



Dr.N E.Daryani

Lower GI bleeding

1404/02/25

Dr.shahsiah



Dr.Frahvash



Dr.Mokhtare



Dr.Jamali



Dr.agah



Dr.Eshagh Hoseini



Case presentation

**58year –old man admitted with ongoing painless hematochezia-
no melena or hematemesis**

Hgb 12.4 → 8.5; INR 1.3 ;Platelet 75000 ; creat 2.0

NG aspirate :clear&orthostatic in ER

Hx:DM,HTN ,obesity

No alcohol ;No NSAID or ASA

No prior GI bleeding

- **What is DDx & recommendation?**

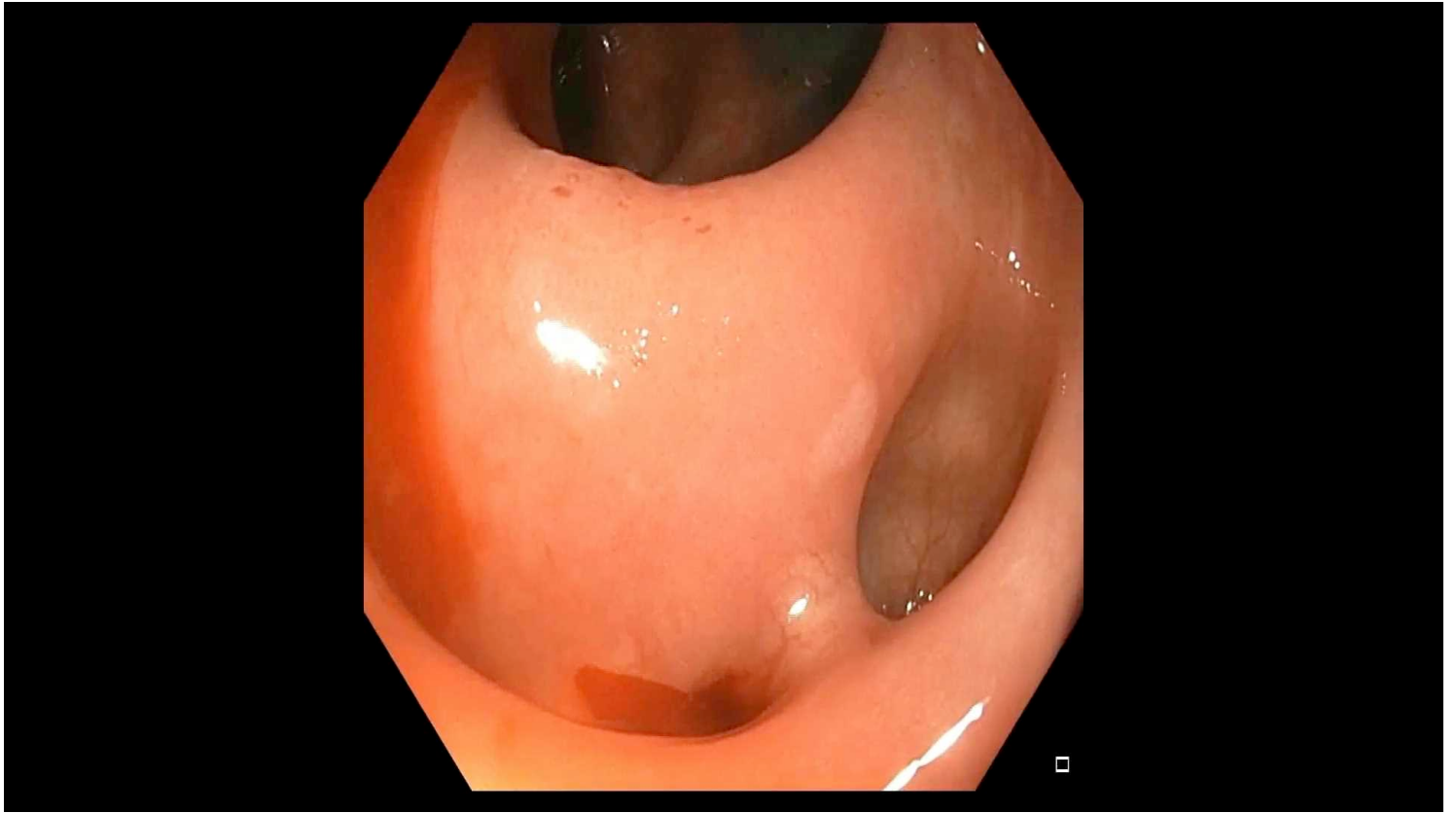
Are you sure he has lower GIB?

**5-20% of patients with UGIB
may present with hemtaochezia**

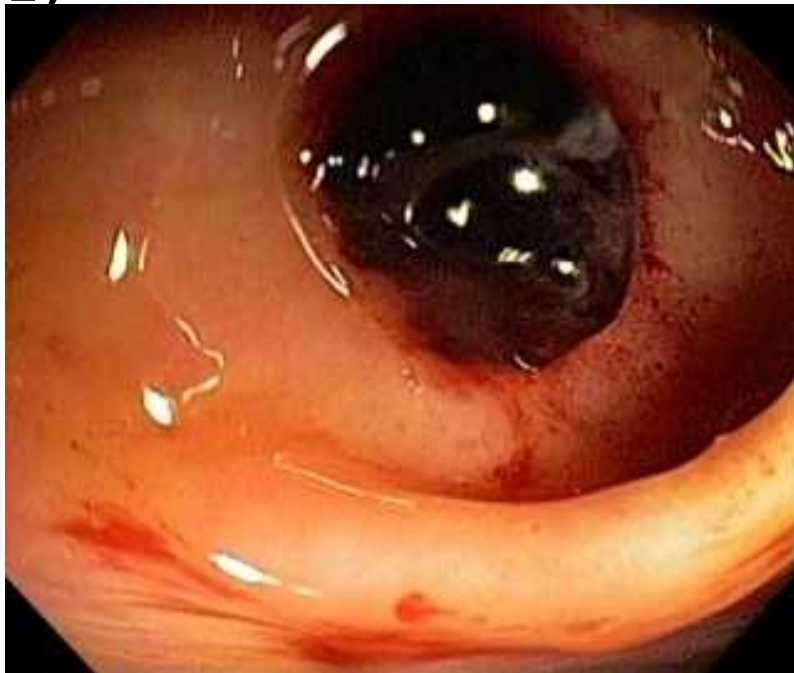
•How you Discriminate lower from upper GIB?

Discrimination lower from upper GIB

- **BUN**
- **Bowel movement**
- **NG aspirates**
- **Bright red blood versus black stool**
- **After colonoscopy you found these lesions(next)**



(Figure 1)



Endoscopic therapy is recommended when finding active

- **bleeding or SRH, irrespective of the etiology.**

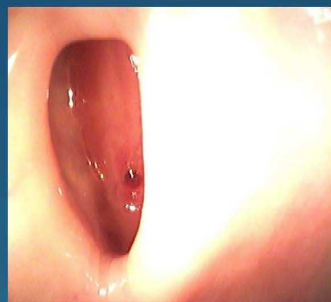
Appearance & Prevalence of Major Stigmata of Definitive Diverticular Hemorrhage on Urgent Colonoscopy (100 patients)

Adherent Clot



(42%)

**Non-Bleeding
Visible Vessel**



(28%)

**Active
Bleeding**



(30%)

