Diverticular Disease

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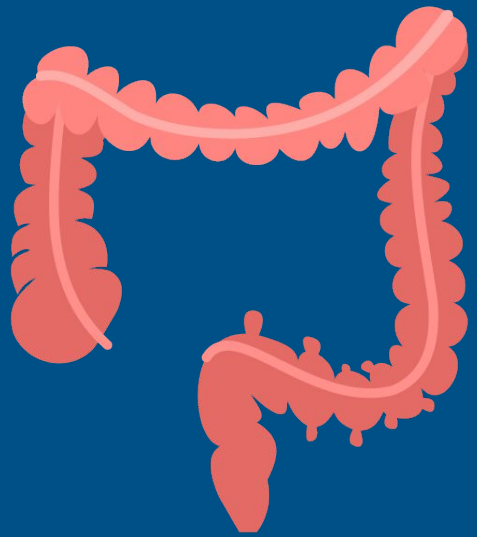
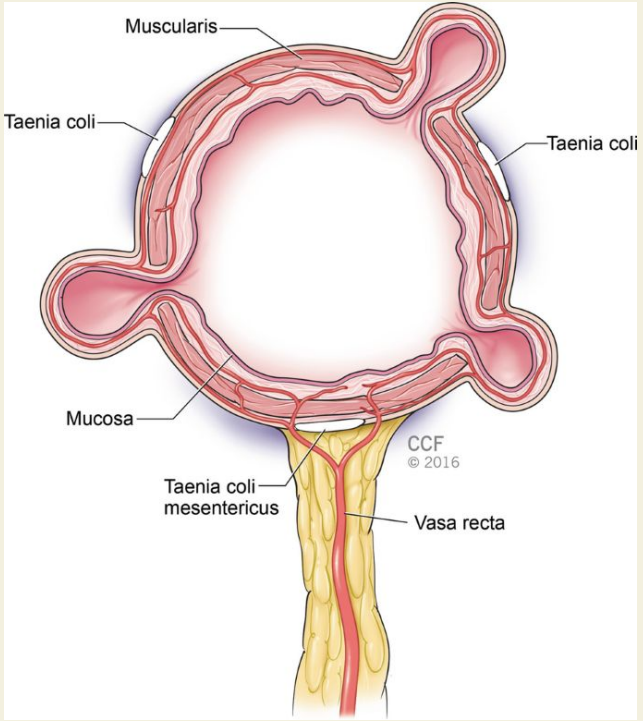


Diverticulosis

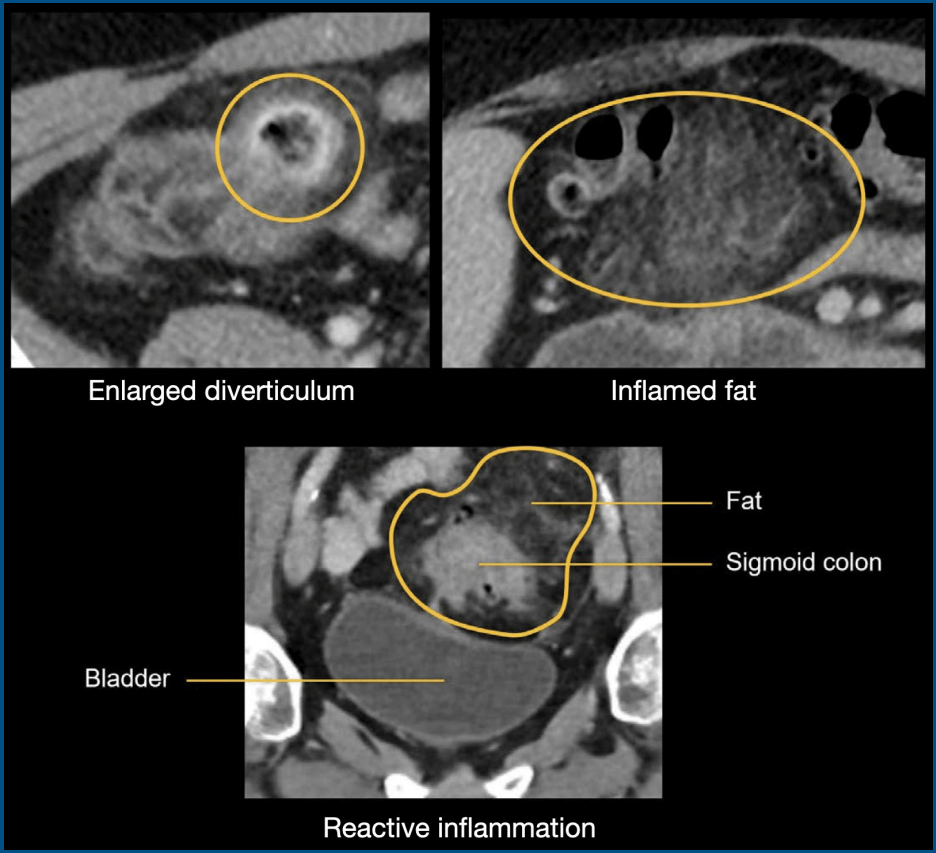
- Small, bulging pouches (diverticula) that form in the inner lining of the large intestine
- Caused by chronic high pressure within the colon and natural weakening of the colon wall
- Risk factors:
  - Aging
  - Low-fiber diet
  - Medications
  - Sedentary lifestyle
  - Smoking

