

BRIGHAM HEALTH



BRIGHAM AND
WOMEN'S HOSPITAL



HARVARD
MEDICAL SCHOOL

Endoscopy for the patient with IBD

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No disclosures regarding the content
presented in this talk

Summary of topics

- Diagnostic scopes in IBD- disease activity
- Surveillance scopes in IBD- cancer/dysplasia
- Therapeutic scopes in IBD- strictures, fistula

When is Endoscopy Performed in IBD?

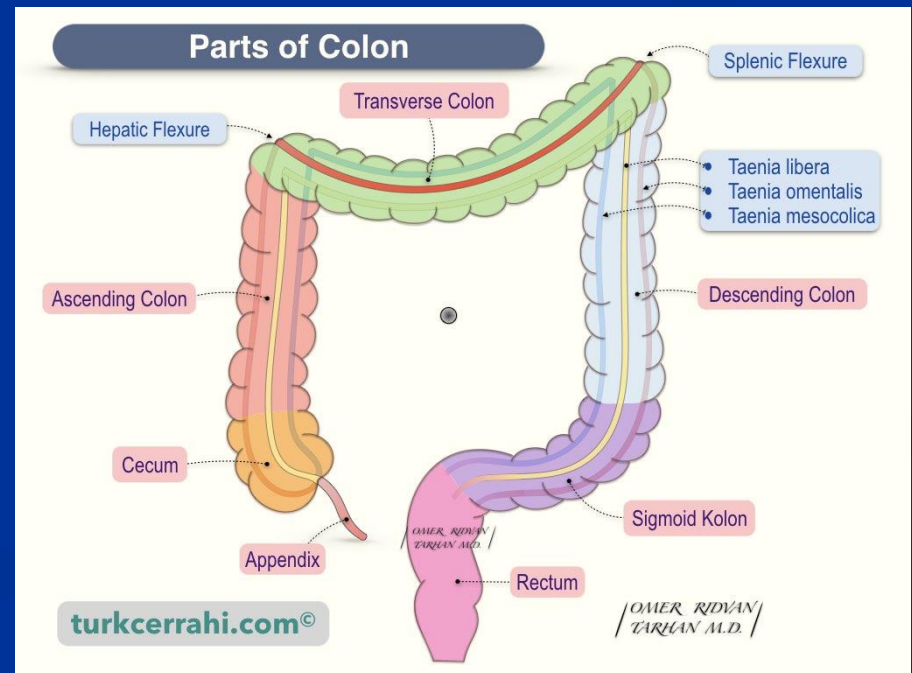
- At initial presentation (**diagnostic**)
 - To diagnose IBD
 - To differentiate between UC and CD
 - To assess disease severity and extent
- During patient follow up (**diagnostic**)
 - Flares, new symptoms
 - To assess recurrence after surgery
- For dysplasia/cancer surveillance (**surveillance**)
- For therapeutic intervention (**therapeutic**)
 - Strictures
 - Fistula
 - Removal of large dysplastic lesions

Diagnostic Colonoscopy in IBD

- 26 y o male with 6 weeks of loose and frequent stools with urgency and cramping
- Blood and mucous in stool last 2 weeks
- Saw PCP- blood tests for inflammation abnormal
- Colonoscopy ordered

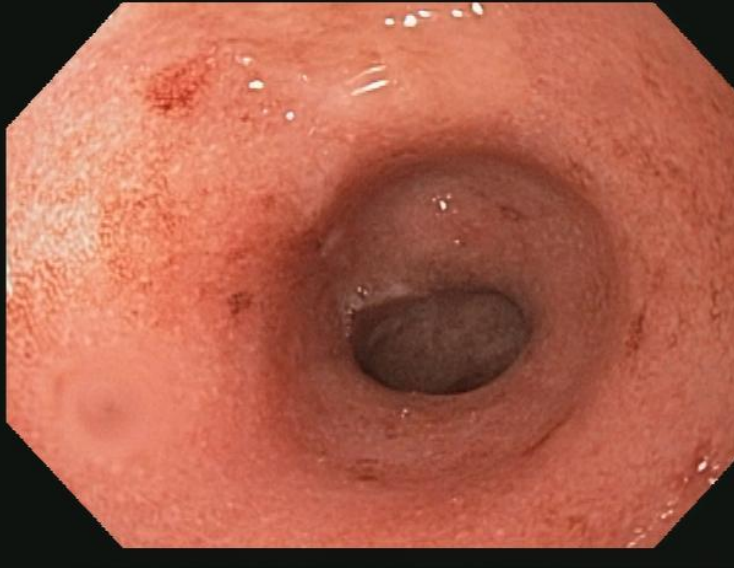
Initial Colonoscopy Evaluation

- Careful inspection of the whole colon and t. ileum
- Biopsy and place in separate jars:
 - rectum (always)
 - inflamed segments
 - normal segments
 - t. ileum



Endoscopic features of ulcerative colitis

- Involvement of rectum
- Continuous inflammation extending from rectum
- Absence of anal or overt t. ileal disease
- Caveats



