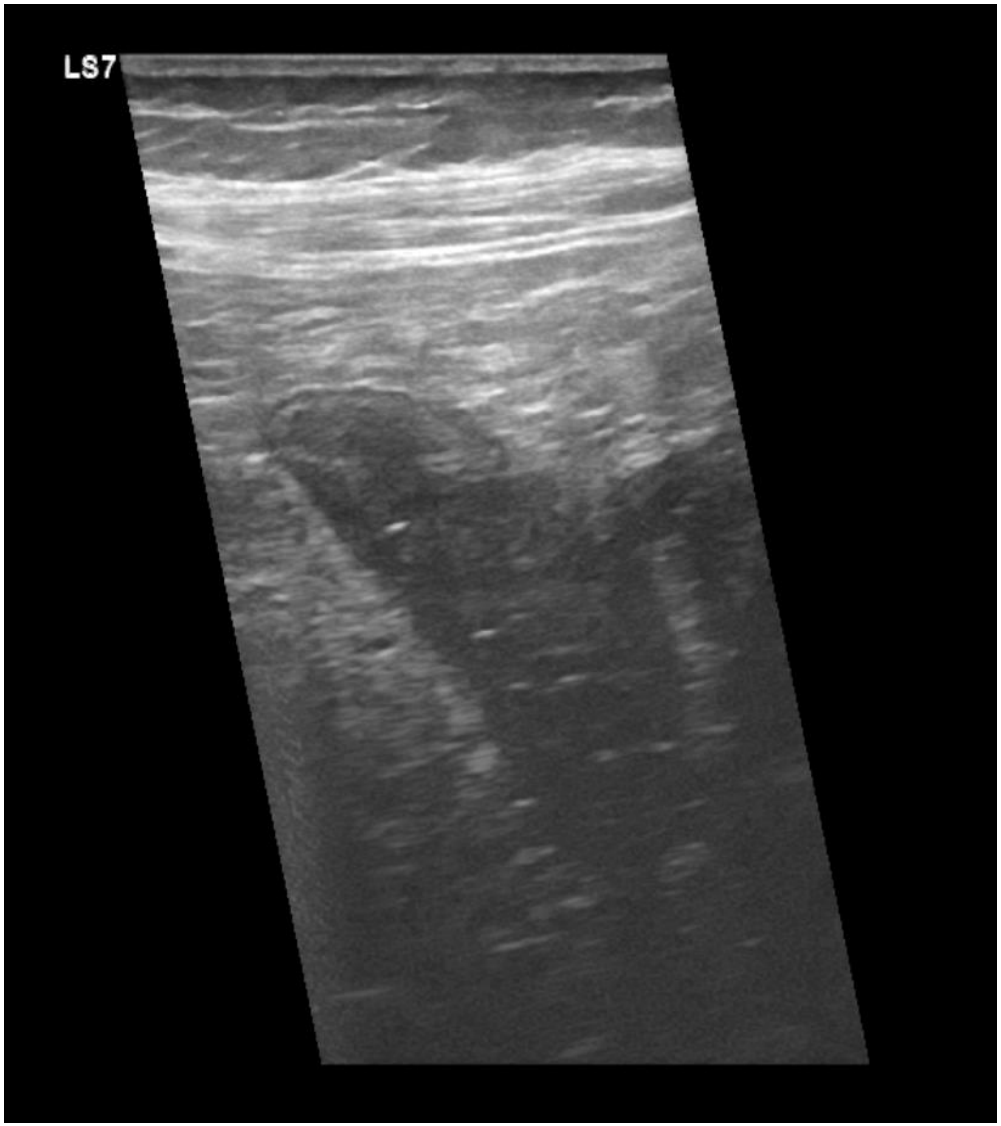
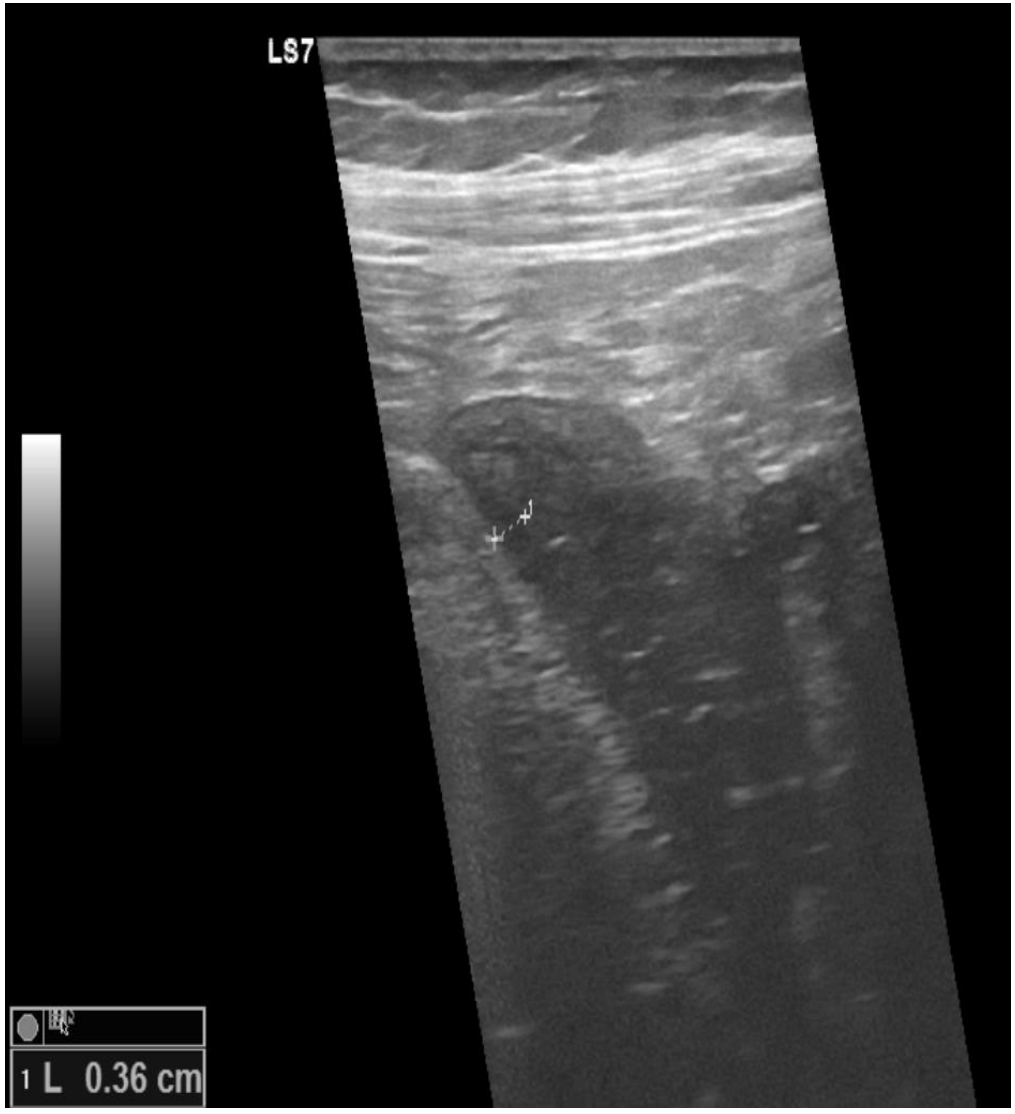
2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

CASE 2: (MRN: 10080000028148)

- A 41 year old female presented with loose stools (15-20 times per day), blood in stools, weight loss, urgency to defecation since 8-9 months.
- No co-morbidities.
- No prior h/o TB.
- O/E: tender anal canal, blood on PR examination
- Neutrophilia, Hb- 10.0 g/dl, CRP = 48 (> 5)
- Serology is negative.
- No improvement with antimicrobials.
- USG- abdomen and pelvis was advised (08/06/2022)


LS7


LS7
1 L 0.36 cm

IMPRESSION:

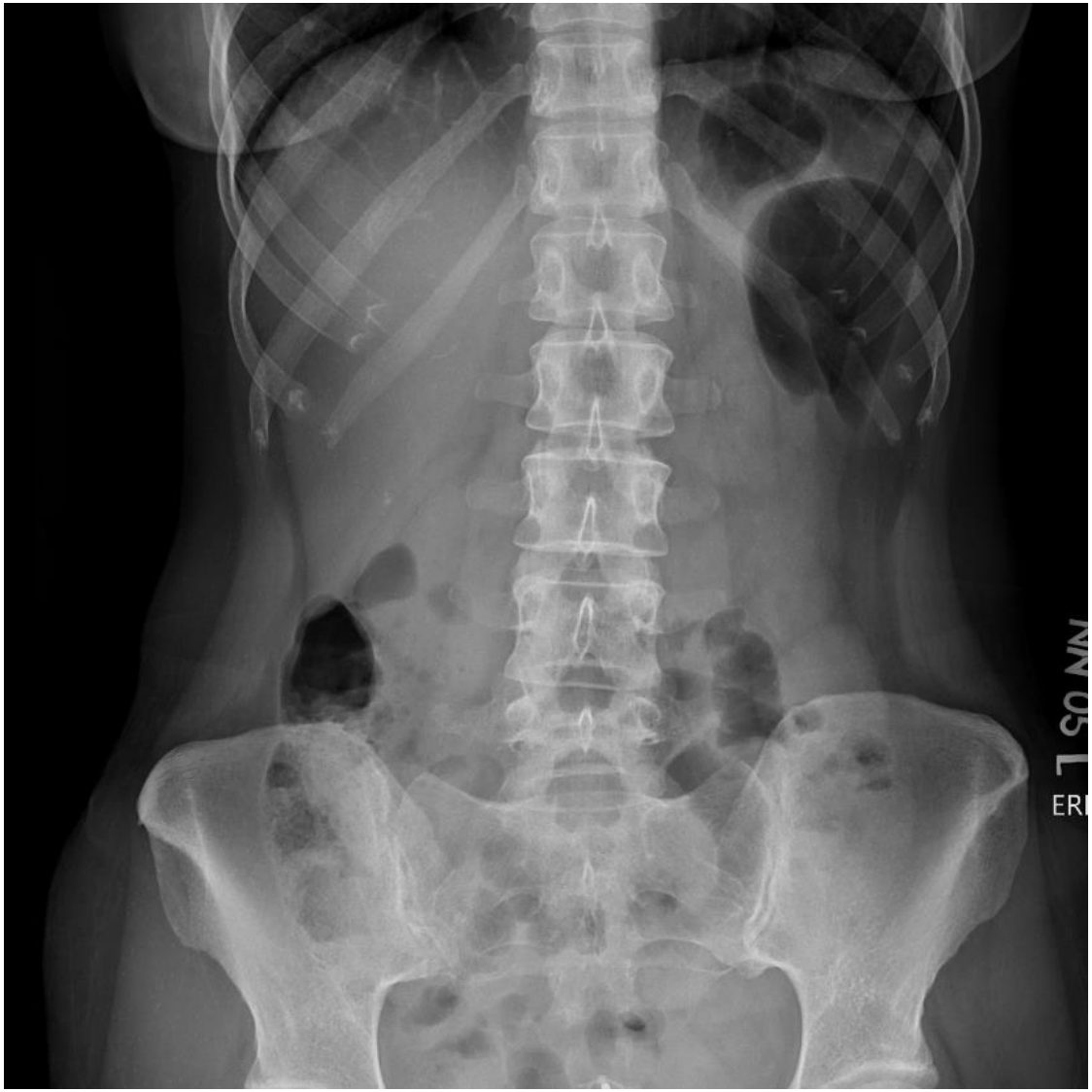
- **Tiny gallbladder calculi with sludge and no signs of cholecystitis.**
- **Mild diffuse hypoechoic wall thickening of visualized sigmoid colon,*of concern for Infective / inflammatory etiology.***

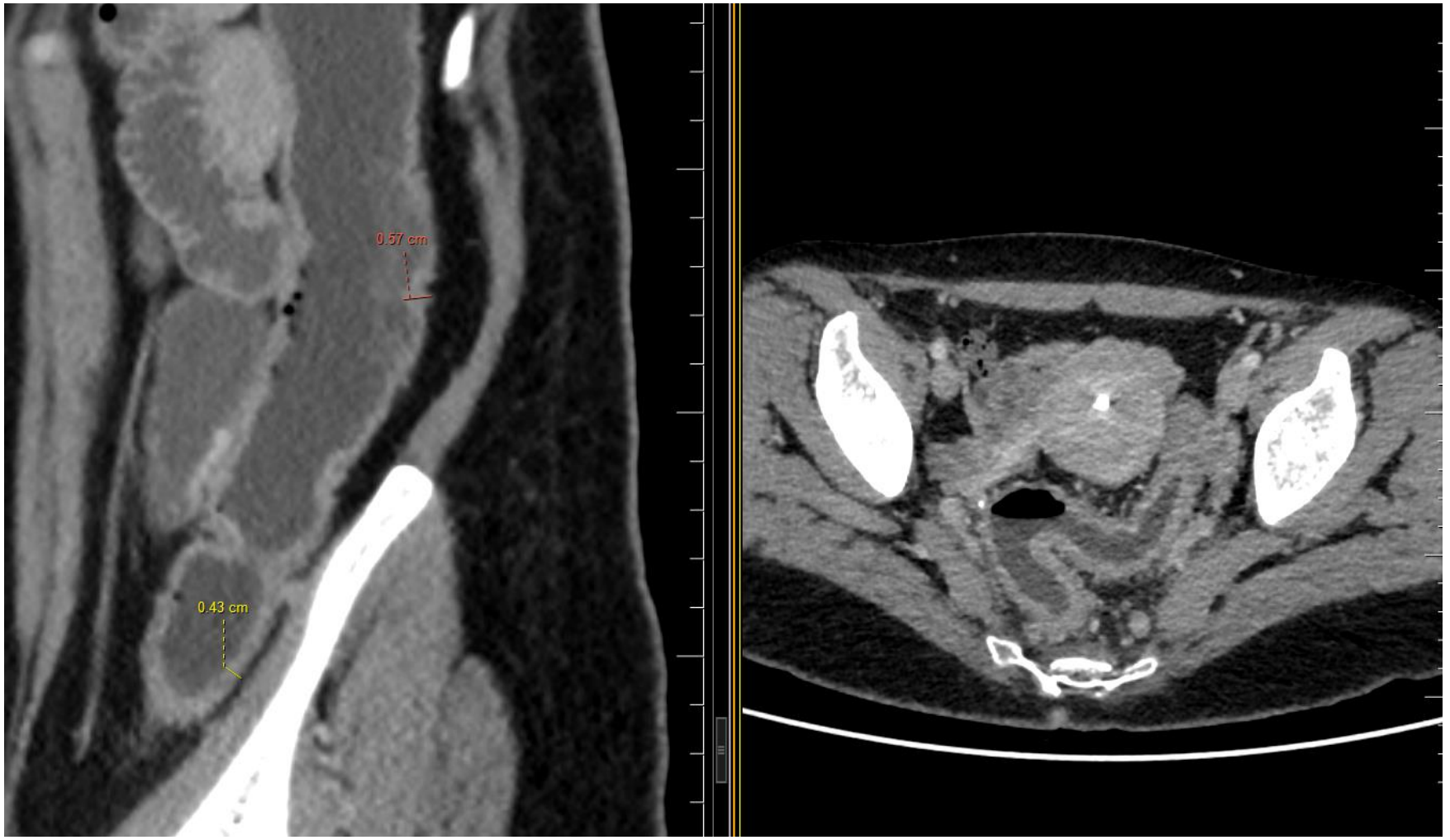
  Recommend clinical / CECT abdomen correlation.

Next, CECT abdomen was planned.

CT findings:

- There is long segment circumferential mild wall thickening with mucosal hyperenhancement of rectum, sigmoid colon, distal descending colon.
- Prominent vasa recta of rectum, sigmoid and descending colon.
- Loss of haustrations in descending colon.
- Few prominent lymph nodes in pre-sacral region.
- Normal opacification of SMA and IMA and its branches.
- No ascites
- No radio dense gallbladder calculi.




