CHA BUNDANG MEDICAL CENTER

혈변의 진단과 치료

분당차병원 소화기내과
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CHA BUNDANG MEDICAL HOSPITAL

CONTENTS

1. Classification and definition

Classification and definition

1. Overt vs Occult

Overt : hematemesis, melena, black tarry stool, hematochezia

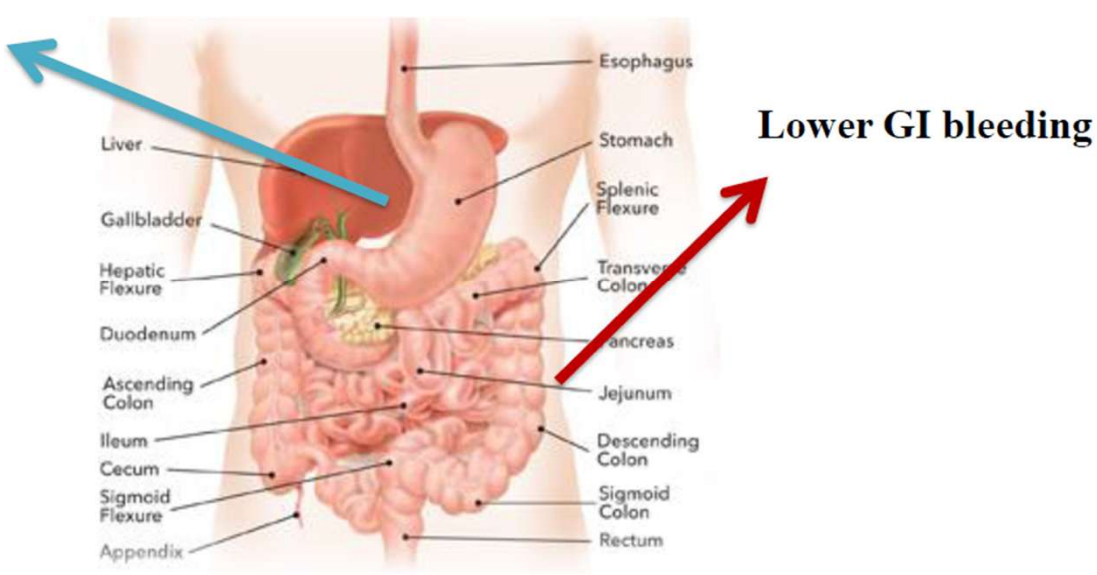
Occult : In the absence of overt bleeding - symptoms of blood loss or anemia (lightheadedness, syncope, angina, dyspnea), Iron deficiency anemia, positive stool occult blood

2. According to the site of bleeding

Upper GI bleeding : Esophagus, Stomach, Duodenum (Proximal to Treitz ligament)

Lower GI bleeding : Colon, small intestine

Obscure GI bleeding : unclear source



2. Initial assessment

Initial assessment

1. History

Symptom:

1) Hematemesis (DDx. blood tinged vomit, dark green or tarry vomit)
2) Melena (DDx. black tarry stool, dark green or brown stool)
3) Hematochezia (DDx. anal bleeding, blood tinged stool or diarrhea)

Duration: Acute (3 days) or Chronic (Several days or more)

Associated symptom: Abdominal pain, Diarrhea, Nausea/Vomiting, Weight loss

Previous history:

1) Previous gastrointestinal bleeding
2) Medical history: Hypertension, DM, Vascular disease, Liver cirrhosis, Cancer, *H. pylori*
3) Surgical history: GI tract operation, Recent endoscopy (EMR/Polypectomy/ESD/Biopsy)

Drug history: Antithrombotics, NSAIDs or steroid, etc

Social history: Alcohol, Smoking, Travel, Stress

Initial assessment

2. Physical exam and simple test – Add clues to the impression

Check exact color of suspicious bleeding: Rectal exam, Patient's photo, etc.

EGD or sigmoidoscopy for stable ambiguous patient

Chronic and low probability actual bleeding: CBC, Stool occult blood

Tenderness on abdomen: Indicated high probability of inflammatory disease

Rectal bleeding has been reported to be the sixth most common symptom prompting an outpatient clinic visit.[1] Anorectal causes account for from 3% to 10% of patients presenting with hematochezia.[2-4] In a study that used artificial neural networks, 12.5% of patients with acute lower GI bleeding had an anorectal etiology.[5] The

years.[7,8] Mortality from lower GI bleeding (0.6%) is significantly lower than that from upper GI bleeding (2%).[11] However, outcomes data for anorectal causes of

Gastrointestinal endoscopy, *76*(2), 406-417.