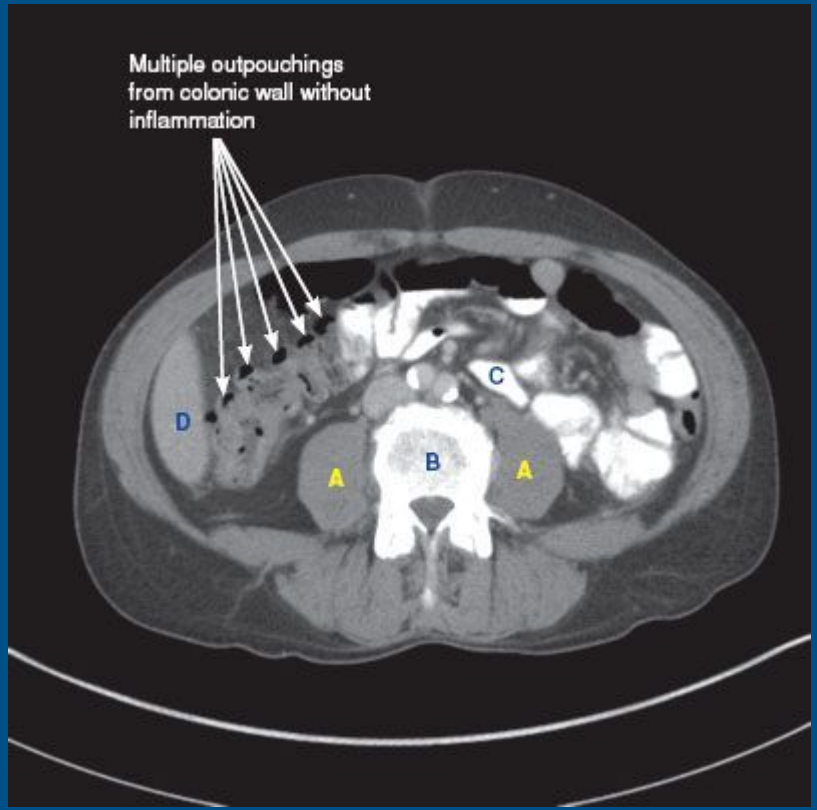


Diverticulosis → Diverticulitis

Uncomplicated diverticulitis

- Fecal stasis or inspissated stool (fecalith) or undigested food can obstruct the diverticula which can cause distention, local ischemia, and bacterial overgrowth
- This process is confined to the pericolic tissues by mesentery and adjacent organs
- Signs and symptoms:
  - Left lower quadrant pain
  - Fever
  - Changes in bowel habits
  - Nausea/vomiting
  - Tenderness to palpation in LLQ
- CT findings:
  - Local pericolic fat stranding
  - Bowel wall thickening
  - Inflamed diverticula


Enlarged diverticulum
Inflamed fat
Fat
Sigmoid colon
Bladder
Reactive inflammation