Mild



Moderate



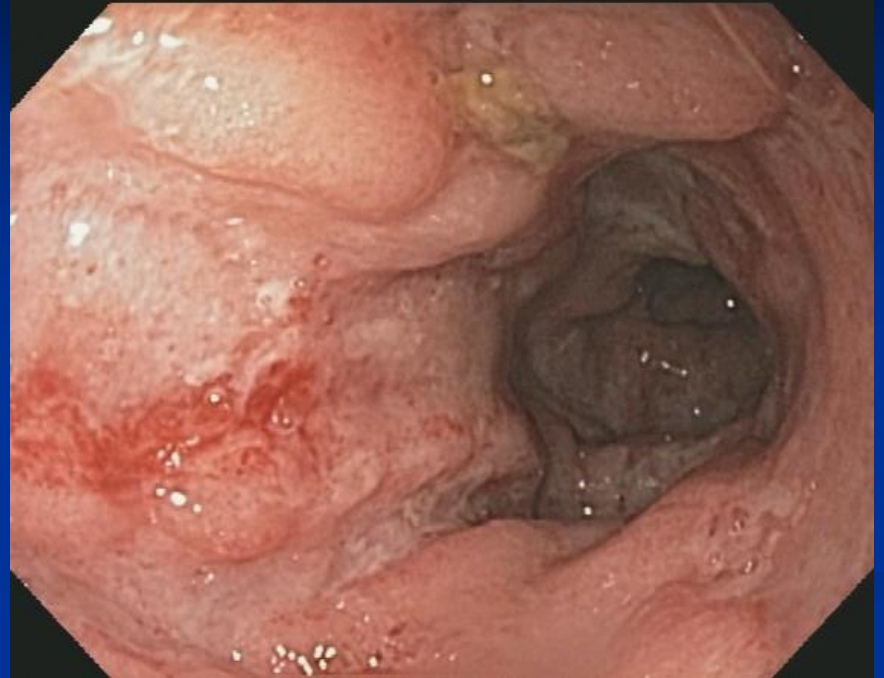
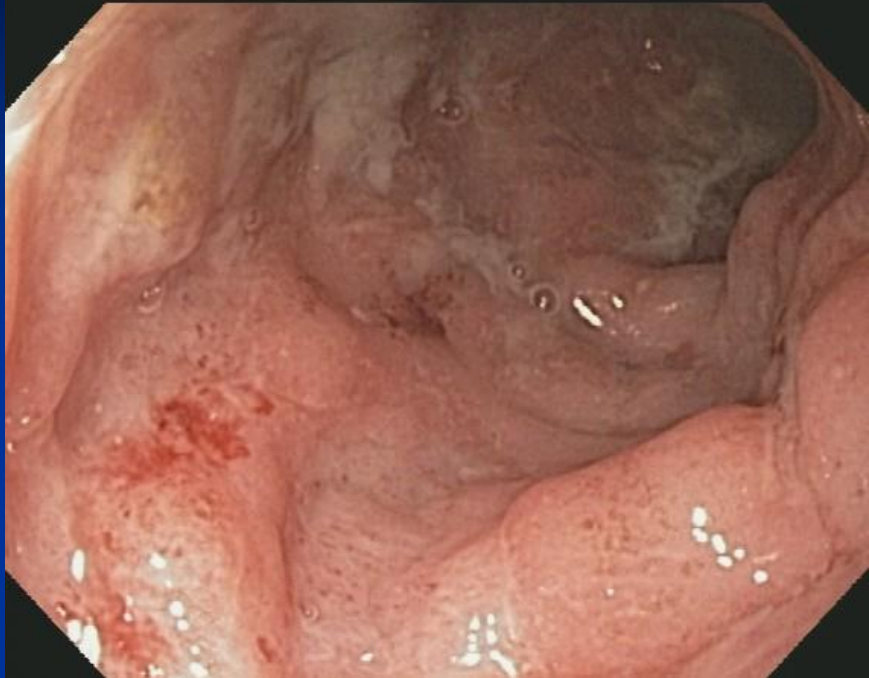
Severe

Score	Disease activity	Endoscopic features
0	Normal or inactive	None
1	Mild	Erythema, decreased vascular pattern, mild friability
2	Moderate	Marked erythema, absent vascular pattern, friability, erosions
3	Severe	Spontaneous bleeding, ulceration

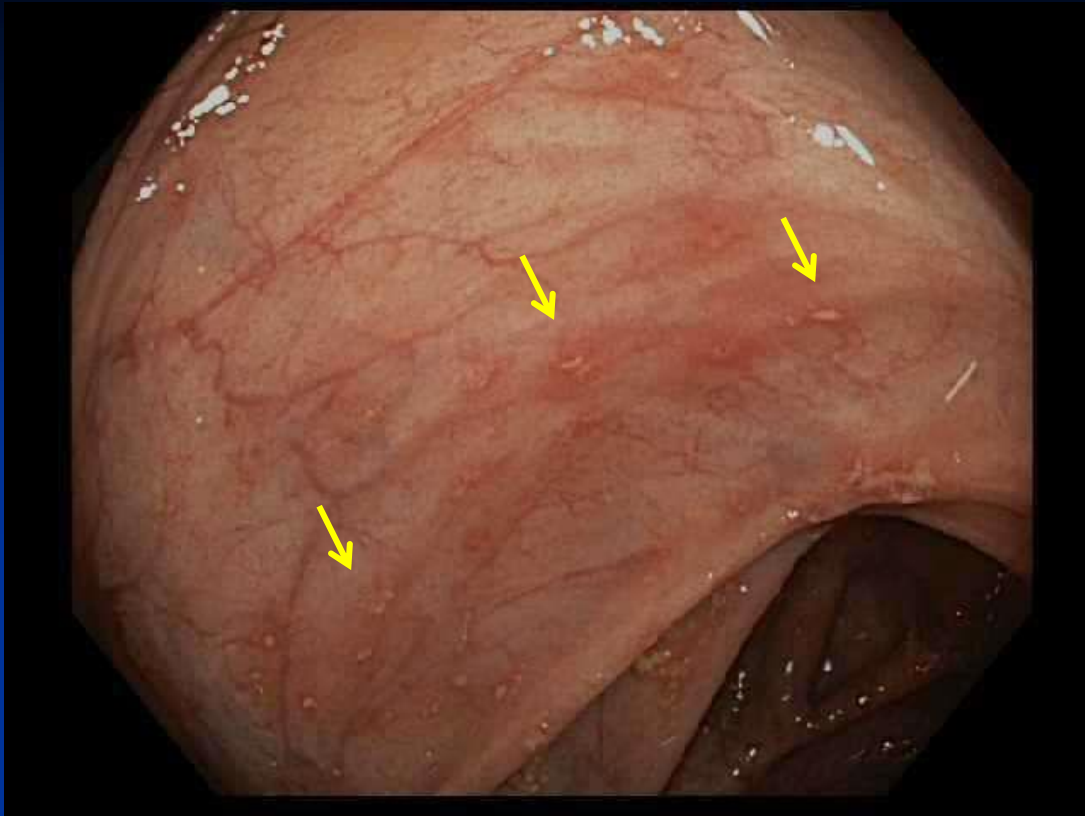
“Mayo” endoscopic disease activity scale for UC

Endoscopic features of Crohn's

- Skip areas
- Rectal sparing
- Discrete ulcers- superficial, deep, small, large
- Anal involvement
- Terminal ileum
- Presence of strictures, fistulous openings

