

Surgery in Inflammatory Bowel Disease



Rajesh Gupta MS, MCh
Surgical Gastroenterology Division
Dept of General Surgery
PGIMER, Chandigarh

Ulcerative colitis (UC)

- Ulcerative colitis (UC) characterized by chronic inflammatory condition that affects the rectum and extends proximally into the colon for varying distances
- Many patients are treated effectively by a wide variety of medications
- Approx. 15-30% of patients require or elect operative intervention

Surgical Options in UC

- Complete removal of all potential disease-bearing tissue - theoretically curative

Operative options

Emergency:

- Total or subtotal abdominal colectomy with end ileostomy

Elective :

- Total proctocolectomy with ileostomy
- Total proctocolectomy with IPAA

All these procedures may be performed by using open or MIS techniques

Ulcerative Colitis

Indications for Surgery

- **Intractability** : Failure to respond to medical therapy – **the most common indication**
 - Inability to control symptoms
 - Poor quality of life
 - Risks/Side effects of chronic medical therapy (especially long-term corticosteroids)
 - Noncompliance
 - Growth failure

Patients may opt for surgery in the elective or semi-elective setting

Ulcerative Colitis

Indications for Surgery...contd

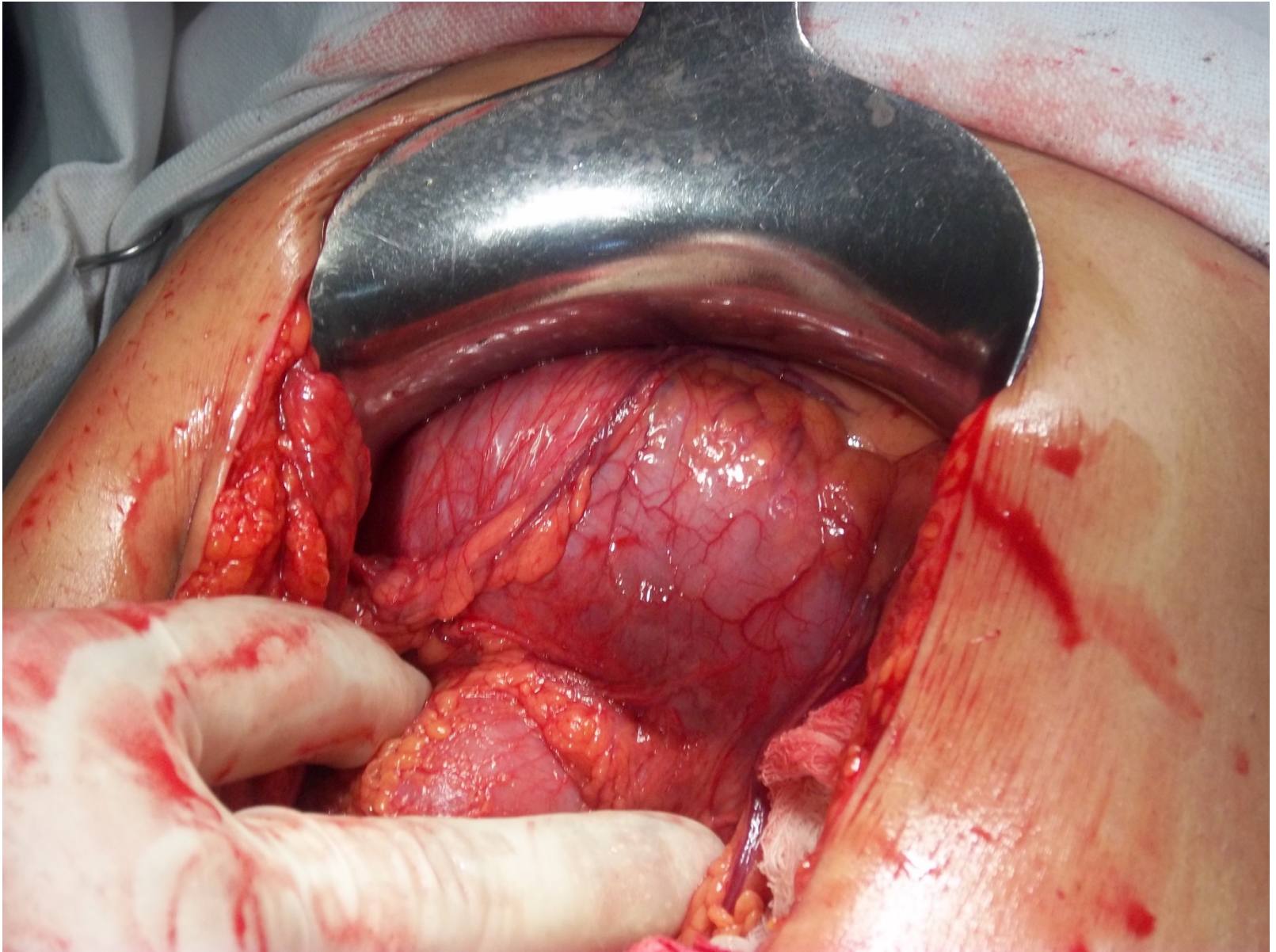
- **Acute Colitis**

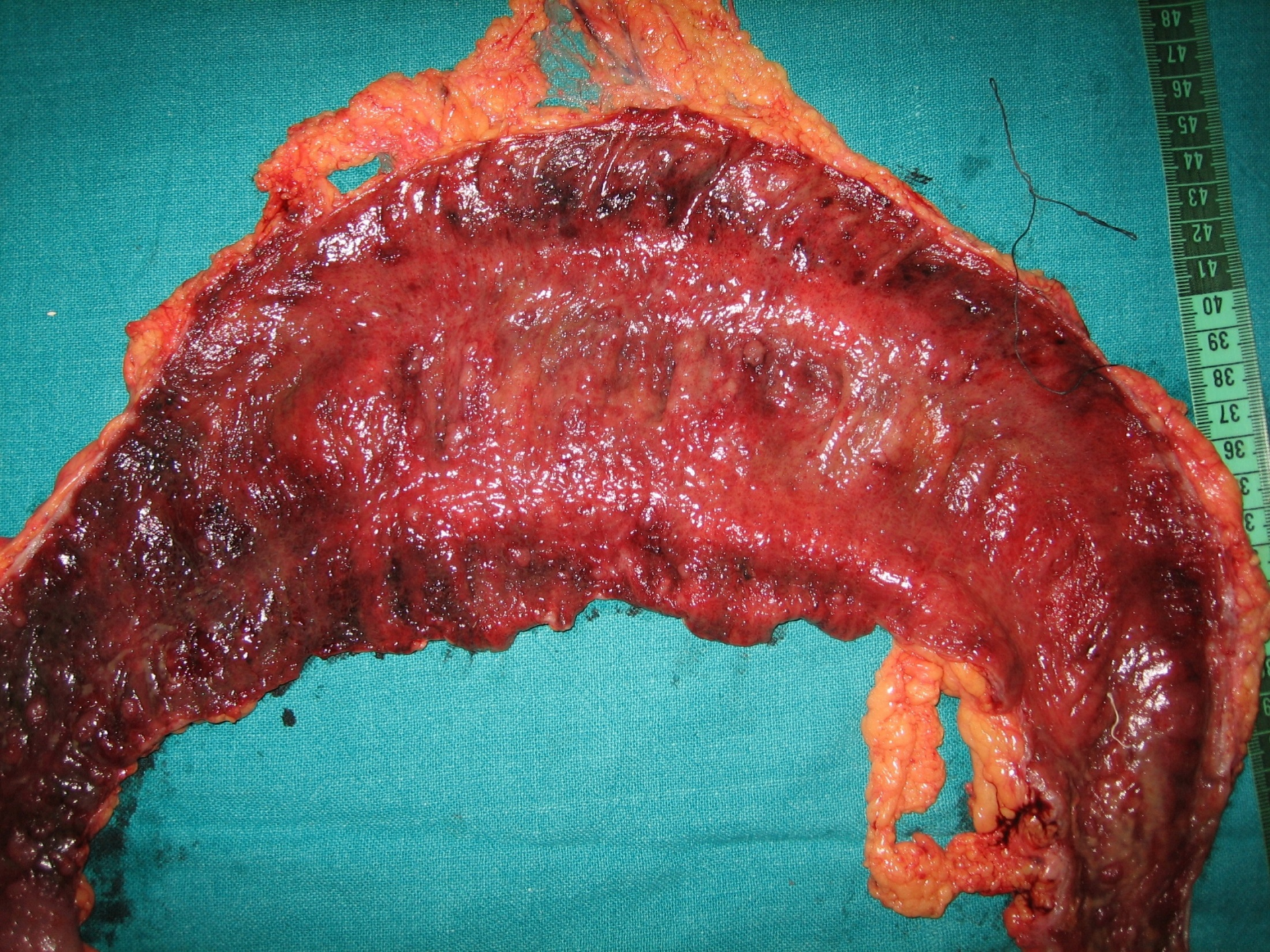
Clinical e/o actual or impending perforation