Multiple outpouchings from colonic wall without inflammation
D
C
A
B
A

Treatment of acute diverticulitis

Hinchey Classification	
1a	Pericolonic phlegmon and inflammation, no fluid collection
1b	Pericolonic abscess <4cm
2	Pelvic or inter-loop abscess OR abscess >4cm
3	Purulent peritonitis
4	Feculent peritonitis

Treatment of uncomplicated diverticulitis

Hinchey stage 1a

Systemic signs of infection
Leukocytosis on labs
> 5 days duration of symptoms
Extensive inflammation of the diverticula seen on imaging

Clear liquid diet, analgesia, antiemetics
Antibiotics:

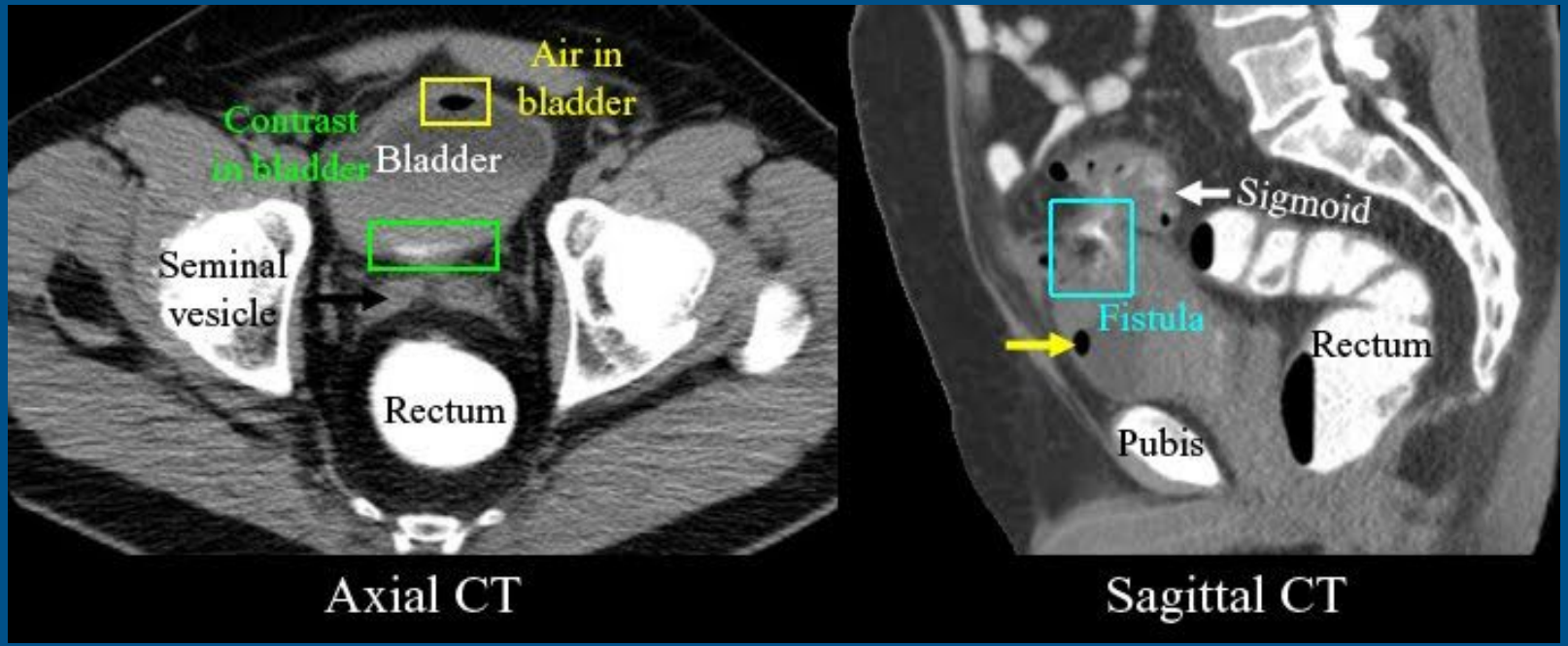
- Augmentin
- Metronidazole + fluoroquinolone
- Metronidazole + Bactrim