0.57 cm
0.43 cm

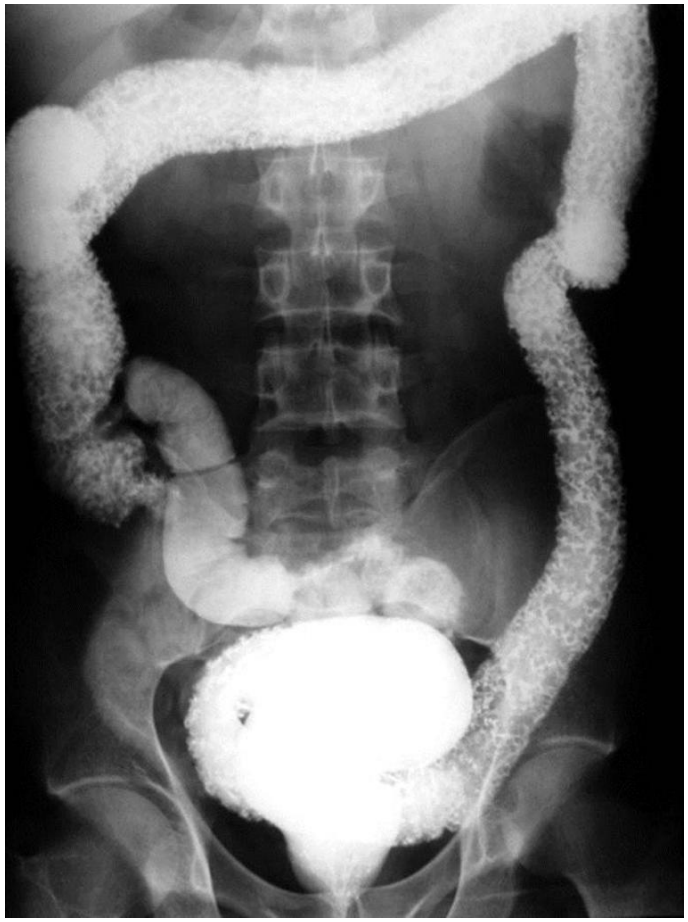
DIFFERENTIAL DIAGNOSES:

- IBD (ULCERATIVE COLITIS >> CROHN'S)
- INFECTIVE COLITIS

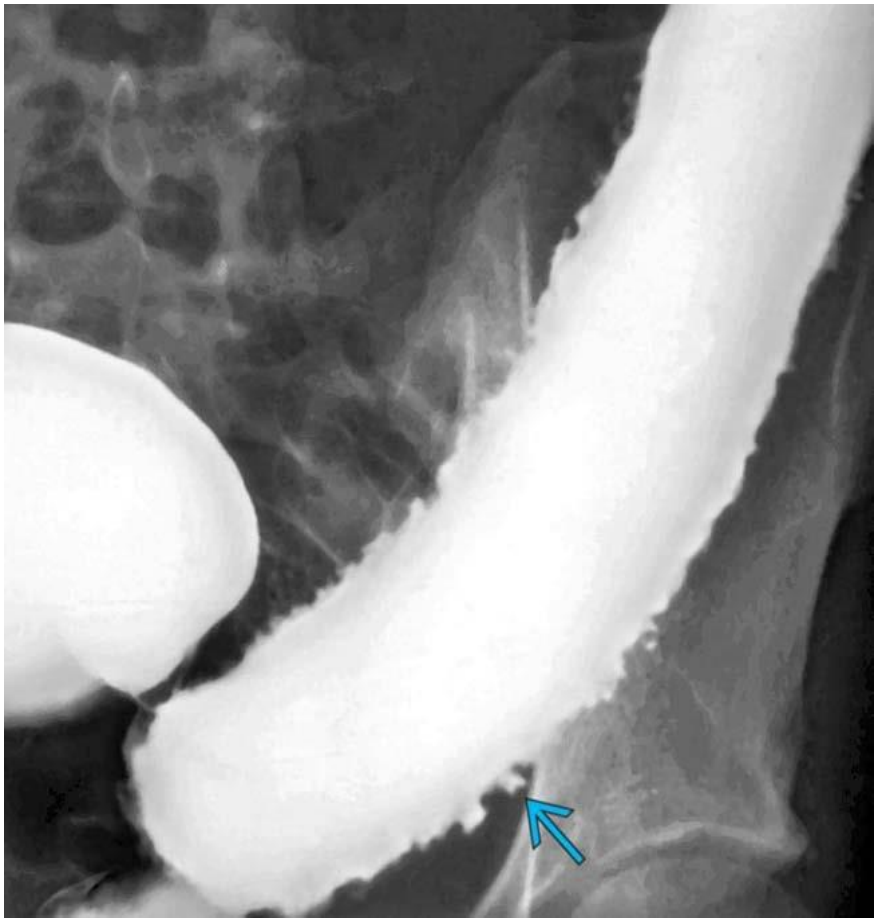
ULCERATIVE COLITIS

- Superficial inflammation involving colon
- Symmetric and contiguous involvement
- Begins in rectum with retrograde progression.
- Terminal ileum – backwash ileitis
- Age at onset: 20-40, another peak at 60-70 years.
- Extra-intestinal manifestations:
  - Fatty infiltration of the liver
  - Gallstones (28-34%)
  - Sclerosing cholangitis
  - Bile duct carcinoma
  - Urolithiasis: oxalate/uric acid stones
  - Migratory arthritis
  - Sacroiliitis and ankylosing spondylitis
  - Erythema nodosum and uveitis