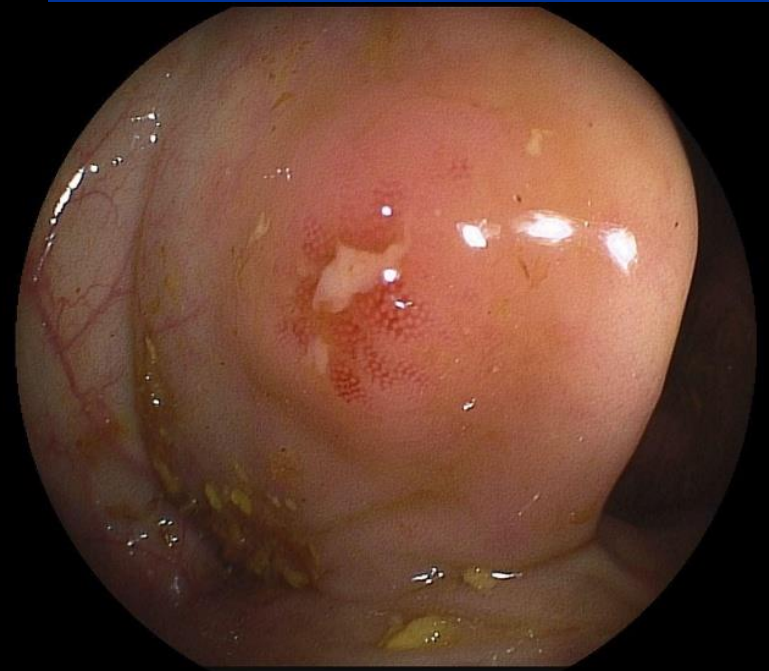


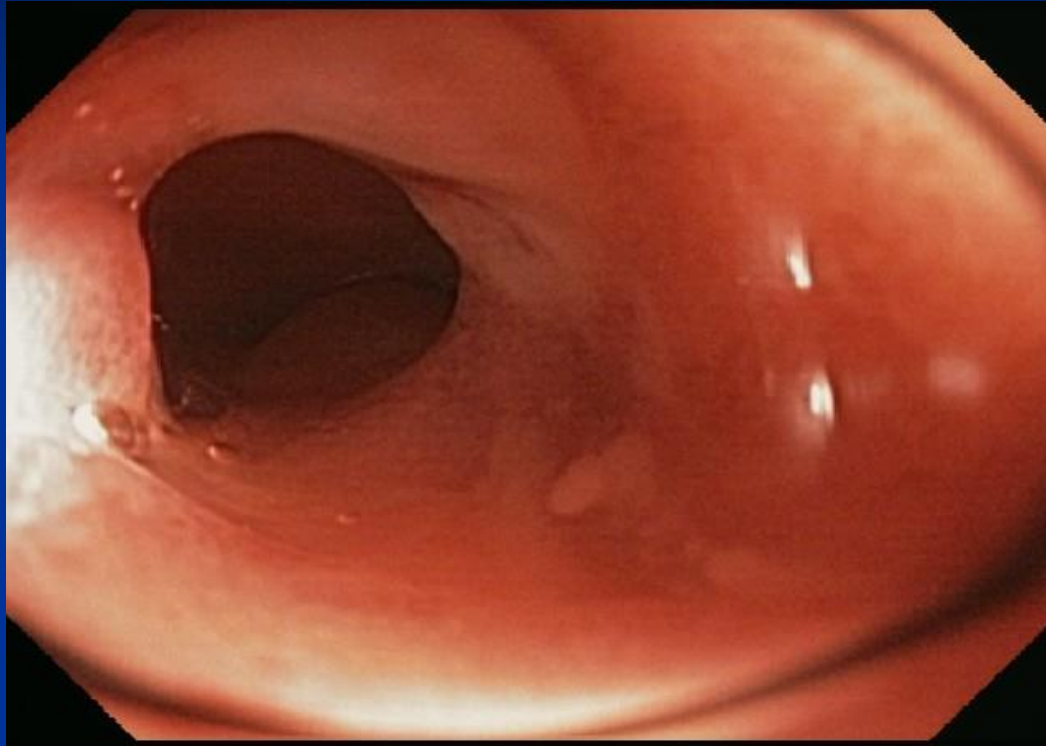
Deep ulcers



Superficial ulcer

Apthous ulcers





t.i. stricture

Variable	Simple endoscopic score			
	0	1	2	3
Size of ulcers	None	Aphthous ulcers	Large ulcers	Very large ulcers
Diameter of ulcers	None	0.1–0.5 cm	0.5–2 cm	>2 cm
Ulcerated surface	None	<10%	10–30%	>30%
Affected surface	Unaffected segment	<50%	50–75%	>75%
Narrowings	None	Single, can be passed	Multiple, can be passed	Cannot be passed

Modified from Daperno M, et al.⁶

“Simple endoscopic scoring system” for Crohn’s

Further Assessment at IBD Diagnosis?

- Capsule endoscopy
 - Is suspicion for Crohn's
 - Good for milder, superficial disease
- EGD
 - If suspicion for Crohn's
 - Upper GI symptoms- dysphagia, nausea/vomiting, upper GI pain
- Enteroscopy

Diagnostic Colonoscopy in IBD

Follow up studies

“How often does this IBD patient
need to be scoped?”

- 26 y o male was diagnosed with UC that extended up to mid transverse colon
- Moderate severity
- Started on Entyvio by his gastroenterologist
- Returns with improvement in stool frequency, form, urgency, blood/mucous (Entyvio x 9 months)
- Still with some abdominal cramping

Endoscopy During Course of Disease

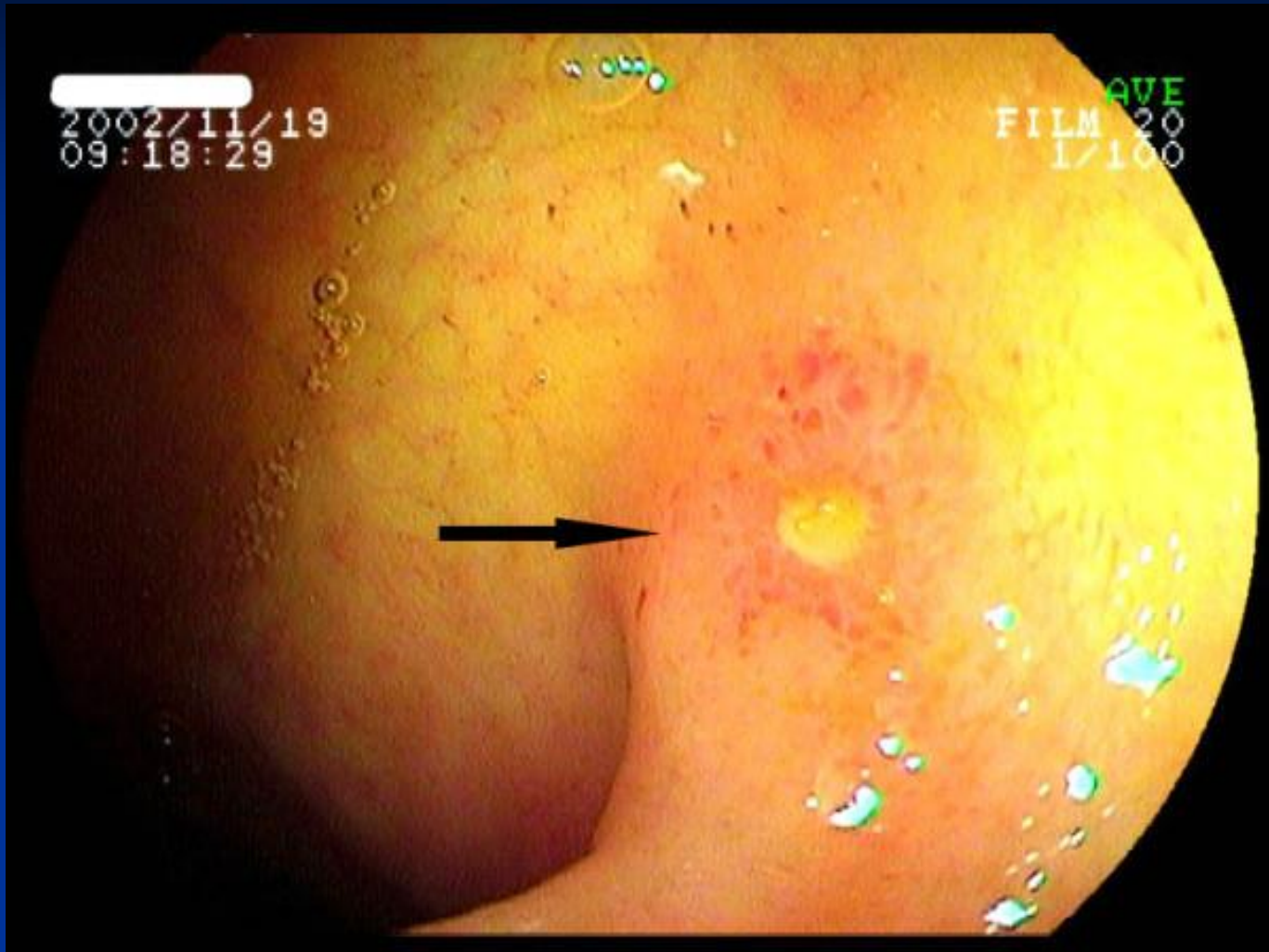
- Evaluate disease activity
 - Assess response to medical therapy
 - Document medical non-response
 - Evaluate new/change in symptoms
- Exclude secondary processes
 - CMV, other colon process (ischemic, diverticular)
 - Cancer, stricture
 - Complications from previous surgery
- Post surgery surveillance in CD
- Pouch evaluation in UC