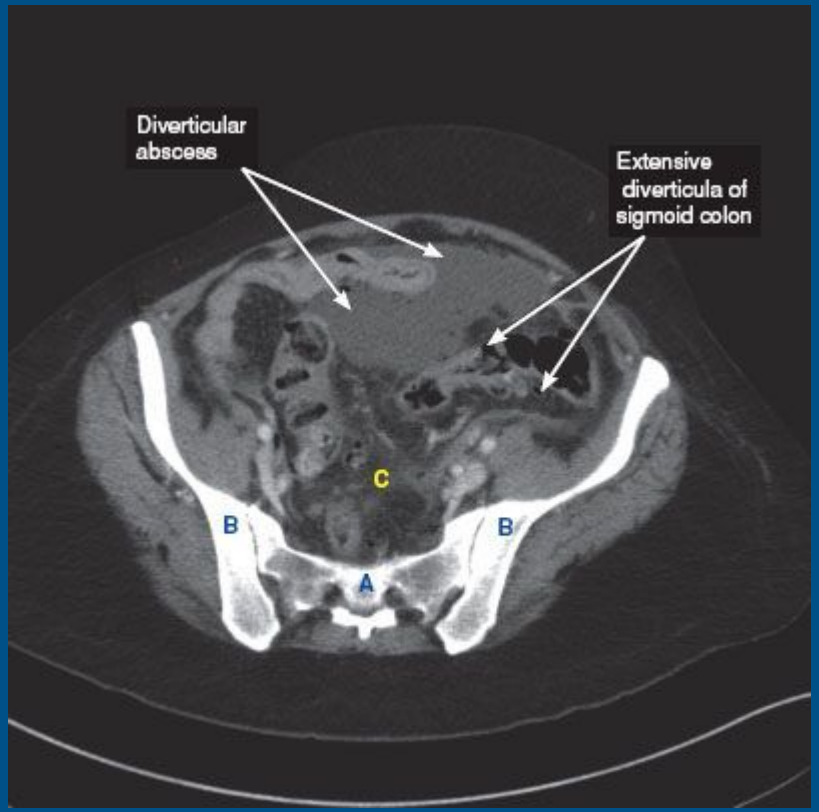
If worsening symptoms, consider repeat imaging and inpatient management

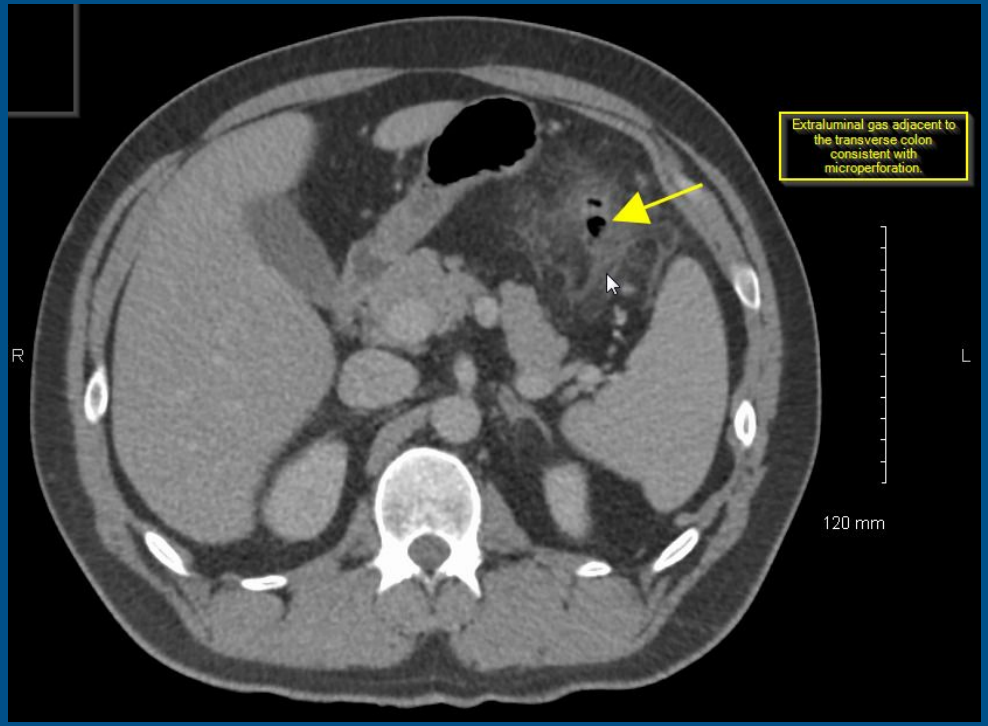
If improvement in symptoms, then advance diet as tolerated