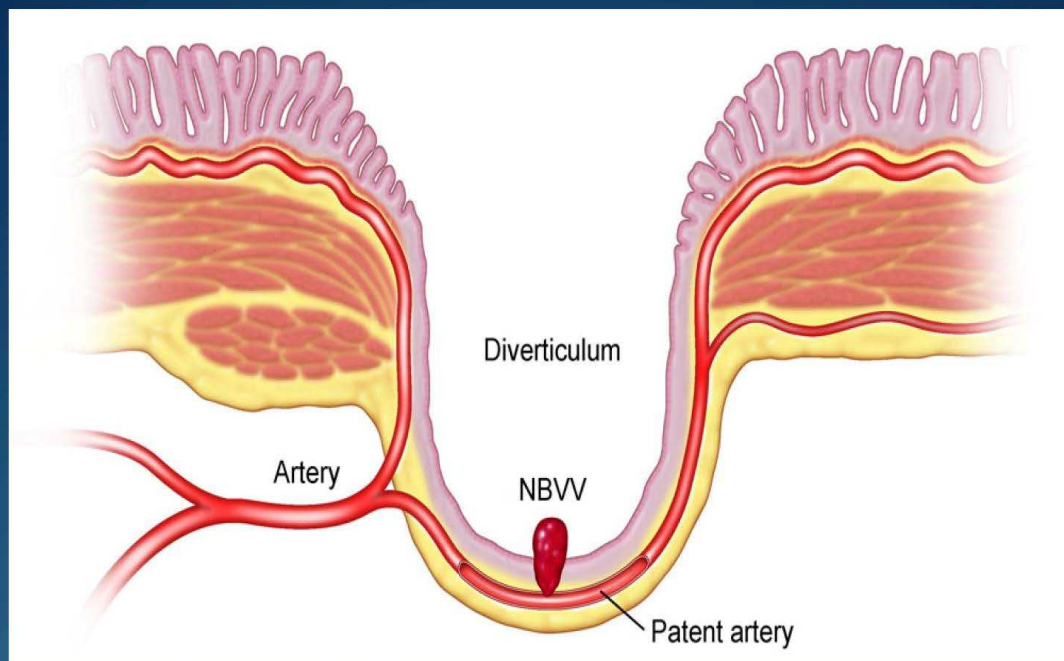
Jensen DM. CURE DDRC 2015

- **Endoclips**
- **Coagulation**
- **Others...**

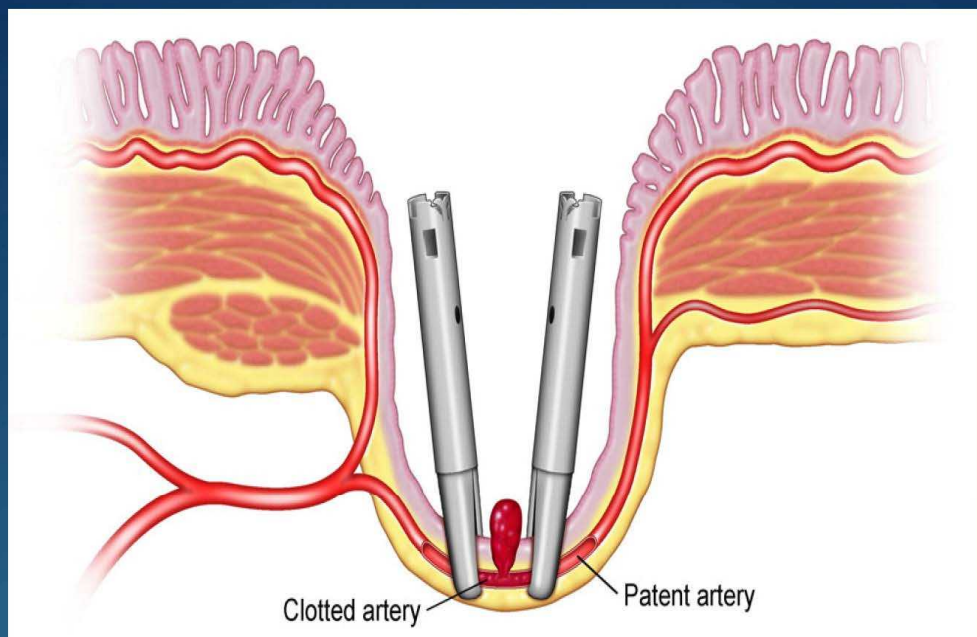


- **Endoscopic therapy and tattooing the surrounding mucosa**



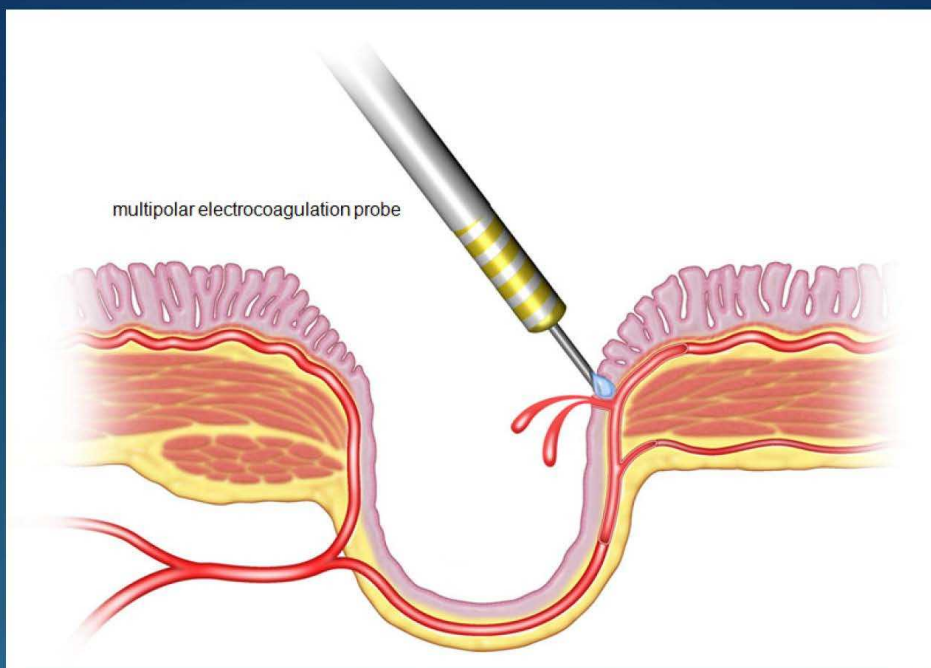
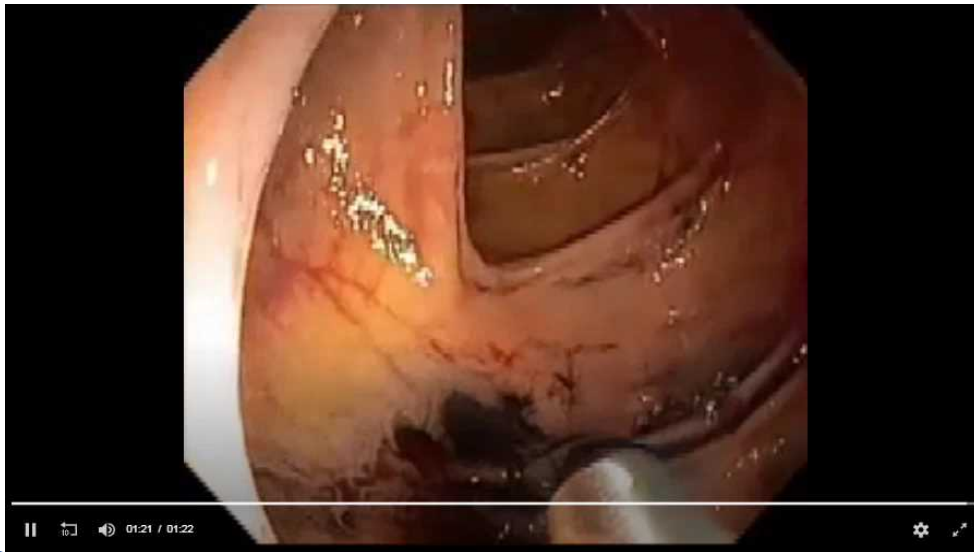


Jensen DM & CURE Hemostasis Research Group 2015

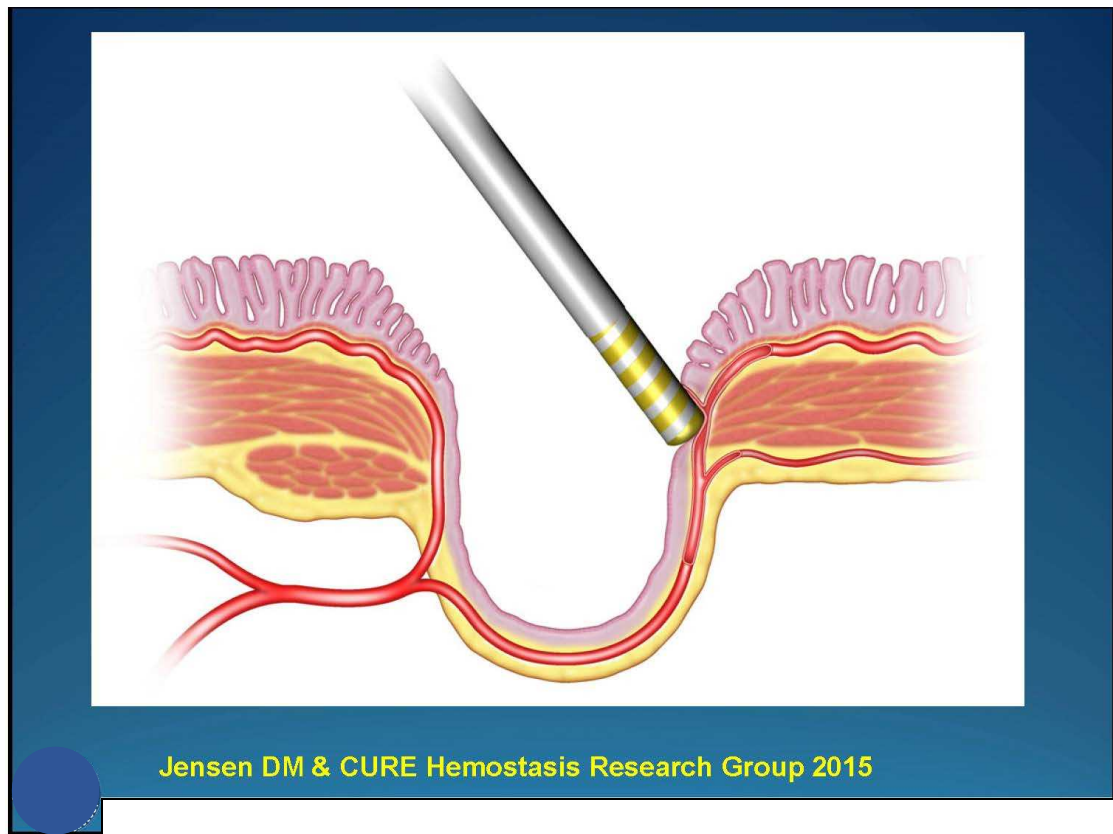


Jensen DM & CURE Hemostasis Research Group 2015

Video 2



Jensen DM & CURE Hemostasis Research Group 2015



Diverticulosis

- The prevalence of diverticulosis is age-dependent, increasing from less than 20 percent at age 40 to 60 percent by age 70

How many percent of lower GI bleeding is related to this lesion?