Post-operative recurrence CD

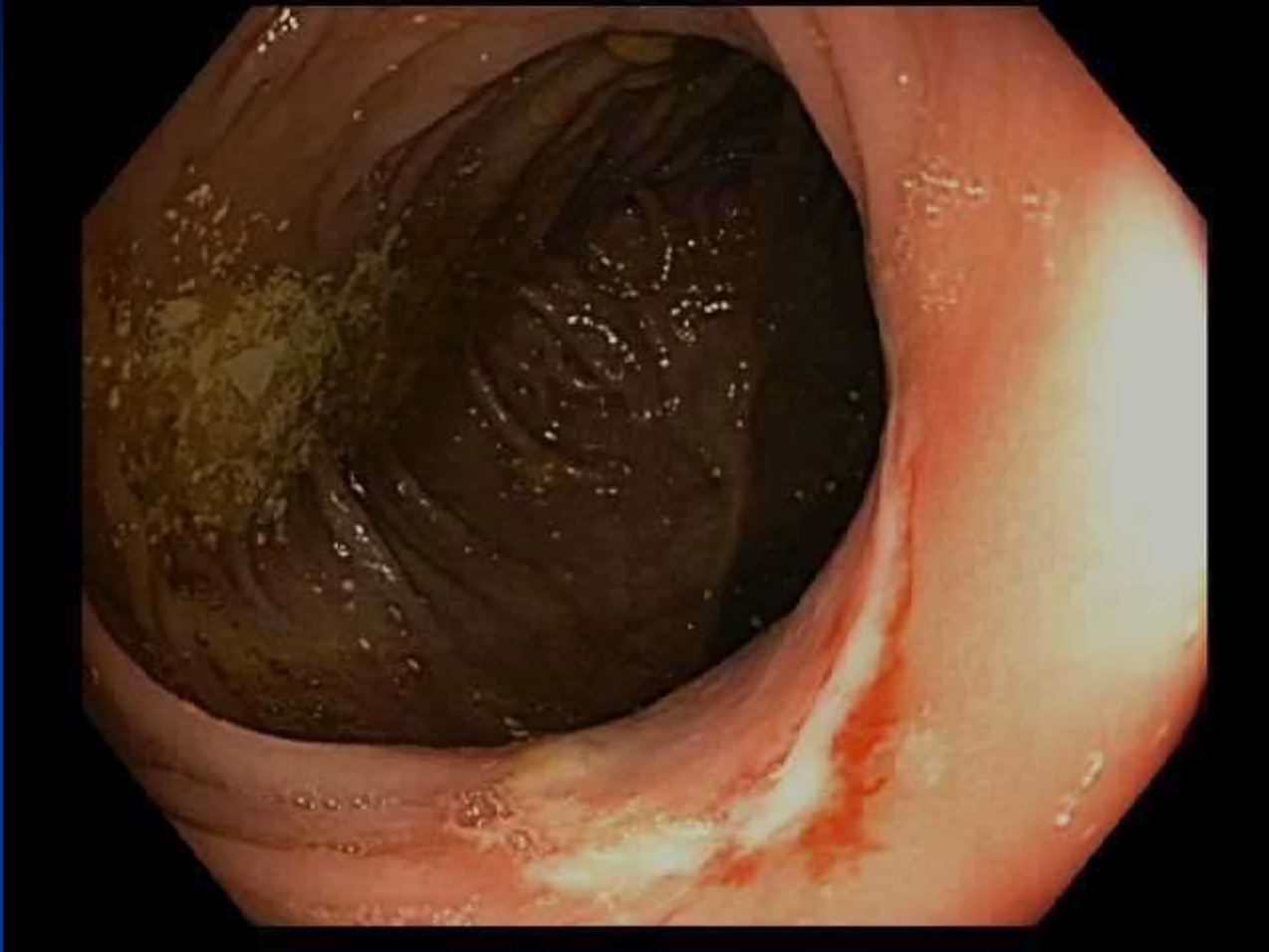
- Prospective study 1979-1984 of 89 CD pts s/p ileocecal resection
- Colonoscopy at 1 year and 3 year post op
- At one year- 73% endoscopic lesions, 20% symptoms
- At 3 years- 85% endoscopic lesions, 34% symptoms

Rutgeerts CD Anastomotic Score- Post op Recurrence Following Resection

- 0 No inflammation
- 1 Less than 5 aphthous ulcers
- 2 Greater than 5 aphthous ulcers with normal intervening mucosa
- 3 Diffuse aphthous ileitis with diffusely inflamed ileal mucosa
- 4 Diffuse inflammation with larger ulcers, nodularity, or narrowing



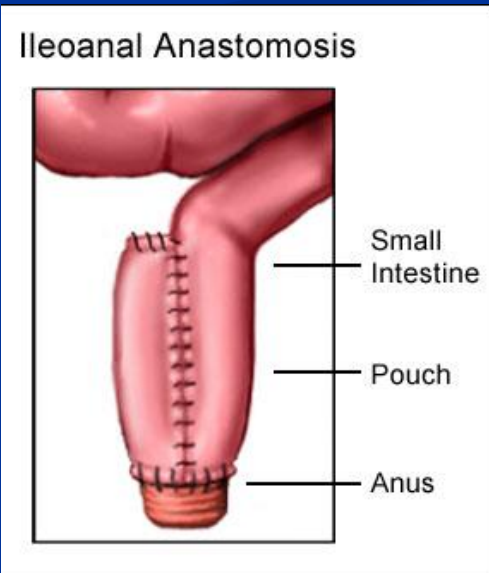
Aphthous ulcer in TI



Ulcer at the ileo-cecal anastomosis- Not recurrence of Crohn's,
Biopsies not helpful here