Complicated diverticulitis

- Occurs when severe, untreated diverticulitis causes secondary issues such as:
  - Perforation of diverticula
  - Abscesses
  - Fistulas
  - Bowel obstruction
  - Diverticular bleeding
- Signs and Symptoms:
  - Worsening abdominal pain
  - Rigid abdomen
  - If abscess, then high fever, chills, persistent nausea, tender palpable mass in abdomen/pelvis
  - If fistula present, then pneumaturia, fecaluria, recurrent UTI
  - If bowel obstruction, then inability to pass gas or stool, cramping, bloating


Air in bladder
Contrast in bladder
Bladder
Seminal vesicle
Rectum
Axial CT
Sigmoid
Fistula
Rectum
Pubis
Sagittal CT


Diverticular abscess
Extensive diverticula of sigmoid colon
C
B
B
A


Extraluminal gas adjacent to the transverse colon consistent with microperforation.
R
L
120 mm

Treatment of complicated diverticulitis

Bowel rest, IV fluids, IV antibiotics, IV analgesia, antiemetics

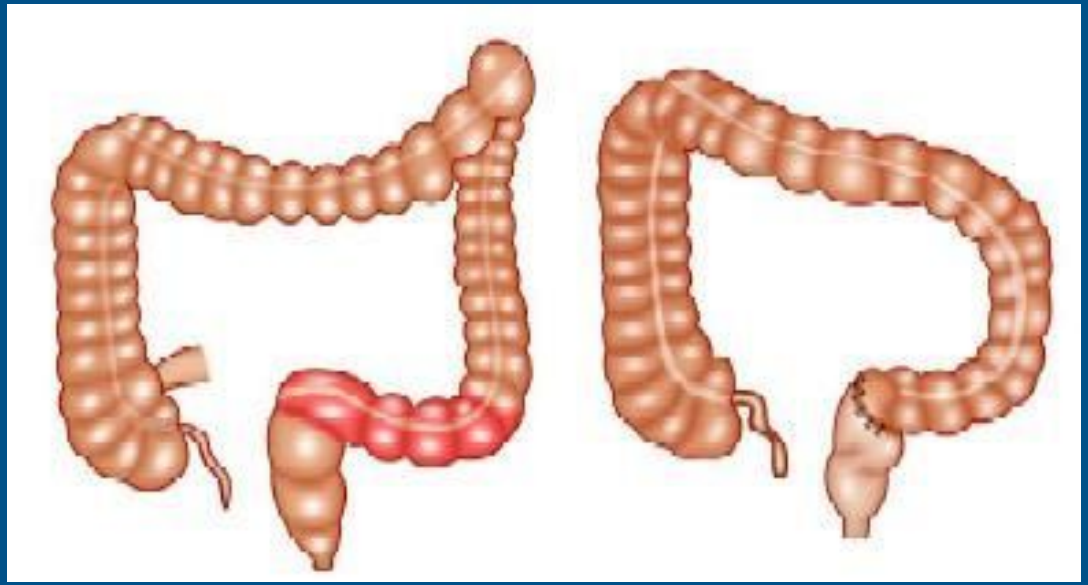
Hinchey 1b to 2: pericolonic abscess <4cm, pelvic abscess or abscess >4cm

