Inflammatory Bowel Disease

Endoscopic Assessment

12th Annual Endoscopy Skills Day

Jan 2024

UNIVERSITY OF ALBERTA

ASEP

Endo Skills 2024:
Presenter Disclosure

- **Presenter: Karen Wong**
- **Relationships that may introduce potential conflict of interest:**
  - **Grants/Research Support:**
  - **Speakers Bureau/Honoraria: Janssen, Abbvie**
  - **Consulting Fees:**
  - **Other:**

Objectives:

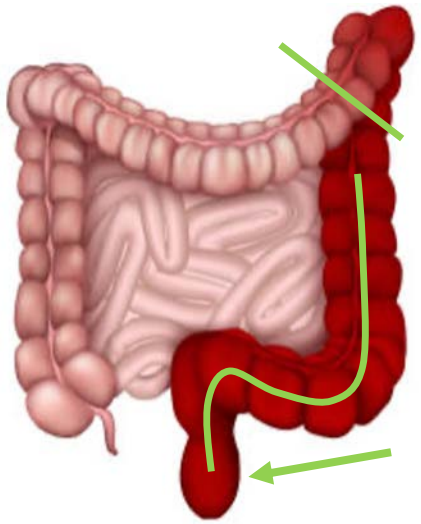
- Tips to differentiate endoscopically between CD and UC
- General approach to appropriate biopsies at index colonoscopy
- Briefly review endoscopic nomenclature / classification of IBD
- Review of surveillance of IBD patients and use of chromoendoscopy for IBD surveillance.

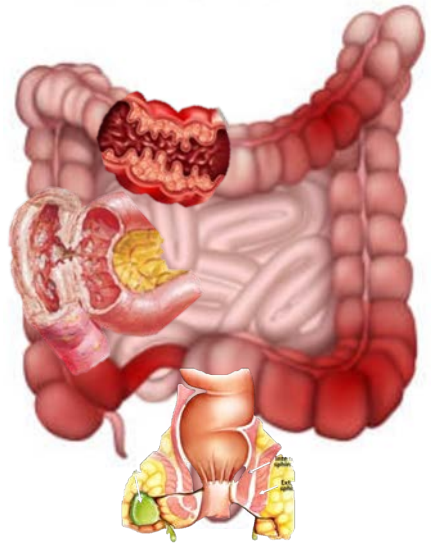
Statement 1.1. ECCO-ESGAR Diagnostics GL [2018]

A single reference standard for the diagnosis of Crohn's disease [CD] or ulcerative colitis [UC] does not exist. The diagnosis of CD or UC is based on a combination of clini onal imag

Statement 1.7. ECCO-ESGAR Diagnostics GL [2018]

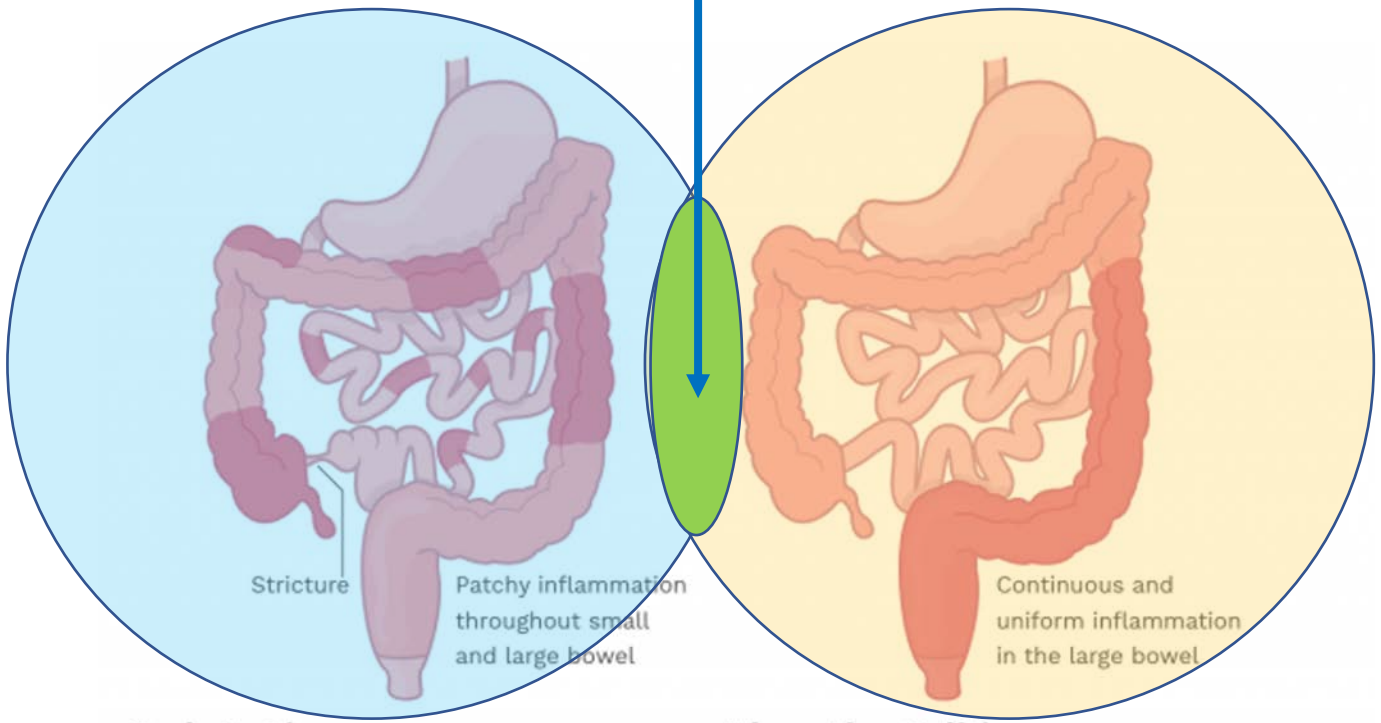
No endoscopic feature is specific for CD or UC. The most useful endoscopic features of UC are considered to be continuous and confluent colonic involvement with clear demarcation of inflammation and rectal involvement [EL2]. The most useful endoscopic features in CD are discontinuous lesions, presence of strictures and fistulae, and perianal involvement [EL2]





ECCO-ESGAR Guidelines 2018

Indeterminate Colitis



Crohn's Disease

Age of onset: 15–35 years and 55–70 years

Symptoms: Depends on location of disease. May include abdominal pain, diarrhea, weight loss and fatigue.

Bloody stool: Variable

Malnutrition: Common

Ulcerative Colitis

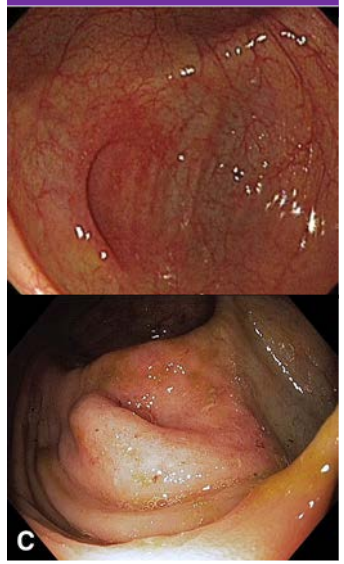
Age of onset: 15–35 years and 55–70 years

Symptoms: May include stool urgency, fatigue, increased bowel movements, mucous in stool, nocturnal bowel movements and abdominal pain.