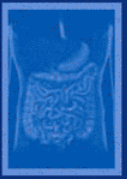
Pouch Symptoms after IPAA

- Crohn's disease
- Cuffitis
- Pouchitis
- Anatomical/surgery related issues

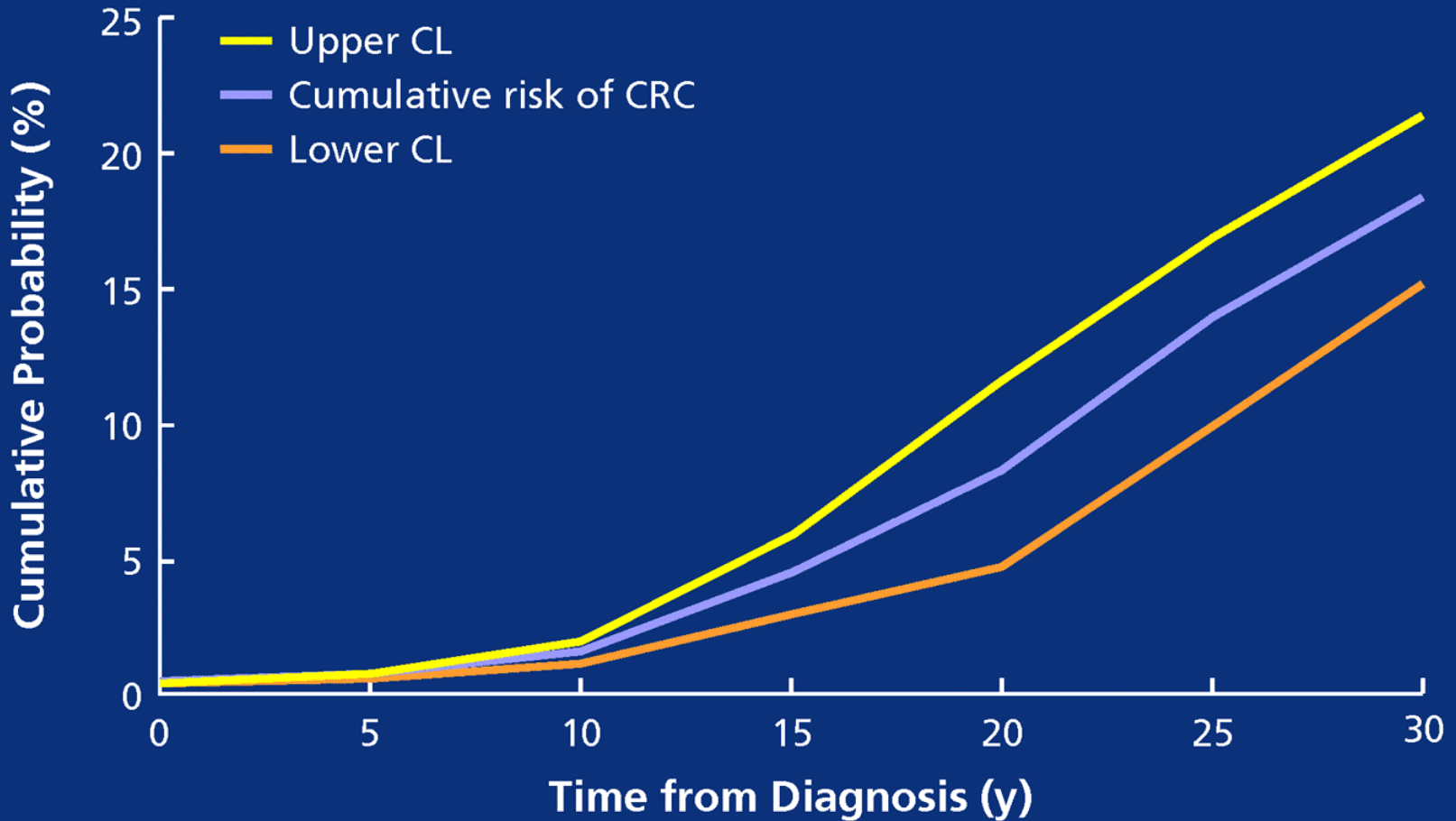


Surveillance Colonoscopy in IBD

- 62 y o male with UC pancolitis x 30 years
- Mostly in control although forgets to take his mesalamine
- Asymptomatic but was told that he needed a colonoscopy- last 5 years ago



Cumulative Risk of Developing CRC in UC



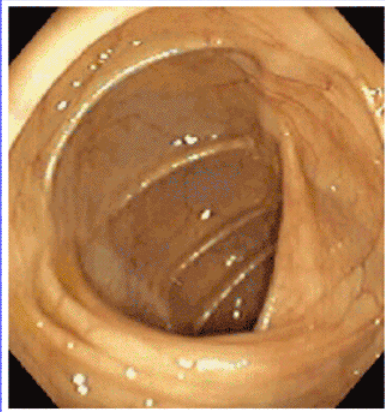
CL=confidence limit.

Adapted from Eaden JA, et al. *Gut*. 2001;48:526-535 with permission from BMJ Publishing Group.

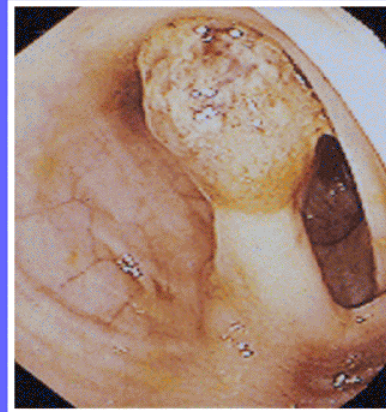


Dysplasia-Carcinoma Sequence Non-IBD vs IBD

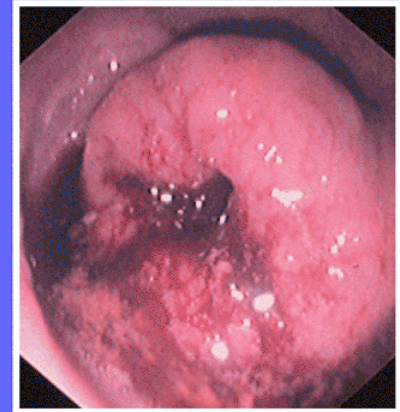
Non-IBD



Normal



Adenoma

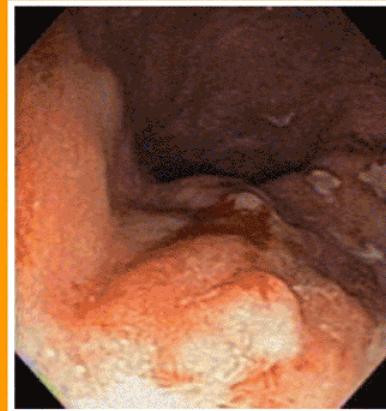


Cancer

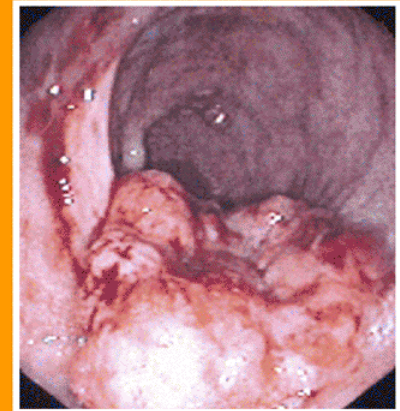
IBD



Colitis



Dysplasia



Cancer

Who Needs Surveillance?

