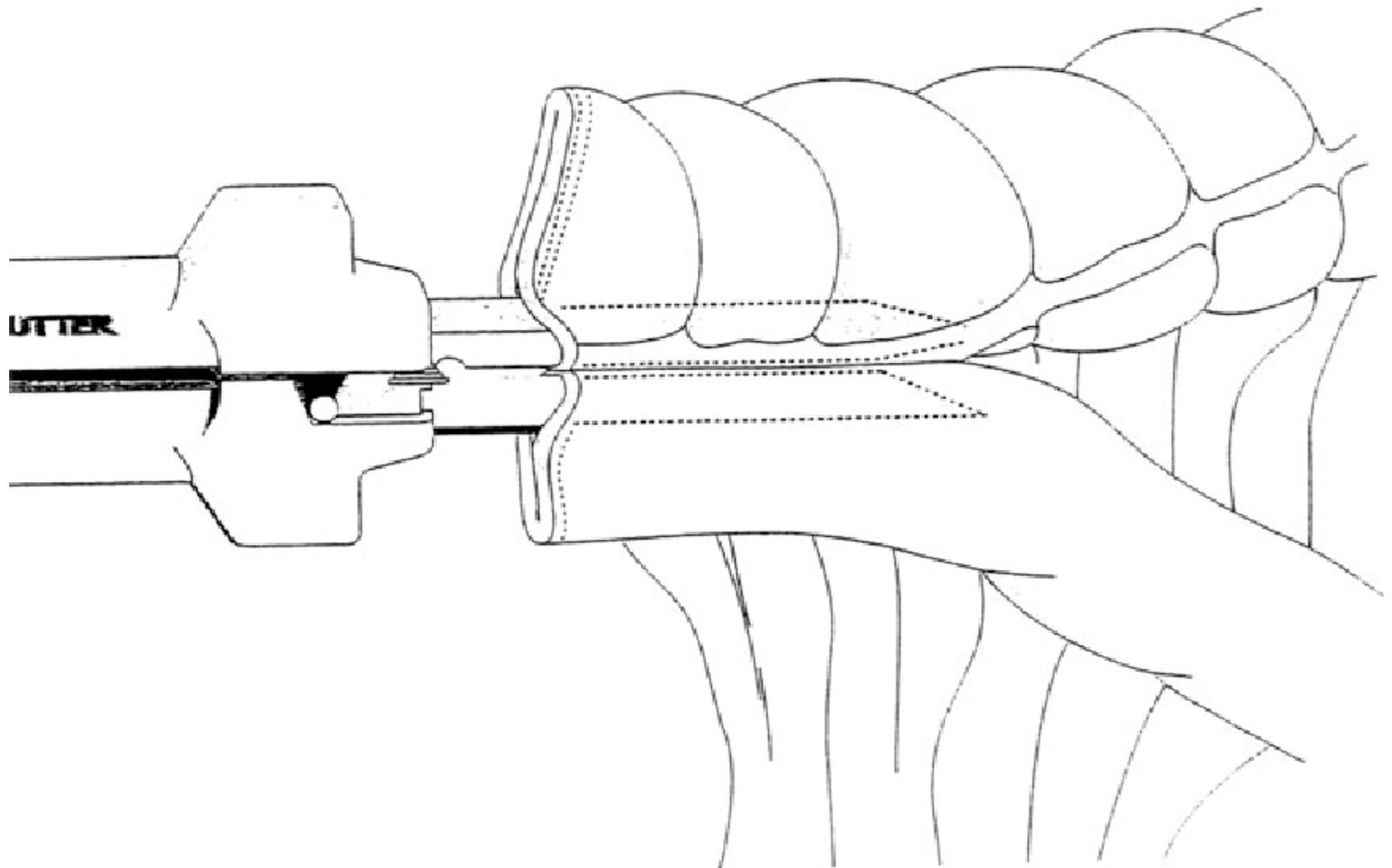


Type of Anastomosis – does it matter?

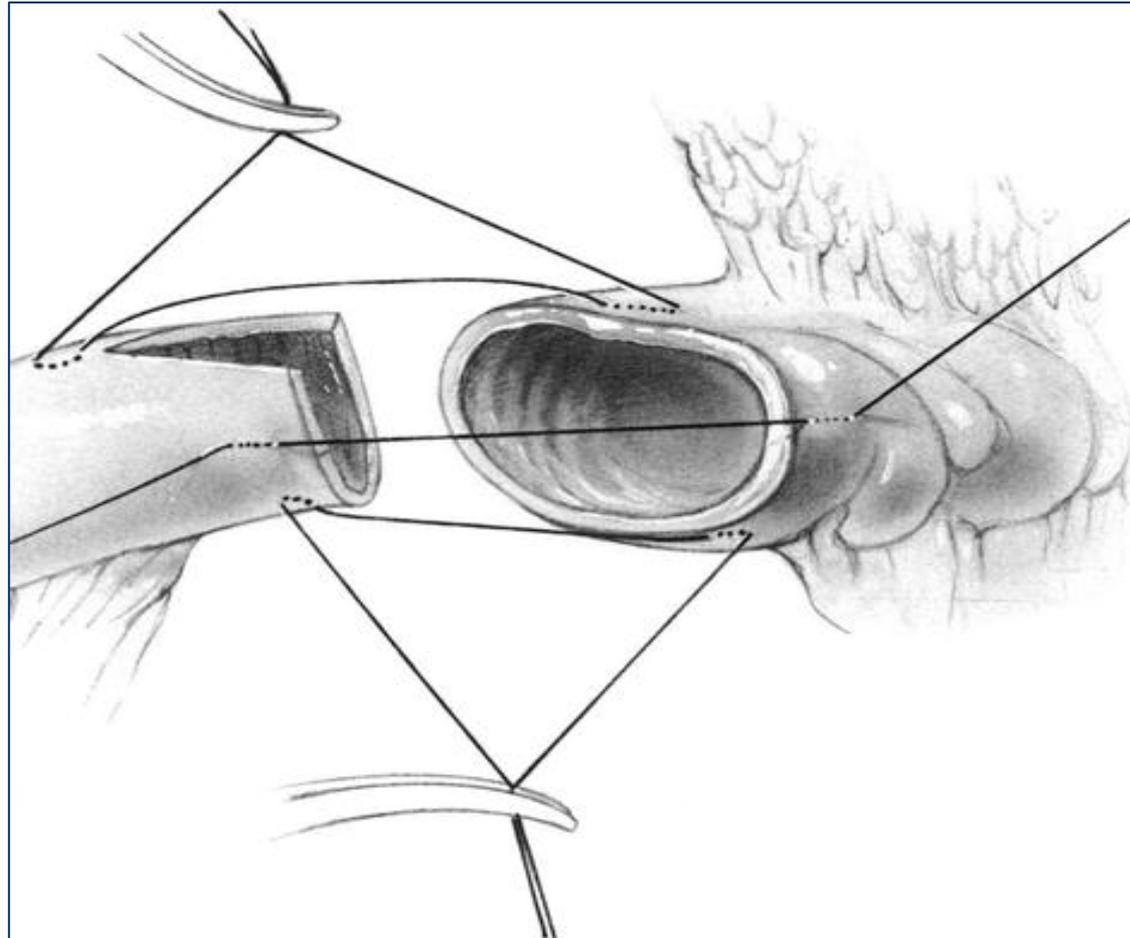
- Relationship between anastomosis and recurrence
 - Proctocolectomy
 - Pre-anastomotic location
 - Stasis
- Types of Anastomoses
 - Side to Side
 - End to End
 - End to Side
 - Kono S



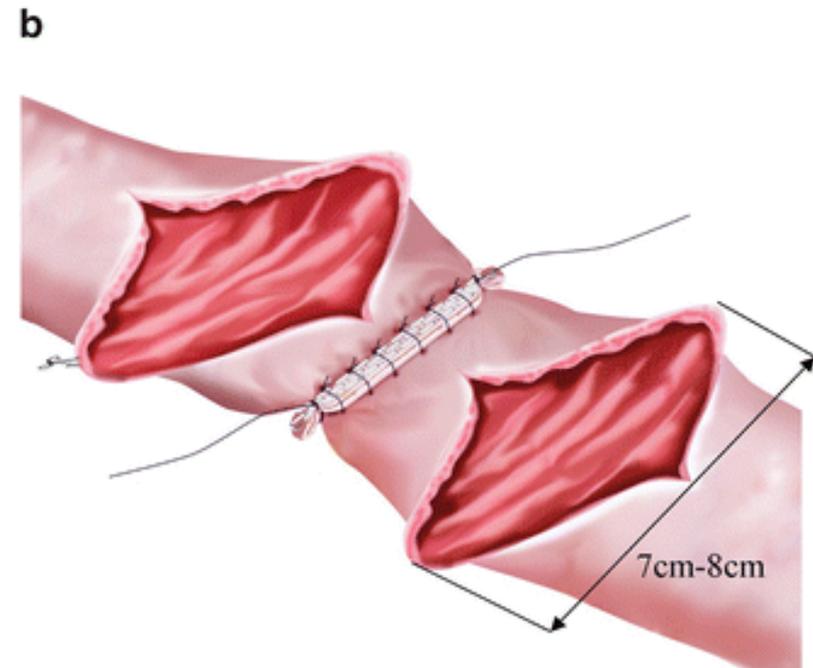
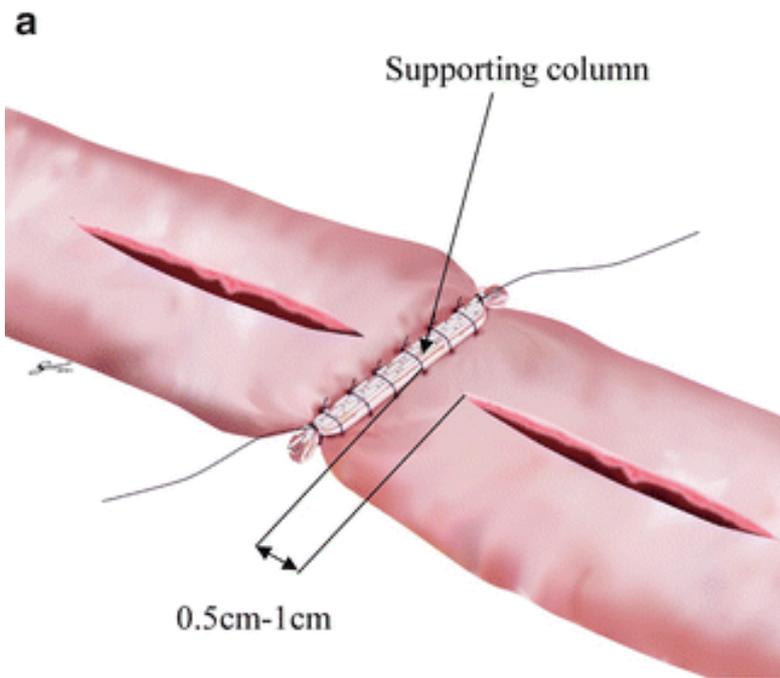
Side to Side Anastomosis