Grade of Recommendation: 1B

- Surgery required in 20-30% of pts with toxic colitis, & typically consists of a subtotal colectomy with end ileostomy.



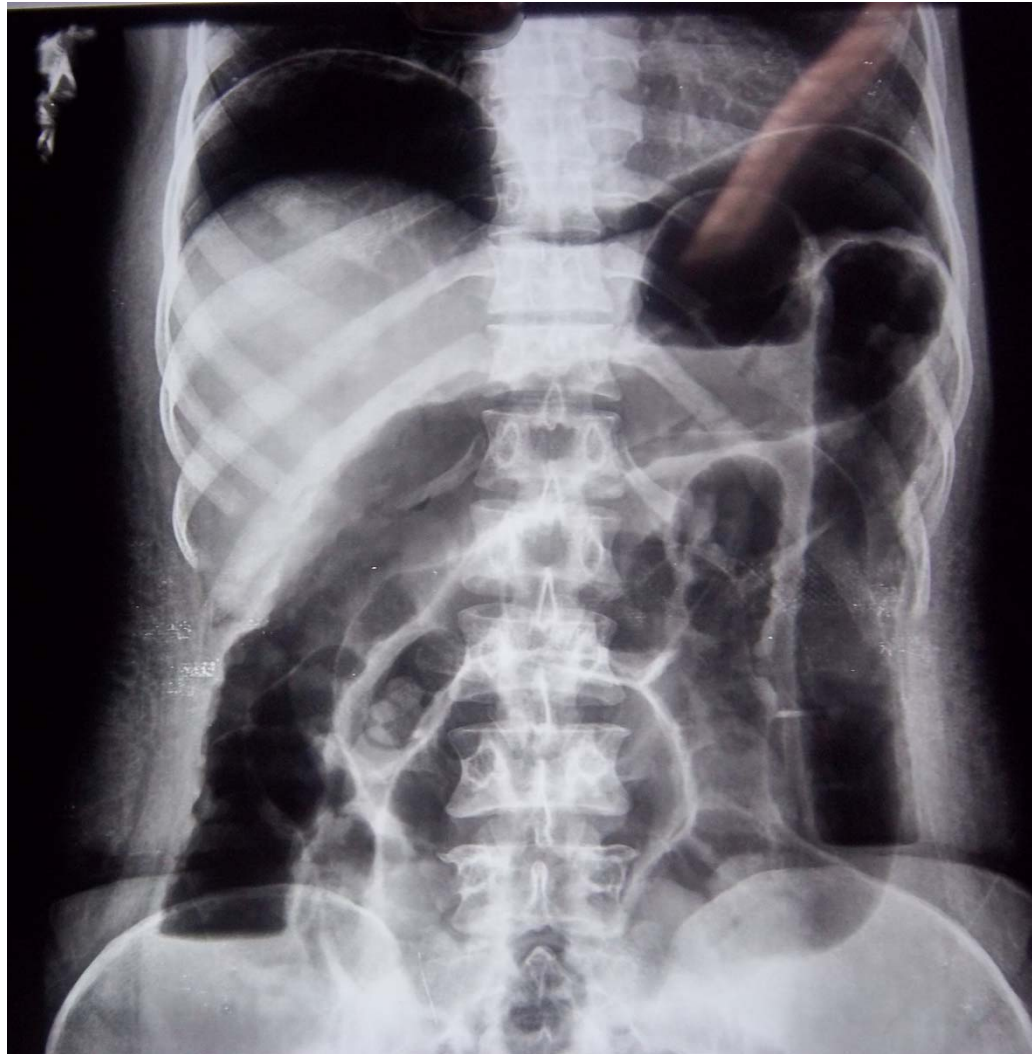




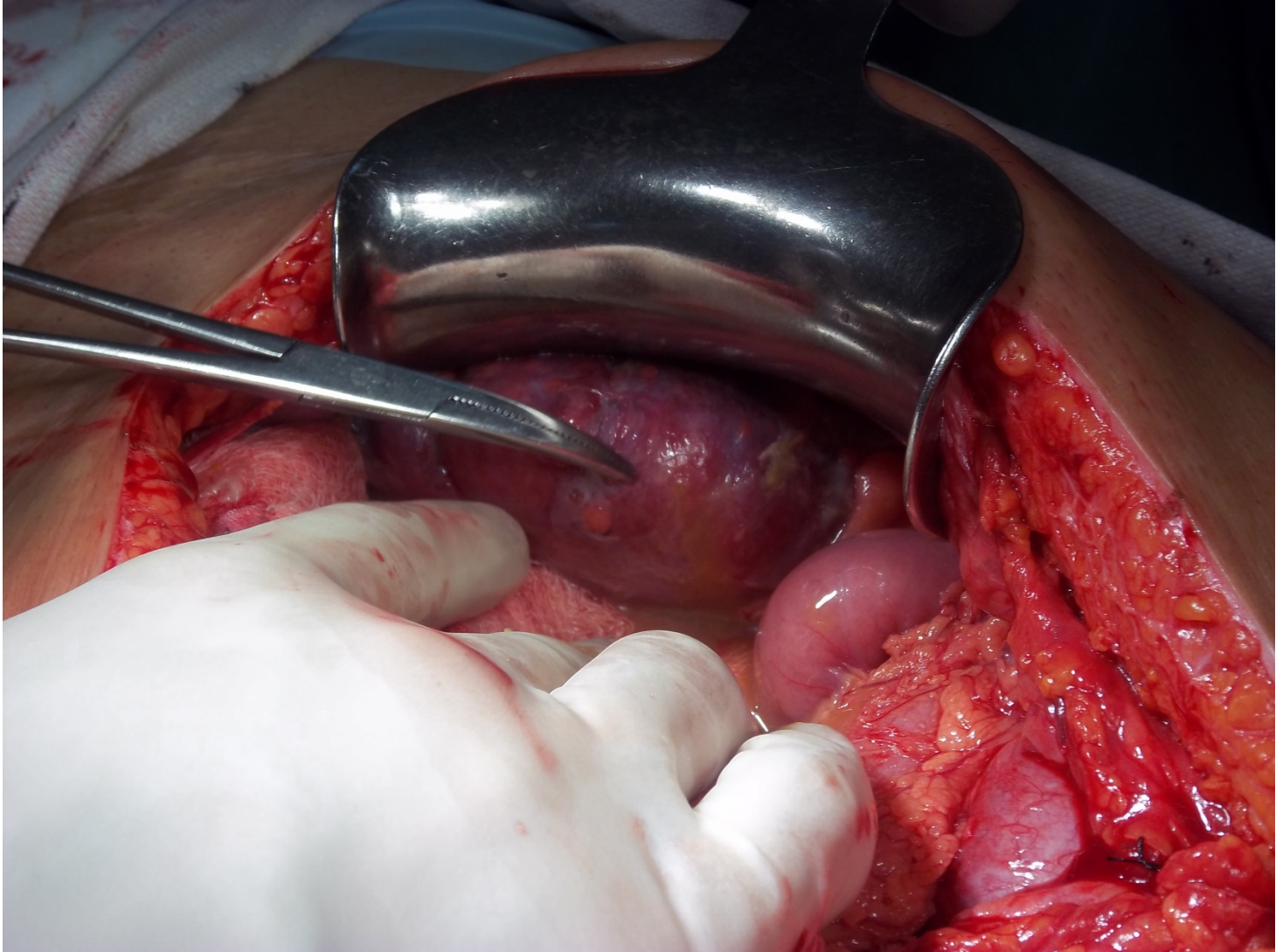
Acute Colitis ...contd

- **Perforation** in patients with Toxic Colitis
 - a.w. high mortality 27–57%, regardless of whether the perforation is contained or free
 - Mortality rate also increases as the time interval between perforation and surgery increases
- Pertinent to identify signs of impending perforation

