Surgical Management of Inflammatory Bowel Disease

Comprehensive Study Guide

Covering: Indications • Risk Assessment • Surgical Options • Complications

TABLE OF CONTENTS

1. OVERVIEW & MULTIDISCIPLINARY CARE

1.1 Learning Objectives

- Indications for surgical intervention in IBD
- Understanding the risks involved in IBD surgery
- Options and rationale of surgical treatment

1.2 Multidisciplinary Team (MDT)

Effective IBD management requires a named MDT. Core members include:

Core MDT Members	Extended Access
Gastroenterologists	Psychologist / Counsellor
Colorectal Surgeons	Rheumatologist
Clinical Nurse Specialists	Ophthalmologist
Dietician	Dermatologist
Pathologist	Obstetrician
GI Radiologist	Nutrition Support Team
Pharmacist	Paediatric Gastroenterologist
	Gastroenterology Clinical Network / GP

2. SURGICAL MANAGEMENT OF ULCERATIVE COLITIS (UC)

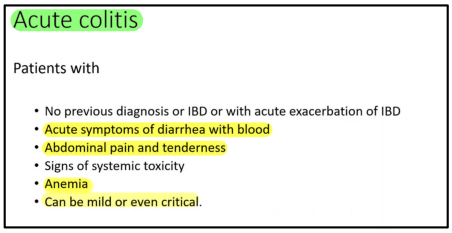
2.1 Epidemiology & Surgical Risk

Statistic	Value
UC patients requiring surgery (lifetime)	20 – 30%
UC patients presenting with acute severe colitis	5 – 10%
Acute severe cases requiring emergency surgery	30%
Colectomy within 1 year after incomplete steroid remission	50%

2.2 Classification of UC Severity (Truelove & Witts)

Based on Truelove & Witts Criteria (1955):

Parameter	Mild	Moderate	Severe
Evacuations / day	≤4	5	≥6
Bright-red blood in stool	±	+	++
Temperature (°C)	Normal	Intermediate	>37.5°C at night or ≥37.8°C x2 in 4 days
Pulse (bpm)	Normal	Intermediate	>90 bpm
Hemoglobin (g/dL)	>10	Intermediate	≤10.5
ESR (mm/1st hr)	≤30	Intermediate	>30



2.3 Acute Severe Colitis — Definition & Features

Diagnostic Criteria (Fulminant / Severe):

- ≥6 bloody stools per day
- Abdominal tenderness
- Signs of systemic toxicity: HR >90, T >37.8°C, Hb <10.5 g/dL, or ESR >30
- Anemia
- Fulminant colitis: stool >10/day, anemia requiring transfusion, systemic toxicity, abdominal distension, fever, leukocytosis

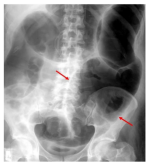
Colectomy Rate: ~30% in acute severe colitis

Note: Rate of colectomy has NOT changed in the last 40 years [redacted]

2.4 Surgery for UC: Emergency vs. Elective

Type	Indications	Key Considerations
EMERGENCY	① Perforation ② Haemorrhage ③ Toxic megacolon (diameter >5.5 cm or caecum >9 cm) ④ Failed medical treatment (5 day role حكيناها قبل)	Mortality up to 40% if perforated Mortality 2–8% if before perforation Steroids mask clinical picture
ELECTIVE	① Medical intractability / failed treatment ② Chronic disease (quality of life) ③ Steroid dependence or refractory ④ Extra-alimentary manifestations ⑤ Malignancy / Dysplasia	MDT decision Optimise nutrition and reduce steroids pre-op