- All pan and left-sided UC patients, Crohn's colitis >1/3 of colon
- Perform full colonoscopy at 8-10 years after symptoms- map with multiple biopsies
 - Restage extent and severity
 - Assess for dysplasia

Determine IBD Patient's Risk

■ High risk

- Patient factors- family history of colon ca <50, hx of PSC, hx of dysplasia
- Endoscopy factors- extensive mod-severe active UC, stricture

■ Intermediate risk

- Mild active extensive disease, other family history of colon ca, inflammatory polyps

■ Low risk

- Inactive histology, left-sided UC or Crohn's <50% of colon

Cancer Surveillance in IBD

■ High risk- **Every year**

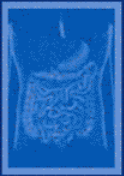
- Patient factors- family history of colon ca <50, hx of PSC, hx of dysplasia
- Endocopy factors- extensive mod-severe active UC, stricture

■ Intermediate Risk- **Every 2 years**

- Mild active extensive disease, other family history of colon ca, post-inflammatory polyps

■ Low risk- **Every 3 years**

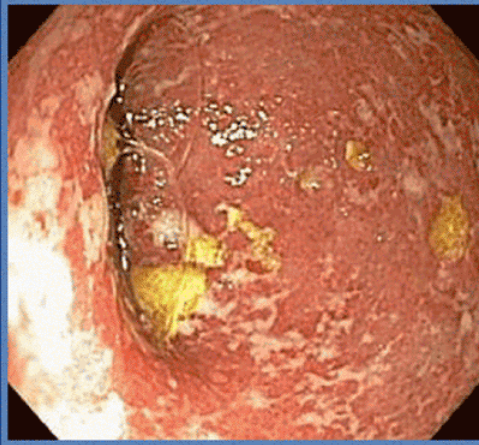
- Inactive histology, left-sided UC or crohn's <50% of colon



Dysplasia in IBD

Visible or not visible??

Resectable or not resectable??



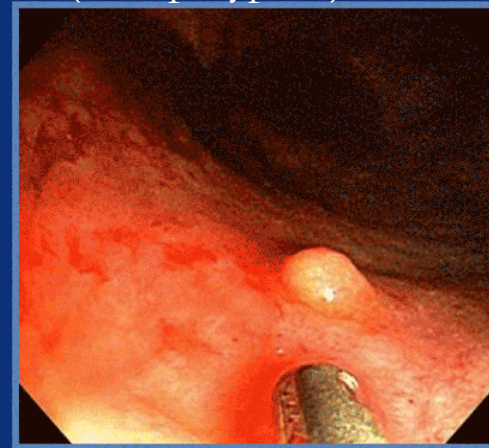
Flat Dysplasia (not macroscopically visible)



Dysplasia (non-polypoid)- not resectable



Adenomatous Polyps (proximal to colitis)