Cecal Perforation



Cecal Perforation



Acute Colitis ...contd

- **Signs of impending perforation**

- Persistent or increasing colonic dilation
- Pneumatosis coli
- Worsening local peritonitis
- Development of MOF

Signs may be masked by ongoing medical therapy

Acute Colitis ...contd

- **Moderate to severe colitis**
 - Early surgical consultation should be obtained
 - Grade of Recommendation: 1C
- Indications for surgical consultation in patients with a lesser degree of disease include
 - Failure of primary therapy i.e.,
 - Pts. worsen on medical therapy or who do not make significant improvement after 48 - 96 hrs
 - Pts. being considered for 2nd line - Monoclonal antibody (Infliximab, Adalimumab) or cyclosporine therapy

Acute Colitis ...contd

Moderate to severe colitis

•Timing of surgery

- Patients with more than 8 stools per day
- 3 to 8 stools and a CRP > 45 mg/mL after 3 days of therapy
 - 85% chance of requiring colectomy during same hospitalization
- Patients with contraindication to (or do not desire) MAb or cyclosporine therapy, or when steroids fail
- Persistent colonic distention----- Toxic Megacolon

Acute Colitis ...contd

Moderate to severe colitis

Important tips:

- Decision regarding response to 2nd line or “rescue” therapy be made within 5 to 7 days after initiation
- Mortality rates increase as operative timing progresses from **within 3 - 6 days** (OR 2.12) & **11 days** (OR 2.89)
- Longer waiting times results in
 - Worsening physiological reserve
 - Further depletion in nutrition stores
 - Inappropriate delay in surgery with no apparent gain

UC – Indications of Surgery

Disabling Extra-intestinal Manifestations

- Typically
 - Episcleritis
 - Erythema nodosum
 - Aphthous ulcerations
 - Large joint arthropathy

These are more likely to be responsive to colectomy
- Hepatic, vascular, hematologic, cardiopulmonary, & neurological comorbidities – **Not responsive**
- **Growth failure** in children another form of intractability - may require colectomy

Ulcerative Colitis

Indications for Surgery...contd

Risk of Malignancy

Risk factors:

- Extent of colonic disease
 - Pancolitis (proximal to the splenic flexure)
 - Greater than left-sided colitis
- Prolonged disease duration (>8 years with pancolitis)
- Diagnosis of UC at a younger age a.w. increased risk of colorectal cancer

Additional risk factors include

- Family history of IBD
- Concomitant primary sclerosing cholangitis

Ulcerative Colitis

Indications for Surgery...contd

Risk of Malignancy

- Patients with low-grade dysplasia
 - Total proctocolectomy, or surveillance endoscopy
 - Grade of Recommendation: 1C
- Non-adenoma like dysplasia-associated lesion or mass
- High-grade dysplasia
- Patients with carcinoma
 - Total proctocolectomy, with or without IPAA
 - Grade of Recommendation: 1B

Cut section: smooth tubularized left colon with
loss of mucosal fold



Cut section tumor at lower end in ulcerative colitis



Ulcerative Colitis

Indications for Surgery...contd

Colonic stricture : Develop in 5% to 10% with UC

- **Especially with long-standing disease**

–Grade of Recommendation: 1B

- 25% of strictures malignant
- Most common manifestations of CRC in chronic UC
- Biopsy may reveal dysplasia or malignancy- a negative biopsy not reliable:

–risk of sampling error

–and more infiltrative nature of colitis-associated malignancies

In general all patients with strictures should undergo an oncological resection

Surgery in UC

Emergency Procedure

- **Procedure of choice:** Total or subtotal abdominal colectomy with end ileostomy
- Surgical goals in the acute setting
 - To remove the bulk of the diseased bowel
 - Restore patient health with the greatest reliability and least risk
 - Preserve reconstructive options after the patient has recovered and medications are withdrawn
- Subtotal colectomy with end ileostomy and Hartmann closure of the distal bowel or creation of a mucous fistula
 - a safe and effective approach
- Completion proctectomy and IPAA can be performed later
 - to remove the remaining disease & restore intestinal continuity