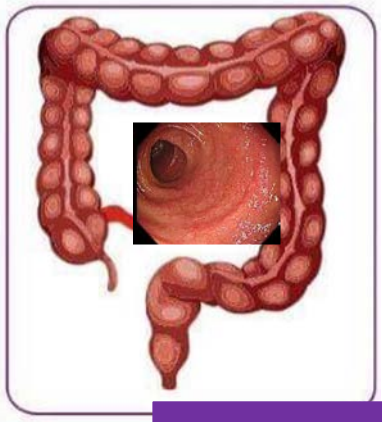
Bloody stool: Common

Malnutrition: Less common

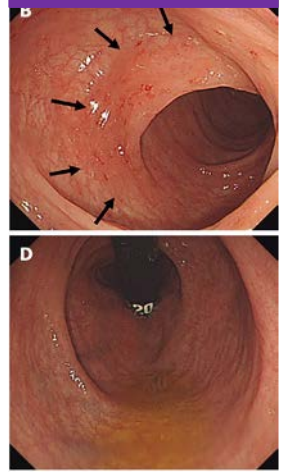
Cecal Patch



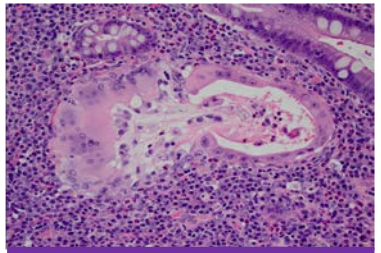
Backwash Ileitis



Rectal Sparing



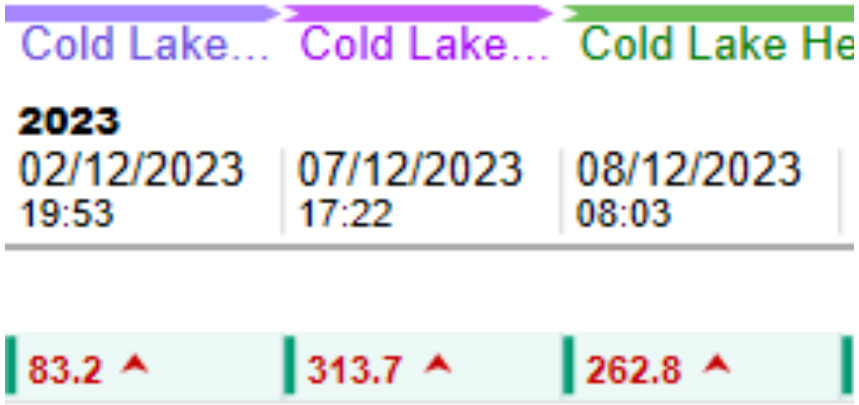
Crypt Rupture Granulomas

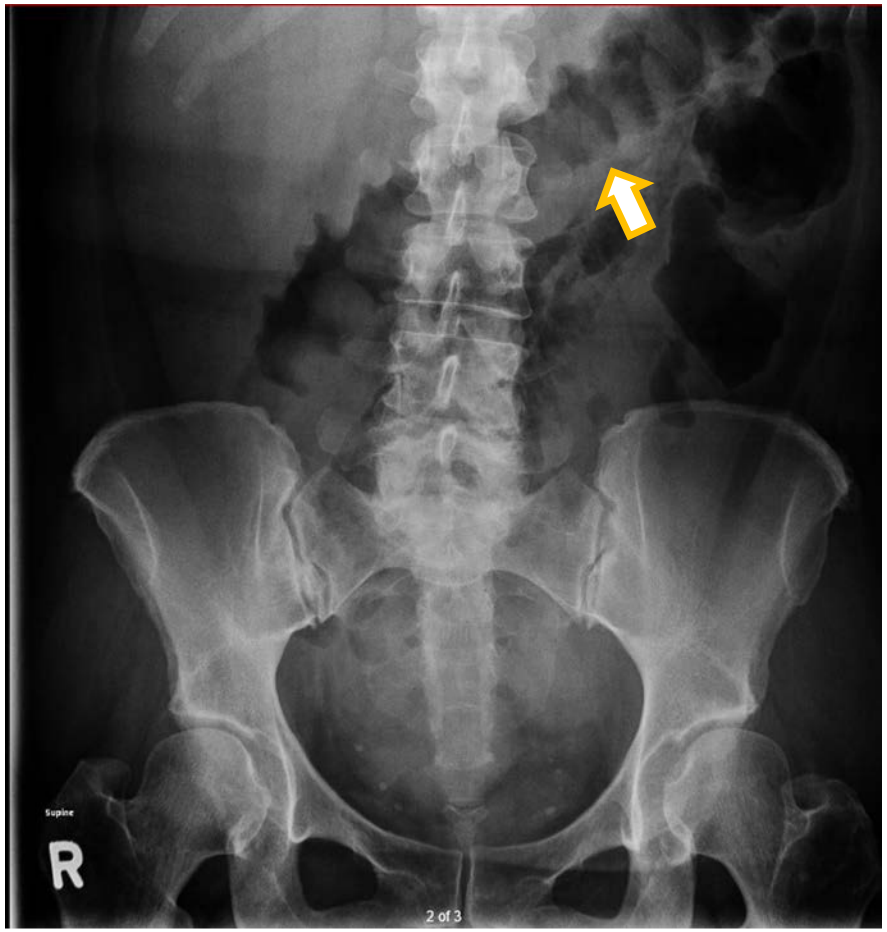


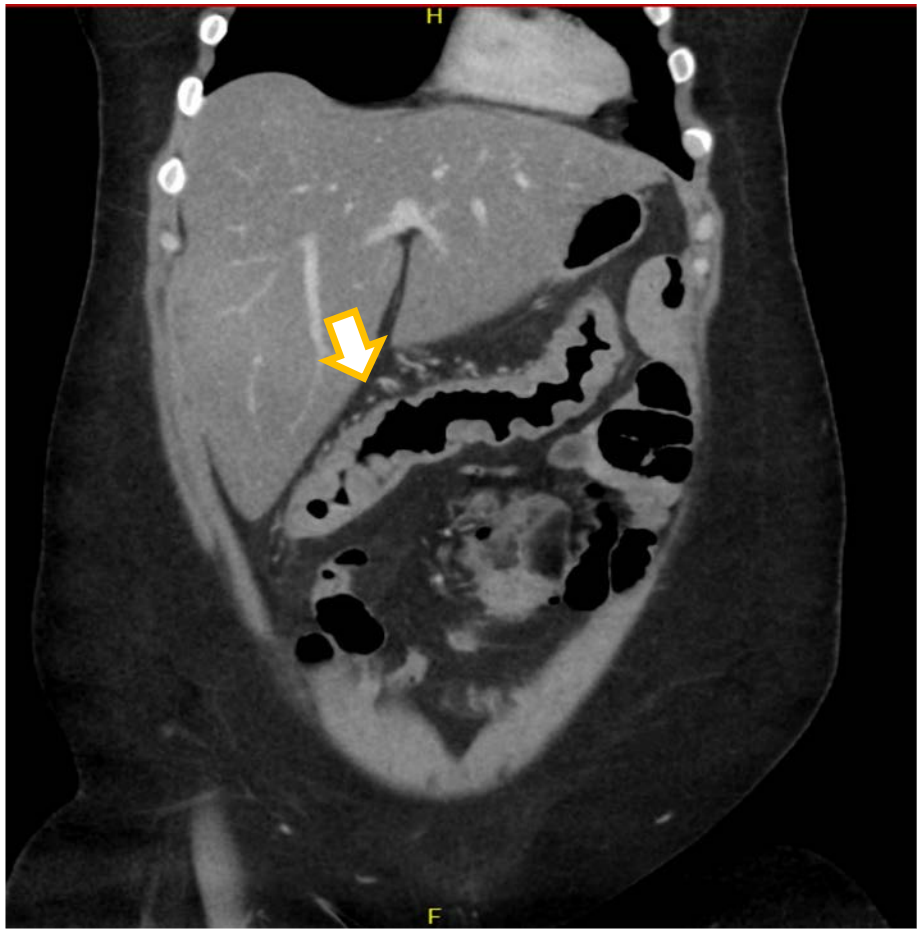
Crohn's and Colitis Foundation

Case

- 46 yo female – Cold Lake
  - Dec 2nd - ER
  - Dec 7th - admitted – 4-week history of diarrhea – bloody one week ago
- Stool cultures negative
- Hypokalemic – K+ 2.6
- Empirically started on ciprofloxaxin and metronidazole
- Aunt with IBD



