

IBD Surgery: Clinical Pearls for IBD Nurses and Advanced Providers

Common Indications for Surgery:

- Intractable disease, refractory to maximal medical therapy
- Dysplasia (precancerous changes) / cancer
- Massive colonic bleeding (uncommon, <5% of patients)
- Fulminant colitis or toxic megacolon
- Intestinal obstruction
- Symptomatic fibrostenotic strictures
- Intra-abdominal or pelvic abscess
- Perforation
- Fistulas (up to 35% of Crohn's patients develop fistulas; majority involve the small intestine; can also involve the large intestine, perineum, bladder or vagina)
- Perianal disease (abscess, fistulae) in Crohn's disease

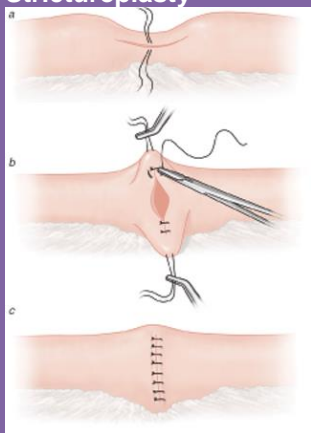
Primary Goals of Surgery:

- Alleviate symptoms
- Alleviate complications
- In Crohn's disease: preservation of intestinal length and function
- Achieve best possible quality of life for the patient

Pre-Op Work-Up May Include:

- ✓ Ileo-Colonoscopy (to assess for large bowel disease)
- ✓ MR or CT Enterography (to assess for small bowel disease ie inflammation and penetrating complications)
- ✓ CT Abdomen/Pelvis (especially in patient with mass or fever—possible abscess)
- ✓ CBC, Comprehensive metabolic panel, PT, PTT
- ✓ Optimize nutritional status
- ✓ Taper steroids when possible to reduce risk of infections and decreased healing ability

Common IBD Surgical Procedures

Surgical Options	Condition	Advantages	Disadvantages
Strictureplasty 	Crohn's	Opens diseased portion of bowel (decreased risk of obstruction at the affected site) Avoids resection/removal of bowel (bowel sparing procedure)	Does not remove diseased bowel Cannot perform in malnourished patients May need to be repeated; about half of patients will require subsequent surgery Risk of malignant stricture (may require biopsy)
Ileocecal/Ileocolic resection	Crohn's	Primary anastomosis (reconnection of ends of bowel) No permanent stoma	Recurrence rate of Crohn's disease requiring re-resection in patients who have undergone ileocolic resection is roughly 50% in 10 years
Segmental Colectomy	Crohn's	Effective in patients with disease limited to a segment of	Contraindicated in patients with severe rectal or anal

		colon (eg, stricture, obstruction) Avoids permanent ostomy placement	disease within 5 years, recurrence % and 50%, with 60% of patients requiring reoperation by 10 years Special consideration for patients with colonic dysplasia as recommendation would be total colectomy
Total colectomy, Hartmann's pouch (retained rectum) with ileostomy	UC, Crohn's	Eliminates colitis Diverts stool, which can result in improved control of perianal disease Single operation Indicated in setting of acute surgery for UC and Crohn's affecting the colon such as toxic colitis or a flare that is refractory to medical therapy Can be the 1 st stage in a 2 or 3-stage procedure for UC	End stoma, rectum remains – possible site of active disease or diversion colitis in future with high likelihood of recurrence requiring completion proctectomy and permanent ileostomy (roughly 50% of patients require proctectomy within 10 years) May still have disease recurrence in small bowel (if Crohn's) Risk of cancer developing in retained rectum, need for ongoing surveillance until removed. Follow IBD surveillance guidelines.
Total abdominal colectomy with ileorectal anastomosis	UC, Crohn's	Colon is removed Maintains intestinal continuity	Rectum remains—possible site of active disease in future high likelihood of recurrence requiring eventual completion proctectomy and ileostomy; roughly 50% of patients require proctectomy within 10 years Frequent and loose stools, i.e. up to 3-6 per day Cancer risk remains in rectum
Total proctocolectomy with end ileostomy	UC, Crohn's	Curative in UC Removes all diseased colon, rectum and anus Removes colon cancer risk Single operation	Permanent ileostomy Challenges with perineal wound healing
Total proctocolectomy with ileal pouch anal anastomosis (J-Pouch, IPAA)	UC	Curative in UC Removes all diseased colon Preservation of the anal sphincter complex and intestinal continuity (no permanent stoma)	Not for use in Crohn's because of the risk of recurrence in the pouch with high failure rate of pouch function Usually requires 2-3 operations