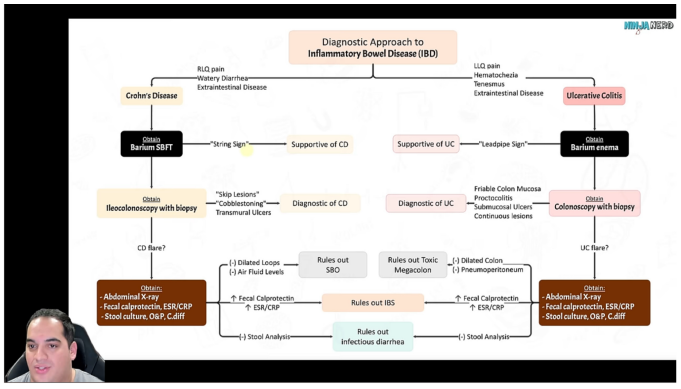
- Toxic megacolon:
- Abdominal pain and distention, along with fever, diarrhea, and signs of shock (decreasing BP, increasing HR) in a patient with ulcerative colitis should alert the physician to the possibility of toxic megacolon.
- This is a common complication of inflammatory bowel disease and is seen much more often in ulcerative colitis than in Crohn's disease.
- Severe inflammation causes release of inflammatory mediators, bacterial products, and increased nitric oxide, which contribute to colonic smooth muscle paralysis.
- Complete cessation of neuromuscular activity in the intestinal wall is the first step in the pathogenesis of toxic megacolon. Rapid colonic distention ensues, which thins the intestinal wall, making it prone to rupture.
- Perforation is a life-threatening complication of megacolon, with a mortality rate> 50%.
- On physical examination, the classic acute abdomen will be present: marked distention with tenderness and tympany on percussion.
- Plain abdominal radiography is sufficient for diagnosis and will show colonic dilatation (especially in the transverse colon) with a >5.5cm diameter of the colon. Fluid levels might be seen in the large bowel.
- Barium contrast studies and colonoscopy are contraindicated due to risk of perforation.



2.5 Management Protocol for Acute Presentation

Initial Management (GI Team + Surgeon Awareness)

- Routine bloods: CBC, U&Es, CRP, Albumin
- Regular abdominal examination
- Abdominal X-Ray (AXR)
- Stool for bacteriology, C. difficile, CMV
- +/- Flexible sigmoidoscopy
- DVT prophylaxis
- IV Steroids



Predictors of Surgical Need (Travis Criteria)

Stool frequency >8/day OR CRP >45 mg/L at Day 3 → predicts surgery in **85% of cases** *(Travis SP, Gut 1996)*

بعد ما اعطيتها IV steroid

IV Steroid Protocol

- Generally given for up to 5 days
- No benefit demonstrated beyond 7–10 days [redacted]

Decision Timeline (5 days Role)

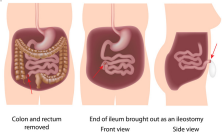
Timepoint	Action
Day 1	Admission, IV steroids, investigations, surgeon awareness

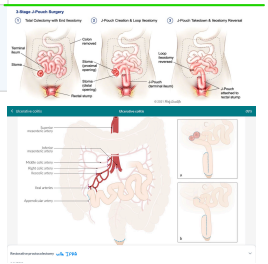
1 2
Stool frequency >8/day OR CRP >45 mg/L at Day 3 - Gut 1996)
بعد ما اعطيه IV steroid

Day 3	Reassess: Surgery discussed, stoma therapist input if Travis criteria met
Day 5	Decision: Colectomy OR rescue therapy (IV Cyclosporine OR Biologic)

2.6 Surgical Options in Acute UC

Procedure	Features	Preferred?
Subtotal Colectomy + Ileostomy rectal sparing	~3% mortality ~2–12% rectal stump blowout Allows: confirm diagnosis, stop medication, improve nutrition 6 months before next stage	YES Preferred in acute setting best option in Patient with Acute colitis bc2 Pts is quite sick
Proctocolectomy + Ileostomy	High mortality Permanent stoma Pelvic dissection / nerve damage / sepsis risk	Avoid in acute setting
Proctocolectomy + Pouch	Not ideal acutely	Avoid in acute setting





Options After Subtotal Colectomy (Second Stage)

For UC or Indeterminate Colitis:
ileal pouch Anal anastomosis

- Completion proctectomy + Pouch (IPAA)
- Completion proctectomy + End ileostomy
- Completion proctectomy + Continent ileostomy

For Crohn's Disease: Determined based on disease pattern and extent

2.7 Elective Surgery for UC

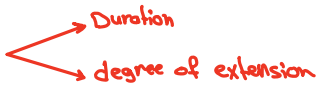
Indications

- Medical intractability / failed medical treatment (MDT decision)
- Chronic disease: poor quality of life, never in remission, anemia, amenorrhea, malnutrition, hospitalization
- Steroid dependence or refractory disease
- Extra-alimentary manifestations
- Malignancy

Extra-Intestinal Manifestations (EIM) — Response to Colectomy

EIM	Response to Colectomy
Peripheral arthritis	Responds to colectomy
Uveitis	Responds to colectomy
Iritis	Responds to colectomy
Ankylosing spondylitis	✘ Does NOT respond to colectomy
Sacroilitis	✘ Does NOT respond to colectomy
Primary sclerosing cholangitis (PSC)	✘ Does NOT respond to colectomy