Editorials

Rectal bleeding in general practice:

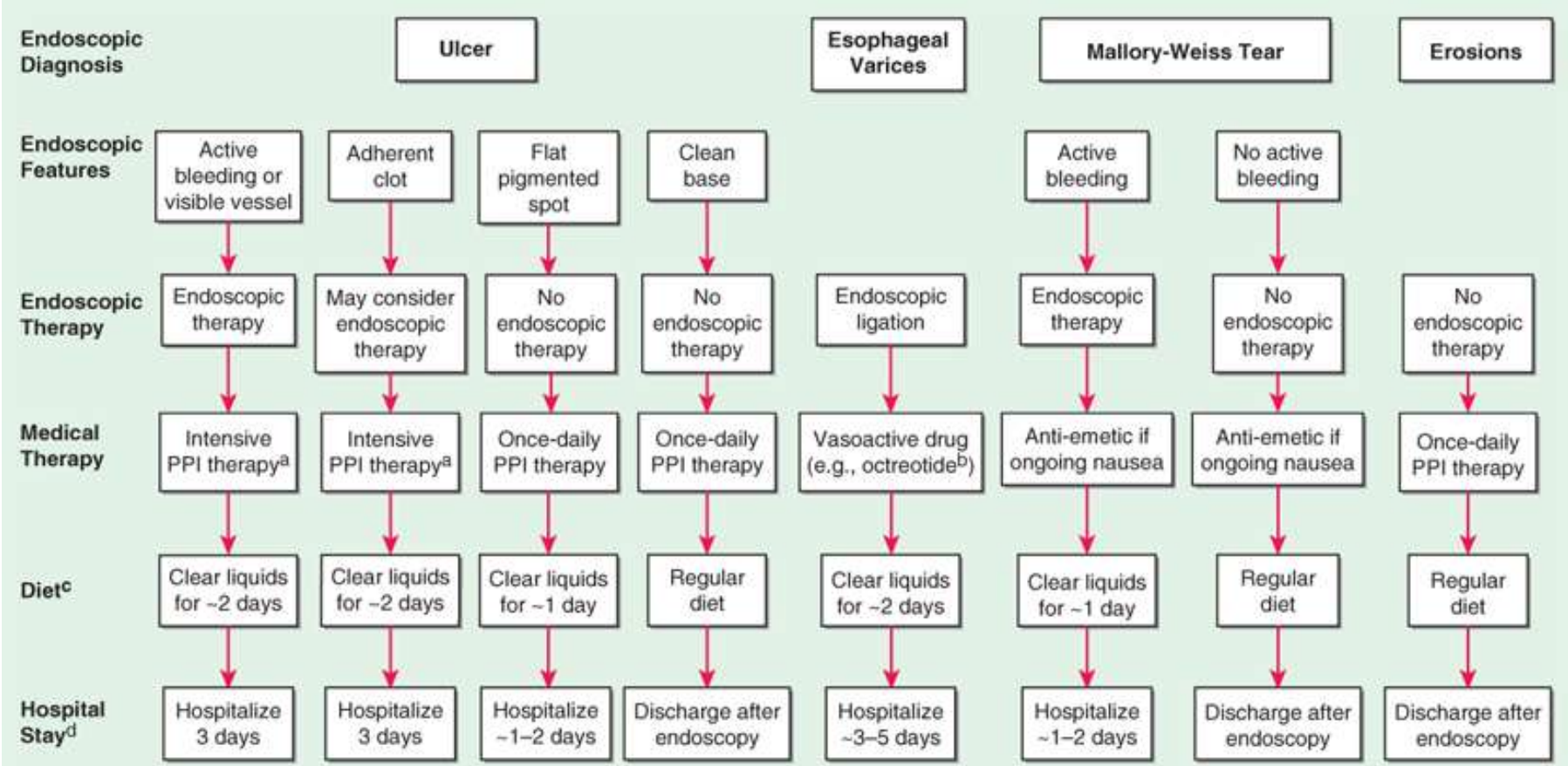
new guidance on commissioning

an underlying sinister cause. In the vast majority of patients in primary care the cause will be benign and most often a benign anorectal condition such as haemorrhoids and/or an anal fissure. However, rectal

British Journal of General Practice, *68*(676), 514-515.