			Frequent loose stools, up to 4-8 per day Pouchitis – 50% risk Incontinence of stool – mostly at night as wetness, may improve over time Ongoing pouch surveillance is recommended to assess function, pouchitis and dysplasia if retained 1-2 cm of the anal transition zone, dysplasia on specimen or PSC
Abdominoperineal resection (APR)	Crohn's	Useful in setting of isolated, severe perianal disease that is refractory to fecal diversion alone	Permanent stoma Possibility of active disease in remaining bowel
Continent Ileal Reservoir	UC	Control over intubation of small nipple when to empty rather than frequency from anus	Very specialized surgery. Prolonged recovery. Complications can include nipple valve slippage, injury, or leakage. Perineal wound healing is same as proctocolectomy.
Procedures for anorectal disease (eg, abscess I&D, seton, diverting ostomy, advancement flap repair)	Crohn's	Controls perianal disease, often in conjunction with antibiotics (ciprofloxacin +/- flagyl) and systemic medications	Perianal sepsis may require diverting ostomy, which rarely (if ever) can be reversed without relapse Need combination aggressive medical and surgical management
Small bowel transplant (<i>very rare, used as a last resort option</i>)	Crohn's	Useful in patients with severe small bowel disease requiring extensive resection	Low success rate Organ rejection Transplant medications must be taken for rest of life

Post-Operative Issues

Care & Recovery	Potential Complications
<ul style="list-style-type: none"> • Enhanced Recovery Protocol allows for consumption of general diet avoiding raw fruits/vegetables on POD #0 or #1 to encourage early return of bowel function and decrease length of stay • NG tubes unnecessary but used for bowel decompression; if placed, will need to stay in place for as long as patient has nausea, vomiting and/or distension (ileus vs small bowel obstruction) 	<ul style="list-style-type: none"> • Anastomotic leak +/- pelvic sepsis (4%-10%) • Small bowel obstruction (15-35%) (bowel rest + IV fluids vs return to OR) • Infection (5-6%) – wound, pneumonia, UTI • Abscess (may require antibiotics +/- drainage) • Bleeding (~4%) (serial Hgb checks; transfuse as needed) • Venous thromboembolism (VTE)

- **Advance diet** once patient has evidence of return of bowel function (ostomy with gas and stool); low residue diet x 2-6 weeks (surgeon and surgery specific). Perianal procedure may resume regular diet.
- Leave **drains** in place until character (eg, serosanguinous vs frank blood vs purulent) and amount of output (depending on drain location, eg, deep vs superficial) is acceptable (deemed by surgeon and procedure)
- Remove bladder catheters POD #1
- Control **PONV** to avoid excessive intra-abdominal pressure (on new anastomosis) from retching/emesis
- Anticoagulation prophylaxis daily while hospitalized as determined by DVT risk and operation performed.

Patients with inflammatory bowel disease (IBD) are at greater risk for postoperative deep vein thrombosis (DVT) and pulmonary embolism (PE).