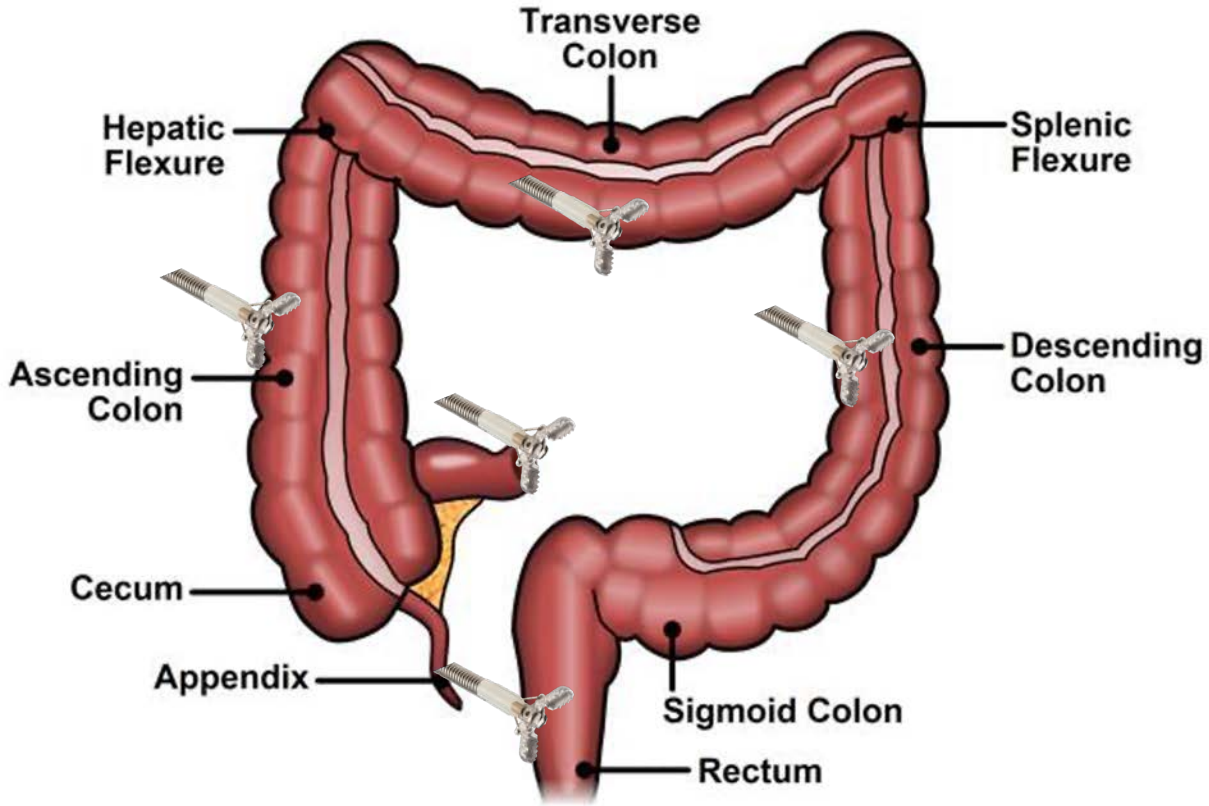




Uncomplicated pancolitis. Differential includes infectious, inflammatory (especially IBD) or ischemic etiologies, favor the former two given age and absence of significant vascular disease

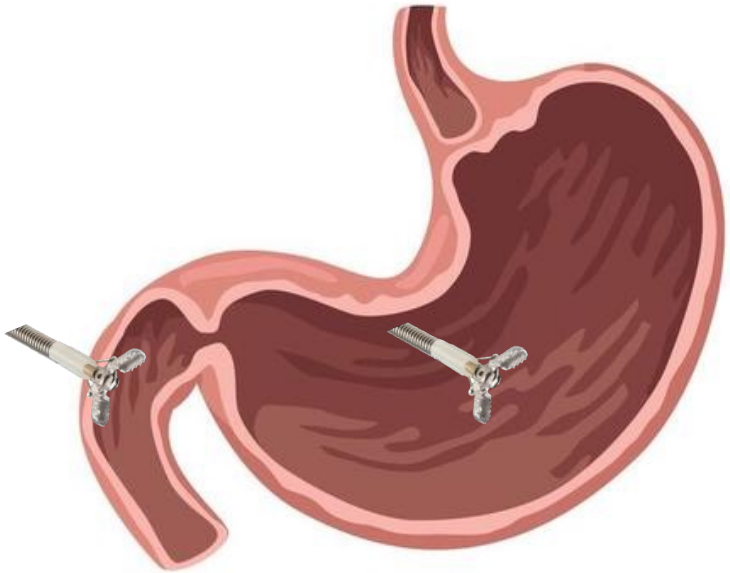
Statement 1.6. ECCO-ESGAR Diagnostics GL [2018]

For suspected IBD, ileocolonoscopy with biopsies from inflamed and uninflamed segments are required to establish diagnosis [EL1], except in the case of acute severe colitis in which sigmoidoscopy may be sufficient [EL3]



Statement 1.9. ECCO-ESGAR Diagnostics GL [2018]