Malignancy Risk in UC

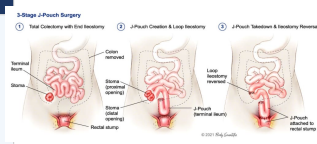


Risk Factor	Details
General cancer risk	1–2% per year after 10 years of disease
With PSC	9% at 10 years; 50% at 25 years
Risk factors for malignancy	Pancolitis, PSC, Dysplasia
HGD/DALM → concomitant cancer	Up to 58%
LGD → concomitant cancer	Up to 19%
LGD progression to HGD or cancer	0.5–54%
LGD non-progression (4 year follow-up)	81% failed to progress
>3 LGD biopsies	Risk increases 6-fold

Surveillance: Ongoing endoscopic surveillance is essential. Cuff surveillance not routinely required unless dysplasia/cancer in original specimen.

2.8 Elective Surgical Options for UC

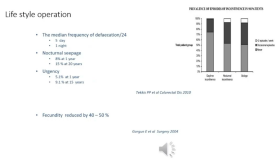
Procedure	Key Features
Restorative Proctocolectomy (IPAA) 	Gold standard elective option One or two-stage procedure Reduce steroids to minimum pre-op Performed in specialised units (minimum 10/year per BSG 2010) Pouch configuration: J, W, or S (most common.) Hand-sewn or stapled ileo-anal anastomosis
Proctocolectomy + End Ileostomy	Permanent stoma Option when pouch contraindicated

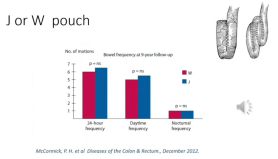


2.9 Restorative Proctocolectomy (RPC) — Functional Outcomes

not important

Parameter	Outcome
Median defaecation / 24h	5 daytime, 1 nocturnal
Nocturnal seepage	8% at 1 year; 15% at 20 years
Urgency	5.1% at 1 year; 9.1% at 15 years
Fecundity (fertility)	Reduced by 40–50%
J vs W pouch	No significant difference in bowel frequency at 9-year follow-up





2.10 Complications After Restorative Proctocolectomy (RPC)

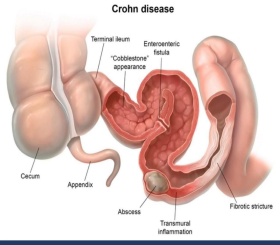
Complication	Rate / Notes
Pouchitis	Up to 50% Consider Crohn's if refractory Treat with: Antibiotics, Probiotics, Biologic, Ciclosporin
Pouch vaginal fistula	Technical complication Options: Advancement flaps, Redo-pouch
Vitamin B12 & Iron deficiency	Common after ileal resection
Infertility	Secondary to pelvic dissection
Stricture	Anastomotic or pouch stricture
Malignancy in pouch/rectal cuff	Low risk; cuff surveillance not routinely needed
Pouch failure at 10 years	5.9% overall Causes: Pelvic sepsis, anastomotic leak, fistula, Crohn's disease

Key Summary: UC Surgery

- **Surgery is CURATIVE for UC (unlike Crohn's)**
- Risk of cancer/dysplasia drives elective surgery decisions
- Complication management and re-operative surgery are important skills
- Minimally invasive surgery is increasingly used
- Some controversies remain (pouch type, staging)

3. SURGICAL MANAGEMENT OF CROHN'S DISEASE (CD)

3.1 Indications for Surgery in Crohn's Disease

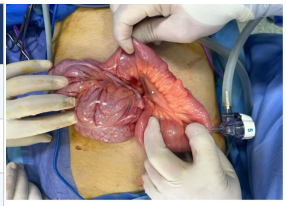


Surgery in CD is for COMPLICATIONS — it is not curative:

Indication	Details
Stenosis / Stricture → most common	Causing obstructive symptoms
Fistula	Enterocutaneous or intra-abdominal fistula
Abscess	Intra-abdominal or retroperitoneal abscess
Bleeding	Acute or chronic GI bleeding
Free perforation	Emergency situation

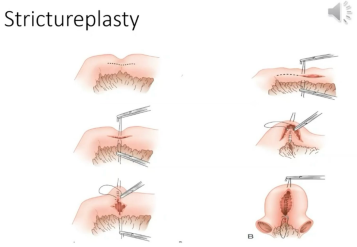
3.2 Surgical Principles for Crohn's Disease