How many percent stop spontaneously?



- **Account for 20-50 percent of lower GI bleeding**



Which part of colon is most common for bleeding in diverticulosis?



Which part of colon is most common for bleeding in diverticulosis?

•Sigmoid & descending colon



What was the risk factors for diverticular bleeding in this case?



Case presentation

**58year –old man admitted with ongoing painless hematochezia-
no melena or hematmesis**

Hgb 12.4 → 8.5; INR 1.3 ;Platelet 75000 ; creat 2.0

NG aspirate :clear&orthostatic in ER

Hx:DM,HTN ,obesity

No alcohol ;No NSAID or ASA

No prior GI bleeding

•



Case presentation

58year –old man admitted with ongoing painless hematochezia-
no melena or hematemesis

Hgb 12.4 → 8.5; INR 1.3 ;Platelet 75000 ; creat 2.0

NG aspirate :clear&orthostatic in ER

Hx:DM,**HTN** ,**obesity**,**Hyper lipidemia**

No alcohol ;No NSAID or ASA

No prior GI bleeding

• What is DDx & recommendation



Risk factors for diverticular bleeding include:

- aspirin and nonsteroidal anti-inflammatory drug (NSAID) use, advanced age,
- obesity,
- physical inactivity,
- hypertension,
- ischemic heart disease,
- chronic kidney disease,
- and  hyperlipidemia .

Can her bleeding recur?



- Bleeding from diverticula usually stops spontaneously but can recur in

**Bleeding from diverticula usually stop
spontaneously but can recure in 10% to
40% of patients**



Which patient with lower GI bleeding can discharge early?



Oakland score

We suggest using risk stratification tools (e.g., Oakland score#8) to identify low-risk patients with LGIB who are appropriate for early discharge and outpatient diagnostic evaluation.



Oakland score

Age group, y	
≤39	0
40-69	1
≥70	2
Sex	
Female	0
Male	1
Previous hospital admission with LGIB	
No	0
Yes	1
DRE results	
No blood	0
Blood	1
Heart rate, beats/min	
≤69	0
70-89	1
90-109	2
≥110	3
Systolic blood pressure, mm Hg	
50-89	5
90-119	4
120-129	3
130-159	2
≥160	0
Hemoglobin concentration, g/dL	
3.6-6.9	22
7.0-8.9	17
9.0-10.9	13
11.0-12.9	8
13.0-15.9	4
≥16.0	0

Age, years

<40

0

40-69

+1

≥70

+2

Sex

Female

0

Male

+1

Previous lower GI bleeding admission

No

0

Yes

+1

DRE findings

No blood

0

Blood

+1

Heart rate, bpm

<70

0

70-89

+1

90-109

+2

≥110

+3

Systolic blood pressure, mmHg

50-89

+5

90-119

+4

120-129

+3

130-159

+2

≥160

0

Systolic blood pressure, mmHg	50-89	+5
	90-119	+4
	120-129	+3
	130-159	+2
	≥160	0
Hemoglobin, g/L (g/dL)	36-69 (3.6-6.9)	+22
	70-89 (7-8.9)	+17
	90-109 (9-10.9)	+13
	110-129 (11-12.9)	+8
	130-159 (13-15.9)	+4
	≥160 (16)	0

What is the role of surgery in diverticulosis?

Urgent colonoscopy?

most patients requiring inpatient colonoscopy undergo a nonurgent colonoscopy because performing an urgent colonoscopy within 24 hours of presentation has not been shown to improve important clinical outcomes such as rebleeding.

Indication for UGI endoscopy?

Hematochezia associated with hemodynamic instability may be indicative of an UGIB source, and an upper endoscopy should be performed if the suspicion is high to exclude a proximal source of bleeding.

Upper GI bleeding

*Risk factors of UGI bleeding include history of peptic ulcer bleeding, portal hypertension, BUN/Cr>30, aspirin/NSAID use, and positive nasogastric lavage

INR for endoscopic hemostasis?

Endoscopic hemostasis can be considered safe and effective in patients who have an INR of 2.5 or less.

antifibrinolytic

**We recommend against the administration of antifibrinolytic
• agents such as tranexamic acid in LGIB.**

Aspirin and nonaspirin antiplatelet

For patients with LGIB on cardiac aspirin for secondary prevention, aspirin should be continued during hospitalization if possible.

**Nonaspirin antiplatelets(Plavix) should be held initially for patients with severe hematochezia. However, for patients with recent cardiac stents within 1 year, a multidisciplinary approach should be used to determine the safety of temporarily holding
• antiplatelets.**

Vitamin K antagonist(comadin)

Although most patients with LGIB on VKAs are unlikely to require reversal, it is necessary reversal of patients who present with a life-threatening LGIB and have an INR substantially exceeding the therapeutic range.

For patients on VKAs to prevent stroke in nonvalvular atrial fibrillation who require reversal, 4-factor prothrombin complex concentrate (PCC) is preferred to fresh frozen plasma (FFP) because of the rapidity of INR reduction

DOAC

For patients on DOACs, we suggest reversal for the small subset of patients who present with a life-threatening LGIB that does not respond to initial resuscitation and cessation of the anticoagulant alone.

For patients requiring reversal, targeted reversal agents (idarucizumab for dabigatran and andexanet alfa for apixaban and rivaroxaban) should be used when available if the DOAC has been taken within the past 24 hours

Redblood cell transfusion

We suggest a restrictive strategy of red blood cell transfusion (threshold for transfusion at a hemoglobin level of 7 g/dL) in

- hemodynamically stable patients with LGIB.**

Platelet

Platelets should be administered in the setting of severe LGIB to maintain a platelet count of more than 30000 and a higher threshold of 50000 can be considered if endoscopic procedures are required.

There is no benefit to routine platelet transfusion for patients on antiplatelets.

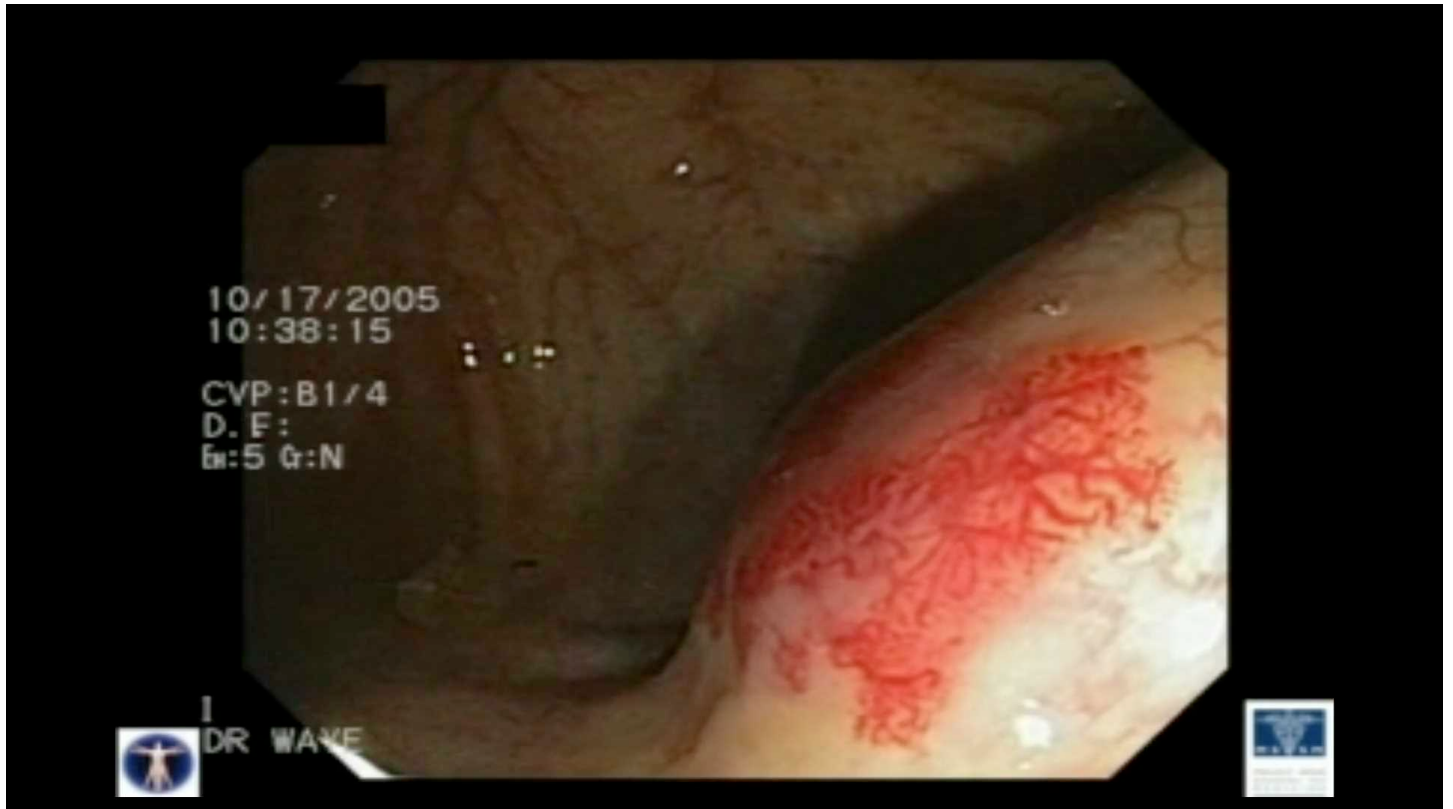
Differential Diagnoses of lower GI bleeding