End to End Anastomosis



Kono S Anastomosis



Side to Side vs End to End

	N of studies	N	Post-Op Complications	Anastomotic Leak	Recurrence	Re-operation
He, 2014	8	821	0.54 (0.32-0.93)	0.45 (0.20-1.0)	0.20 (0.07-0.55)	0.18 (0.07-0.45)
Guo, 2013	11	1220	Favours SSTA	No difference	No difference	No difference
Simillis, 2007	8	661	No difference	Favours SSTA	No difference	No difference

He. Dig Dis Sci 2014;59;1544-1551

Guo. World J Surg 2013;37;893-901

Simillis. DCR 2007;50;1674-1687



Surgery

UNIVERSITY OF TORONTO

CAST Study

- RCT, 16 centres
- Stapled side to side (STS) versus hand-sewn end to end (ETE)
- Endoscopic recurrence @ 12 months
- Colonoscopy by gastroenterologist
- Recurrence assessed by adjudication committee

McLeod RS. Dis Colon Rectum 2009; 52: 919-927



CAST Study

- Baseline characteristics between groups similar
- Endoscopic recurrence @ 12 months
 - 37.9% STS vs 42.5% ETE (95% CI -21.0 to 11.9, p=0.55)
- Symptomatic recurrence @ 12 months
 - 22.7% STS vs 21.9% ETE (95% CI -13.2 to 15.3, p=0.92)

McLeod RS. Dis Colon Rectum 2009; 52: 919-927



CAST Study

	STSA (n=84)	ETEA (n=86)
Median time to complete anastomosis, mins (range)	10 (7-15)	26 (20-34)
Laparoscopic	30%	33%
Report difficulties with the anastomosis	1%	7%
Report difficulties with operation	14%	12%
Median hospital stay, days (range)	6 (5-8)	6 (4-8)
Anastomotic leak	7%	7%
Re-operation	7%	7%

Health Care Utilization in Post-Operative Crohn's Disease

	ETE (n=68)	STS (n=60)	Adjusted OR (95% CI)
Endoscopic recurrence	25.4%	39.3%	1.8 (0.8 to 4.2)
Re-operation	2.9%	6.7%	2.2 (0.4 to 12.6)
Mean SIBDQ	53.4	47.9	-5.1 (-8.7 to 1.5)
Median HBI	3	4	0.9 (-0.2 to 2.1)
Median CRP	0.33	0.26	0.08 (-0.2 to 0.4)
ED Visit*	14.7%	33.3%	2.9 (1.2 to 6.9)
Hospitalization*	11.8%	30%	3.1 (1.2 to 7.8)
Abdo CT*	13.2%	50%	6.5 (2.7 to 15.8)

Gajendran M. Am J Gastroenterol 2018;113:576-583

Kono S Anastomosis

	Kono S (n=69)	Other (n=73)	P-value
Endoscopic recurrence @ 1 year	83	79	NS
Re-operation	3	26	0.0007
Stenosis at anastomosis	0	15	0.0013

Extent of Mesenteric Resection

- Mesenteric adipocytes, fibroblasts and lymphocytes play a role in systemic inflammation

Element	Function	Relevance
Adiponectin	Induces IL-10 and IL-1 receptor antagonist	Production of pro- and anti-inflammatory cytokines
Leptin	Activation of CD4+ and CD8+	Production of pro-inflammatory cytokines
Resistin	Up regulates TNF-alpha, IL-6 and IL-12	Pro-inflammatory effects; correlate with higher CRP levels in serum
Fibrocytes	Secretion of IL-13, TGF-beta and TNF-alpha	Pro-inflammatory and pro-fibrotic responses



Extent of Mesenteric Resection

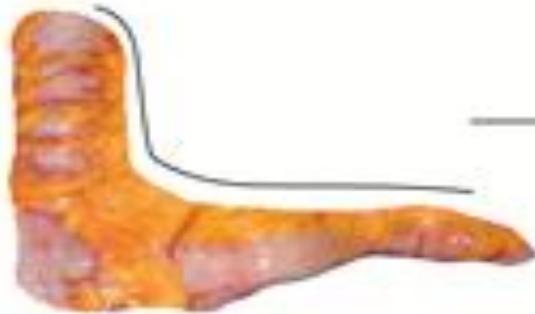
- “Creeping fat” or fat wrapping correlates with intestinal inflammation
- Affected mesentery infiltrated by inflammatory cells that promote mucosal ulceration and stricturing
- “Outside in” phenomenon that contributes to bowel inflammation and fibrosis



Extent of Mesenteric Resection

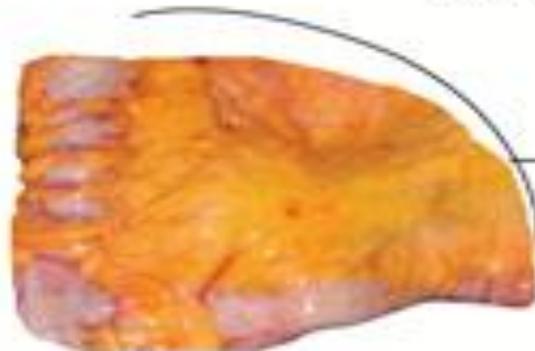
A

Conventional –
Mesentery retained



B

Mesocolic excision –
Mesentery removed



Extent of Mesenteric Resection

- 30 consecutive CD patients undergoing ICR with mesenteric resection
- 34 CD patients with previous ICR and no mesenteric resection as historic controls
- Baseline characteristics similar
- Follow up: 51.7 +/- 20 months versus 69.9 +/- 48.47 months

	No mesenteric resection (n=34)	Mesenteric resection (n=34)	P-value
Re-operation for CD	30% (9/30)	2.9 (1/34)	0.003

Microbial factors and post-op recurrence

- Surgery leads to changes in the GI microbiome
- Recurrence associated with elevated levels of Proteus and reduced Faecalibacterium
- Smoking associated with elevated levels of Proteus