- **Fistula** involving bowel (location and volume will dictate expectant management vs surgery)
- **Pouchitis** (occurs in up to 50% of patients; treated with antibiotics)
- **Sexual dysfunction** related to removal of rectum or perineal procedures in males (1-3%). Females can develop dyspareunia-pain on intercourse possibly d/t adhesions and may improve over time as tissues soften and become more elastic.
- **Decreased fertility** (25-40%) (females may elect ova harvest pre-op for in vitro fertilization once recovered from surgery)
- **Stoma-related complications** (eg, high ileostomy output, dehydration, metabolic disturbances may require use of anti-diarrheals, fiber supplements and IV fluid infusions to compensate for losses, parastomal hernia, retraction or prolapse of stoma which may eventually require revision of stoma)
- **Pouch failure** due to development of refractory Crohn's or pouchitis as well as poor function and quality of life (requires removal of pouch and conversion to permanent ileostomy)

See <http://www.cdfa.org/resources/surgery-for-crohns-uc.html> for more patient-centered information on surgery for IBD.

Pearls for managing surgical patients:

- IBD patients have a risk of VTE that is 2- to 3-fold greater than that of the general population. However, during hospitalization, multiple prothrombotic risk factors other than active disease act synergistically, multiplying the absolute risk of VTE. Surgery represents a major risk factor for VTE, particularly in patients with IBD, and thromboprophylaxis is universally performed during the perioperative period. Some institutions have implemented scoring to help stratify increased risks in IBD patients depending upon surgery. Not all institutions utilize enoxaparin post operatively.
- The following actions can potentially reduce the incidence of VTE in the surgical setting: correcting preoperative coagulopathy and/or anemia, improving nutritional status, reducing steroid use, operating early to avoid emergency surgery, and limiting anesthesia time.
- An important factor in acceptance of a permanent ileostomy is that the decision needs to be the patient's decision of choice whenever possible. The patient needs to "**OWN it**"! This means the patient needs to have all the information necessary to make an informed choice and understand the permanent ileostomy is the best choice given their medical condition for an improved quality of life. **Except in case of emergent surgery, patients should be counseled and educated by an Enterostomal Therapy team pre-operatively.**
- Patient needs to have all their "**What if's**" answered when possible, meaning there are no other medical options to treat the condition and surgery is the option which will afford the best quality of life. Otherwise,

when complications or issues occur they cannot say “But what if I would have tried that other treatment option and it would have worked and maybe I would not have had to deal with this problem!”

- Remind patients with an ileostomy that have either a retained rectum or a diverted ileal pouch that it is normal to pass a discharge of clear or milky mucous like a bowel movement daily or less frequently. If the mucous becomes bloody with urgency and tenesmus, this may indicate recurrent flare of disease in the rectum or diversion proctitis.
- Education on the signs and symptoms of dehydration preoperatively and postoperatively as well as measures to maintain hydration and thickened stool output are key principles in patient education with an ileostomy:
 - Signs of dehydration include dry mouth and feeling thirsty, light headed or dizzy especially upon standing, decreased urine output and dark amber in color, high ostomy output or multiple number of stools that are watery to liquid, fatigue, nausea, headaches, muscle cramps and elevated heart rate or palpitations.
 - Ileostomy output less than 500 ml or output greater than 1800ml in 24 hours may be concern for possible dehydration.
 - Urine output that is amber and/or less than 800ml in 24 hours may also be concern for possible dehydration.
 - Use of oral rehydration formulas such as G 2, pedialyte, Ceraltye, Drip Drop or other electrolyte enhanced beverage may be useful when patients are feeling dehydrated.
- Patients best understand the concept of balancing liquid and solid intake with an ileostomy by using the following example: “By eating first and then drinking, the foods eaten will soak up the liquids, thereby slowing down the transit time of both through the intestines so the fluids and nutrients have time to be absorbed. Drinking fluids without food often causes fluids to move rapidly through the intestines with minimal absorption resulting in dehydration over time.” Patients should always snack between meals when drinking liquids as much as possible.
- Ongoing assessment of ileal pouch function should include:
 - Number of daytime and nighttime bowel movements
 - Stool incontinence/leaks
 - Perineal skin integrity
 - Digital check of ileoanal anastomosis patency
 - Sexual function
 - Perceived quality of life
 - Feelings of depression, anxiety or post-traumatic stress related to a chronic illness and multiple surgeries, especially in young kids and adults.
 - Perineal rash may be common initially after ileal pouch surgery or whenever stools are loose. Recommend patients to use a moisture barrier ointment to protect the skin but be sure the skin is dry before the barrier is applied and reapply after each loose bowel movement.
 - For patients who have a lot of bowel movements, warm water (sitz baths or shower wand and pat dry)
 - If patients experience minor perianal incontinence of stool, have draining perianal fistulae or setons in place, using anal leakage or incontinent butterfly pads is helpful to wick away the moisture from the perineal area and protect the skin. **Wearing panty liners protects clothes not the patients perianal skin!**