1:diverticulosis

- **A 65-year-old man was admitted to the hospital with episodes of recurrent red blood per rectum without pain but not massive.**
- **He denied any previous gastrointestinal (GI) diseases, abdominal pain, weight loss, or prior change in bowel habits.**
- **There was no family history of colon cancer**

- **heart rate :**
 - supine :96
 - Upright:118
- **blood pressure:**
 - upright: 124/90
 - supine: 110/72
- **hemoglobin :11.0 g/dL**
- **hematocrit:32%**
- **BUN :13 mg/dL**
- **creatinine :0.8 mg/dL.**

Colonoscopic finding

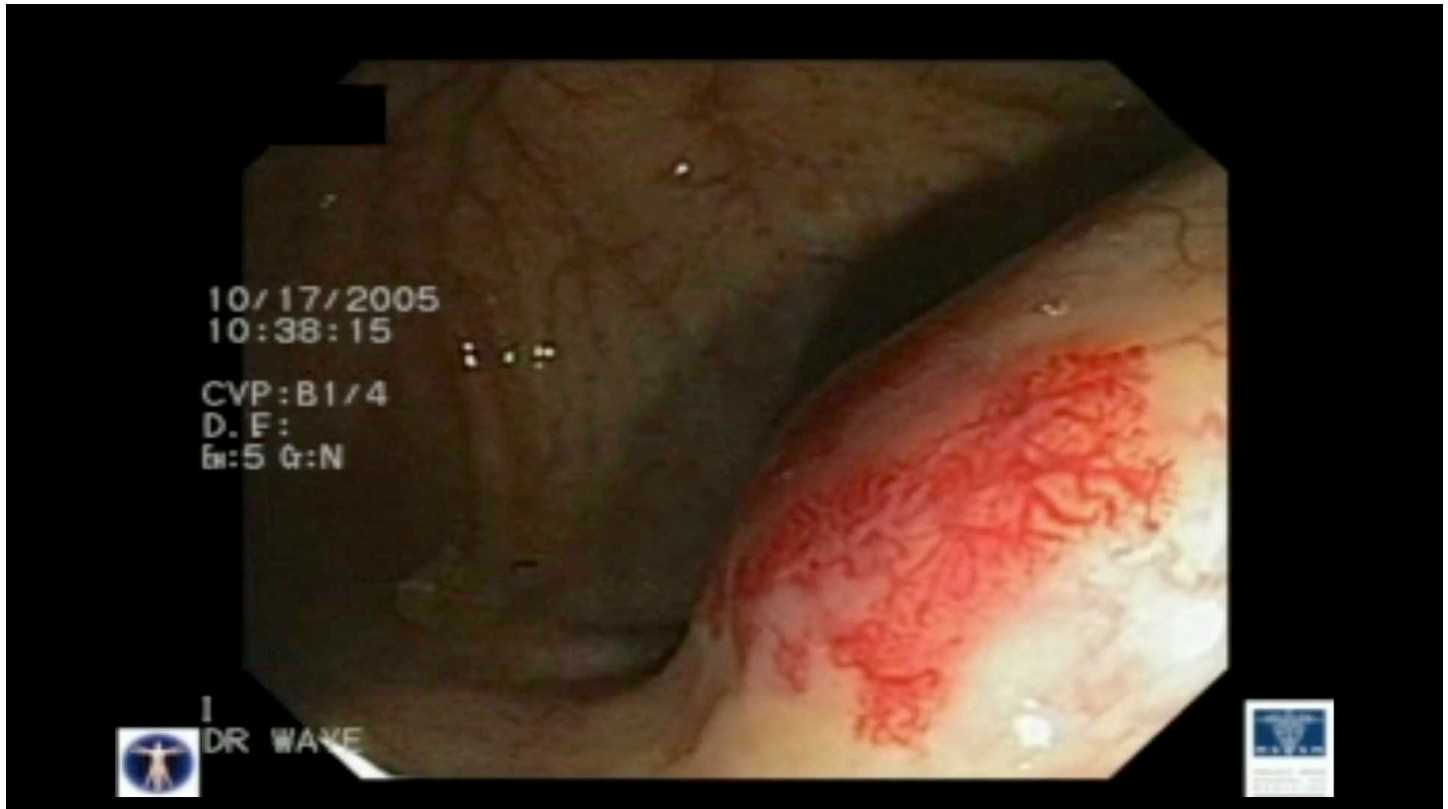


Angiodysplasia

angiodysplasias

- **Common cause of acute, chronic, and occult lower GI bleeding**
- **common in the right colon, but have been identified in all portions of the GI tract**
- **associated with aging**
- **typically small**
- **painless hematochezia(undistinguishable from diverticula)**
- **Less bleeding volume than with diverticular bleeding**

How You manage this case?



Differential Diagnoses of lower GI bleeding

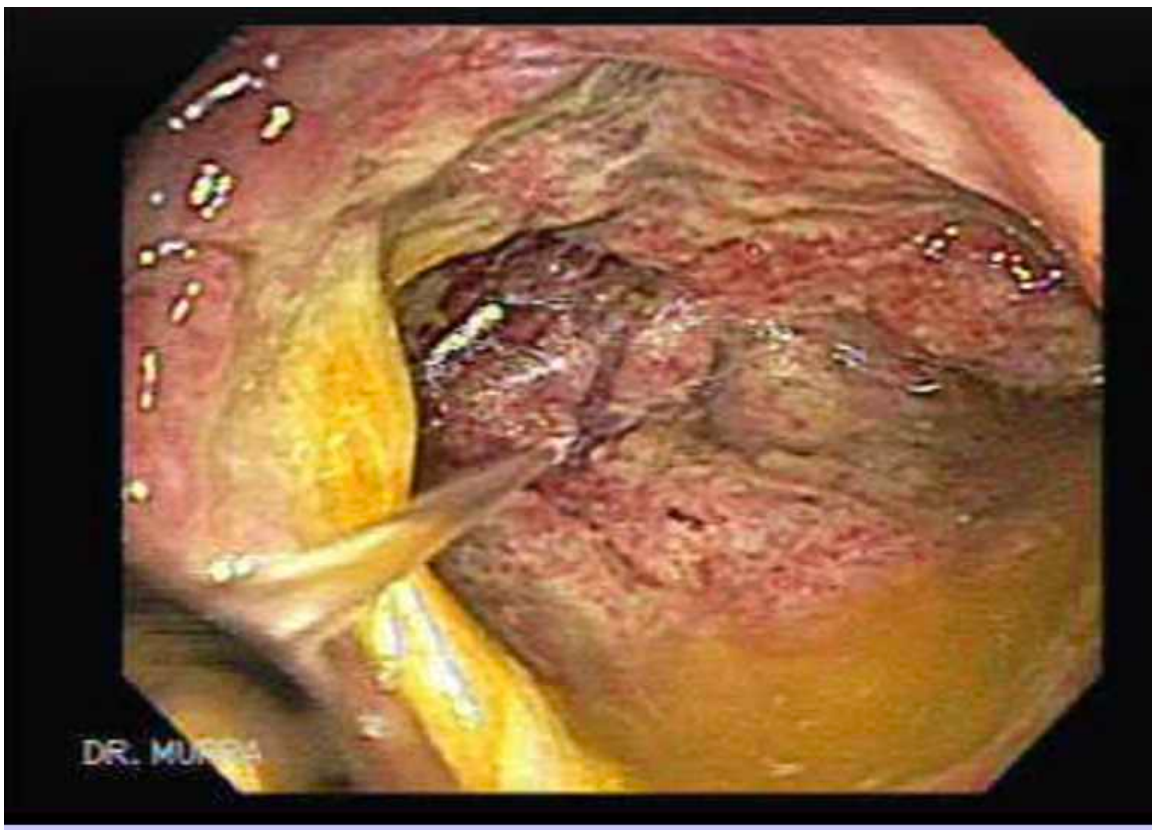
1:diverticulosis

2:angiodysplasia

Case presentation ischemic colitis:

How many percent of lower GI bleeding is due to ischemic colitis?