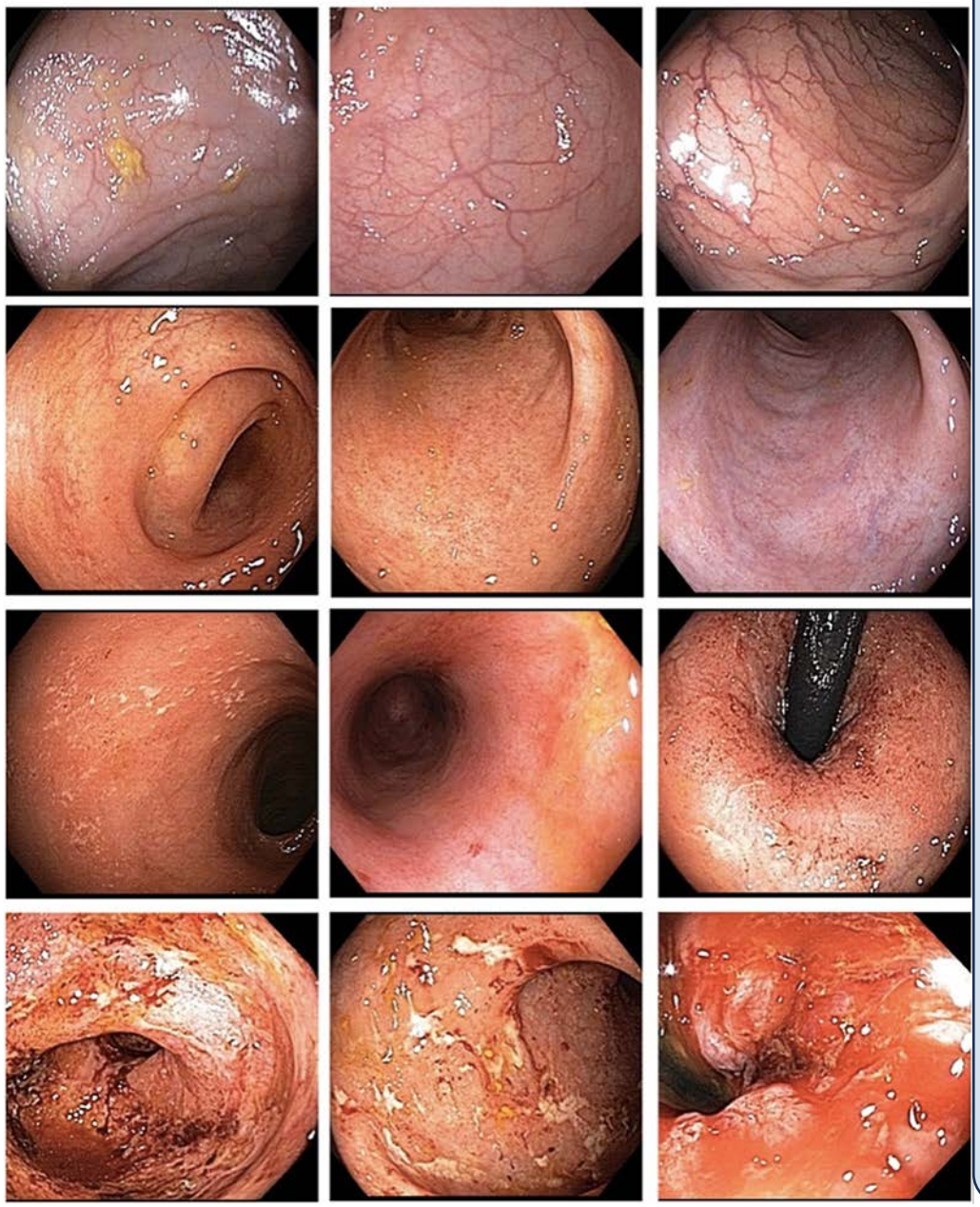
Upper GI endoscopy is recommended in patients with CD with upper GI symptoms, but not for asymptomatic newly diagnosed adult IBD patients [EL5]



Endoscopic Assessment

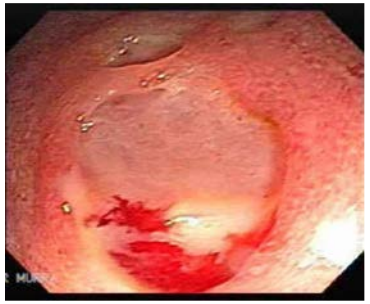
- Utility of endoscopic assessment
  - Establish diagnosis
  - Severity
  - Prognosis
  - Guide treatment
    - Treat-to-target
- What to include in your endoscopy report

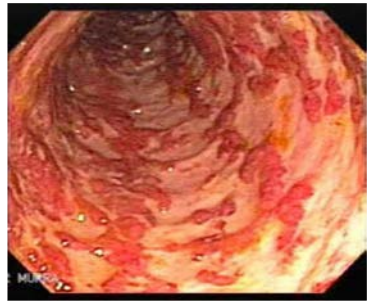
Endoscopic Assessment of Disease Activity



Mayo Score	Endoscopic Features
0	Normal
1	Erythema, decreased vascular pattern, mild friability
2	Marked erythema, absent vascular pattern, friability, erosions
3	Spontaneous bleeding, ulceration

Ulcerative Colitis





Crohn's disease - Endoscopic Assessment / Indices

- SES-CD

(Simple Endoscopic Score for Crohn's Disease)

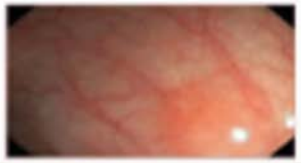
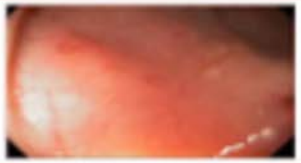
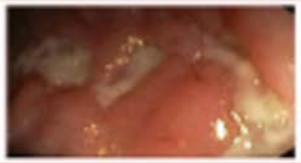
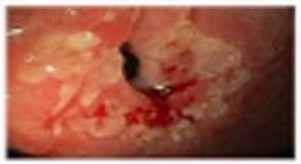
- Rutgeert's

(Post-operative Endoscopic Index)

	SES-CD values			
Variable	0	1	2	3
Ulcers	None	Aphthous ulcers (Diameter 0.1-0.5 cm)	Large ulcers (Diameter 0.5-2 cm)	Very large ulcers (Diameter >2 cm)
Ulcerated surface	None	<10%	10-30%	>30%
Affected surface	Unaffected segment	<50%	50-75%	>75%
Stenosis	None	Single, can be passed	Multiple, can be passed	Cannot be passed

	Ileum	Right colon	Transverse colon	Left colon	Rectum	Total
Presence and size of ulcers (0-3)	3	0	1	2	0	6
Extent of ulcerated surface (0-3)	2	0	1	2	0	5
Extent of affected surface (0-3)	2	0	2	2	0	6
Presence of strictures (0-3)	1	0	2	0	1	4
					SES-CD =	21

Post-operative Recurrence – Rutgeert's Score

GRADE	ENDOSCOPIC FINDING	ENDOSCOPY
i0	No lesions	
i1	<5 aphthous lesions	
i2	i2a. Lesions confined to the anastomosis i2b. 5 aphthous lesions with normal mucosa between lesions; areas scattered with larger lesions	
i3	Diffuse aphthous ileitis over inflamed mucosa	
i4	Diffuse inflammation with large ulcers, nodules and/or strictures	

Colonoscopy recommended
6 months to 9 months post-surgery

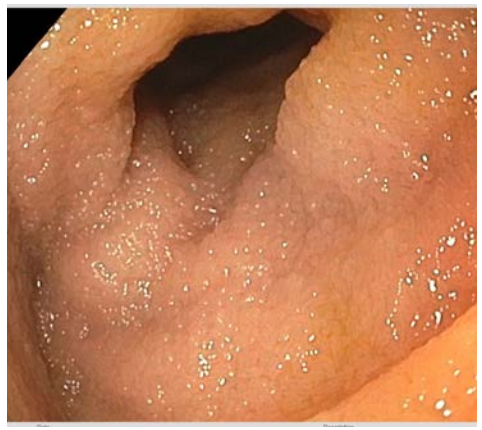
Additional Details:

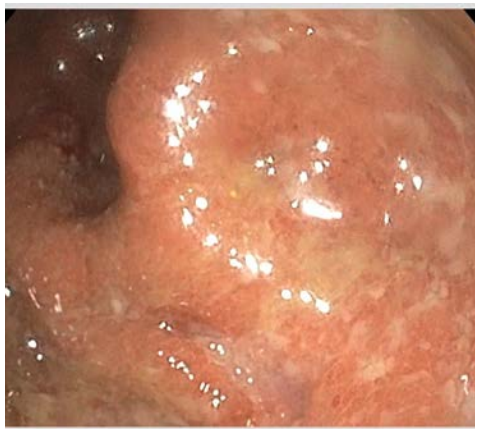
- Type of anastomsis
  - end-to-end / end-to-side
- Patent anastomosis versus narrowed / strictured