Wright EK. Journal of Crohn's and Colitis 2017;191-203

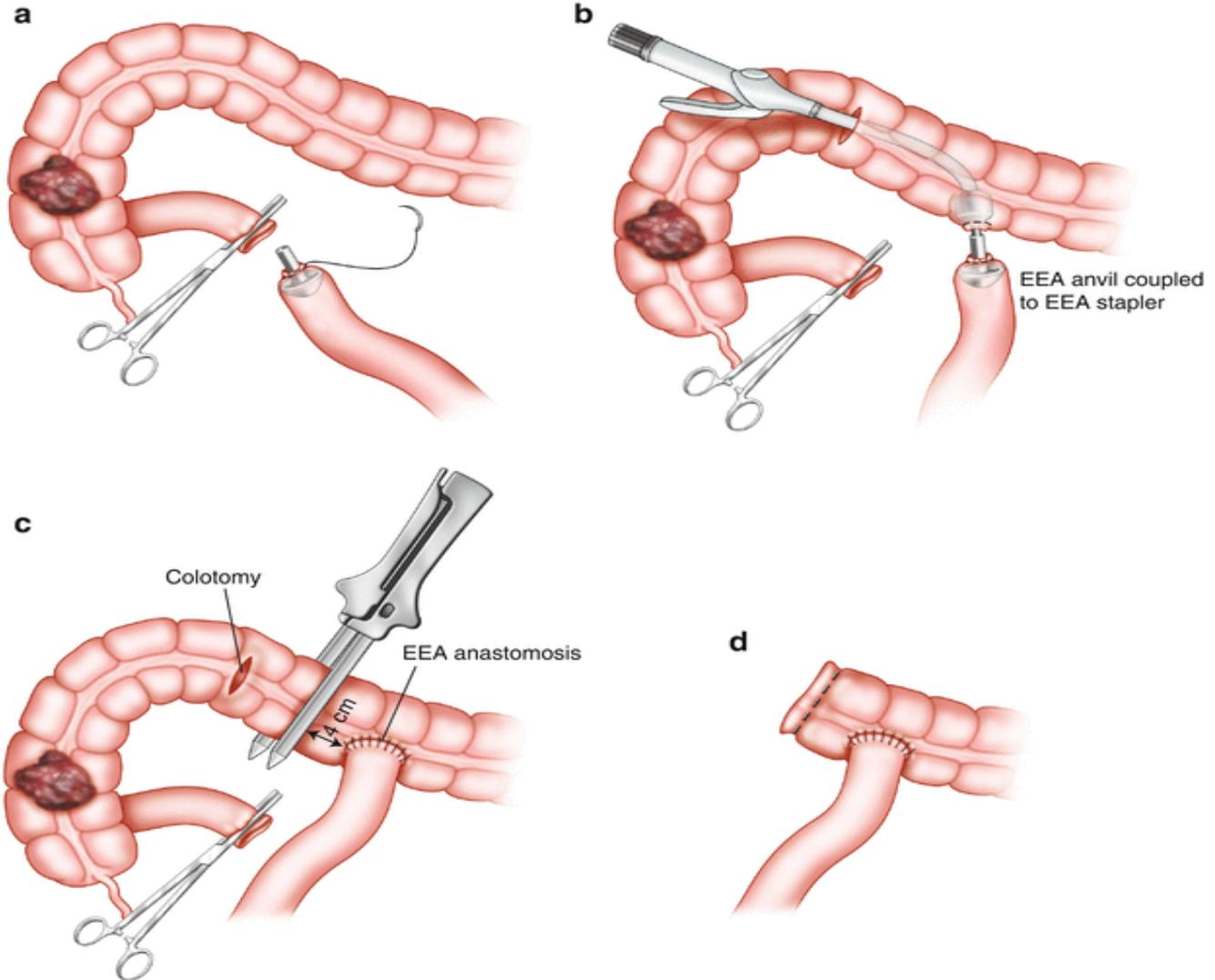


SUMMARY

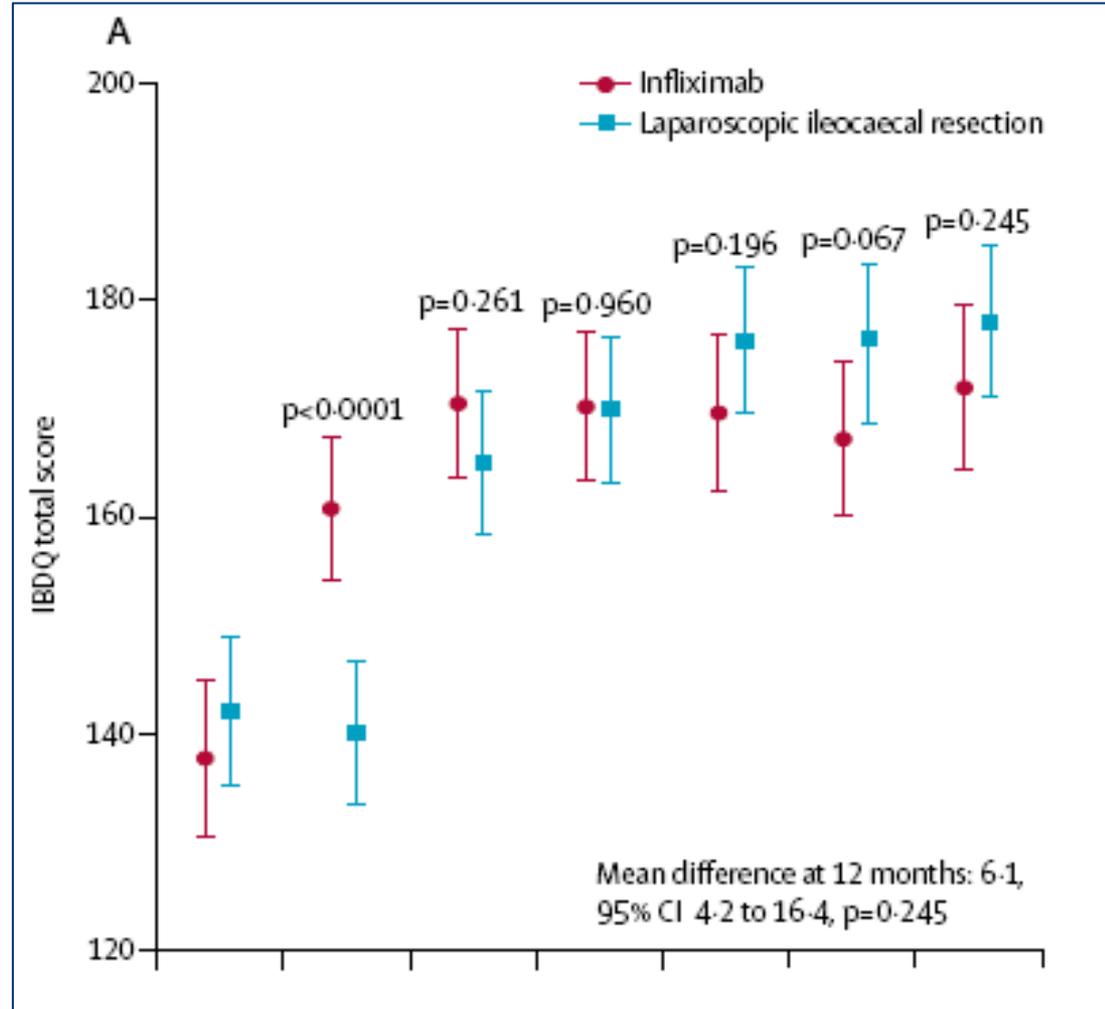
- CONSIDER EARLY(IER) SURGICAL CONSULT
- Side to side anastomosis preferred
- RCT data necessary to show:
 - ETEA improves hospital utilization and quality of life
 - Kono-S superior to STSA
- Future RCT need to consider type of anastomosis, extent of mesenteric resection and microbiome



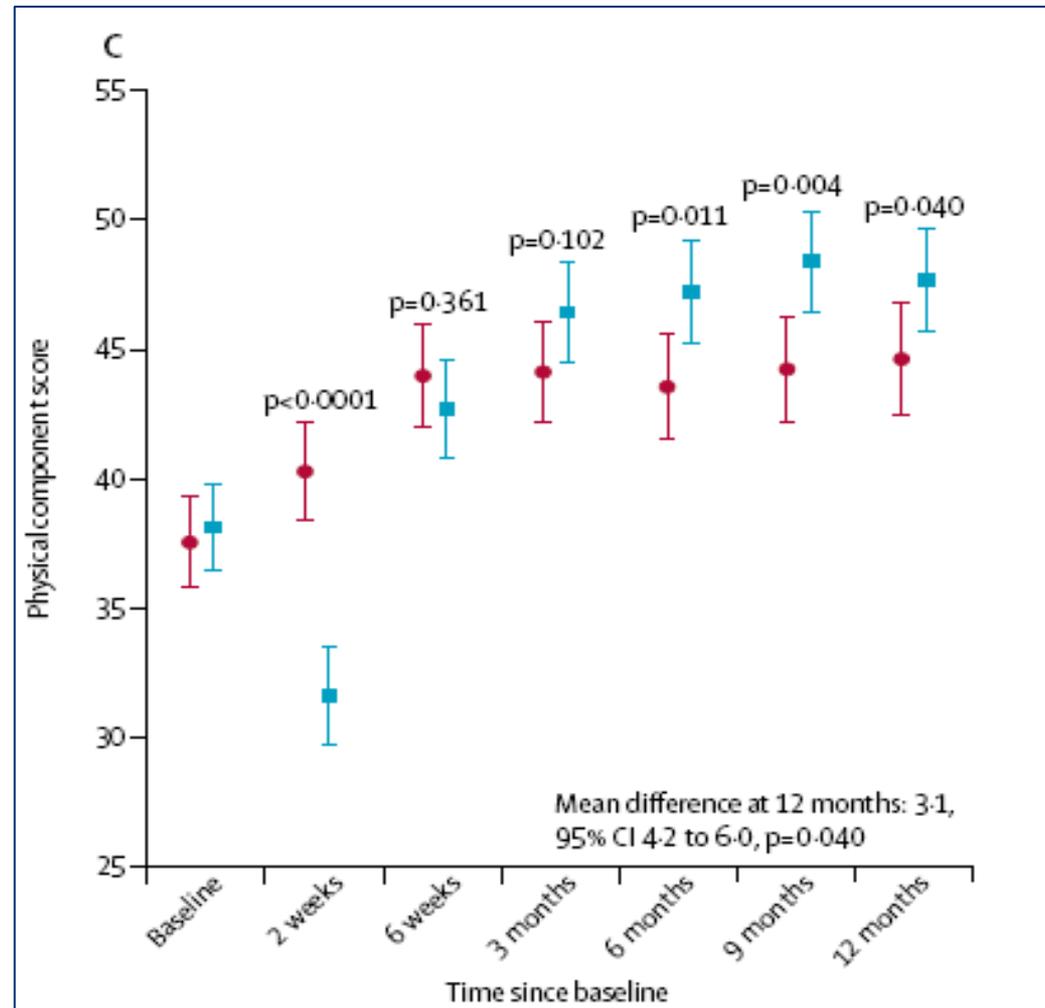
End to Side Anastomosis



IBDQ Scores



SF-36 Physical Component



Mesenteric Disease Index

- Based on fat wrapping (FW) and mesenteric thickness (MT)
- Correlates with CDAI ($r=0.7$, $p<0.0001$)

Element	Severity	Score
Minimal FW Minimal MT	Mild	1
FW <25% MT vascular pedicle only	Moderate	2
FW <25% MT pan mesenteric	Severe	4
FW >25% MT pan mesenteric	Very severe	6



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CENTRE FOR INFLAMMATORY
BOWEL DISEASE (IBD)



Case 2

- 20 year old male with 5 year history of ileocolonic CD presenting with intermittent perianal pain and swelling; now has persistent drainage of yellow-brown fluid
- 3 – 4 soft stools per day
- No abdominal pain
- Presently on MTX maintenance therapy
- Previously on prednisone

Medical Management of Perianal Fistulizing Crohn's Disease: Key Aspects

- Identification of need for surgical intervention
- Antibiotics for initial symptomatic control
- Optimization of therapy for intestinal disease activity (especially rectal disease)
- Initiation of effective medical therapy for reduction and elimination of fistula drainage and prevention of abscesses and new fistulas