References:

- Becker JM. Surgical therapy for ulcerative colitis and Crohn's disease. *Gastroenterol Clin North Am.* 1999 Jun;28(2):371-90,viii-ix.
- Beery RM, Sunanda K. Current approaches to the management of new-onset ulcerative colitis. *Clin Exp Gastroenterol.* 2014; 7: 111–132.
- Biondi A, et al. Surgical treatment of ulcerative colitis in the biologic therapy era. *World J Gastroenterol.* 2012 Apr 28;18(16):1861-70.
- CCFA Fact Sheet--About Surgery for IBD. <http://www.cdfa.org/news/for-the-media/media-kit/fact-sheet-about-surgery-for.html?referrer=https://www.google.com/>.
- CCFA Surgery for Crohn's Disease & Ulcerative Colitis. <http://www.cdfa.org/resources/surgery-for-crohns-uc.html>.
- Fichera A, et al. patterns and operative treatment of recurrent Crohn's disease: A prospective longitudinal study. *Surgery*140(4):649-654, 2006.
- Fichera A, Michelassi F. Surgical treatment of Crohn's disease. *J Gastrointest Surg* 2007; 11:791.
- Grucela A, Steinhagen RM. Current surgical management of ulcerative colitis. *Mt Sinai J Med* 2009; 76:606–612.
- Hwang, JM, Varma, MG. Surgery for Inflammatory Bowel Disease. *World J Gastroenterol.* 2008 May 7; 14(17): 2678–2690.
- Kappelman MD, Horvath-Puho E, Sandler RS, Rubin DT, Ullman TA, Pedersen L, Baron JA, Sørensen HT. Thromboembolic risk among Danish children and adults with inflammatory bowel diseases: a population-based nationwide study. *Gut.* 2011;60:937–943. [PubMed]
- Michelassi F, Milson JW (Eds). Indications for surgical treatment in ulcerative colitis and Crohn's disease. In: *Operative Strategies in Inflammatory Bowel Disease.* Springer, 1997. p.151.
- Nandivada P, et al. Advances in the Surgical Management of Inflammatory Bowel Disease. *Curr Opin Gastroenterol.* 2012;28(1):47-51.
- Nguyen GC, Bernstein CN. Duration of anticoagulation for the management of venous thromboembolism in inflammatory bowel disease: a decision analysis. *Am J Gastroenterol.* 2013;108:1486–1495. [PubMed]
- Rubin, M. Surgical Management in IBD. *Wound, Ostomy and Continence Nurses Society Core Curriculum Ostomy Management.* Wolters Kluwar 2015; chap 4, p.44-64.
- Wallaert JB, De Martino RR, Marsicovetere PS, Goodney PP, Finlayson SR, Murray JJ, Holubar SD. Venous thromboembolism after surgery for inflammatory bowel disease: are there modifiable risk factors? Data from ACS NSQIP. *Dis Colon Rectum.* 2012;55:1138–1144. [PMC free article] [PubMed]
- World Gastroenterology Organisation Global Guidelines on Inflammatory Bowel Disease. <http://www.worldgastroenterology.org/guidelines/global-guidelines/inflammatory-bowel-disease-ibd/inflammatory-bowel-disease-ibd-english>.
-

Acknowledgement: Developed by Michele Rubin, BSN, MSN, APRN-CNS, CGRN. Updated by Abigail Meyers, PA-C. August 2023. Reviewed by the Crohn's & Colitis Foundation's Nurse & Advanced Practice Committee.