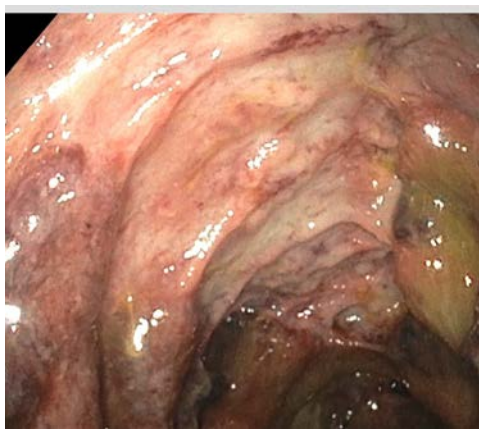
What should you include in your report

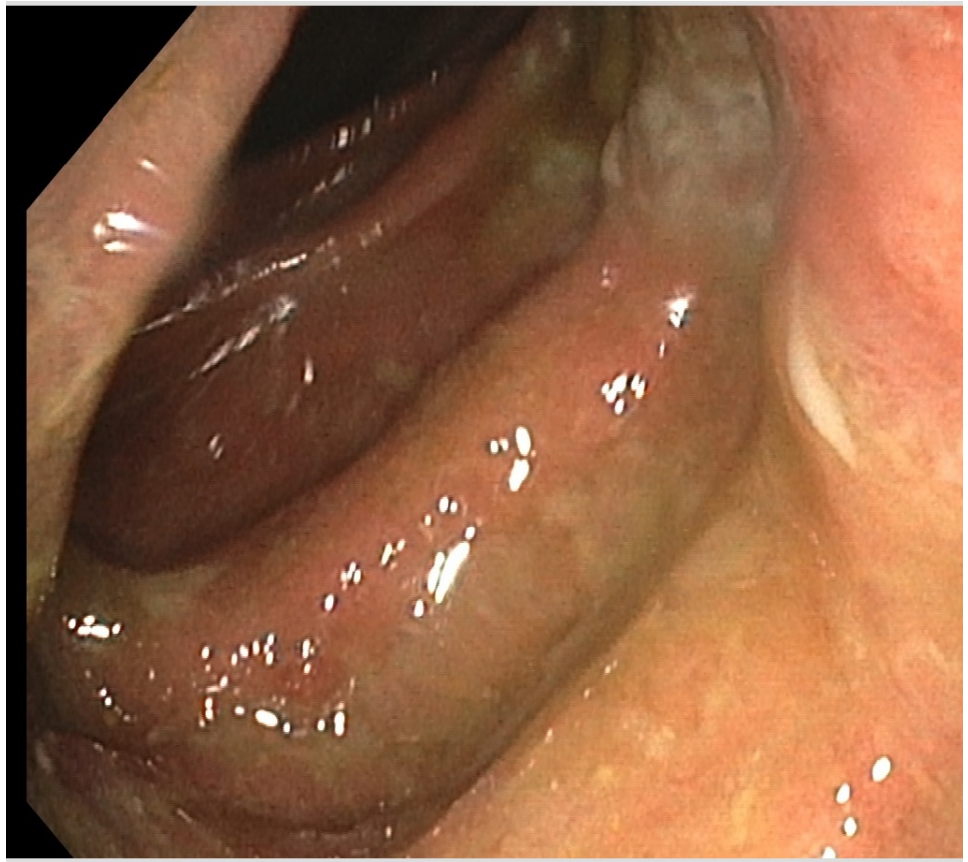
- **Extent** of involvement
  - Is the terminal ileum involved? – length
  - Ulcerative colitis
    - Proctitis - anal verge to “x” cm
    - Left-sided - to splenic flexure
    - Extensive - beyond splenic flexure
    - If incomplete scope - always mention extent of scope and whether inflammation goes beyond this
  - Continuous vs skip lesions
    - cecal or periappendiceal patch
    - relative rectal sparing
- Disease **Activity**
  - Elements in the activity indices (Mayo / SES-CD)
- Perianal disease
  - active vs chronic scarring, fluctuance, discharge, induration, tags, fistulous openings

Case

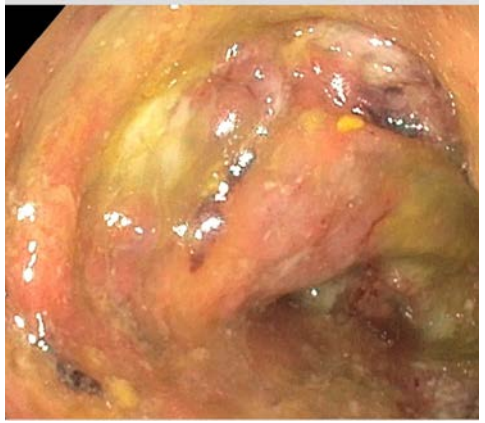


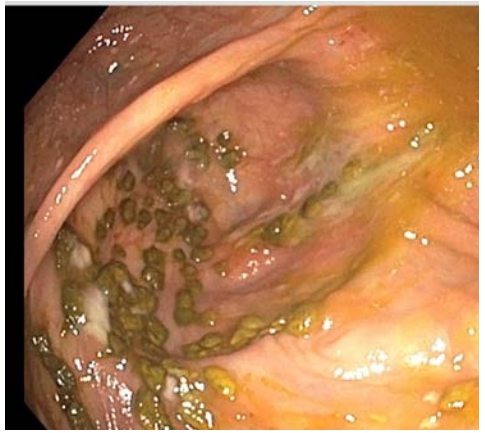






- Dec 10 – colonoscopy
  - Pancolitis - severe, generalized pancolonic edematous, erythematous, hemorrhagic and ulcerated mucosa, consistent with ulcerative colitis; no bleeding was identified





Final Diagnosis

A. Terminal ileum, biopsy x2:
- Within normal limits.

B to F. Ascending colon, transverse colon, descending colon, sigmoid colon, rectum biopsy x3:
- Diffuse moderate active colitis - see comment.
-Negative for dysplasia and malignancy

Comment

The colonoscopy report corresponding to these biopsies is reviewed negative microbiology stool cultures are negative.. The biopsies show diffuse acute and chronic colitis with areas cryptitis and crypt abscesses. The inflammation is more or similar in all the biopsies. No definitive granulomata are identified. There are no viral inclusions (negative for CMV in multiple biopsies). No features of dysplasia or malignancy are seen.

Overall the features can be classified as moderately severe acute and chronic colitis. The features fit inflammatory bowel disease in the correct clinical clinical context. I favour ulcerative colitis.

Dysplasia Screening / Surveillance

Year: 2023

ECCO Guidelines on Inflammatory Bowel Disease and Malignancies

Gordon, Hannah ; Biancone, Livia ; Fiorino, Gionata ; Katsanos, Konstantinos H ; Kopylov, Uri ; Sulais, Eman Al ; Axelrad, Jordan E ; Balendran, Karthiha ; Burisch, Johan ; de Ridder, Lissy ; Derikx, Lauranne ; Ellul, Pierre ; Greuter, Thomas ; Iacucci, Marietta ; Di Jiang, Caroline ; Kapizioni, Christina ; Karmiris, Konstantinos ; Kirchgesner, Julien ; Laharie, David ; Lobatón Ortega, Triana ; Molnár, Tamás ; Noor, Nurulamin M ; Rao, Rohit ; Saibeni, Simone ; Scharl, Michael ; Vavricka, Stephan R ; Raine, Tim

Gastroenterology 2021;161:1043–1051

CLINICAL PRACTICE UPDATE

AGA Clinical Practice Update on Endoscopic Surveillance and Management of Colorectal Dysplasia in Inflammatory Bowel Diseases: Expert Review

Sanjay K. Murthy,[1] Joseph D. Feuerstein,[2] Geoffrey C. Nguyen,[3] and Fernando S. Velayos[4]