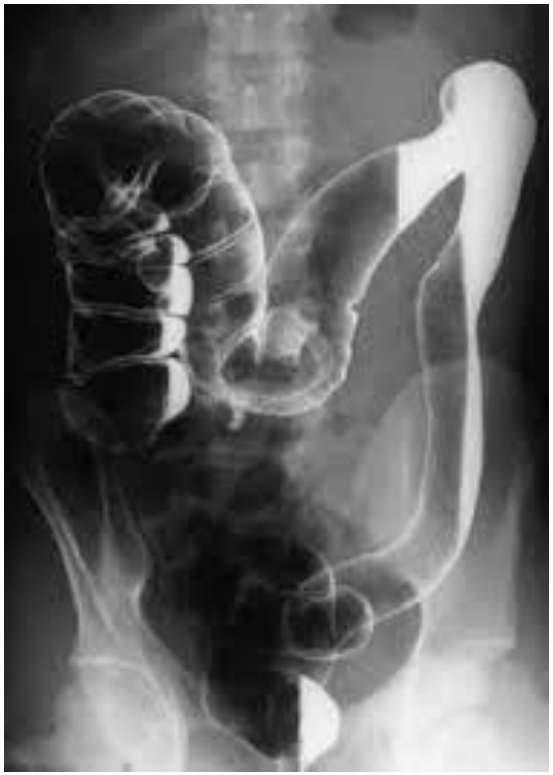
BARIUM



Diffuse granular appearance of mucosa – earliest finding

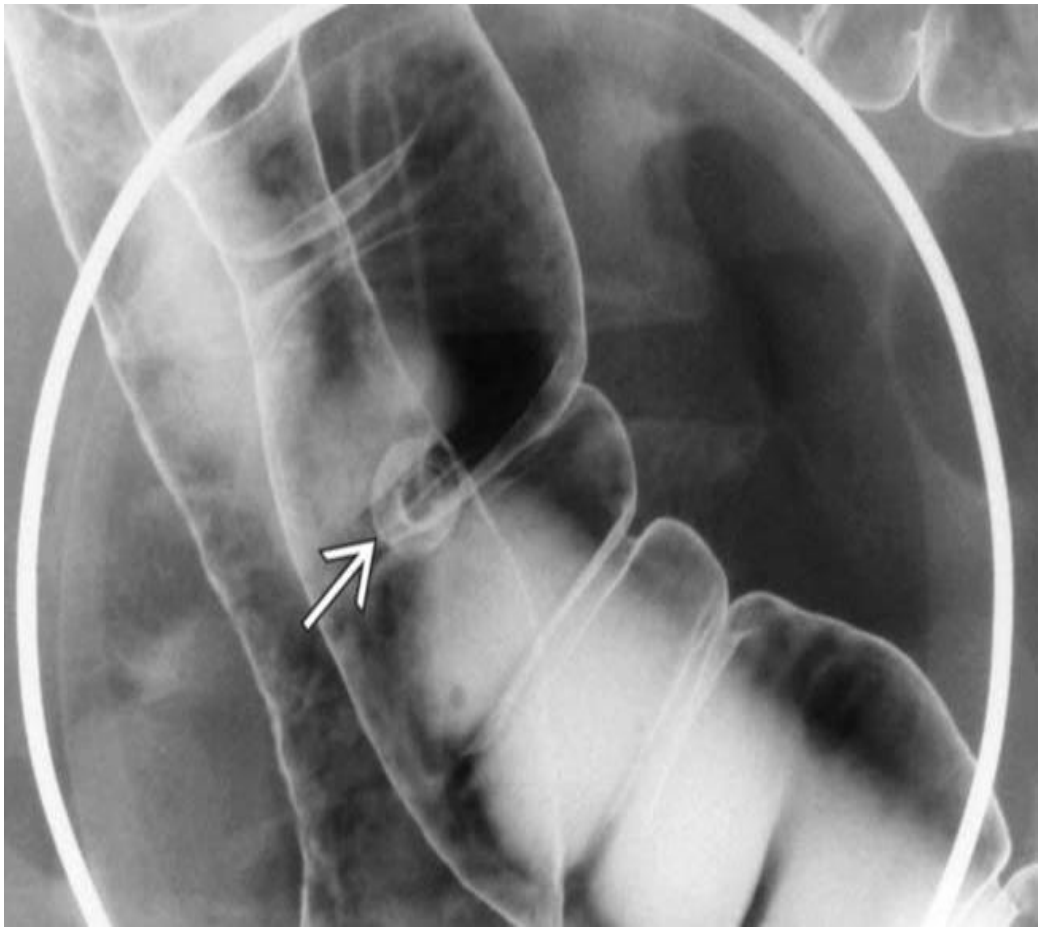


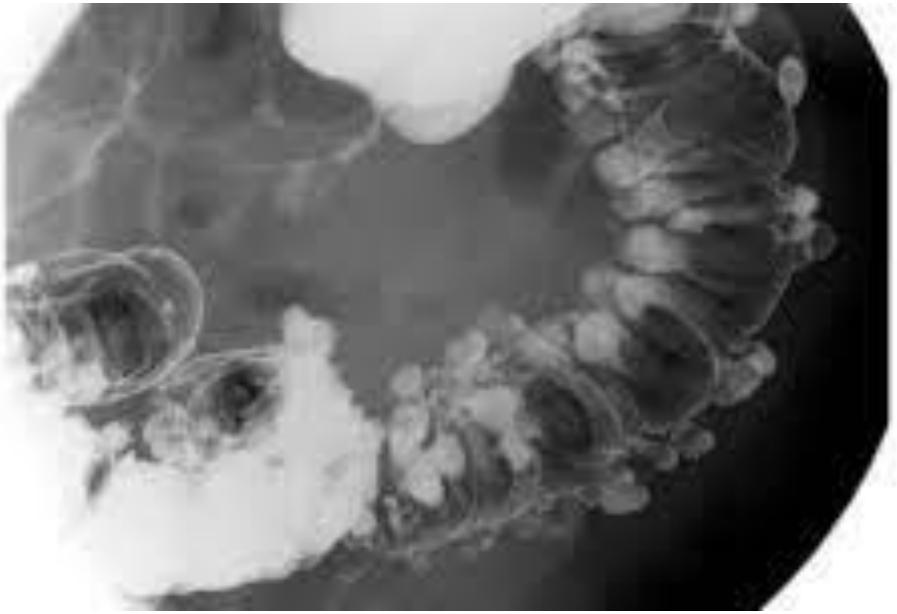
Collar-button ulcers (non-specific)- progression to submucosa