Surgery in UC

Elective Procedure

1. Total proctocolectomy with ileostomy - considered a benchmark with which all other operations compared

- Suitable for those at significant risk for pouch failure

- Patients with impaired anal sphincter muscles
- Previous anoperineal disease
- Limited physiological reserve secondary to comorbid conditions

2. Total proctocolectomy with IPAA - an appropriate op. for selected pt.

- Most commonly performed elective surgery

- A.w. acceptable morbidity rate (19 – 27 %)

- extremely low mortality rate (0.2 – 0.4 %)

- QOL approaches that of the healthy population

Patient selection

- Baseline continence

- Ability to undergo major pelvic surgery and its complications

- Medical comorbidities

Proctocolectomy specimen



Cut Section- Proctocolectomy Specimen



Pseudopolyps







Surgery in UC

Post op Complications

- Risks arising from the pelvic dissection
 - Infertility
 - Sexual dysfunction
- Pouch-specific complications - Pouchitis
 - Medical Rx to salvage pouch
 - Antibiotics
 - Immunomodulators
 - Biologics
 - Surgery

Successful in more than 50% of cases
- Anastomotic leak
 - Pelvic sepsis
 - Fistula
 - Stricture
 - Cuff inflammation

Crohn's Disease

- Anywhere in GIT between the mouth and anus
 - 50% have ileocolic disease
 - 30% have ileal disease only
 - 20% have colonic disease only
 - 26.5% have **perianal disease**
 - **Felt to be a marker of more aggressive disease**
- Vienna classification - most commonly used (2000)
 - Penetrating (fistulizing)
 - Stricturing
 - Nonpenetrating, nonstricturing disease

Crohn's Disease

Indications of Surgery

Tends to recur & cannot be cured

Surgery is reserved for patients with

- Symptomatic disease refractory to medical management
- Or in those with complications :
 - Retardation of growth in children
 - Hemorrhage
 - Perforation
 - Abscess
 - Fistula
 - Stricture
 - or Malignancy

Anorectal Crohn's Disease

- Large perianal skin tags with fissure
- Recurrent perirectal abscesses
- Complicated fistula-in-ano
- Strictures

A careful anorectal examination (under anesthesia if necessary), including anoscopy and flexible sigmoidoscopy - critical for diagnosis

CROHN'S DISEASE

Anal Fissure

- Typical anterior or posterior midline anal fissure
- Can be treated with standard medical treatments:
 - Glyceryl trinitrate, Calcium channel blockers & Botulinum toxin
- Surgical Rx
 - In absence of proctitis - **lateral internal anal sphincterotomy** gives good results

I.p.o. Proctitis - Sphincterotomy be avoided

Abscess/Fistula-in-Ano/Rectovaginal Fistula

- EUA and **drainage of abscesses** in a timely fashion
 - Incision as close to the anal verge as possible to minimize the risk of a long fistula tract
- **Simple fistulas** involving minimal muscle –
 - Fistulotomy with marsupialization of wound edges in patients with otherwise normal continence
 - Repeat fistulotomy avoided : Risk of fecal incontinence
- Fistula-in-ano may have
 - Internal opening above dentate line,
 - Multiple internal openings,
 - And/Or may involve a large amount (>50%) of the ext. anal sphincter

Pelvic MRI or endorectal US with H₂O₂ injected into the fistula tract can elucidate the anatomy of more **complex fistulae**

CROHN'S DISEASE

Fistula-in-Ano in CD

- Setons placed to control every internal opening
- Flexible sigmoidoscopy done to rule out proctitis
- Weak evidence –
 - anal fistula plug or the ligation of the intersphincteric fistula tract
- I.p.o proctitis - Leave setons and continue with aggressive medical therapy to control rectal dis.
- Severe perianal disease refractory to setons
 - Temporary or permanent fecal diversion (ileostomy vs colostomy)