[1]The Ottawa Hospital Inflammatory Bowel Disease Centre, Department of Medicine, University of Ottawa, Ottawa Hospital Research Institute, Ottawa, Ontario, Canada; [2]Center for Inflammatory Bowel Disease Beth Israel Medical Center, Harvard Medical School, Boston, Massachusetts; [3]Mount Sinai Hospital Centre for Inflammatory Bowel Disease, University of Toronto, Toronto, Ontario, Canada; and [4]Division of Gastroenterology and Hepatology, The Permanente Medical Group, San Francisco, California

British Society of Gastroenterology consensus guidelines on the management of inflammatory bowel disease in adults

2019

Gastroenterology 2015;148:639–651

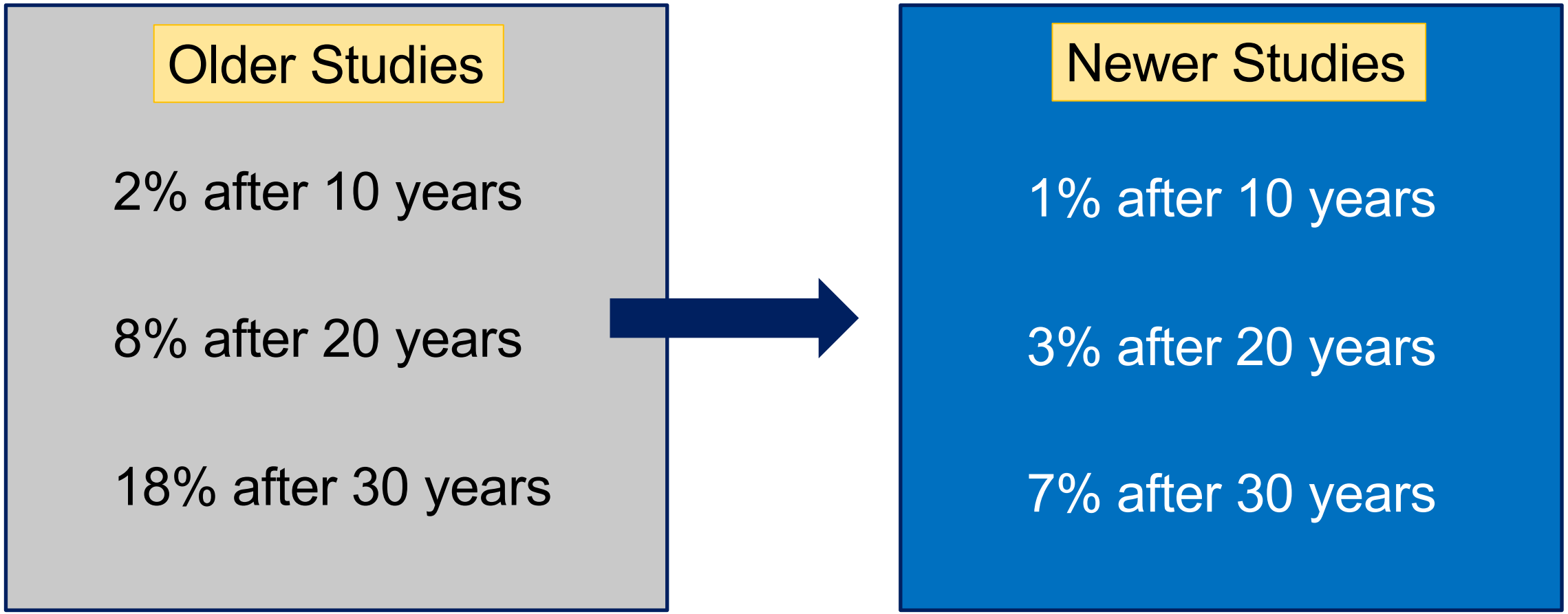
CONSENSUS STATEMENT

SCENIC International Consensus Statement on Surveillance and Management of Dysplasia in Inflammatory Bowel Disease

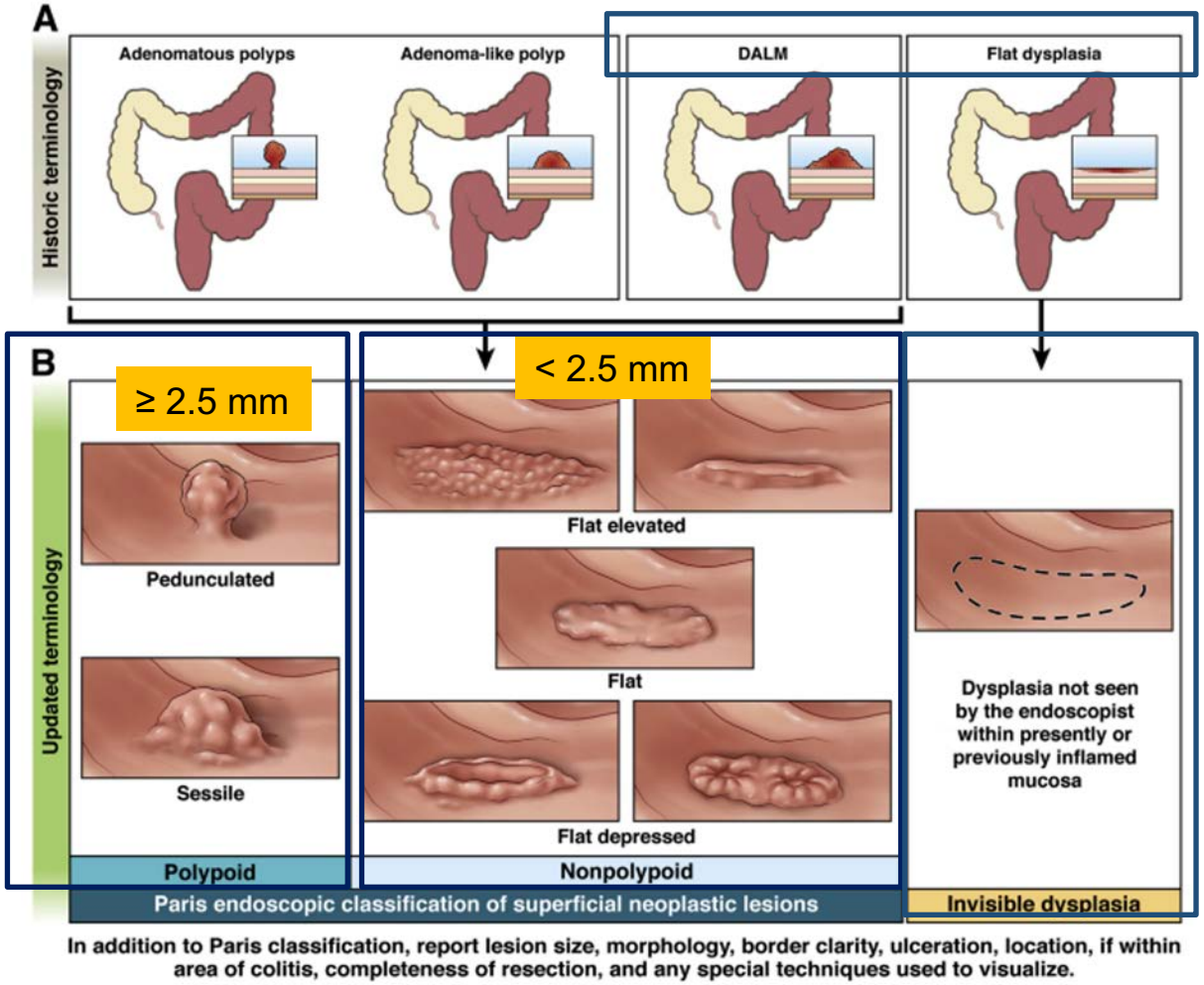
Loren Laine,[1,2] Tonya Kaltenbach,[3] Alan Barkun,[4] Kenneth R. McQuaid,[5] Venkataraman Subramanian,[6] and Roy Soetikno,[3] for the SCENIC Guideline Development Panel