•3-9%



Numerous medications may produce colonic ischemia by a similar mechanism.

The most common offenders are: antihypertensive agents, diuretics, nonsteroidal anti-inflammatory drugs, digoxin, oral contraceptives, pseudoephedrine, cocaine, Tegaserod and alosetron. Strenuous physical activities, such as long distance running or bicycling, have been reported to lead to colonic ischemia, presumably by physiologic shunting caused by mesenteric vasoconstriction and intravascular volume depletion from dehydration.

Colonic ischemia occurs due to changes in systemic circulation and/or alterations in local mesenteric vasculature.^{1,5-7} The most frequently affected areas are the left colon and superior rectum, the lower rectum usually being spared because of its dual blood supply.^{1,6} However, any part of the colon may be involved.^{1,7} Reported conditions associated with ischemic colitis include atherosclerosis, heart failure, cardiac arrhythmias, shock, vasculopathies, abdominal aortic surgery, and hyperviscosity states.¹⁻⁷ Drugs and medications such as cocaine, digitalis derivatives, alosetron, migraine agents (e.g., sumatriptan), and nonsteroidal anti-inflammatory agents (NSAIDs) have been all related to ischemic colitis. The main differential diagnoses of ischemic colitis are infectious colitis, diverticulitis, and inflammatory bowel disease. Therefore, stool cultures and histology are an important part of the work-up of patients presenting with abdominal pain and bloody stools. Regular stool cultures do not detect *Klebsiella oxytoca* or enterohaemorrhagic *Escherichia coli*, and this should be specifically stated in the microbiology request form.

Most cases of ischemic colitis are self-limited and do not require any specific medical or surgical therapy.¹⁻⁴ However, if the patient is clinically unstable, the etiology was cocaine or a vasoconstrictive agent, and there are signs of peritoneal inflammation, then colon resection should be considered.^{1,6}

The endoscopic spectrum of ischemic colitis is broad, ranging from mild, patchy subepithelial hemorrhages to extensive necrosis. Nevertheless, the 'pathognomonic' endoscopic appearance of ischemic colitis is a 'segmental' involvement of the left colon in the so-called 'watershed area.'¹⁻⁵ There are scant data on the endoscopic appearance of ischemic colitis. This review and video presents the endoscopic spectrum of ischemic colitis.

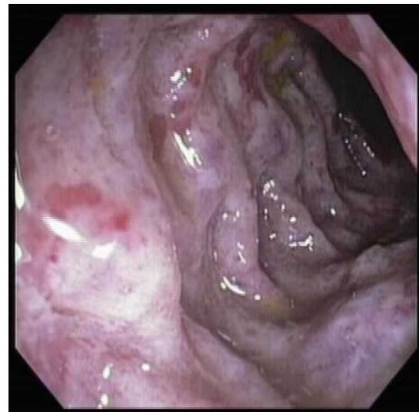
Others: Ischaemic colitis

- Age – normally over 60
- Symptoms and findings will vary with chronicity, sites and causes
- Site – predominantly left-sided
- Symptoms
 - Typically sudden onset, crampy, left-sided pain
 - Diarrhoea or need to defaecate
 - Blood within 24h

Theodoropolou *World J Gastroenterol.* 2008

Findings

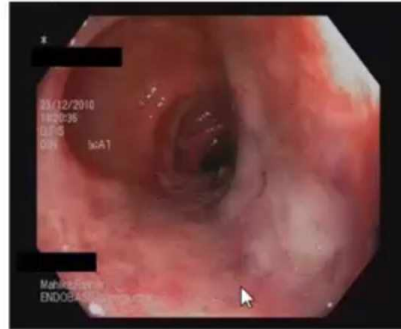
- CT
 - bowel wall thickening
 - Thumbprinting
 - Pericolonic stranding
- Colonoscopy
 - Depends on timing
 - Purple submucosal haemorrhages (48h)
 - Focal pale and oedematous mucosa interspersed with petechial haemorrhage or superficial ulceration
 - segmental erythema, ulcerations and bleeding
- Splenic flexure (but can be proximal)
- Rectal sparing
- Rapid evolution / resolution



Ischaemic colitis

Causes

- Arteriosclerosis
- Mesenteric vein thrombosis
- Heart failure
- Vasculitis
- NSAID
- Drugs (e.g. digitalis, bevacizumab)
- EHEC
- Cocaine
- ...

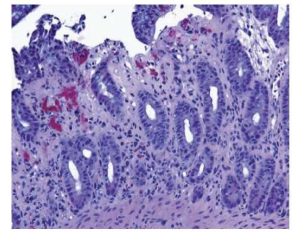
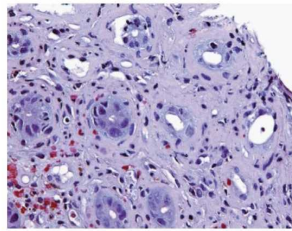


Ischaemic colitis in a 54-yr-old woman

26 of 29

Acute ischaemic colitis - pathology

- Superficial mucosal necrosis
- Withered or atrophic crypts
- Cryptitis and abscesses rare
- Cytologic atypia, can be confused with dysplasia



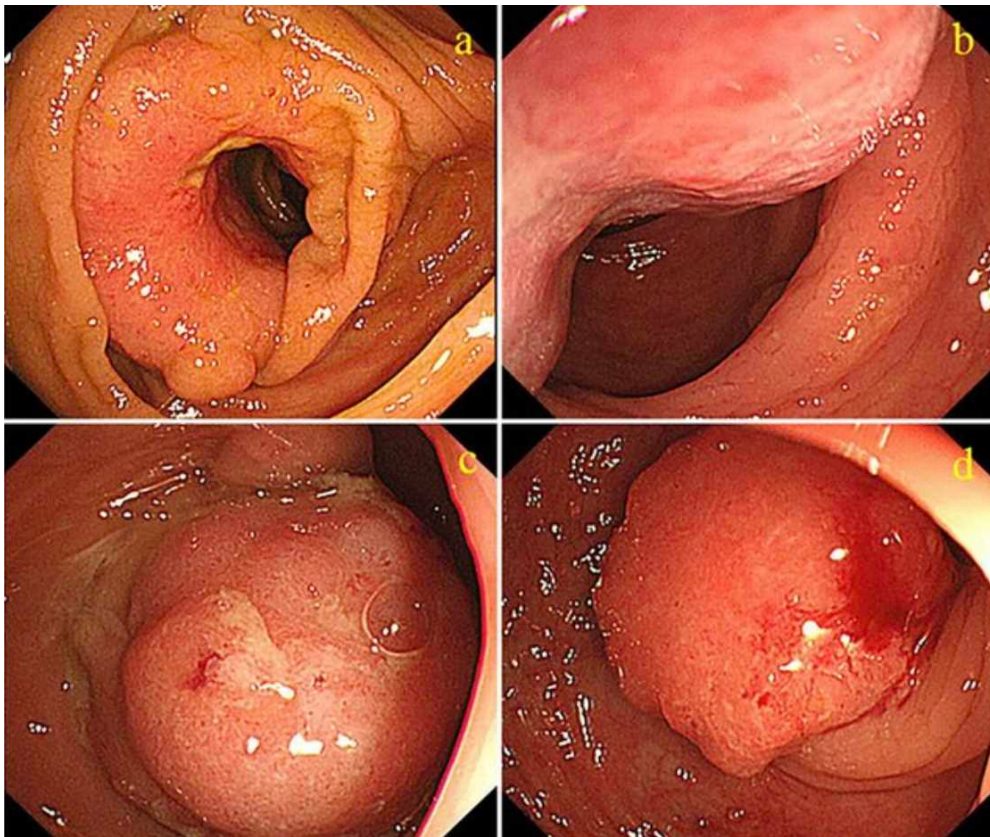
Cerilli Arch Pathol Lab Med 2012

Differential Diagnoses of lower GI bleeding

1:diverticulosis

2:angiodysplasia

3:ischemic colitis



Differential Diagnoses of lower GI bleeding

1:diverticulosis

2:angiodysplasia

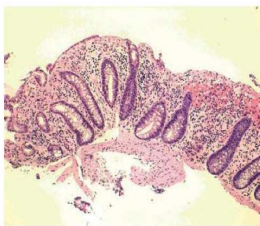
3:ischemic colitis

4:colon cancer

28 of 29

Others: Radiation proctitis

- Up to 15% of patients with abdominal radiation
- Related to dose and age
- Bleeding
- Endoscopically
 - Telangiectasia
 - Haemorrhage
 - Ulceration can occur - circumferential