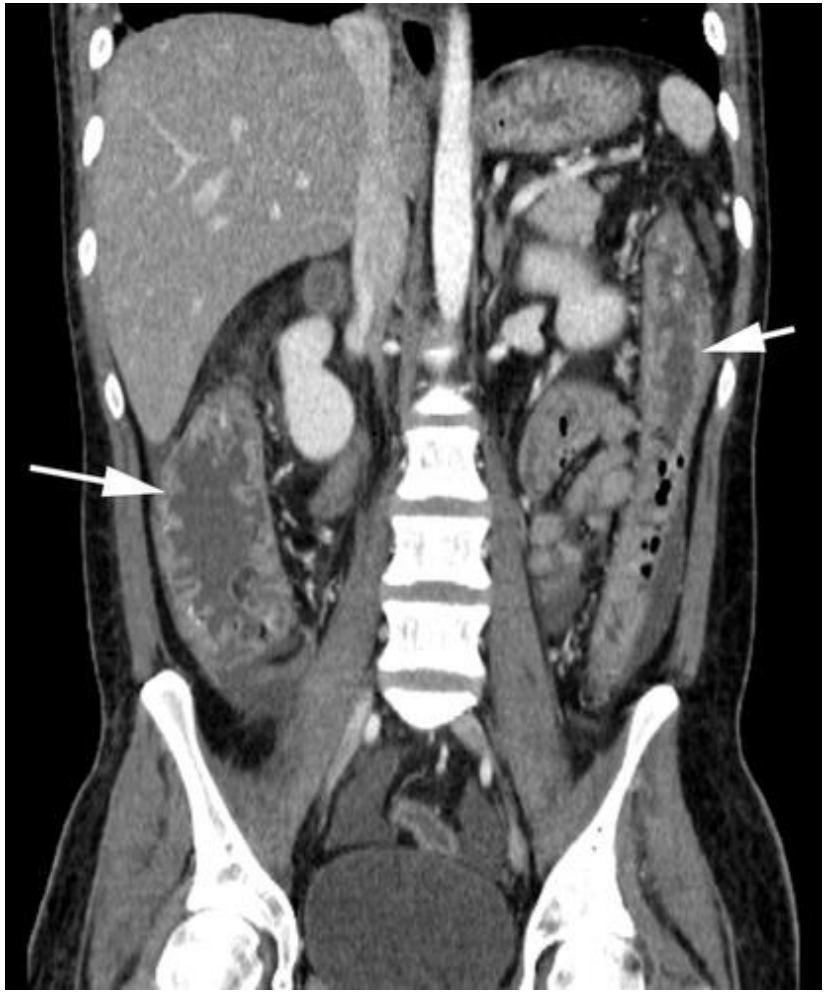
Lead- pipe colon

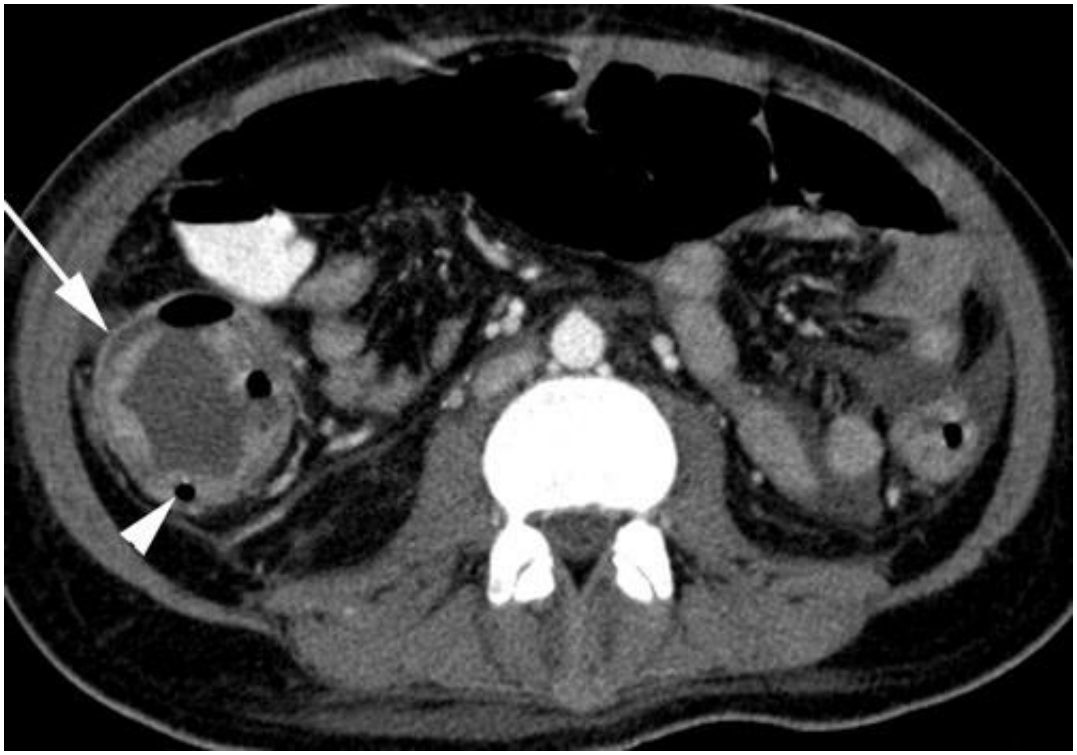
POLYP VS DIVERTICULA



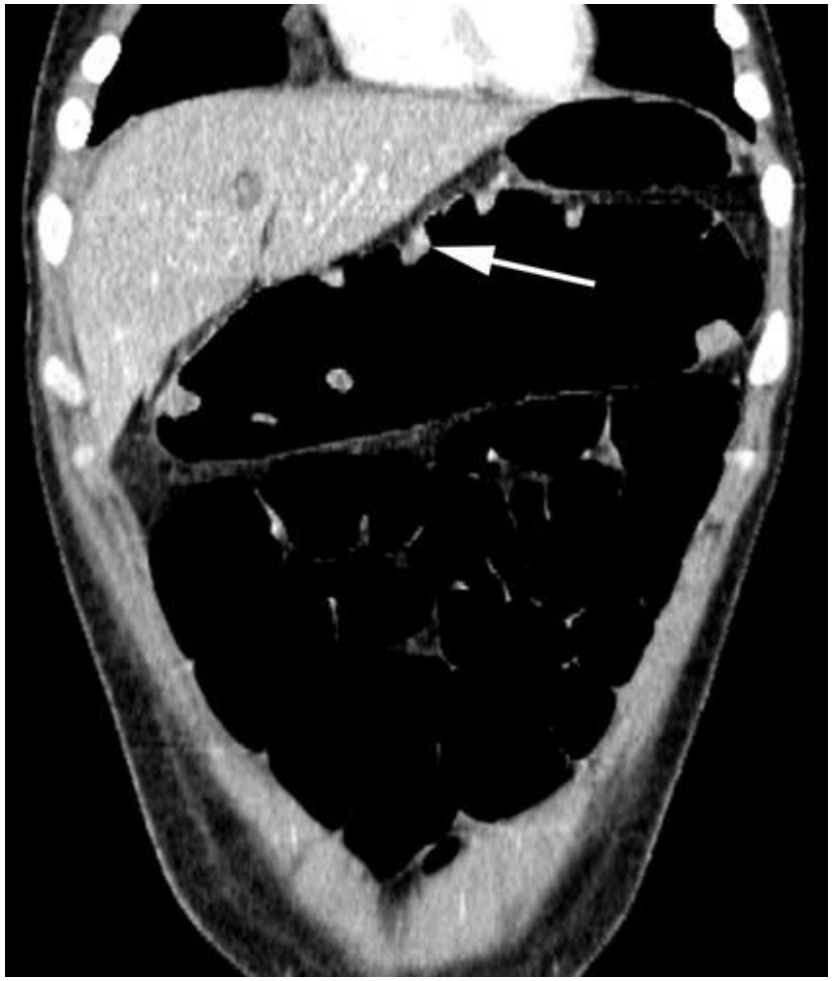


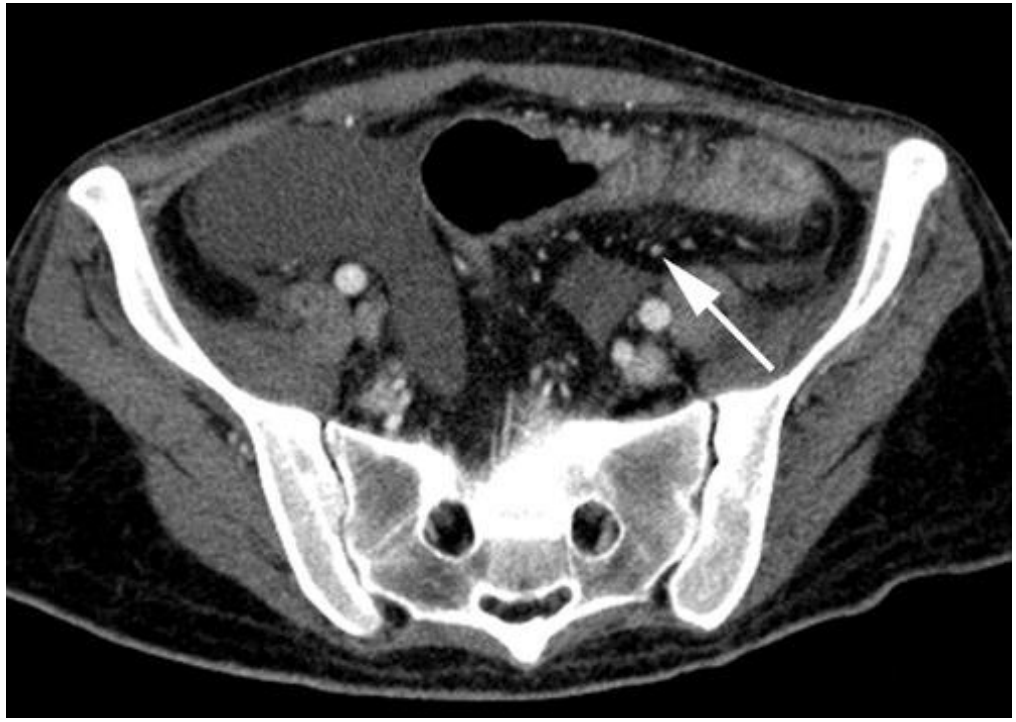
CT





- Thickening of wall and haustral folds
- Mucosal irregularity
- Mural stratification
- Pneumatosis

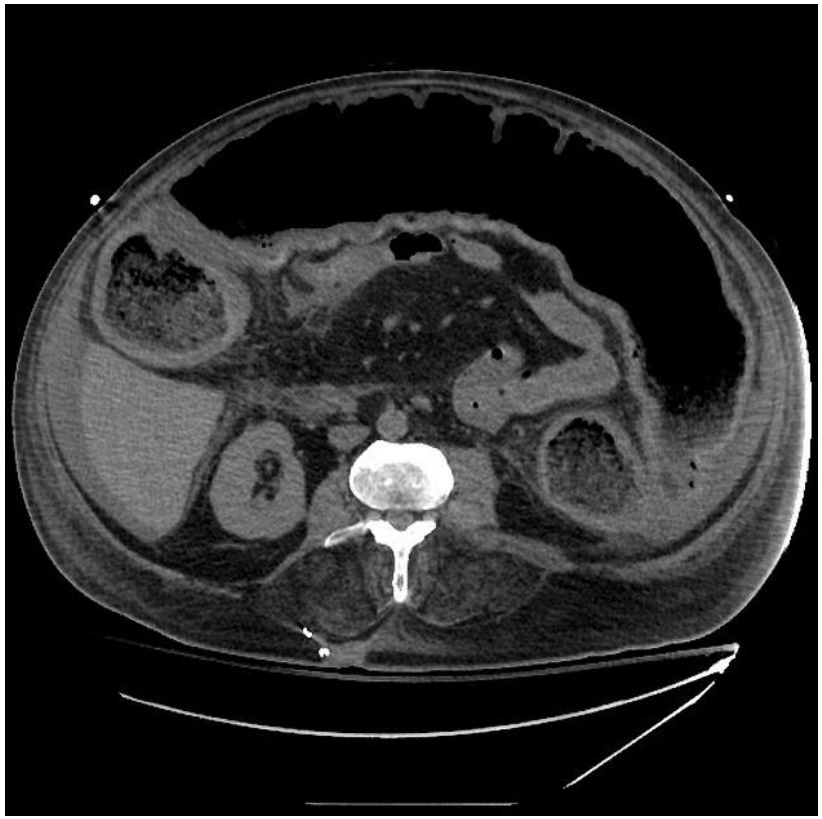




- Enhancing pseudopolyps
- Dilatation of peri-sigmoid vasculature
- Hyperattenuation of adjacent fat
- Ascites