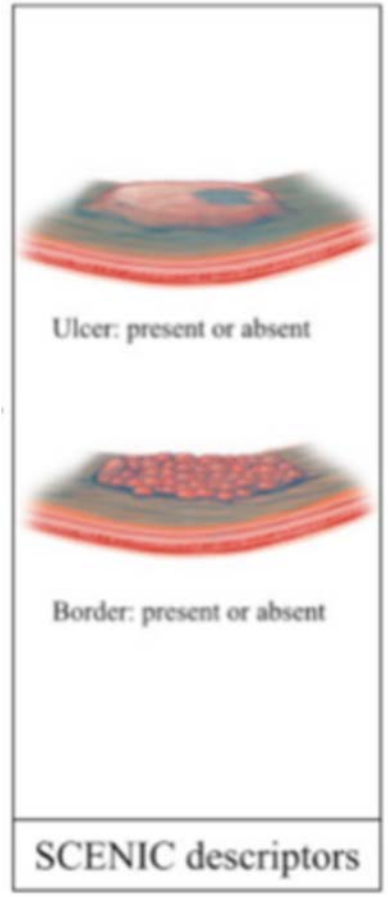
[1]Section of Digestive Diseases, Yale School of Medicine, New Haven, Connecticut; [2]Veterans Affairs Connecticut Healthcare System, West Haven, Connecticut; [3]Veterans Affairs Palo Alto Healthcare System and Stanford University School of Medicine (affiliate), Palo Alto, California; [4]Division of Gastroenterology, McGill University, Montreal, Quebec, Canada; [5]University of California at San Francisco, Veterans Affairs Medical Center, San Francisco, California; [6]University of Leeds, Leeds, United Kingdom

Change in Colon Cancer Risk



Change in Terminology



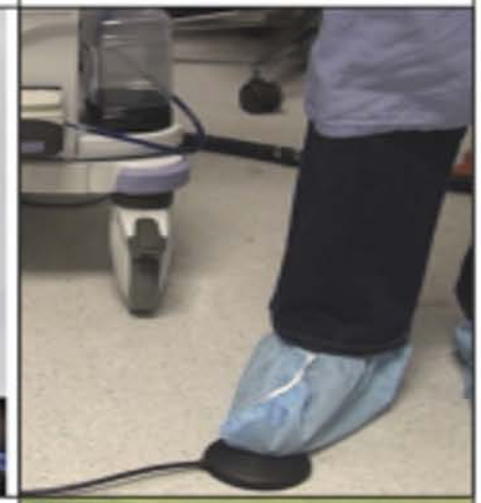
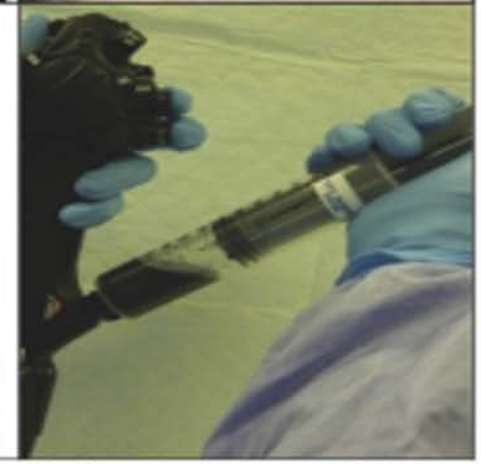


Change in Technique

- Old guidelines
  - 32 random biopsies from all segments of the colon (4 quadrant every 10cm)
    - 33 biopsies = sensitivity of 90%

TABLE 1. Updates in detection methods, management, and follow-up surveillance in patients with longstanding colitis

	SCENIC recommendation (2015)	Updates since SCENIC (2021)
Detection method(s)	• HD colonoscopy recommended for dysplasia surveillance • DCE recommended (over WLE) when using SD colonoscope • DCE suggested (over WLE) when using HD colonoscope • NBI not recommended over WLE when using SD colonoscope • NBI not suggested over WLE when using HD colonoscope • NBI not suggested over DCE when using HD colonoscope	• HD colonoscopy recommended for dysplasia surveillance • DCE with targeted biopsy sampling recommended (over WLE) when using SD colonoscope • DCE, WLE, NBI, and VCE with targeted biopsy sampling all acceptable modalities for surveillance when using HD colonoscope; endoscopist should have training or expertise in dysplasia detection using method of choice • Random biopsy sampling (in addition to targeted biopsy sampling) should be used in highest risk patients, including those with PSC, previous neoplasia, active inflammation, or a tubular, scarred colon

Purpose	Technique	Method	Dilution*	Color	
Lesion detection	Pan chromo-endoscopy	Water jet channel using auxillary foot pump or biopsy channel using spray catheter	Indigo carmine (0.8%, 5ml ampule): 2 ampules + 250ml water (0.03%) Methylene blue (1%,10ml ampule): 1 ampule + 240ml water (0.04%)		
Lesion characterization and delineation of borders	Targeted chromo-endoscopy	Syringe spray through biopsy channel	Indigo carmine (0.8%, 5ml ampule): 1 ampule + 25ml water (0.13%) Methylene blue (1%,10ml ampule): 1 ampule + 40ml water (0.2%)		

*Various dilutions ranging from 0.03-0.2% of indigo carmine and methylene blue have been reported for for panchromoendoscopy.

UC (beyond rectosigmoid)

Colonic CD of at least 1/3 of the colon

C When to start screening

- 8–10 years after disease onset in all patients to stage histologic activity and extent and guide future surveillance
- At diagnosis in primary sclerosing cholangitis

D Fundamentals for dysplasia detection

- High definition colonoscope
- Quiescent disease
- Washing and careful inspection of fully visible mucosa
- Targeted biopsies of suspicious mucosal abnormalities or sites of prior dysplasia

E Enhanced dysplasia detection techniques

- Dye spray chromoendoscopy (DCE)
- Virtual chromoendoscopy (VCE)
- Non-targeted biopsies of non-suspicious areas

F Types of biopsies to obtain

Targeted		Non-targeted		Staging
Biopsies of suspicious or subtle mucosal abnormalities to rule out dysplasia	+	Biopsies of non-suspicious areas to rule out invisible dysplasia	OR	Biopsies of macroscopically inflamed and uninflamed areas to assess histologic disease activity and extent