Nielsen Nat Clin Prac Gastroenterol Hepatol 2008

Differential Diagnoses of lower GI bleeding

1:diverticulosis

2:angiodysplasia

3:ischemic colitis

4:colon cancer

5:radiation proctitis

iPad 10:19 AM 56%

23 of 29

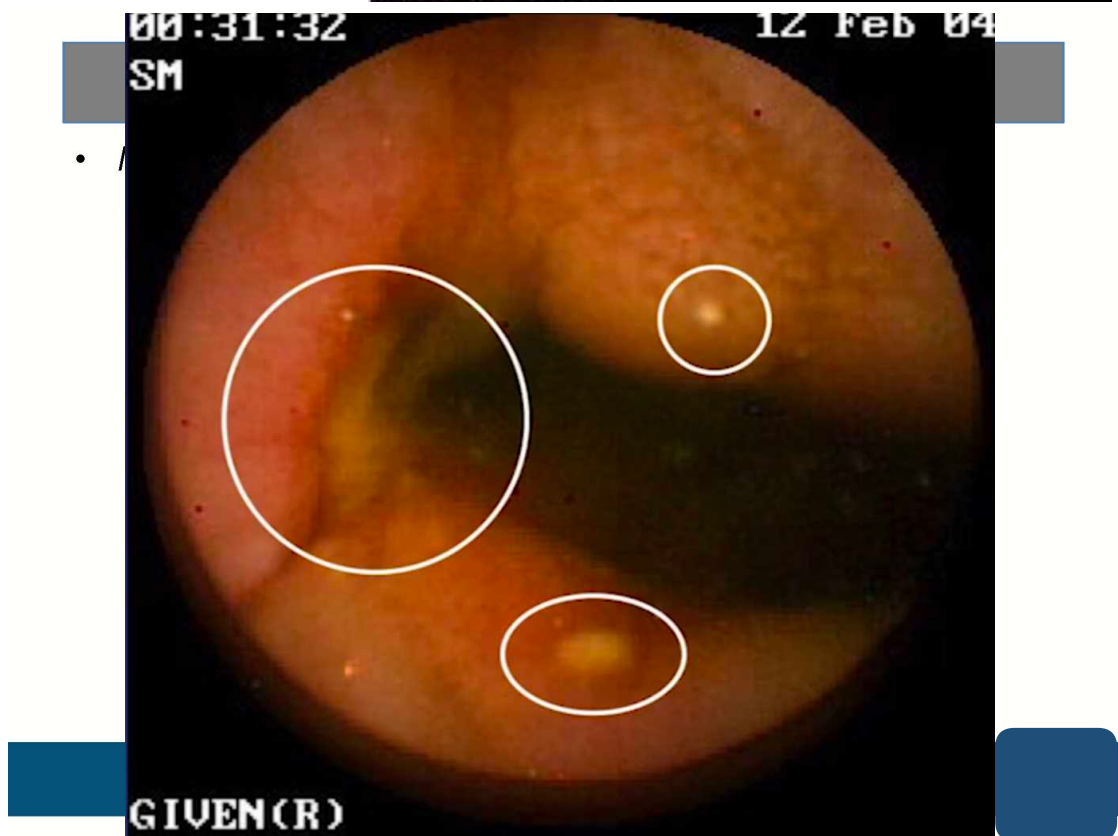
Drug-induced colitis: NSAIDs

- - Aspirin, ibuprofen, diclofenac, piroxicam, naproxen
- Colonoscopy performed in all (5 had bloody diarrhoea)
- 2 deep ulcers
- 2 superficial ulcers
- 1 erythema
- right-sided lesions except 1
- Pathology: erosions and fibrosis, lymphocytic colitis



Geramizadeh *Indian J Gastroenterol* 2009

(Figure 1)



Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis**
- 2:Angiodysplasia**
- 3:Ischemic colitis**
- 4:Colon cancer**
- 5:Radiation proctitis**
- 6:Medication associated**

Importance of age

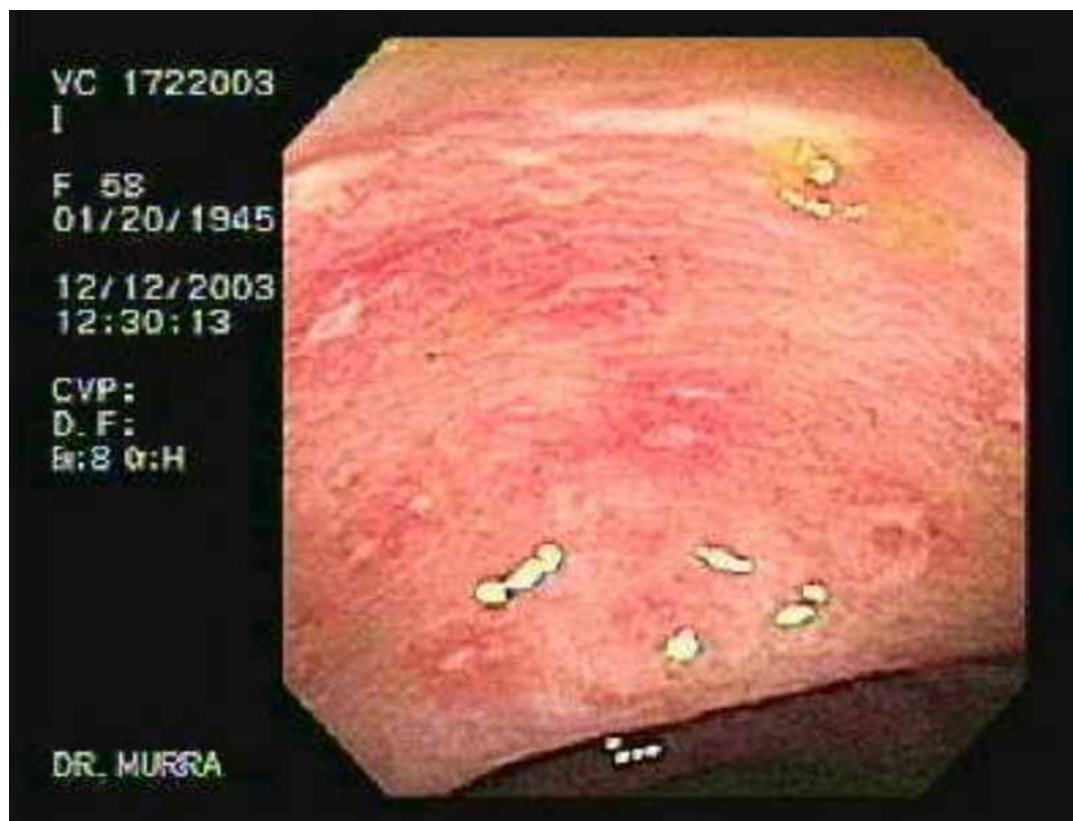
Age>65

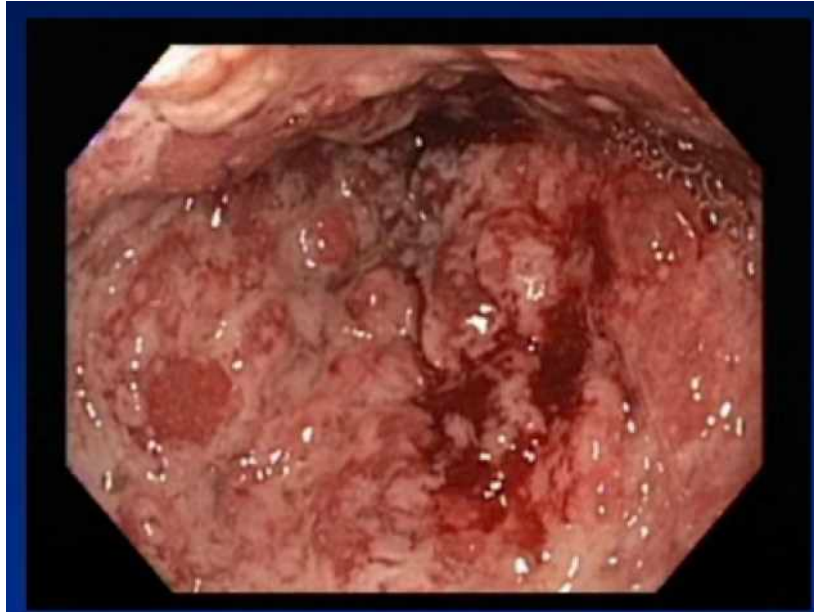
- Vascular ectasia**
- Diverticular hemorrhage**
- Ischemic colitis**

Age<65

- Infection**
- Inflammatory condition**

Infectious colitis with lower GI bleeding





Ulcerative colitis

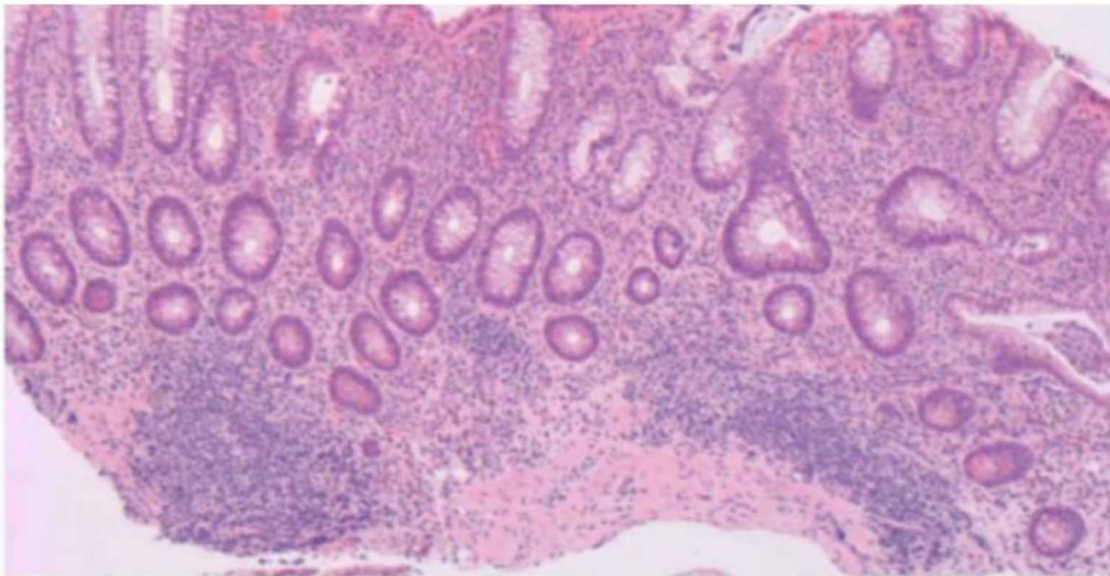
ulcers and erosions along with exudates, edema, erythema, touching friability and mucosal hemorrhage with no skip lesions or cobble stoning a.