3. Clinical guidelines

1-1) Upper - Traditional Harrison's algorithm



[a]Intravenous bolus (80 mg) followed by infusion (8 mg/h) for 3 days; or oral or intravenous bolus (e.g., 80 mg) followed by intermittent high doses (e.g., 40–80 mg bid or 40 mg tid) for 3 days.Then twice-daily PPI on days 4–14 followed by once-daily PPI.
[b]Intravenous 50 μg bolus followed by 50 μg/h infusion for 2–5 days.
[c]Diet after endoscopy, assuming no nausea or vomiting.
[d]Duration after endoscopy assuming pt stable without further bleeding or concurrent medical conditions requiring hospitalization; PPI, proton pump inhibitor.

Source: J.L Jameson, A.S. Fauci, D.L. Kasper, S.L. Hauser, D.L. Longo, J. Loscalzo: Harrison's Manual of Medicine, Twentieth Edition.

1-2) Upper – Korean Guidelines

REVIEW

Gut and Liver, Vol. 14, No. 5, September 2020, pp. 560-570

Guidelines for Nonvariceal Upper Gastrointestinal Bleeding

BODY

Recommendation 1. Risk stratification with an appropriate scoring system prior to upper gastrointestinal endoscopy in patients with NVUGIB can predict cli

Grade of recommendation: strong for re

Level of evidence: high quality of evide

Recommendation 2. Intravenous administration of PPIs prior to upper gastrointestinal endoscopy is recommended in patients with suspected NVUGIB.

Grade of recommendation: strong for recommendation

Level of evidence: high quality of evidence

1-3) Upper – American College of Gastroenterology

CME

ACG Clinical Guideline: Upper Gastrointestinal and Ulcer Bleeding

Table 1. List of guideline statements with strength of recommendation and quality of evidence

Risk stratification
1. We suggest that patients presenting to the emergency department with upper gastrointestinal bleeding (UGIB) who are classified as very low risk, defined as a risk assessment score with ≤1% false negative rate for the outcome of hospital-based intervention or death (e.g., Glasgow-Blatchford score = 0–1), be discharged with outpatient follow-up rather than admitted to hospital (conditional recommendation, very-low-quality evidence).
Red blood cell transfusion
2. We suggest a restrictive policy of red blood cell transfusion with a threshold for transfusion at a hemoglobin of 7 g/dL for patients with UGIB (conditional recommendation, low-quality evidence).
Pre-endoscopic medical therapy
Prokinetic therapy with erythromycin
3. We suggest an infusion of erythromycin before endoscopy in patients with UGIB (conditional recommendation, very-low-quality evidence).
Proton pump inhibitor (PPI) therapy
4. We could not reach a recommendation for or against pre-endoscopic PPI therapy for patients with UGIB.
Endoscopy for UGIB
Timing of endoscopy
5. We suggest that patients admitted to or under observation in hospital for UGIB undergo endoscopy within 24 hr of presentation (conditional recommendation, very-low-quality evidence).
Need for endoscopic hemostatic therapy for ulcers with active bleeding or nonbleeding visible vessels
6. We recommend endoscopic therapy in patients with UGIB due to ulcers with active spurting, active oozing, and nonbleeding visible vessels (strong recommendation, moderate-quality evidence).
Need for endoscopic hemostatic therapy for ulcers with adherent clot
7. We could not reach a recommendation for or against endoscopic therapy in patients with UGIB due to ulcers with adherent clot resistant to vigorous irrigation.
Choice of endoscopic hemostatic therapy for bleeding ulcers
8. We recommend endoscopic hemostatic therapy with bipolar electrocoagulation, heater probe, or injection of absolute ethanol for patients with UGIB due to ulcers (strong recommendation, moderate-quality evidence).
9. We suggest endoscopic hemostatic therapy with clips, argon plasma coagulation, or soft monopolar electrocoagulation for patients with UGIB due to ulcers (conditional recommendation, very-low- to low-quality evidence).
10. We recommend that epinephrine injection not be used alone for patients with UGIB due to ulcers but rather in combination with another hemostatic modality (strong recommendation, very-low- to moderate-quality evidence).
11. We suggest endoscopic hemostatic therapy with hemostatic powder spray TC-325 for patients with actively bleeding ulcers (conditional recommendation, very-low-quality evidence).
12. We suggest over-the-scope clips as a hemostatic therapy for patients who develop recurrent bleeding due to ulcers after previous successful endoscopic hemostasis (conditional recommendation, low-quality evidence).
Antisecretory therapy after endoscopic hemostatic therapy for bleeding ulcers
13. We recommend high-dose PPI therapy given continuously or intermittently for 3 d after successful endoscopic hemostatic therapy of a bleeding ulcer (strong recommendation, moderate- to high-quality evidence).
14. We suggest that high-risk patients with UGIB due to ulcers who received endoscopic hemostatic therapy followed by short-term high-dose PPI therapy in hospital continue on twice-daily PPI therapy until 2 wk after index endoscopy (conditional recommendation, low-quality evidence).
Recurrent ulcer bleeding after successful endoscopic hemostatic therapy
15. We suggest that patients with recurrent bleeding after endoscopic therapy for a bleeding ulcer undergo repeat endoscopy and endoscopic therapy rather than undergo surgery or transcatheter arterial embolization (conditional recommendation, low-quality evidence for comparison with surgery, very-low-quality evidence for comparison with transcatheter arterial embolization)
Failure of endoscopic hemostatic therapy for bleeding ulcers
16. We suggest patients with bleeding ulcers who have failed endoscopic therapy next be treated with transcatheter arterial embolization (conditional recommendation, very-low-quality evidence).