COMPLICATIONS:

- Toxic megacolon: loss of neurogenic tone of colon – severe dilatation; risk of perforation
- Adenocarcinoma colon



MONTREAL CLASSIFICATION FOR UC

Extent / severity		Anatomy / definition
E1	Ulcerative proctitis	Involvement limited to the rectum (proximal extent of inflammation is distal to the rectosigmoid junction)
E2	Left-sided UC (distal UC)	Involvement limited to a portion of the colorectum distal to the splenic flexure
E3	Extensive UC (pancolitis)	Involvement extends proximal to the splenic flexure
S0	Clinical remission	Asymptomatic
S1	Mild UC	Passage of four or fewer stools / day (with or without blood), absence of any systemic illness and normal inflammatory markers (ESR)
S2	Moderate UC	Passage of more than four stools per day but with minimal signs of systemic toxicity
S3	Severe UC	Passage of at least six bloody stools daily, pulse rate of at least 90 beats/min, temperature of at least 37.5°C, hemoglobin of less than 10.5 g /100 mL and ESR of at least 30 mm/h

ESR, erythrocyte sedimentation rate

MAYO SCORE FOR ULCERATIVE COLITIS

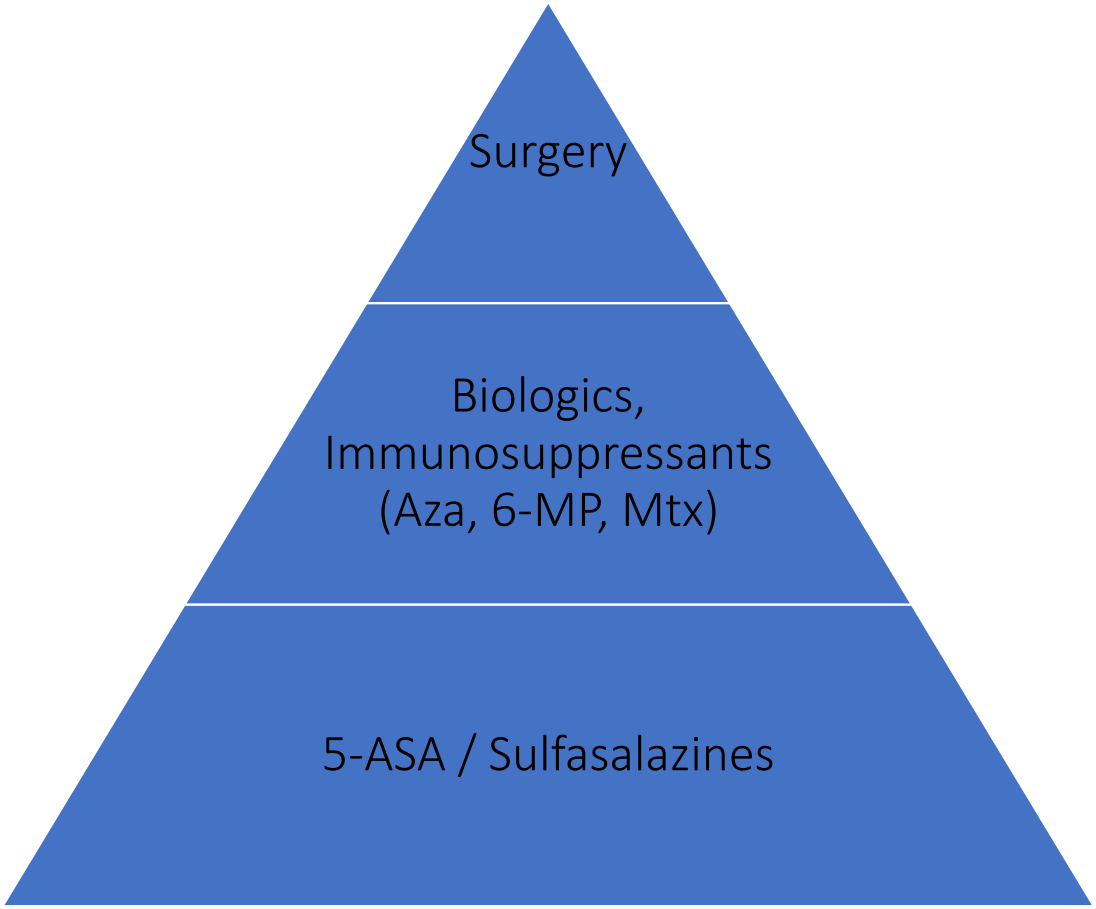
Parameters	Subscore, 0–3
Stool frequency	0 = Normal number of stools for this patient
	1 = 1–2 stools more than normal
	2 = 3–4 stools more than normal
	3 = 5 or more stools more than normal
Rectal bleeding	0 = No blood seen
	1 = Streaks of blood with stool less than one-half of the time
	2 = Obvious blood with stool most of the time
	3 = Blood alone passes
Findings on endoscopy	0 = Normal or inactive disease
	1 = Mild disease (erythema, decreased vascular pattern, and mild friability)
	2 = Moderate disease (marked erythema, lack of vascular pattern, friability, and erosions)
	3 = Severe disease (spontaneous bleeding and ulcerations)
Physician's global assessment	0 = Normal
	1 = Mild disease
	2 = Moderate disease
	3 = Severe disease