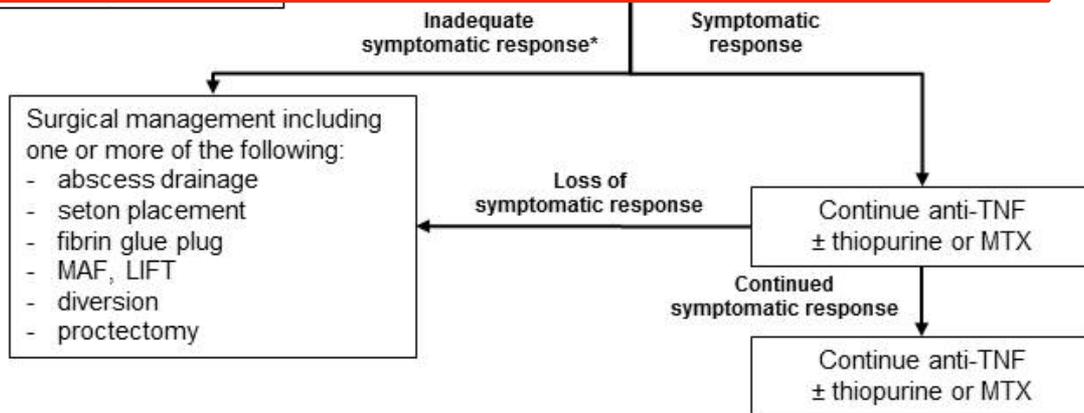
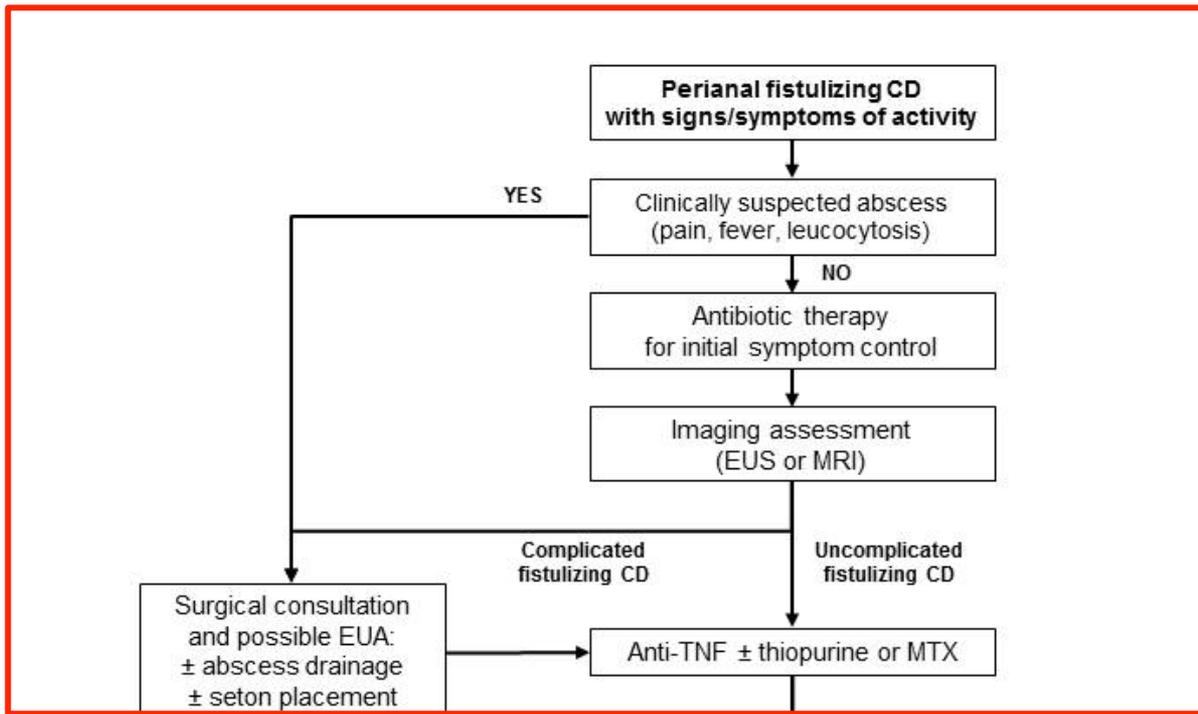
Clinical Practice Guideline for the Medical Management of Perianal Fistulizing Crohn's Disease: The Toronto Consensus

A. Hillary Steinhart, MD, Remo Panaccione, MD,† Laura Targownik, MD,‡ Brian Bressler, MD,§ Reena Khanna, MD,¶ John K. Marshall, MD,|| Waqqas Afif, MD,** Charles N. Bernstein, MD,‡ Alain Bitton, MD,** Mark Borgaonkar, MD,†† Usha Chauhan, NP,‡‡ Brendan Halloran, MD,§§ Jennifer Jones, MD,¶¶ Erin Kennedy, MD, PhD,||| Grigorios I. Leontiadis, MD, PhD,|| Edward V. Loftus Jr, MD,*** Jonathan Meddings, MD,† Paul Moayyedi, MB, PhD,|| Sanjay Murthy, MD,††† Sophie Plamondon, MD,‡‡‡ Greg Rosenfeld, MD,§§§ David Schwartz, MD,¶¶¶ Cynthia H. Seow, MBBS (Hons),|||| and Chadwick Williams, MD******

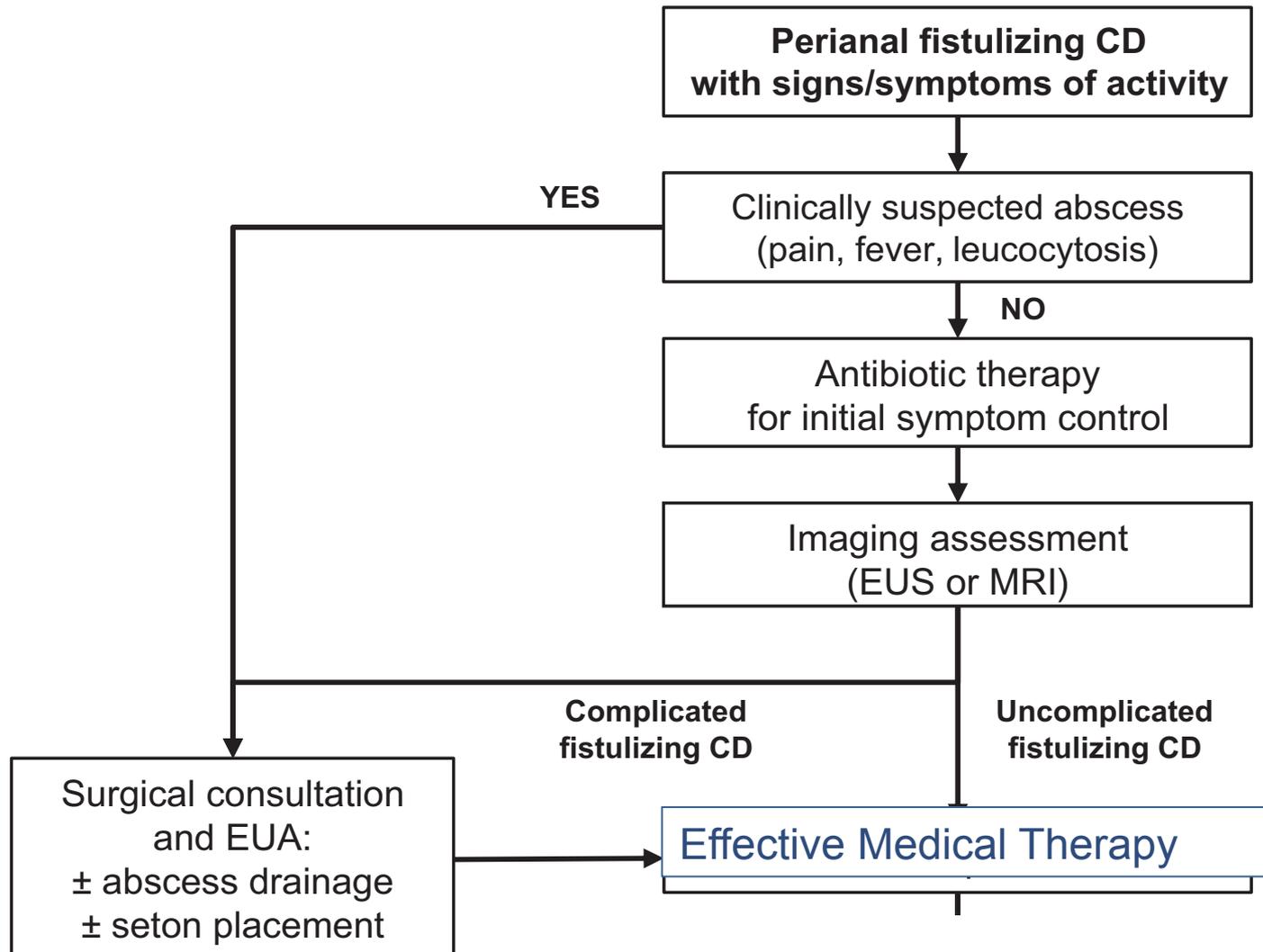
Perianal Fistulizing CD: Identification of Need for Surgical Intervention

- Clinical evidence of abscess
 - local pain
 - swelling
 - fever
 - inflammatory markers
- Imaging studies