1-3) Upper – American College of Gastroenterology

1. We suggest that patients presenting to the emergency department with upper gastrointestinal bleeding (UGIB) who are classified as very low risk, defined as a risk assessment score with ≤1% false negative rate for the outcome of hospital-based intervention or death (e.g., Glasgow-Blatchford score = 0–1), be discharged with outpatient follow-up rather than admitted to hospital (conditional recommendation, very-low-quality evidence).

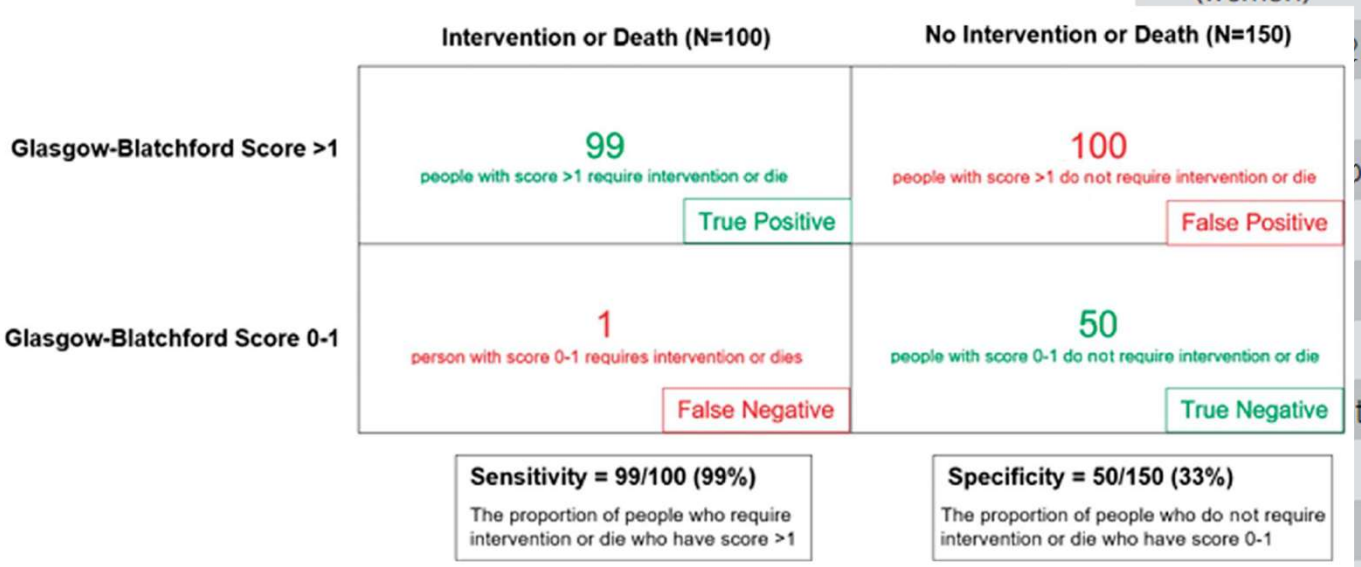
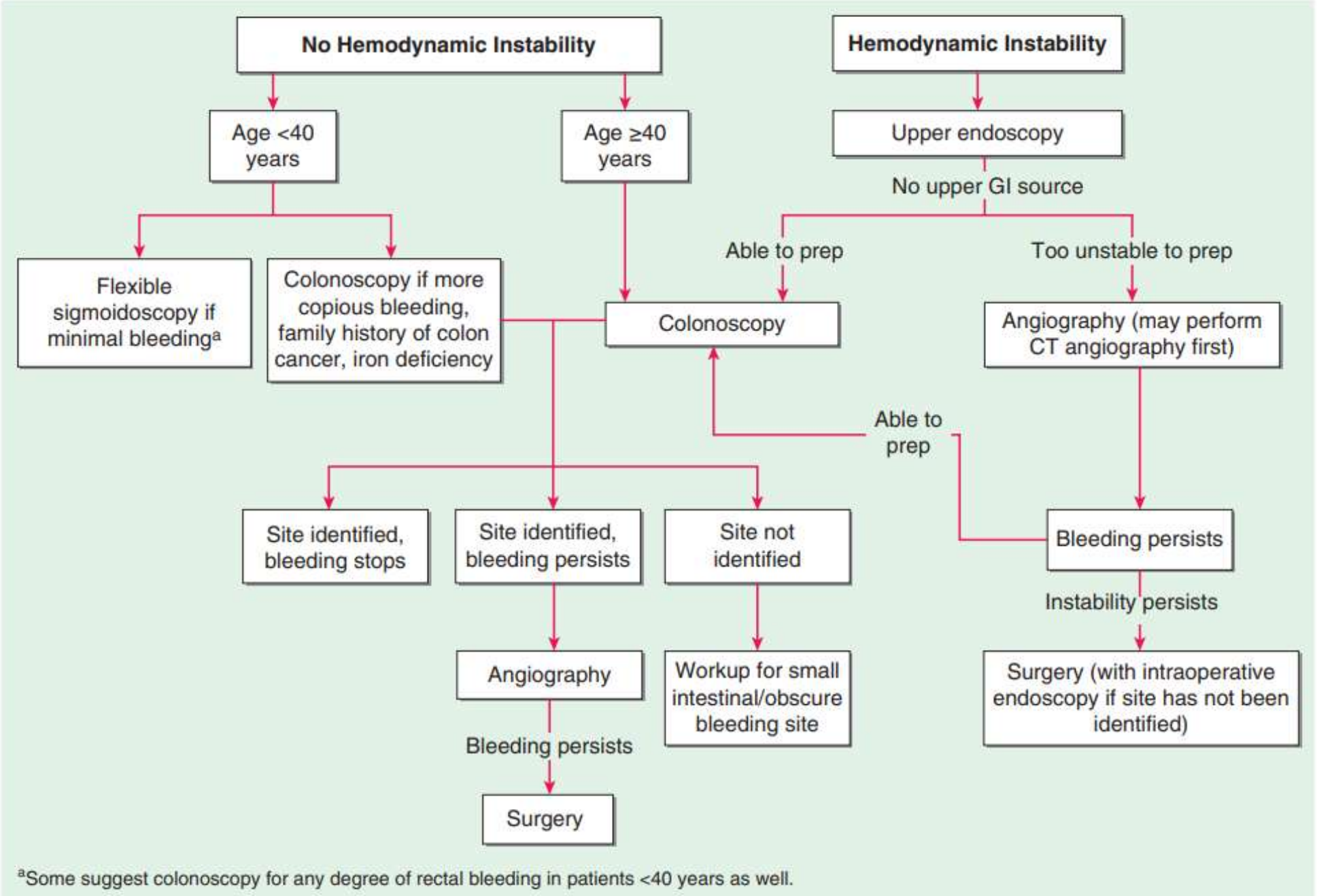


Figure 1. Two-by-two table to determine sensitivity and specificity for hypothetical population of 250 patients presenting with upper gastrointestinal bleeding using Glasgow-Blatchford score cutoff of 1. The upper row includes patients with scores >1, and the lower row includes those with scores of 0–1 (defined as very low risk). The left column shows the 100 patients who will require hospital-based intervention or die, with sensitivity calculated by the formula true positives divided by total number requiring intervention or dying (99/100 = 99%). The right column shows the 150 patients who will not require hospital-based intervention or die, with specificity calculated by the formula true negatives divided by total number not requiring intervention or dying (50/150 = 33%).