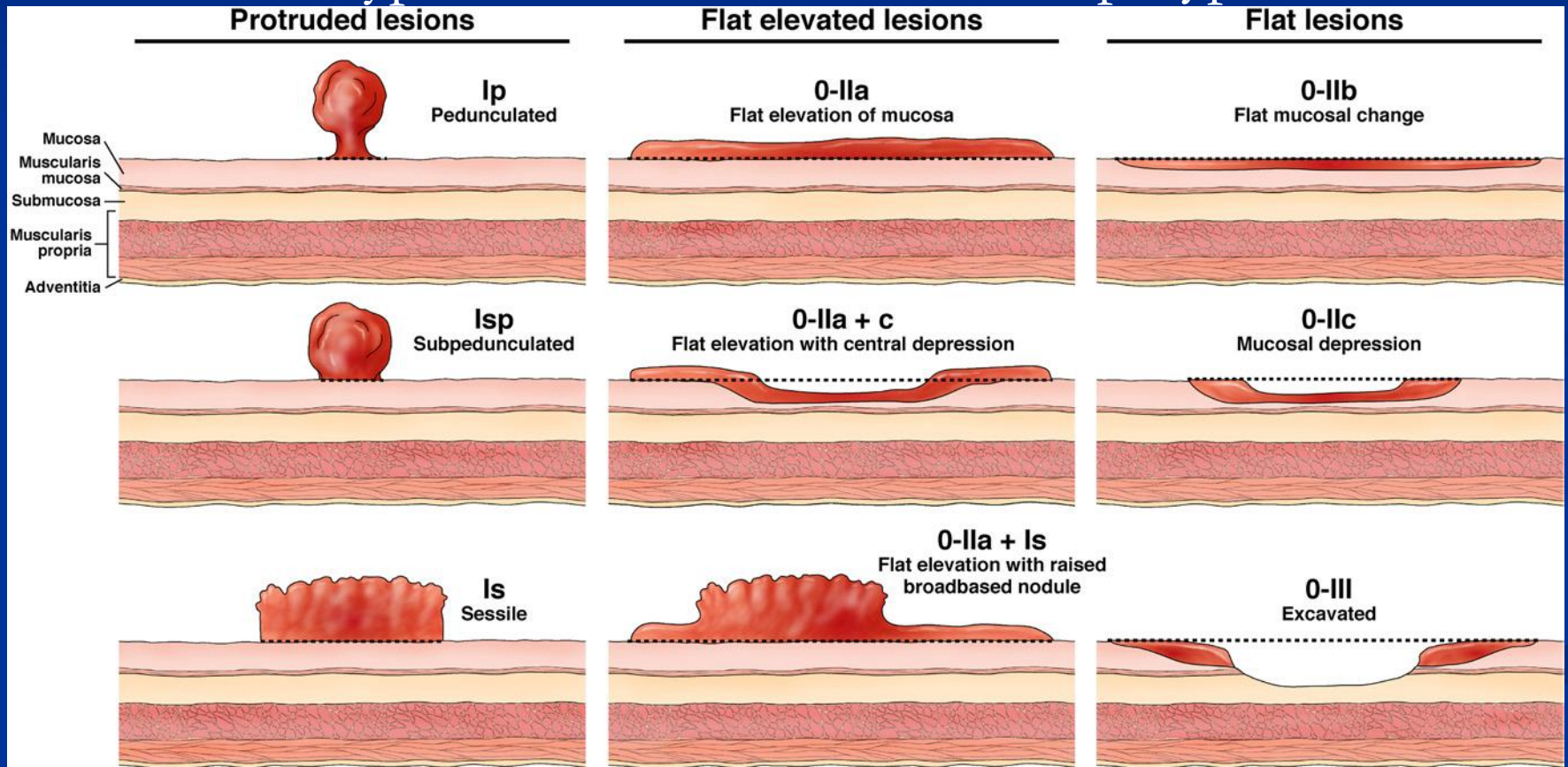


Dysplasia (polypoid), resectable

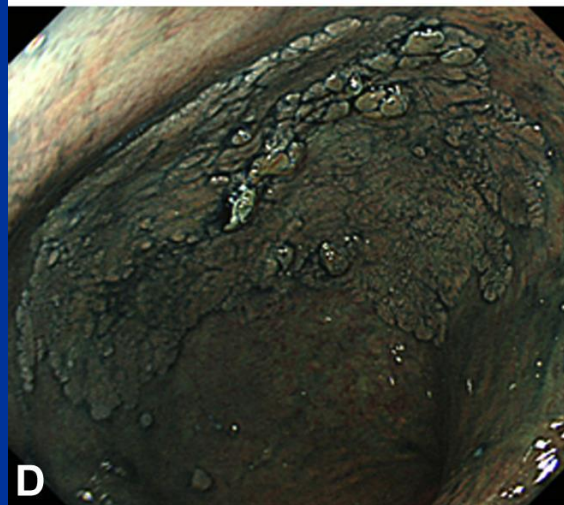
Paris Classification for Mucosal Neoplasia

Polypoid

Non-polypoid



LST, mixed granular, 50 mm



Surveillance Colonoscopy in IBD

<p>C When to start screening</p> <ul style="list-style-type: none"> • 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 	<p>D Fundamentals for dysplasia detection</p> <ul style="list-style-type: none"> • High definition colonoscope • Quiescent disease • Washing and careful inspection of fully visible mucosa • Targeted biopsies of suspicious mucosal abnormalities or sites of prior dysplasia 	<p>E Enhanced dysplasia detection techniques</p> <ul style="list-style-type: none"> • Dye spray chromoendoscopy (DCE) • Virtual chromoendoscopy (VCE) • Non-targeted biopsies of non-suspicious areas
<p>F Types of biopsies to obtain</p>		
<p>Targeted</p> <p>Biopsies of suspicious or subtle mucosal abnormalities to rule out dysplasia</p>	<p>Non-targeted</p> <p>Biopsies of non-suspicious areas to rule out invisible dysplasia</p>	<p>Staging</p> <p>Biopsies of macroscopically inflamed and uninfamed areas to assess histologic disease activity and extent</p>

Best techniques for dysplasia detection

- Chromoendoscopy with targeted and random biopsies- *preferred by multiple societies*
- “Careful” inspection with HD scope and biopsies- *becoming more accepted*
- Virtual Chromo with biopsies (NBI, Fuji color enhancement)- *developing*
- Targeted and random biopsies – *if colitis is active, visibility not great etc*