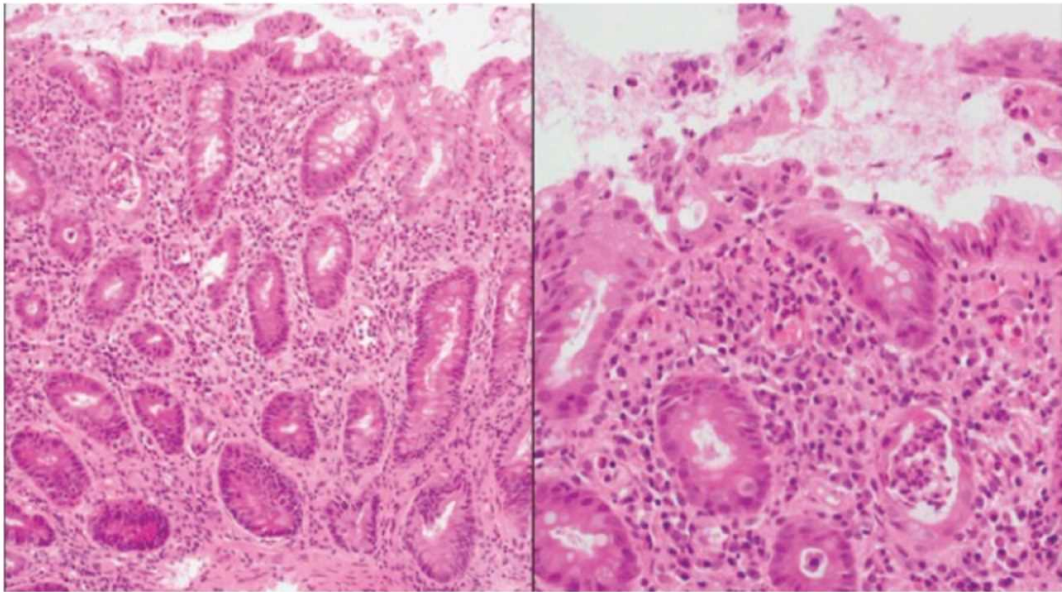
Case presentation IBD

- How pathologist can differentiate bloody diarrhea is due to IBD or infectious diarrhea?

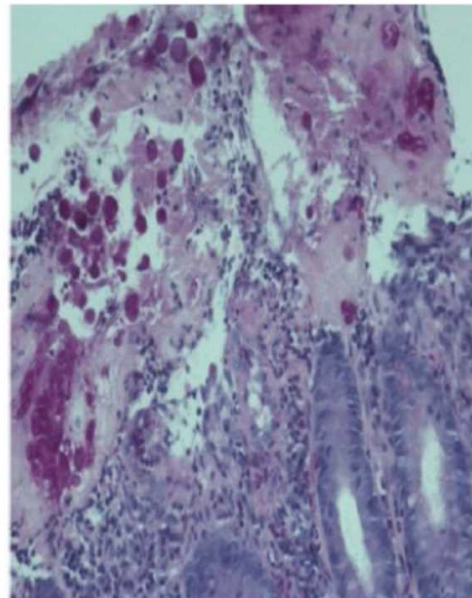
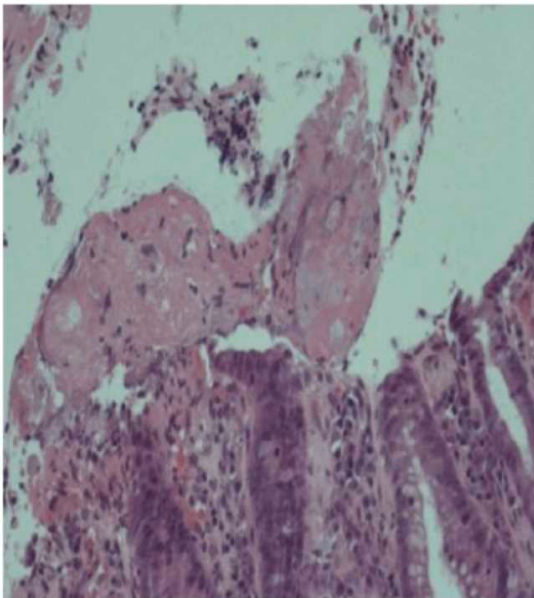
Architectural Distortion: IBD`