Principle	Rationale
Segmental resection (not wide)	Bowel conservation — avoid short bowel syndrome
Avoid wide resection	Disease recurs at new anastomosis; conserve bowel
May need stoma	In cases of malnutrition, immunosuppression, intra-abdominal sepsis
Risk of malignancy → not common as UC	Monitor for cancer in chronic Crohn's segments



3.3 Strictureplasty

A bowel-conserving technique for short fibrotic strictures:



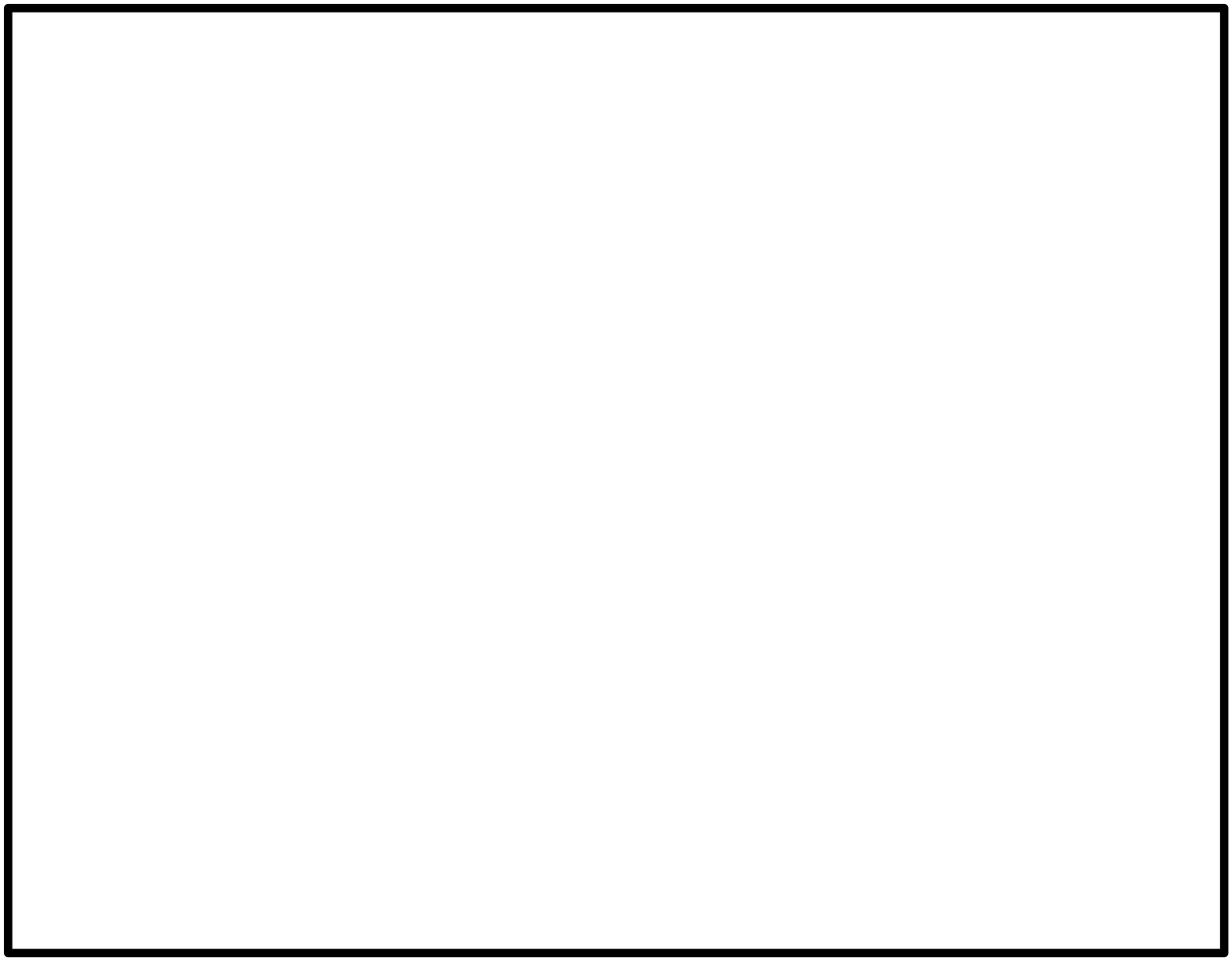
3.4 Smoking & Crohn's Disease

Finding	Significance
Causative role	Tobacco as causative factor is difficult to prove definitively