- For abscesses >4cm, standard treatment is percutaneous CT-guided drainage

Hinchey 3 to 4: purulent peritonitis or feculent peritonitis

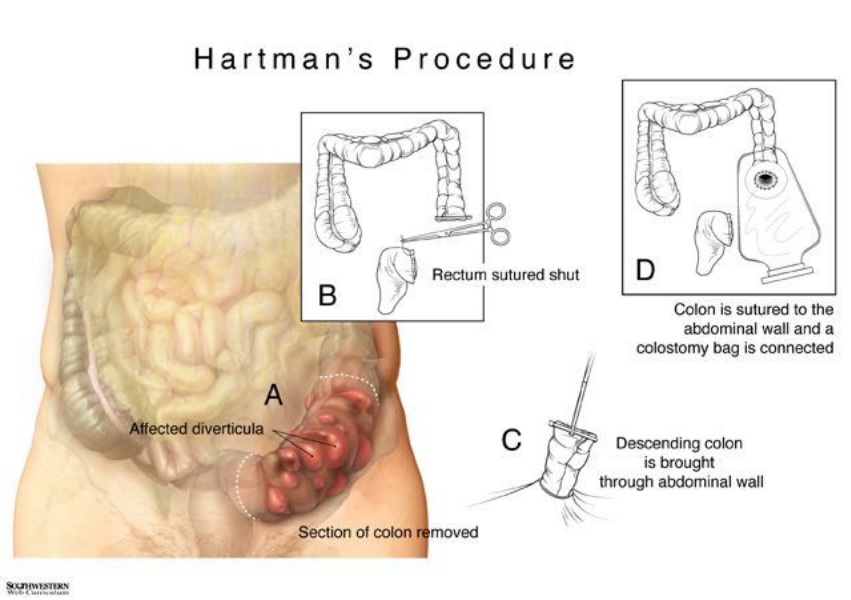
- Stable condition: primary resection with anastomosis with/without protective loop ileostomy
- Critical/unstable condition: Hartmann's procedure