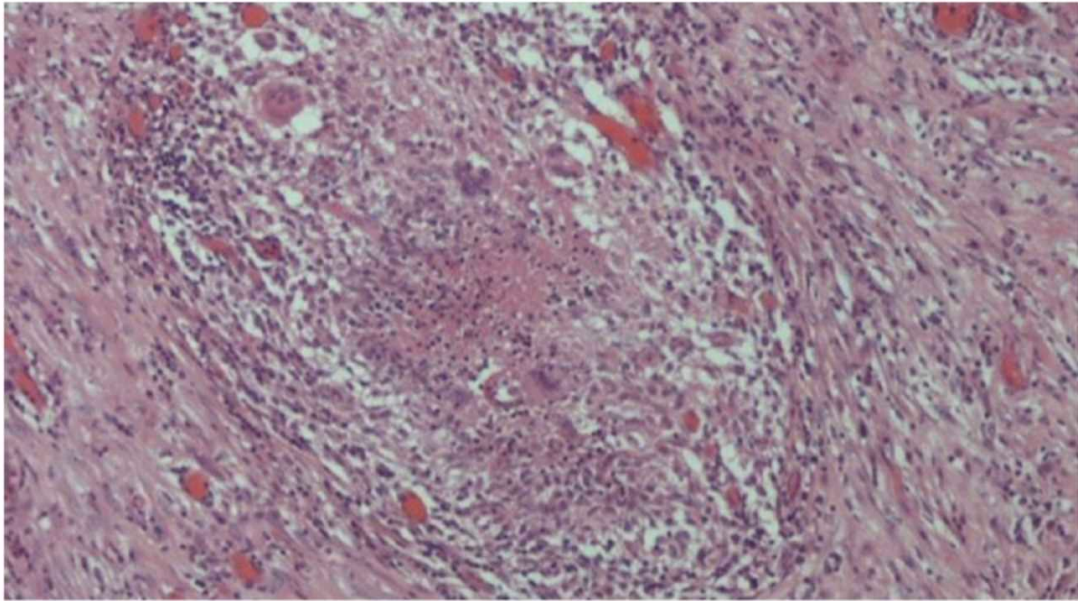
Acute Infective Colitis



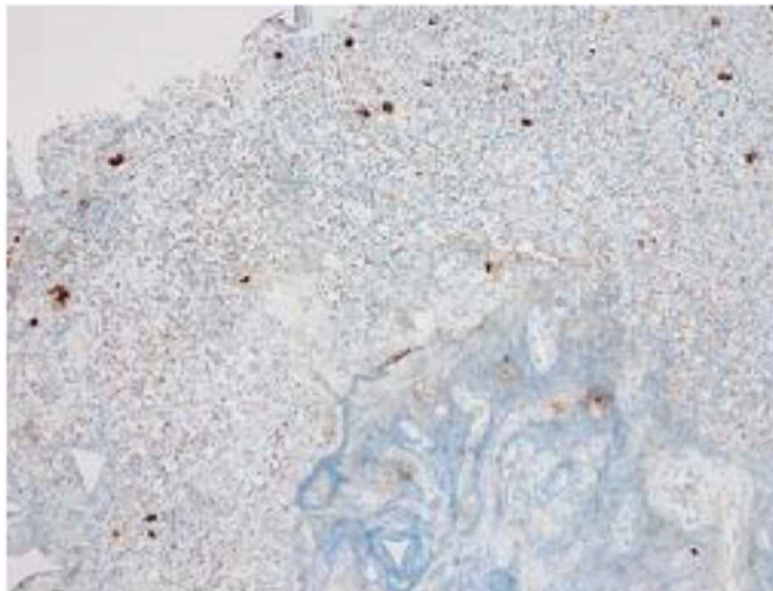
Amoebiasis: H&E and PAS



Caseating Granulomatous Reaction



Immunohistochemistry of CMV colitis



Differential Diagnoses of lower GI bleeding

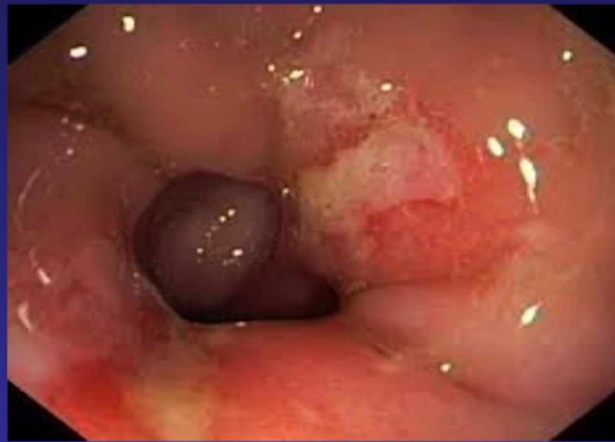
- 1: Diverticulosis
- 2: Angiodysplasia
- 3: Ischemic colitis
- 4: Colon cancer
- 5: Radiation proctitis
- 6: Medication associated
- 7: Infectious colitis
- 8: IBD

Colitis

(May be presented by hematochezia)



The clinical presentation and endoscopic appearance of the various types of colitis can be indistinguishable.



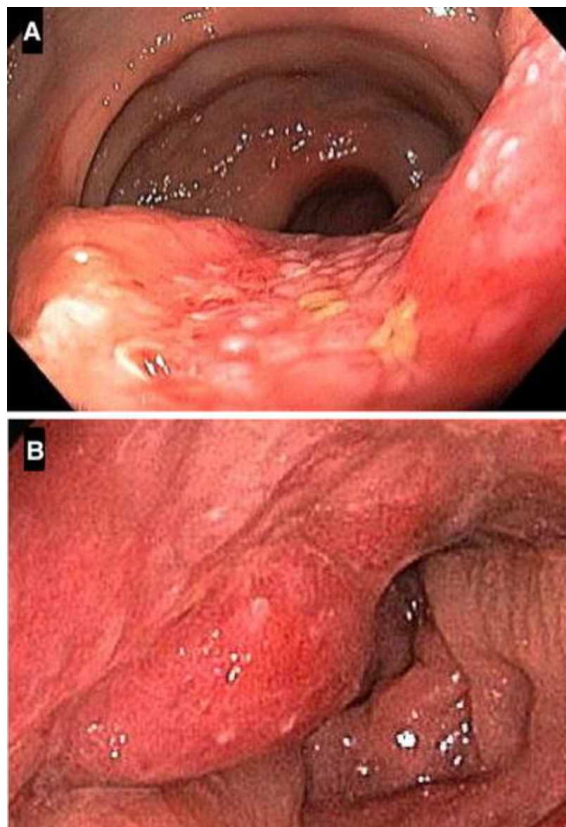
SRUS

Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis**
- 2:Angiodysplasia**
- 3:Ischemic colitis**
- 4:Colon cancer**
- 5:Radiation proctitis**
- 6:Medication associated**
- 7:Infectious colitis**
- 8:Solitary rectal ulcer**

Endometriosis

Ileal or sigmoid endometriosis should be carefully considered in the differential diagnosis of CD in menstruating females who are nulliparous and have dysmenorrhoea, dyspareunia, dyschezia, menometrorrhagia



Figure

Caption

Colonoscopy images of female with endometriosis of the colon showing A mucosal induration with areas of fibrosis and punctate hemorrhagic foci and B mass-like protrusion into the colon

ominal

ght. [Terms and](#)

Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis
- 2:Angiodysplasia
- 3:Ischemic colitis
- 4:Colon cancer
- 5:Radiation proctitis
- 6:Medication associated
- 7:Infectious colitis
- 8:Solitary rectal ulcer
- 9:endometriosis

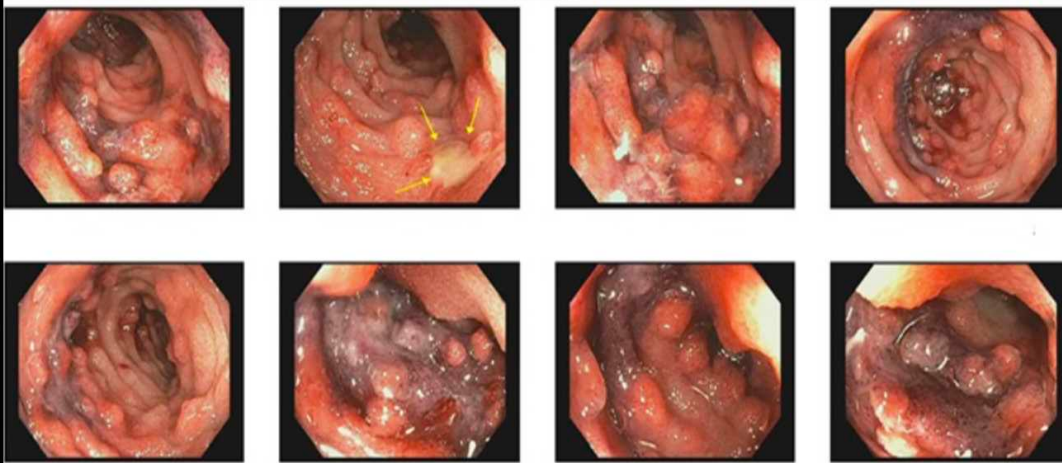


Figure 3.

Colonoscopy showing moderate to severe active terminal ileitis.

Source

S2300 Henoch-Schönlein
Purpura Induced Terminal Ileitis
Mimicking Crohn's Disease

Official journal of the American
College of Gastroenterology |
ACG115:S1216-S1217, October 2020.

Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis**
- 2:Angiodysplasia**
- 3:Ischemic colitis**
- 4:Colon cancer**
- 5:Radiation proctitis**
- 6:Medication associated**
- 7:Infectious colitis**
- 8:Solitary rectal ulcer**
- 9:Endometriosis**
- 10:Vasculitis**

Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis**
- 2:Angiodysplasia**
- 3:Ischemic colitis**
- 4:Colon cancer**
- 5:Radiation proctitis**
- 6:Medication associated**
- 7:Infectious colitis**
- 8:Solitary rectal ulcer**
- 9:Endometriosis**
- 10:Vasculitis**

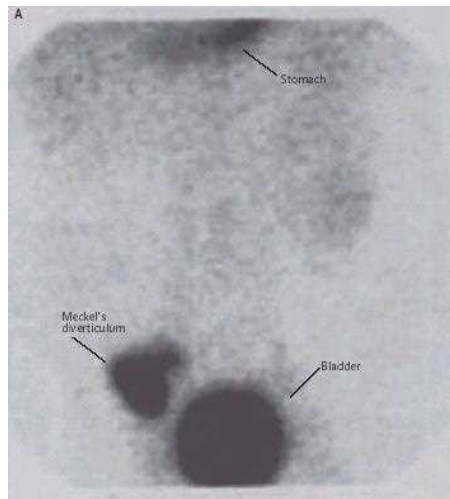
CASE: 5

- **A 10 year -old boy presented with brisk and painless melena from 18h ago**
- **Colonoscopy and endoscopy was performed for the patient that was normal.**

What is the next step in the evaluation of the patient?

Radiolabeled technetium scanning

Meckel scan = ^{99m}Tc pertechnetate which has an affinity for gastric mucosa



Meckel diverticulum

- The vestigial remnant of the omphalomesenteric duct
- Most frequent anomaly of GI tract
- 2-3% of population
- 2-3 cm length
- 100 cm of ileocecal valve
- Male/female = 2/1
- The peak incidence is 2 years of age
- Heterotopic tissue : 50% of cases , usually gastric



Clinical manifestation

- **Painless rectal bleeding (melena in 84%)**
- **Intestinal obstruction (intussusception or volvulus , 10%)**
- **Painful diverticulitis mimicking appendicitis**

Differential Diagnoses of lower GI bleeding

- 1:Diverticulosis**
- 2:Angiodysplasia**
- 3:Ischemic colitis**
- 4:Colon cancer**
- 5:Radiation proctitis**
- 6:Medication associated**
- 7:Infectious colitis**
- 8:Solitary rectal ulcer**
- 9:Endometriosis**
- 10:Vasculitis**
- 11:Meckle diverticulum**

CTA

We suggest performing a CTA as the initial diagnostic test in patients with ongoing hemodynamically significant hematochezia. However, CTA is of low yield in patients with minor

- LGIB or those in whom bleeding has clinically subsided.**

angiography

We recommend that patients who have a CTA demonstrating extravasation be promptly referred to interventional radiology for transcatheter arteriography and possible embolization. For specialized centers with experience in performing endoscopic hemostasis, a colonoscopy can also be considered after a positive

- CTA.**