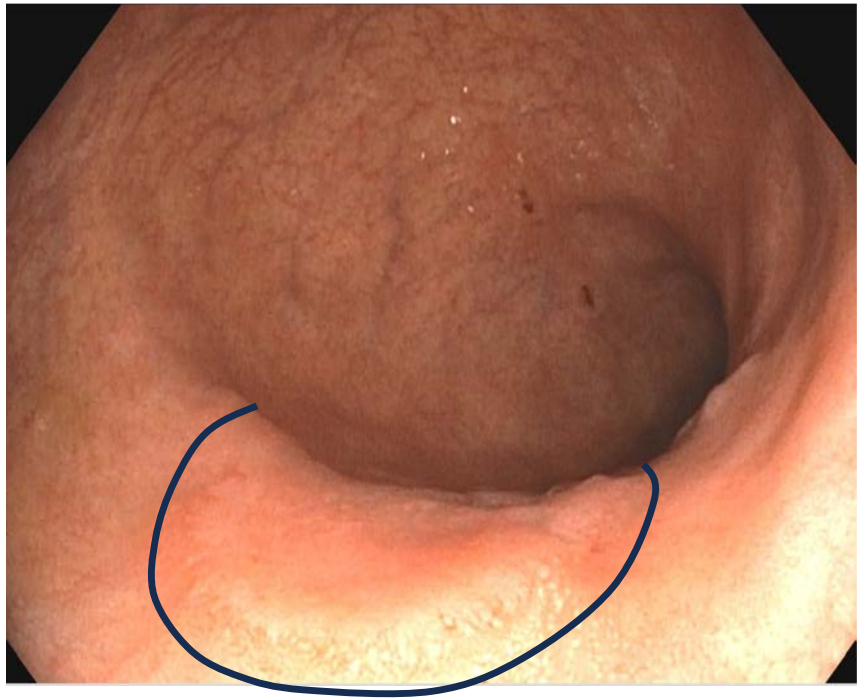
AGA Guidelines

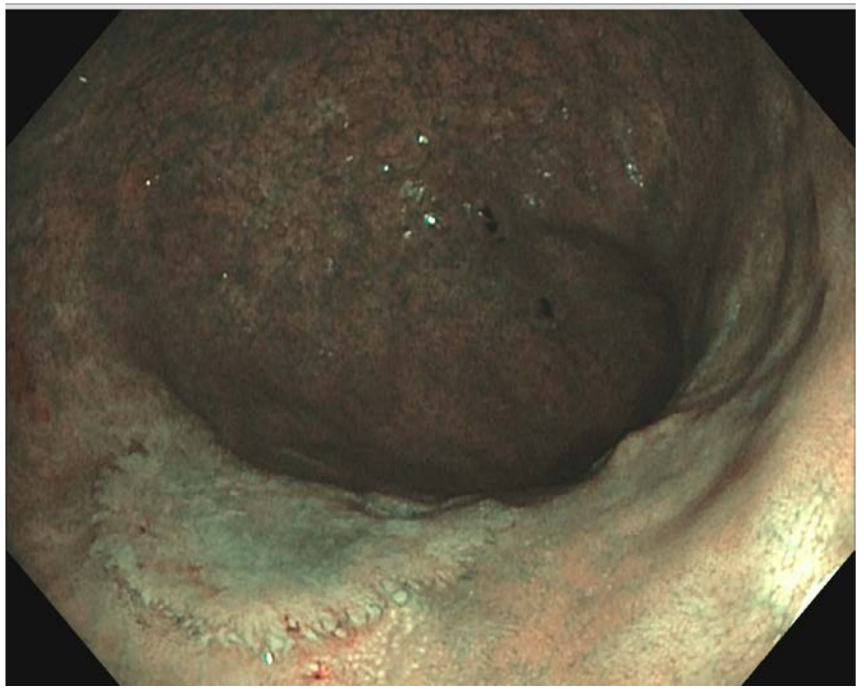
C Timing of next colonoscopy when no dysplasia detected at present colonoscopy

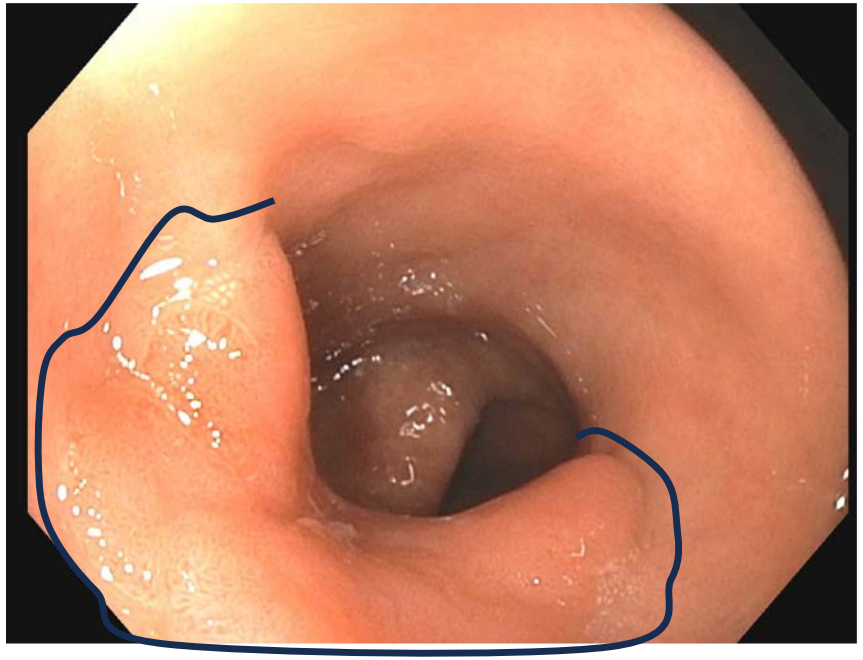
Physicians should err towards the more frequent surveillance category if at least one higher risk factor exists. Timing based on past and ongoing CRC risk factors and mucosal features that may obscure dysplasia.

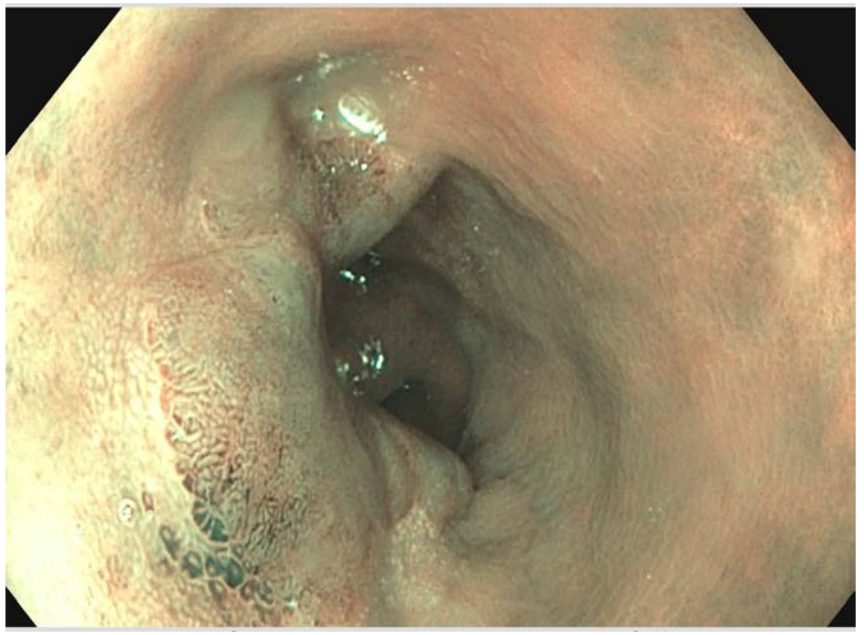
1 year	2 or 3 years	5 years
• Moderate or severe inflammation (any extent) • PSC • Family history of CRC in first degree relative (FDR) age < 50 • Dense pseudopolyposis • History of invisible dysplasia or higher-risk visible dysplasia < 5 years ago	• Mild inflammation (any extent) • Strong family history of CRC (but no FDR < age 50) • Features of prior severe colitis (moderate pseudopolyps, extensive mucosal scarring) • History of invisible dysplasia or higher-risk visible dysplasia > 5 years ago • History of lower risk visible dysplasia < 5 years ago	Continuous disease remission since last colonoscopy with mucosal healing on current exam, plus either of: • ≥ 2 consecutive exams without dysplasia • Minimal historical colitis extent (ulcerative proctitis or < 1/3 of colon in CD)

AGA Guidelines










The End