CROHN'S DISEASE

Anorectal Stricture

- Can be extremely symptomatic
- Factors dictating therapy
 - Presence or absence of Proctitis
 - Exact location of stricture
- **Anal stricture** without anorectal inflamm. –
 - Dilated gently
- Anorectal strictures with severe proctitis refractory to medical Rx
 - **Proctectomy and end colostomy**
- **Rectal stricture** without proctitis –
 - Initial attempt at **dilation**
 - If it fails - **LAR & colo-anal anastomosis**

CROHN'S DISEASE

INTESTINAL FISTULA

- Patients often require multiple surgeries
- Function must be considered when deciding on the extent and aggressiveness of procedure
- 40 - 50% of patients require surgery < 10 years of diagnosis
- 16%, 28%, and 35% of patients require a second surgery at 5, 10, and 15 years after the first surgery respectively

CROHN'S DISEASE

INTESTINAL FISTULA

Guiding Principles for surgery:

1. Nutrition should be optimized preop. if possible
2. Preop. esophagogastroduodenoscopy & colonoscopy are helpful.
3. CT enterography identifies both luminal & extraluminal intestinal dis.
4. Laparoscopy - reasonable approach for complicated dis.
5. Only diseased bowel resected
6. Non-diseased target of the fistula-repaired safely

CROHN'S DISEASE

INTESTINAL FISTULA

Guiding Principles for surgery (Contd....):

7. RM should be small (2 cm) & within grossly normal bowel

8. Increase the risk of anastomotic leak

- Steroid use (>10 mg of prednisone/day x 4 wks before surgery)
- Preop. abscess

Although use of anti-TNF biologics before surgery does not appear to increase the risk of a leak

But still controversial with data supporting each side

CROHN'S DISEASE

Enteroenteric or Enterocolic Fistula

- Asymptomatic enteroenteric fistula should be left alone
- Large acute abscesses should be drained percutaneously if possible
- If fistula a.w. diarrhea - Diseased bowel should be resected

CD

Enterocutaneous Fistula- Management

- Acute sepsis
- Treated with aggressive fluid resuscitation, iv antibiotics & drainage of large intra-abdo. abscesses
- Skin opening should be pouched.
- Nutrition should be optimized
- Fistulogram or CT enterography helpful to delineate fistula anatomy
- Diseased bowel and fistula tract be resected

Diseased bowel with creeping fat and thickened mesentery



Surgery for bowel strictures

- Operative indications for stricturing dis.
 - Persistent or recurrent obst. in the face of adequate medical management
 - Significant weight loss
 - Inability to tolerate a solid diet
 - Inability to tolerate medication
 - Inability to wean from steroids

Role of Preoperative TPN

- Severe malnutrition
- Moderate to severe Crohn's disease can improve their nutritional status and have significantly fewer postop. complications and mortality if treated for several weeks with hyperalimentation

CD

Relevant Points in Patient's Course of Illness

- Reoperation rates for Crohn's disease approach 50% over the long term
- Smoking confers a 2.5-fold increased risk of postop. recurrence requiring surgery, and pts should be counseled extensively on smoking cessation techniques
- Every patient undergoing surgery should understand that there is some lifelong risk of intestinal failure and that bowel conservation is the goal
- Bowel sparing should be the guiding principle
- Pts. with IBD have a > 3 fold risk of VTE events in the postop. period

Carry Home Message

UC

- Approx. 15-30% of patients of UC require or elect operative intervention
- Intractability : the most common indication
- Complete removal of all potential disease-bearing tissue - theoretically curative
- Surgery required in 20-30% of pts with toxic colitis
- High mortality 27–57% in perforation with toxic colitis- **Imperative to know signs of impending perforation**
- Some disabling extra-intestinal manifestations may respond to surgery
- Risk of Malignancy a.w. extent of colonic disease, prolonged disease duration (>8 years with pancolitis) and diagnosis at younger age

Carry Home Message

CD

- 26.5% have perianal disease - a marker of more aggressive disease
- Tends to recur & cannot be cured
- Surgical Rx of anorectal disease depends on presence or absence of proctitis
- Patients often require multiple surgeries
- Function must be considered when deciding on the extent and aggressiveness of procedure
- 40 - 50% of patients require surgery < 10 years of diagnosis

Thank you