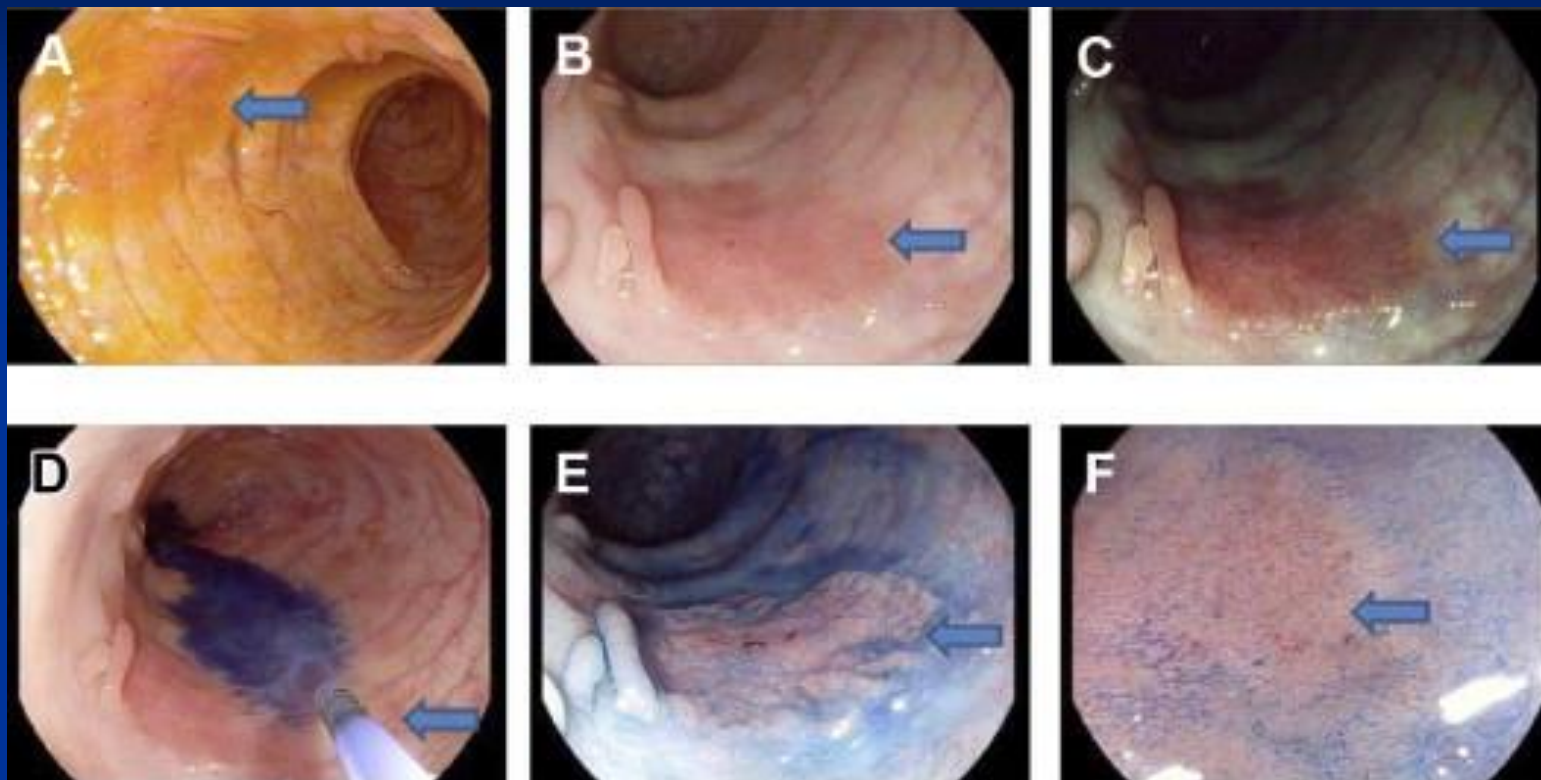
Lesion detected

- Resectable
 - Forceps
 - EMR/ESD
- Not resectable
 - Biopsy

Additional biopsies

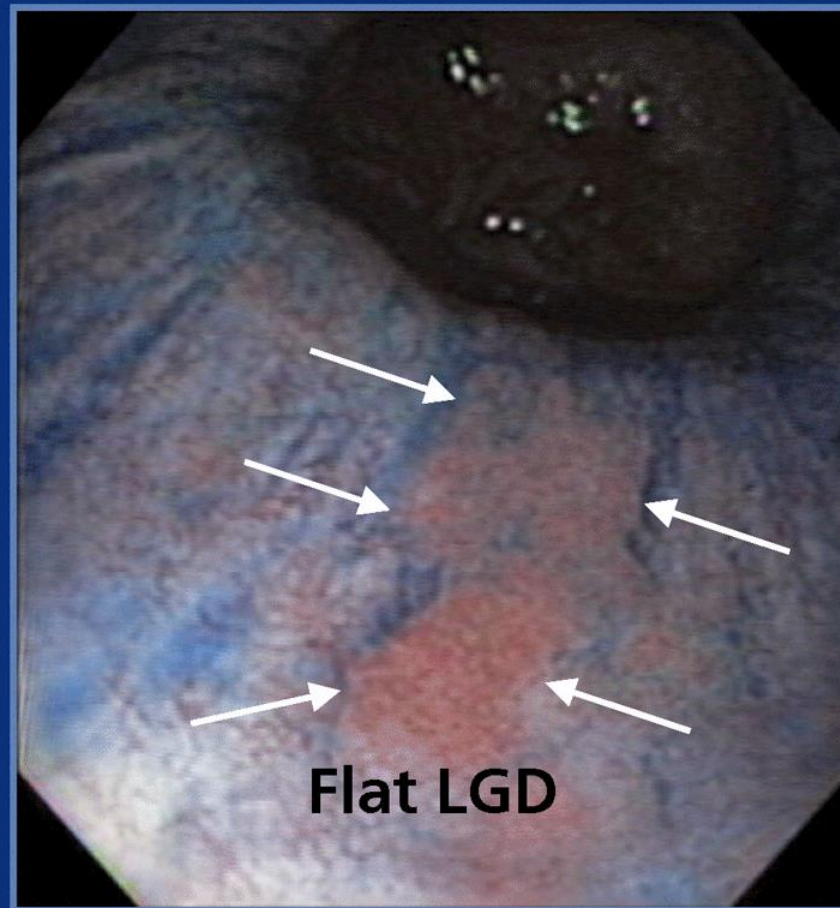
- Disease surveillance
 - One pass in different colon segments
- Dysplasia surveillance
 - 33 or more biopsies in the colon if inadequate prep or active disease or inflammatory polyps
 - High risk patients- hx of PSC, hx of dysplasia

Lesion detection using methylene blue





Chromoendoscopy Can Elucidate Areas of Abnormality



Which technique for which visible lesion?

- Polypoid lesion <1 cm, Ip/Is- **Simple polypectomy technique**
- Polypoid lesion 1-2 cm, raised flat lesion 1-2cm, Ip/Is/IIa- **Endoscopic Mucosal Resection (EMR)**
- Polypoid or non-polypoid lesions >2 cm, Ip/Is/IIa/IIb- **Endoscopic Submucosal Dissection (ESD)**

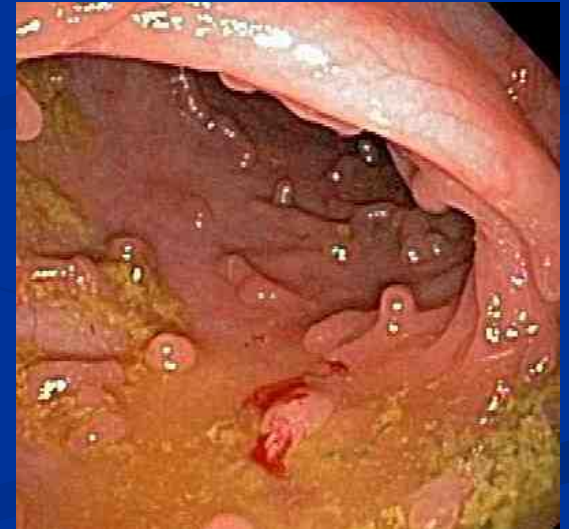
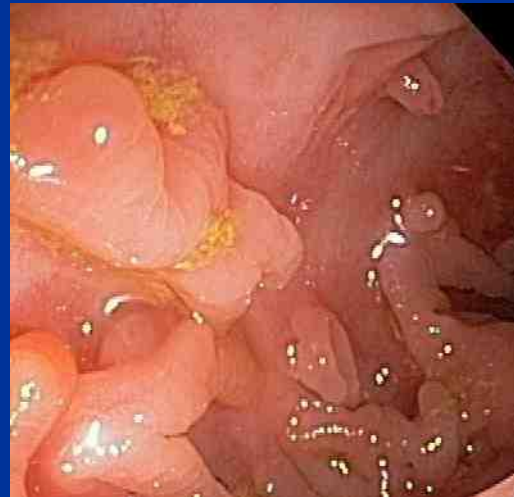
** >10 studies investigating the safety and feasibility of EMR and ESD for large neoplastic lesions in IBD, recently reviewed by Anna Buchner, *Gastroenterology and Hepatology* March 2021

- EMR- a submucosal injectant is used to lift the lesion which is then snared with electrocautery
- ESD- an endoscopic knife is used to dissect out the lesion after the lift

What next for patient?

- “Follow up biopsy results”
 - Dysplasia detected
 - Surgery- cancer, high grade dysplasia, multifocal low-grade dysplasia
 - Enhanced surveillance – 3-6 months – invisible low-grade dysplasia, low grade lesion not fully resected
 - No dysplasia- 1-3 year surveillance based on patient risk
- Follow up 62 y o patient- mild colitis throughout- random (non-targeted) biopsies negative for dysplasia
 - Intensify treatment and repeat colonoscopy 1 year

43 y o female with history of UC pancolitis now in remission.
Underwent surveillance colonoscopy



Can we endoscopically dilate strictures?

- Anastomotic strictures- balloon dilate
- Ileal or colonic strictures <5 cm in length- balloon
- Stricture uncertain length- fluoroscopy





5 ulcer terminal ileum



6 terminal ileum ulcer



7 terminal ileum stricture



8



9 terminal ileum stricture

Endoscopy in IBD-Summary

- Colonoscopy critical tool for IBD diagnosis and disease monitoring
- Colonoscopy for surveillance of dysplasia
 - What is patient's risk for dysplasia?
 - Perform targeted biopsies if possible (chromo, HD scopes)
 - Characterize/resect dysplastic lesions to determine plan