CAG Clinical Practice Guidelines



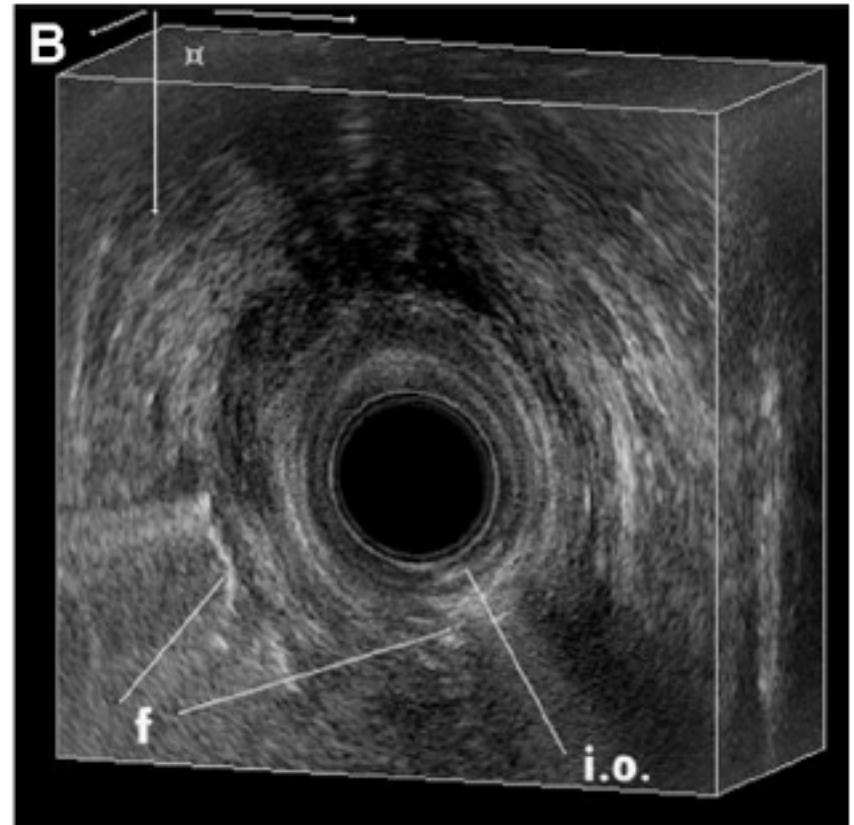
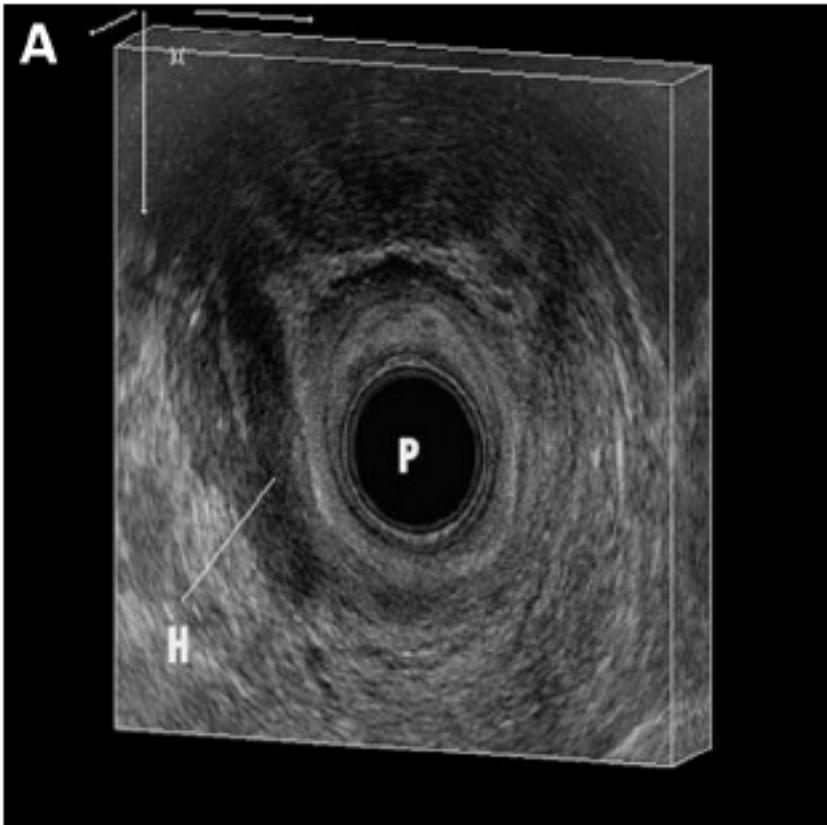
CAG Clinical Practice Guidelines:



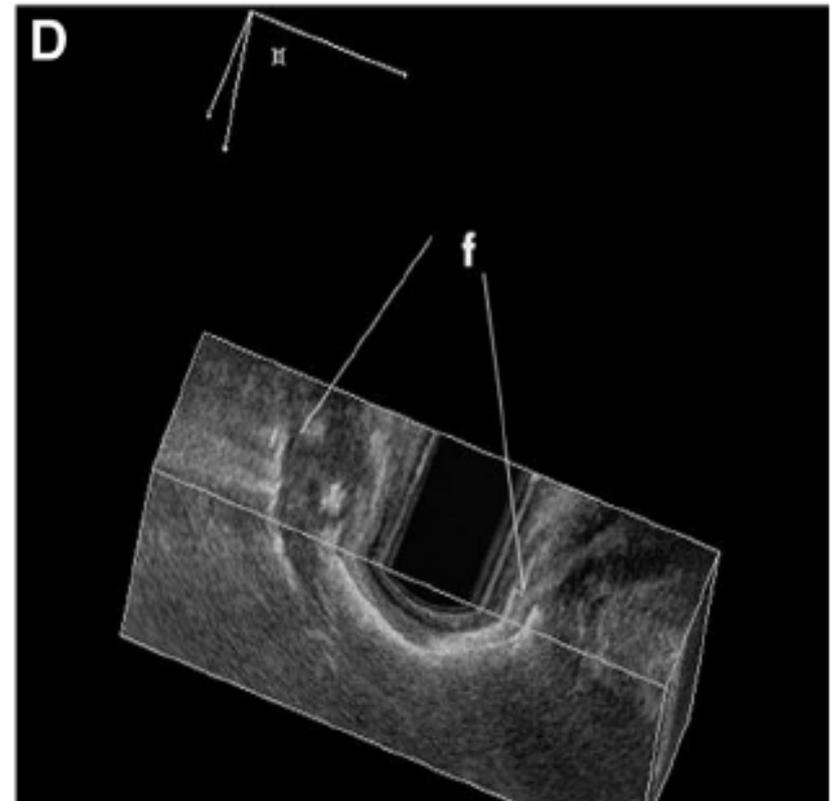
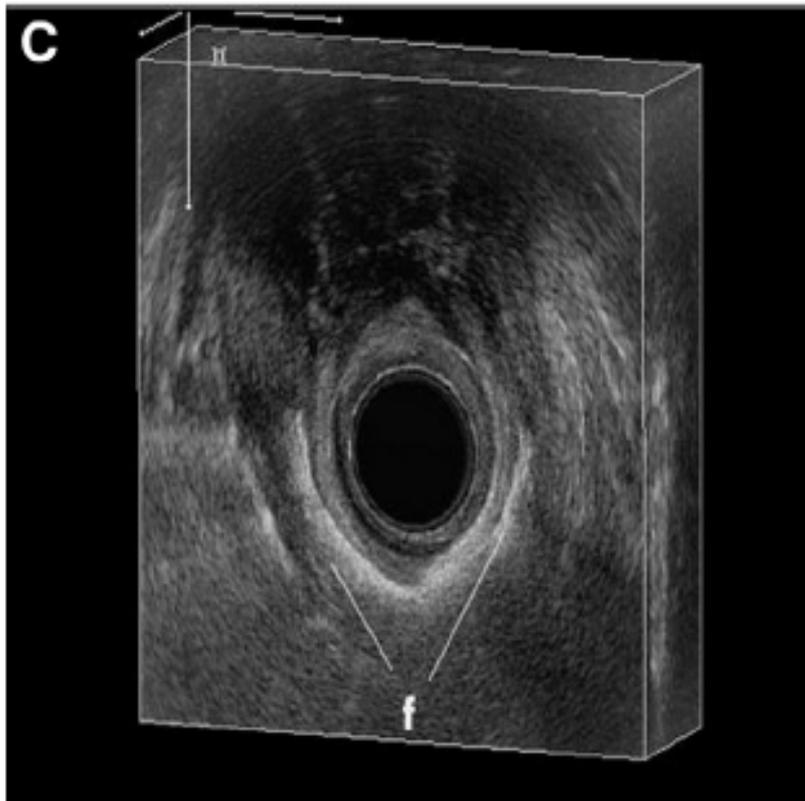
Management of Perianal Fistula: Proper Evaluation and Staging of Disease is Critical First Step

- Defining fistula anatomy or classification
- Identifying sepsis/drainable collections
- Evaluation of inflammation in the fistula tracts and the surrounding tissues
- Assessing associated luminal disease

Evaluation of Perianal Fistula with Endoanal Ultrasound



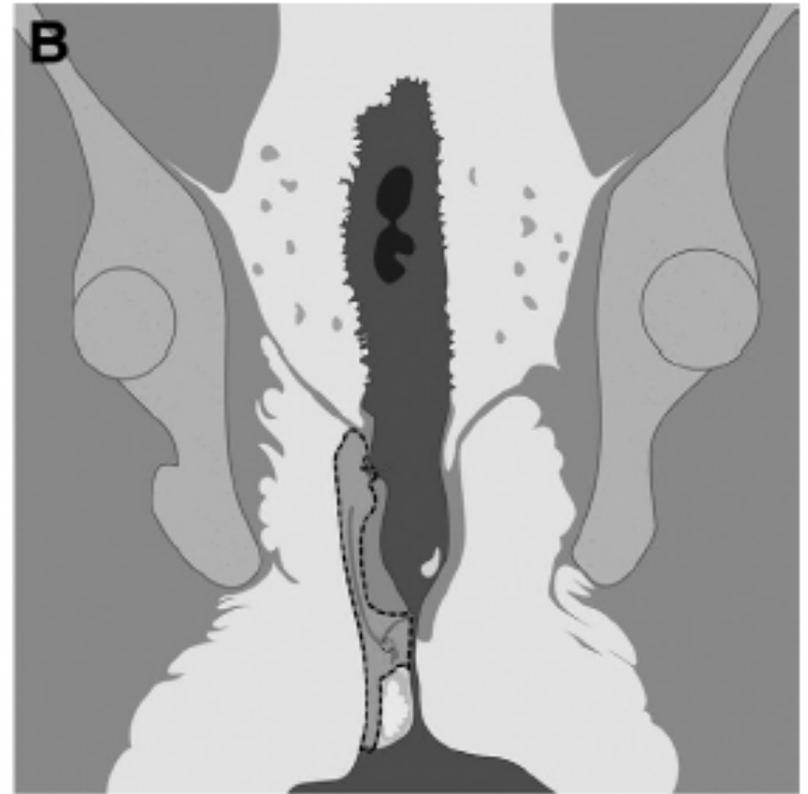
Evaluation of Perianal Fistula with Endoanal Ultrasound