doi:10.1371/journal.pone.0124211.t001

TREATMENT

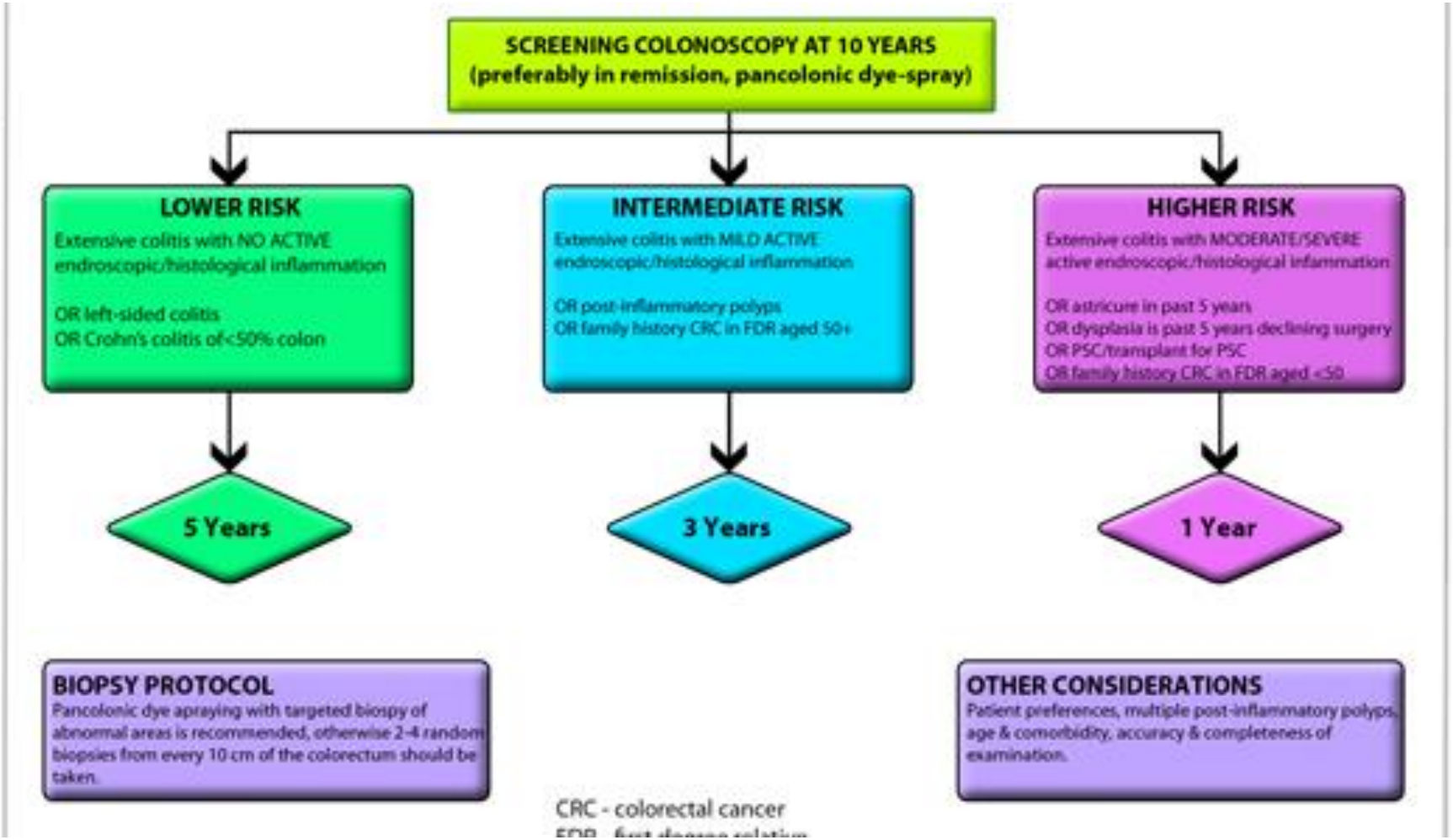
- Step-up approach

- Biologics:
  - Infliximab
  - Adalimumab
  - Certolizumab
  - Vedolizumab



INDICATIONS FOR SURGERY IN UC

- Intractable disease
- Fulminant disease
- Toxic megacolon
- Colonic perforation
- Massive colonic hemorrhage
- Extracolonic disease
- Colonic obstruction
- Colon cancer prophylaxis
- Colon dysplasia or cancer


SCREENING COLONOSCOPY AT 10 YEARS
(preferably in remission, pancolonic dye-spray)
LOWER RISK
Extensive colitis with NO ACTIVE endroscopic/histological inflammation
OR left-sided colitis
OR Crohn's colitis of<50% colon
INTERMEDIATE RISK
Extensive colitis with MILD ACTIVE endroscopic/histological inflammation
OR post-inflammatory polyps
OR family history CRC in FDR aged 50+
HIGHER RISK
Extensive colitis with MODERATE/SEVERE active endroscopic/histological inflammation
OR astricure in past 5 years
OR dysplasia is past 5 years declining surgery
OR PSC/transplant for PSC
OR family history CRC in FDR aged <50
5 Years
3 Years
1 Year
BIOPSY PROTOCOL
Pancolonic dye apraying with targeted biospy of abnormal areas is recommended, otherwise 2-4 random biopsies from every 10 cm of the colorectum should be taken.
OTHER CONSIDERATIONS
Patient preferences, multiple post-inflammatory polyps, age & comorbidity, accuracy & completeness of examination.
CRC - colorectal cancer

SIGMOIDOSCOPY REPORT: 19.12.2022

Findings: short diaphragm stricture seen 5cm from verge scope crossed without resistance. The mucosa shows scars with pseudopolyps- significantly better than last assessment. At 20cm another short diaphragm like stricture noted- easily passed by scope. Above 22cm mucosa is normal.

Impression: Quiescent colitis with scars in distal sigmoid and rectum - significantly better than prior examination short benign looking strictures at 5cm and 20cm

DEPARTMENT OF LABORATORY MEDICINE

Final Report

Patient Name : **Mrs Deepti Kaushal** MRN : **10080000028148** Gender/Age : **FEMALE , 42y (01/02/1981)**

Collected On : **16/02/2023 02:59 PM** Received On : **16/02/2023 04:34 PM** Reported On : **22/02/2023 09:12 AM**

Barcode : **062302160021** Specimen : **Body Tissue** Consultant : **Dr. Rangarajan Kasturi(MEDICAL GASTROENTEROLOGY)**

Sample adequacy : **Satisfactory** Visit No : **OP-035** Patient Mobile No : **8197238238**

HISTOPATHOLOGY

REGULAR HP SMALL SPECIMEN

CASE No.	H-1539/2023
CLINICAL DETAILS	Previous diagnosis of IBD - UC also had CMV colitis. Currently on Vedolizumab. Flare. Severely inflamed mucosa with ulcers. Clinical Diagnosis - IBD, ? CMV. ? Re classified as CD a stricturing.
SPECIMEN DETAILS	Sigmoid biopsies.
GROSS EXAMINATION	Eight tissue fragments range from 0.1 cm to 0.4 cm in maximum size. Entire tissue processed in one capsule. Grossed by Dr. Shaesta N Z.
MICROSCOPY/IMPRESSION	These large bowel mucosal fragments show diffuse sparse to moderate chronic inflammatory cells with focally few neutrophils in the lamina propria. Few crypt abscesses and rare foci of cryptitis are seen. There is focal erosion/ulceration with fibrinopurulent exudate. Focally there is some variation in crypt size and shape. Mucin depletion and regenerative epithelial changes are seen. There is no dysplasia or malignancy in the sections. COMMENT - Sigmoid colon biopsies show features of active chronic colitis which would be consistent with the clinical history of inflammatory bowel disease (favouring ulcerative colitis). No definite CMV inclusions are seen, but CMV immunostain is advised if there is a clinical suspicion of CMV colitis.

--End of Report-

PATIENT MANAGEMENT:

- Mesalazine 1 gm sachets thrice daily
- Azathioprine
- Hydrocortisone enema
- Lactobacillus capsule
- Nutritional supplements
- Surgical option: subtotal colectomy.
- Verdolizumab

- Followed up by sigmoidoscopy annually.

CROHN'S DISEASE

- Transmural granulomatous inflammation of bowel wall.
- Can affect any part of GIT from oral cavity to anus.
- Discontinuous involvement of bowel
- Complication: fistula, abscess
- Imaging differentiates active inflammatory Crohn's from fibrostenotic Crohn's. Active CD is medically managed whereas fibrostenotic CD needs surgery.