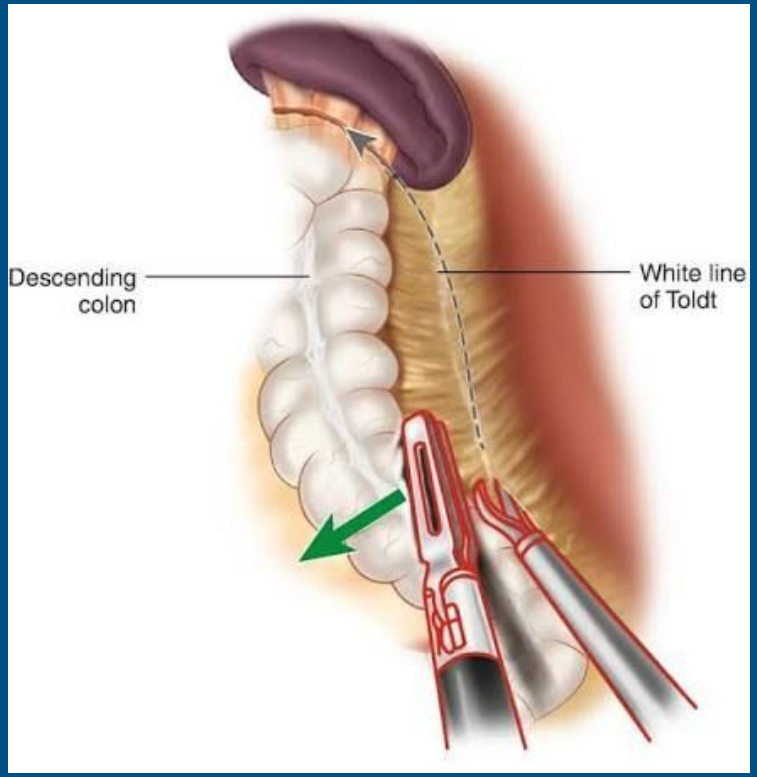
Primary resection with anastomosis

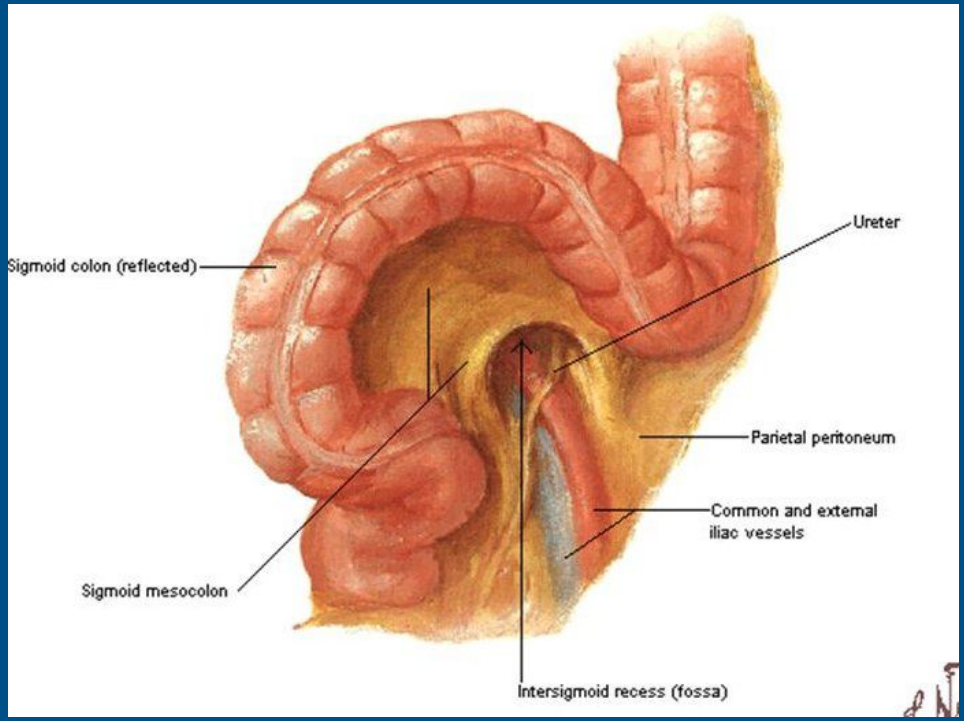


Hartmann's procedure

- Sigmoid colon resection with creation of stoma from the healthy descending colon, and then closure of the distal end of the bowel which is the top of the rectum with surgical staples or sutures
- Critical vascular landmarks: inferior mesenteric artery and vein
- Critical retroperitoneal landmarks: left ureter, gonadal vessels, hypogastric nerve
- Peritoneal landmarks: White line of Toldt, intersigmoid fossa
- Surgical resection margins: proximal - transition point to healthy bowel, typically in descending bowel, distal - rectosigmoid junction where taenia coli ends

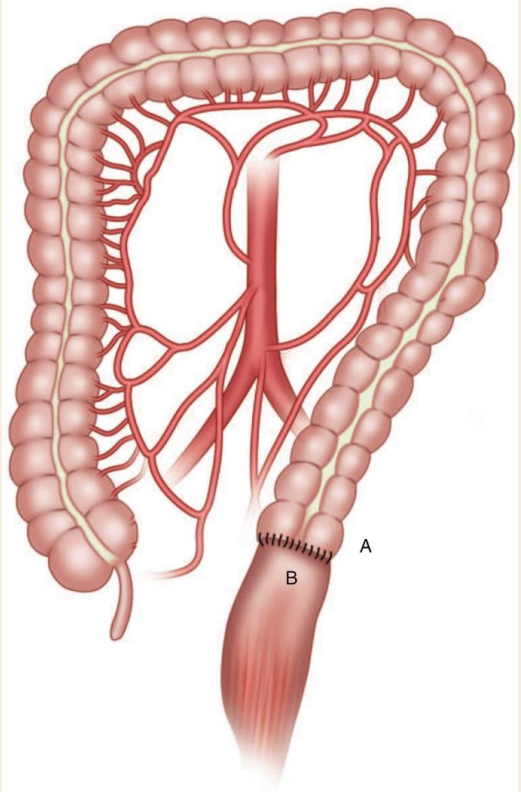



Descending colon
White line of Toldt


Sigmoid colon (reflected)
Ureter
Parietal peritoneum
Common and external iliac vessels
Sigmoid mesocolon
Intersigmoid recess (fossa)

Hartmann's reversal

1. Colostomy takedown
2. Lysis of adhesions
3. Mobilization of the left colon
4. Mobilization of rectum
5. Creation of colorectal anastomosis
6. Flexible sigmoidoscopy to test the anastomosis



Complications of Hartmann's procedure

- Surgical site infection
- Anastomotic leakage
- Evisceration
- Ostomy necrosis

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