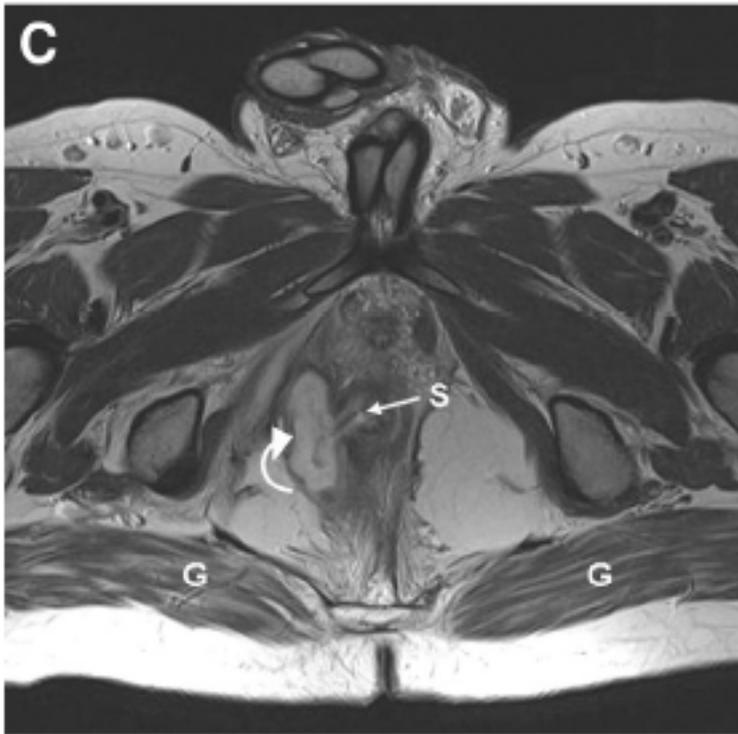
Evaluation of Perianal Fistula with Magnetic Resonance Imaging



Transsphincteric fistula



Evaluation of Perianal Fistula with Magnetic Resonance Imaging



T2-weighted fast spin echo



T1-weighted fat saturated fast spin post iv contrast
= granulation tissue

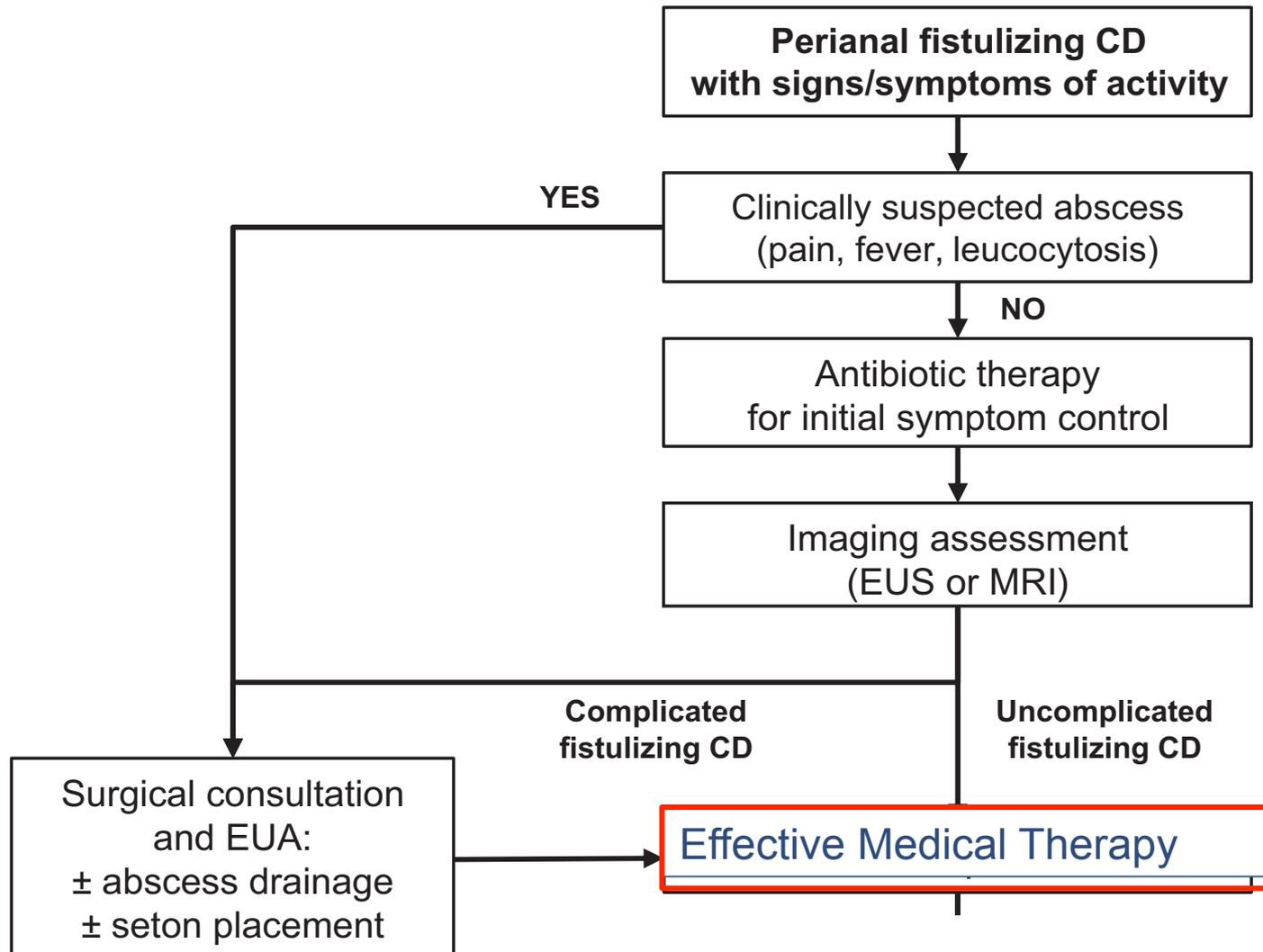
Comparative Accuracy of EUA, MRI and Endoscopic Ultrasound

- 34 patients with suspected CD perianal fistulas underwent EUA, MRI and EUS in blinded fashion
- Consensus gold standard arrived at in all but one patient
- 39 fistulas in 32 patients
- Accuracy:
 - US - 91%
 - MRI - 87%
 - EUA - 91%
 - Combination of any 2 modalities - 100%

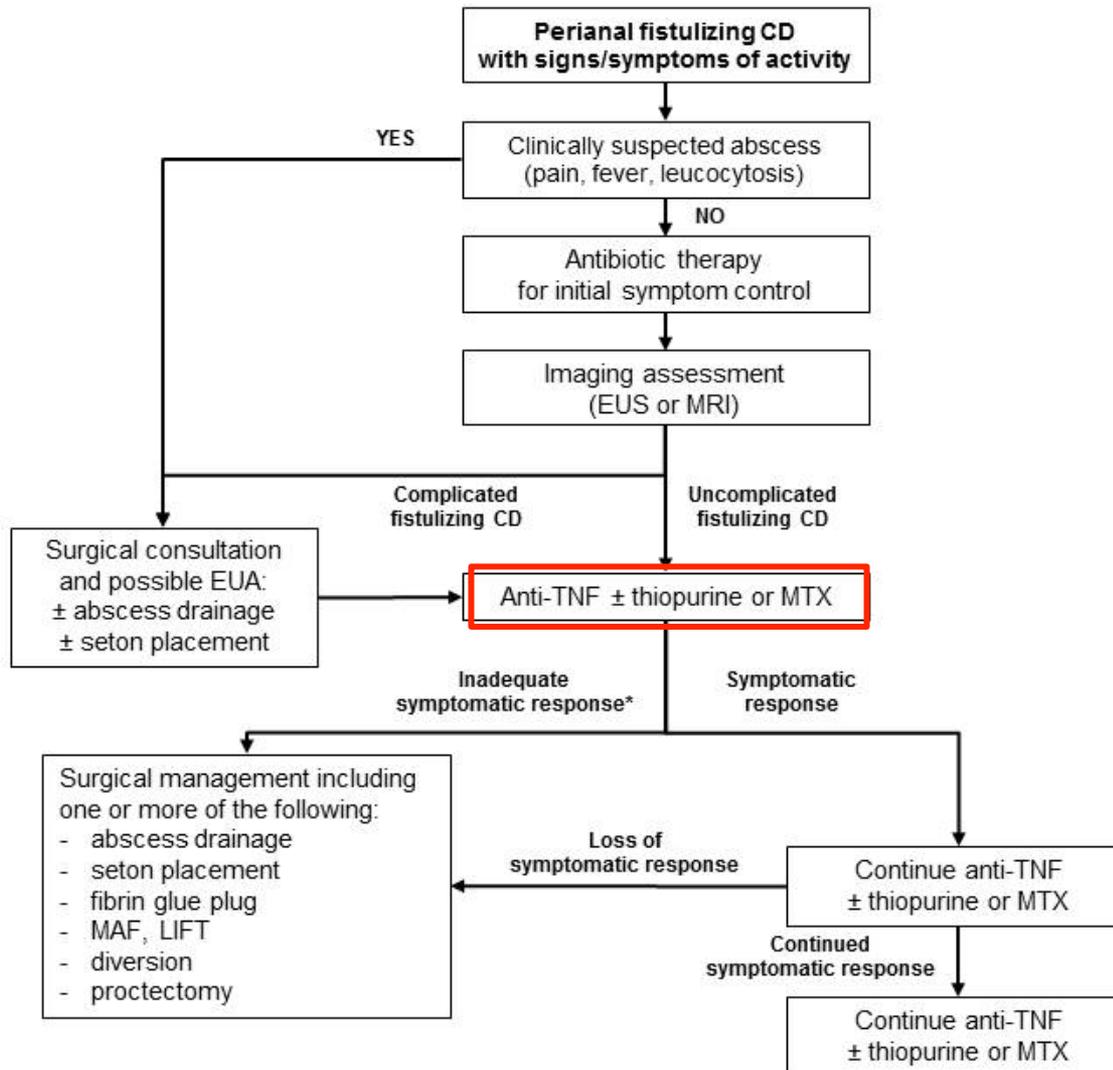
Medical Peri-operative Management of Perianal Fistulizing Crohn's Disease