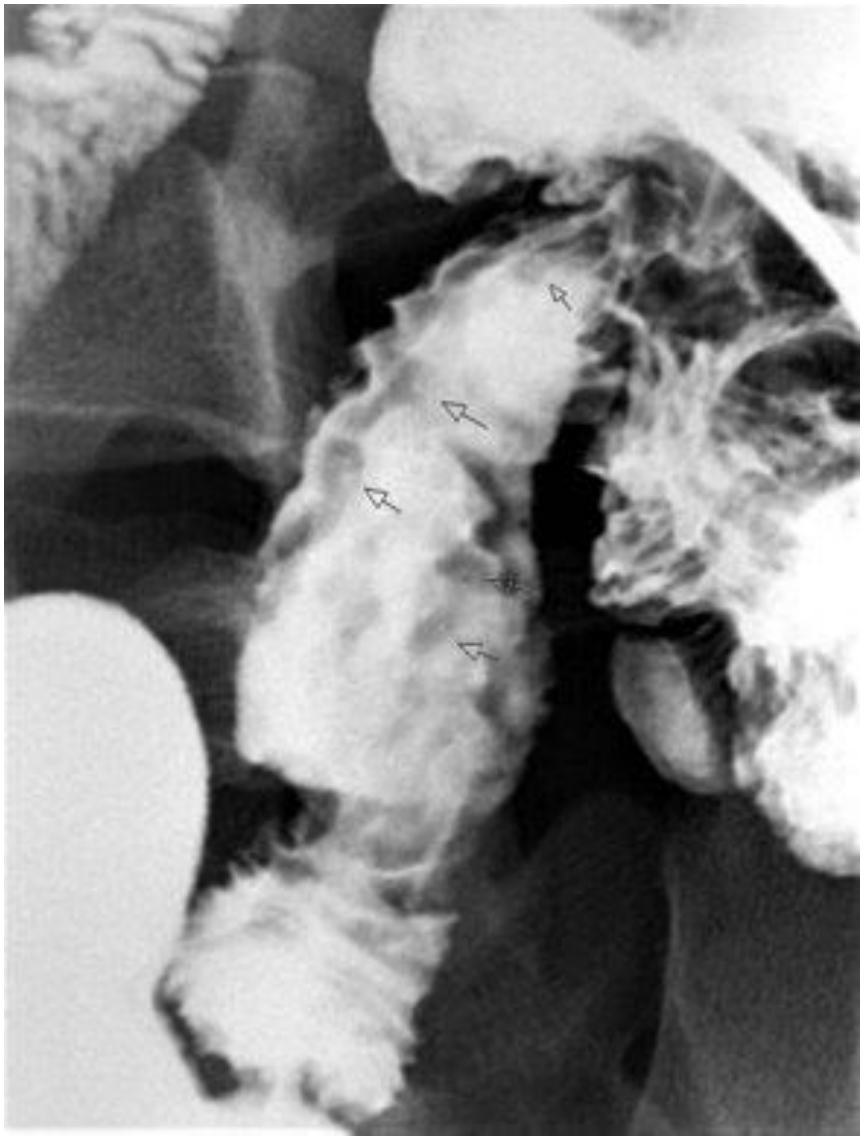
MONTREAL CLASSIFICATION

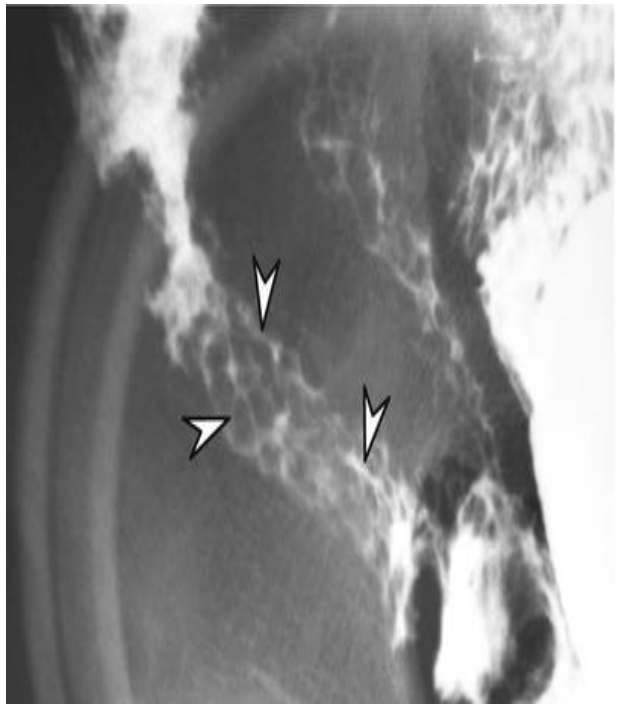
Variable	
Age at diagnosis (yr)	A1, ≤16
	A2, 17–39
	A3, ≥40
Location	L1, ileal
	L2, colonic
	L3, ileocolonic
	L4, isolated upper disease[a]
Behavior	B1, non-stricturing, non-penetrating
	B2, stricturing
	B3, penetrating
	p, perianal disease modifier[b]

[a]L4 is a modifier that can be added to L1–L3 when concomitant upper gastrointestinal disease is present.
[b]p is added to B1–B3 when concomitant perianal disease is present.

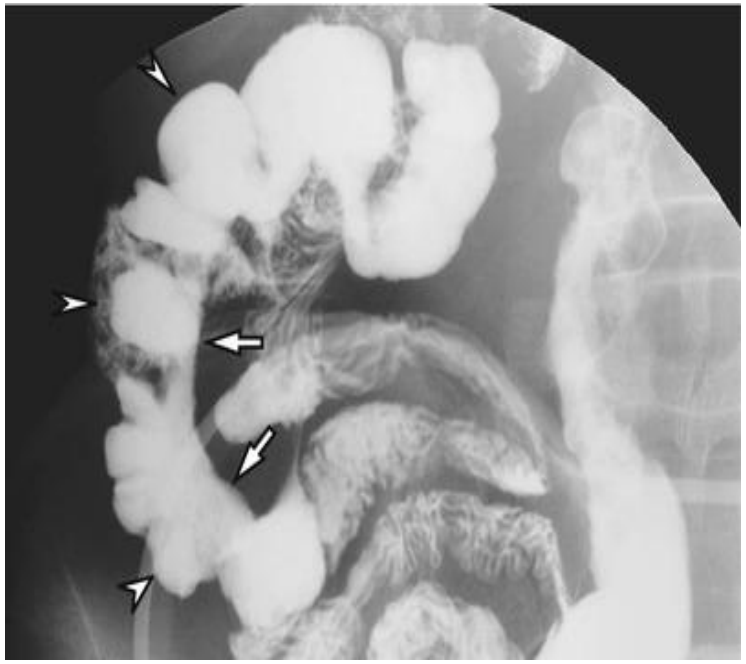
BARIUM

Aphthous ulcers: in active phase of disease as punctate collection of barium with surrounding radiolucent halo due to mucosal edema.

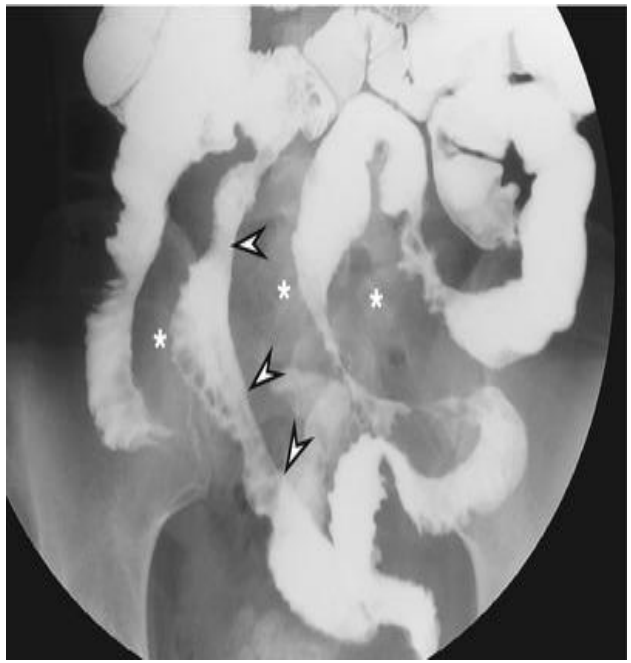




With progression of disease, the aphthous ulcers coalesce and form deep linear ulcerations separating out edematous mucosa – cobblestoning.



Straightening and shortening of mesenteric border with pseudosacculations in anti-mesenteric border.



Widely separated loops of bowel due to fibrofatty proliferation (asterisk)

CT/MR

- Bowel wall thickening: circumferential, symmetrical
- Submucosal edema: hypo on CTE, T2 hyper on MRE
- Bowel wall contrast enhancement: stratified / mucosal / homogenous
- Submucosal fat infiltration: hypo on CTE and loose signal on fat sat.
- Fibrosis: hypo on T1/T2. Homogenous enhancement in delayed.
- Skip lesions: with normal healthy bowel in between
- Stenosis of bowel wall
- Comb sign: prominent vasa recta due to increased mesenteric vascularity.
- Mesenteric edema, Ulcerations
- Abnormal motility
- Abscess, sinus, fistula
- Pseudodiverticulum, Fibrofatty proliferation
- Reactive lymphadenopathy

Active Inflammatory vs Fibro-stenotic CD

ACTIVE DISEASE	FIBROTIC STAGE	NON-SPECIFIC
Submucosal edema	Homogenous wall enhancement	Bowel wall thickening
Early hyperenhancement	Submucosal fatty infiltration	Skip lesions
Stratified wall enhancement	Fibrosis	Bowel stenosis
Comb sign	Pseudodiverticulum	Reactive lymphadenopathy
Mesenteric edema	Fibrofatty infiltration	
Ulcerations		
Abnormal motility		
Abscess, sinus, fistula		

CROHN'S VS UC

FEATURES	CROHN'S	ULCERATIVE COLITIS
Bowel involved	Small bowel (70-80%), large bowel (15-20%)	Rectal (85%), pancolitis
Distribution	Skip lesions typical	Continuous involvement
Gender	No gender preference	Male predilection
Colonic wall		Fat halo sign
Peri-anal involvement	Ischiorectal / perianal fat stranding, fistula/ sinus tract	Infrequent
Mesenteric creeping fat	common	uncommon
Abscess formation	common	rare
Widening of pre-scaral space		Yes