Relapse rate	Smoking increases incidence of relapse
Maintenance therapy	Increases failure of maintenance therapy
Disease severity	Associated with severity in a linear dose-response relationship

Clinical Implication: All Crohn’s patients should be strongly advised to stop smoking

4. QUICK REFERENCE — KEY NUMBERS & FACTS



4.2 UC vs. Crohn's — Surgical Comparison

Feature	Ulcerative Colitis	Crohn's Disease
Surgery curative?	YES	NO ✘ (palliative / complications)
Disease extent	Colon only (continuous)	Any GI tract (skip lesions)
Preferred elective op	Restorative proctocolectomy (IPAA)	Segmental resection / strictureplasty
Pouch suitable?	Yes (gold standard)	Generally NO (high failure rate)
Stoma risk	Temporary or permanent	May need stoma (sepsis, malnutrition)
Smoking effect	Protective (controversial)	Worsens disease significantly
EIM respond to surgery?		Variable

	Peripheral arthritis, uveitis, iritis: YES ASpondylitis, PSC: NO	

4.3 Toxic Megacolon — Diagnostic Criteria

- Colonic diameter >5.5 cm (or caecum >9 cm) on imaging
- PLUS systemic toxicity features
- CAUTION: Steroids can mask the clinical picture
- Indication for emergency surgery

4.4 Extra-Intestinal Manifestations — Summary

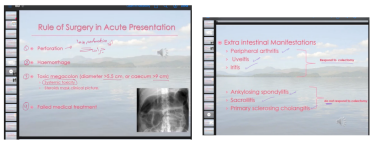
EIM	Responds to Colectomy
Peripheral arthritis	Yes
Uveitis	Yes
Iritis	Yes
Ankylosing spondylitis	✘ No
Sacroilitis	✘ No
Primary sclerosing cholangitis (PSC)	✘ No

End of Study Guide — Good Luck!

References: Truelove & Witts 1955 | Travis SP Gut 1996 | Turner D 2007 | Zisman et al 2012 | McCormick et al 2012 | BSG 2010

17. A 30 y/o male patient with acute colitis presumed to be UC, all of the following represent an indication for urgent surgical treatment, except: ***

A. Massive bleeding
B. Perforation
C. The presence of PSC
D. Sepsis related colitis
E. Toxic megacolon



Answer: C

81. With regard to Crohn's disease, all of the following statements are true, EXCEPT:

A. Bloody diarrhea is a frequent symptom Ulcerative colitis
B. The absence of granulomas does not exclude the diagnosis
C. Intestinal obstruction is the commonest indication for surgery
D. Malignancy occurs less frequently in comparison with ulcerative colitis
E. Crypt abscess is not characteristic for crohn's disease
Lo Bub for UC

Answer:

152. Not an indication for surgery in UC:

A. Toxic mega colon
B. Massive gl hemorhage
C. Refractory to medical
D. Responsive to medical but persisted more than 7 years.

Answer: D

153. Most common extraintestinal in crohn's:

A. Ankylosing spondylitis
B. Arthritis *
C. Erythema nodosum
D. Iritis

arthritis, or inflammation of the joints, is the most common extraintestinal complication of IBD.

Answer: B (not sure

165. Crohn's disease associated fistula all are true except:

A. colovesical is associated with acute UTI caused by single organism polyorganisms (when the mode of spread is by blood → single)
B. colovesical is associated with pneumaturia
C. colointestinal may be asymptomatic
D. colovaginal associated with feces and fltus through vagina
E. colocutaneous associated with secretion to the skin

Answer: A

173. Regarding the pathology of ulcerative colitis, one is TRUE:

A. Is characterized by mesenteric creeping ✗
B. The rectum is rarely involved ✗
C. 10% patients have terminal ileal disease
D. Enterocutaneous or intestinal fistulae are common ✗ (more in crohn's)
E. Pseudopolyps are premalignant

Answer: C

246. All seen with crohn's disease except:

A. Lead pipe appearance on barium enema → UC
B. Serosal involvement
C. Skipped lesions
D. Cobblestone
E. Cryptitis

Answer: A

I hope you get the best grades and best outcomes this year, with the biggest yield of knowledge inshaAllah..

Please do contact me if you spot any mistakes and/ or you have any question

Best of luck