- Identification of need for surgical intervention
- Antibiotics for initial symptomatic control
- Optimization of therapy for intestinal disease activity (especially rectal disease)
- **Initiation of effective medical therapy for reduction and elimination of fistula drainage (? = “healing”) and prevention of abscesses and new fistulas**

CAG Clinical Practice Guidelines:

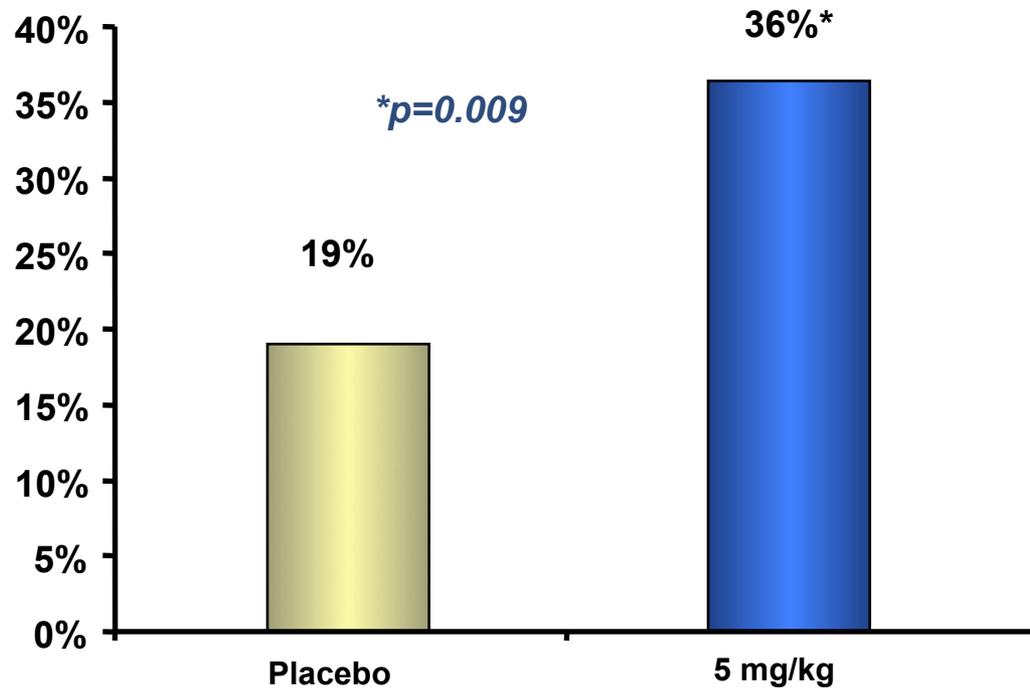


CAG Clinical Practice Guidelines



ACCENT II: Week 54 Results

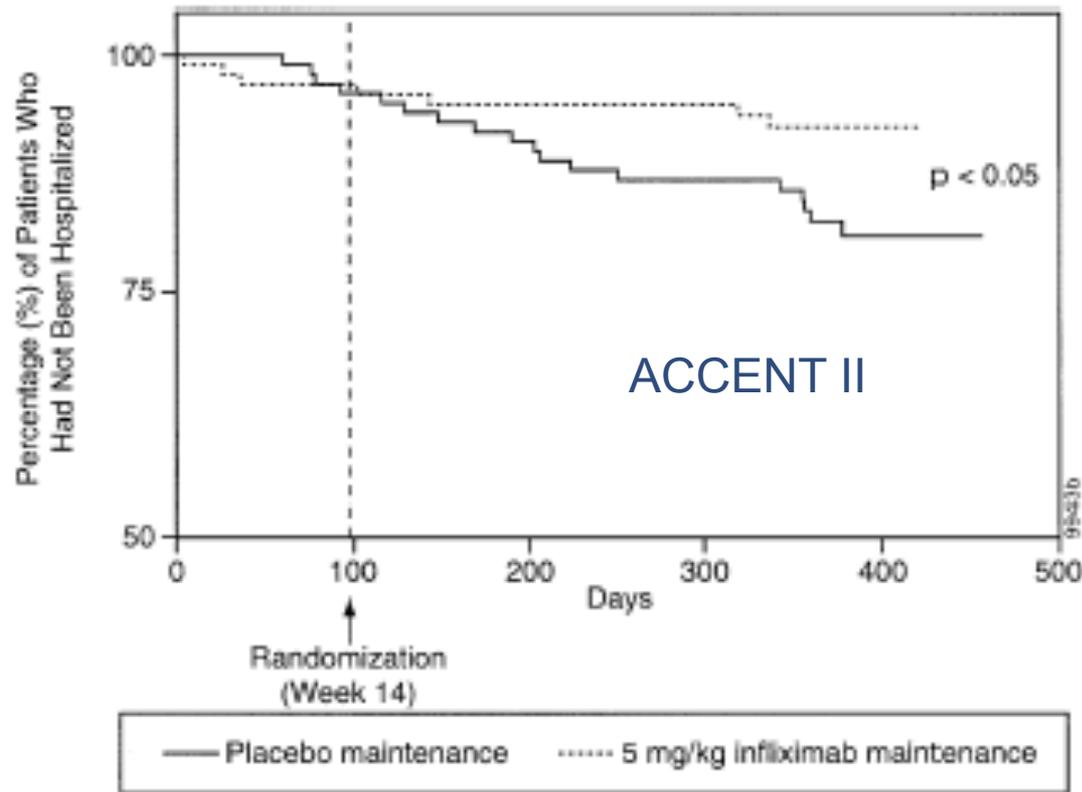
Complete fistula response on infliximab



Note: Complete response = absence of draining fistulas

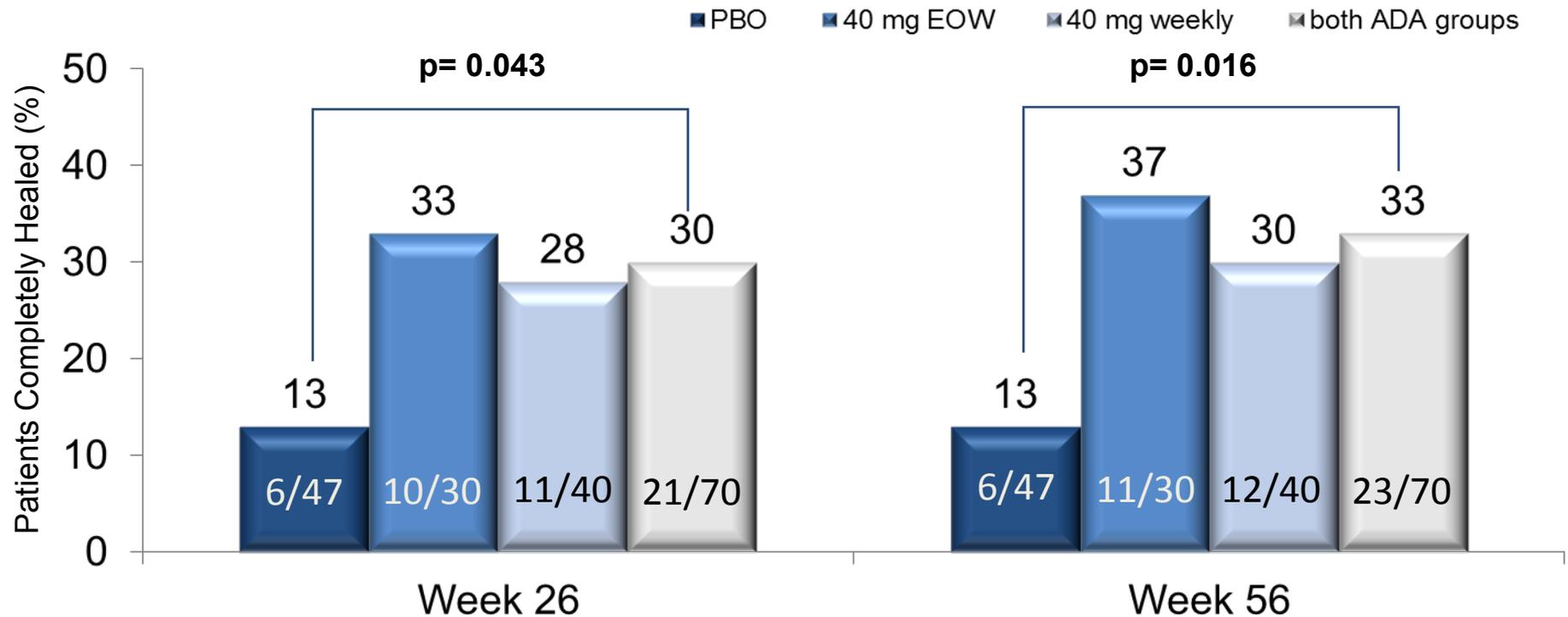
Sands BE, et al. *NEJM* 2004;350:876-85

Infliximab Maintenance Therapy: Reduced Hospitalization



CHARM: Week 26 and Week 56

Healing of draining fistulas on adalimumab



Note: Healing = no draining fistulas. Patients with fistulas: draining fistulas at both screening and baseline

Colombel JF, et al. *Gastroenterol.* 2007;132 (1):52-65

Improving efficacy of infliximab by combining with seton placement

Retrospective study (n=23) of IFX (3 doses) +/- seton^{1*}

- 100% of pts had complete closure (vs. 83% IFX only, $p=0.014$)
- 44% had recurrence (vs. 79% with IFX only, $p=0.001$)
- Time to recurrence 13.5 mos (vs. 3.6 with IFX only, $p=0.0001$)

Retrospective study (n=21) of IFX**+ immunosupp. + surgery²

- Surgery: seton (n=10), drainage (n=2), diversion (n=1)
- At 9 months, 67% of pts had complete closure and 19% of pts had partial response

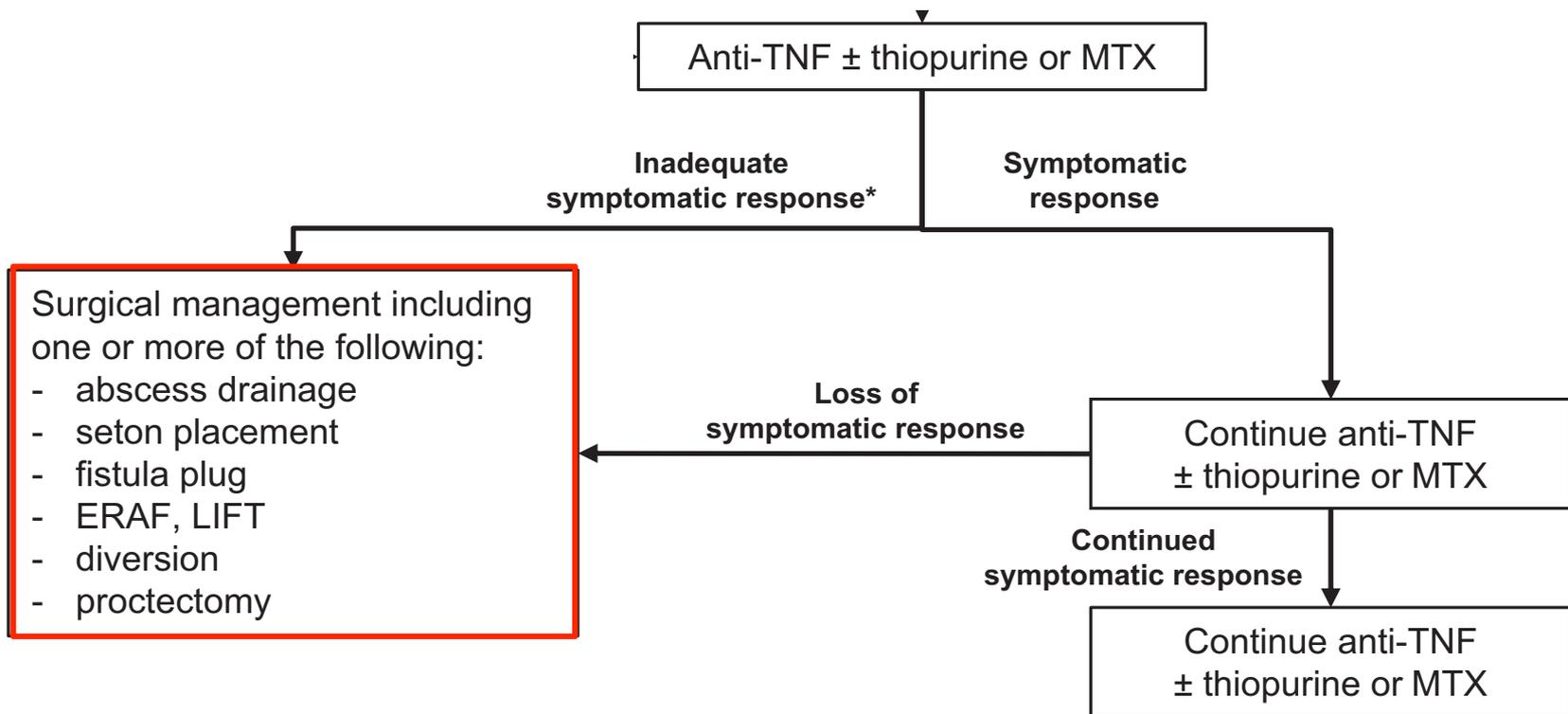
* All patients had at least 3 months of follow-up after the third dose of infliximab.

** At 0, 2, 6 weeks \pm every 8 weeks (mean number of infusions = 3)

1. Regueiro M, et al. *Inflamm Bowel Dis* 2003; 9(2):98-103.

2. Topstad DR, et al. *Dis Colon Rectum* 2003;46(5):577-83.

CAG Clinical Practice Guidelines: Failure of Medical Therapy



Management of Perianal Crohn's Disease

November 2, 2018

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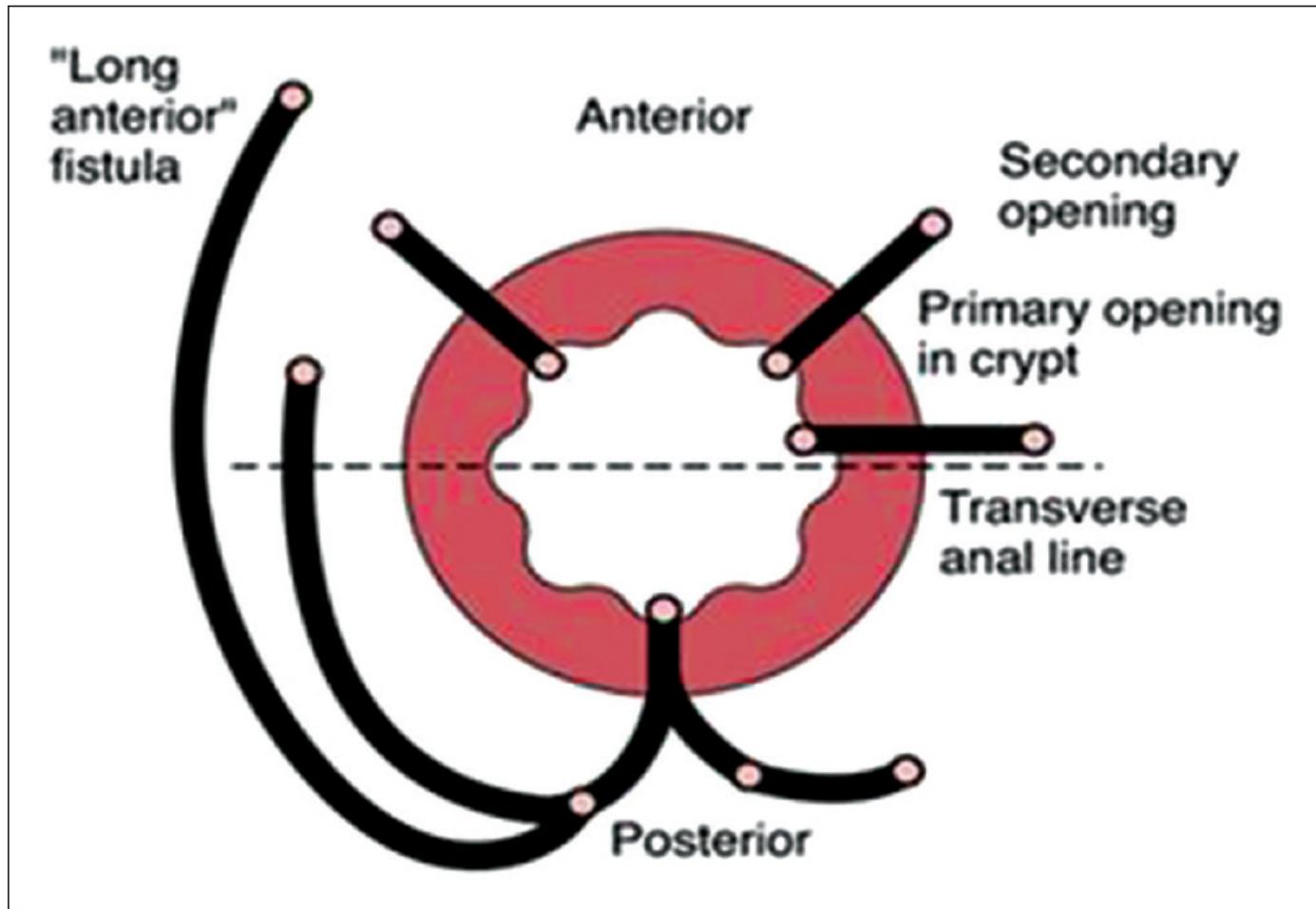


IMAGING

- MRI preferred to US
 - Patient comfort
- Not absolutely necessary prior to EUA
- Main indications
 - Assess for undrained collection
 - Assess for complex, branching fistulas
- No need for serial imaging



Goodsalls' RULE



SURGICAL TREATMENT OPTIONS

1. SETON
2. SETON
3. SETON
4. SETON
5. SETON
6. Diversion
7. Proctectomy



GOALS OF SETON

- Keeps fistula tract open; minimal damage to sphincter
- Allows drainage; prevents recurrent abscess
- Reduces chronic inflammation and discomfort
- Allows fistula tract to epithelialize (mature)
- Once tract has matured, it will not close
- Shorter tracts take less time to mature than longer tracts
- Generally 6-12 weeks to mature



SURGICAL TREATMENT OPTIONS

- Fibrin glue
- Mucous plug
- Mucosal advancement flap
- Ligation of the intersphincteric fistula tract (LIFT)
- Stem cell (Cx601, Gastroenterology 2018)
- Fistulotomy



Timing of Biologics and Removal of Seton

- Studies difficult to evaluate due to definitions of “healing”
- Fistula will not heal (i.e., close) with seton in place or after tract is mature
- Biologic more likely to be successful if taken out “earlier” than “later”
- Biologic more likely to be successful if simple rather than complex fistula
- Fistula unlikely to heal if active disease (i.e, continued diarrhea)



SUMMARY

- MRI preferred
- Most fistula follow Goodsall's rule
- Seton preferred treatment
- Seton can stay in indefinitely
- Fistula tract is unlikely to close after it has epithelialized or matured
- Combination biologic and seton is good treatment option
- Future studies on biologics and timing of seton removal are important

Summary

- Communication and coordination between gastroenterologist and surgeon is critical in planning surgery in CD
- Medical optimization can reduce post-op complications
- Post-op prophylaxis can reduce CD recurrence
- Combined surgical and medical management of perianal CD can improve outcomes