Table 2. Glasgow-Blatchford score

Risk factors at admission	Factor score
Blood urea nitrogen (mg/dL)	
18.2 to <22.4	2
22.4 to <28.0	3
28.0 to <70.0	4
≥70.0	6
Hemoglobin (g/dL)	
12.0 to <13.0 (men); 10.0 to <12.0 (women)	1
.0 (men)	3
	6
pressure (mm Hg)	
	1
	2
	3
ts per minute)	
	1
	1
	2
e[a]	2
[a]	2

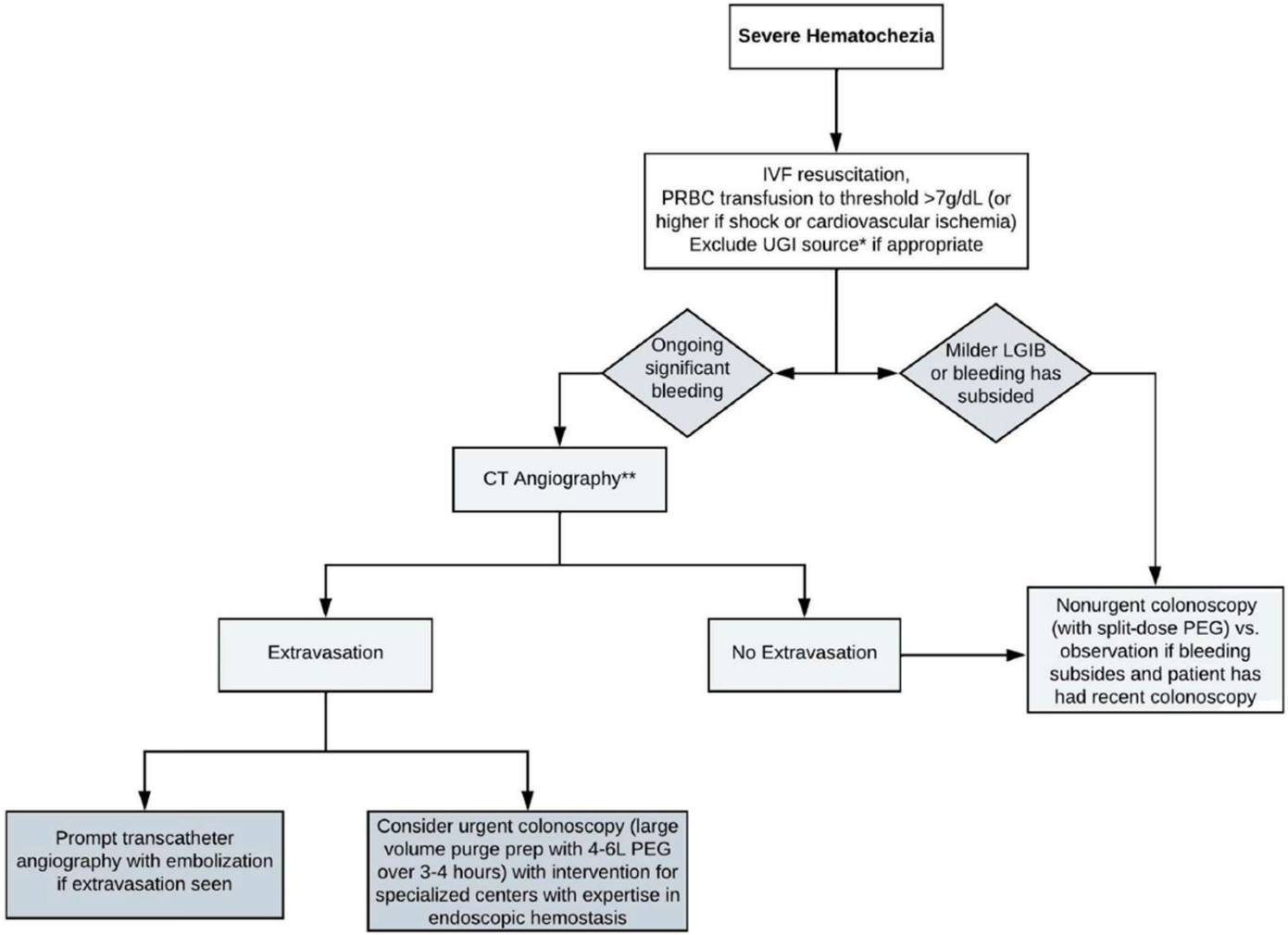
2-1) Lower - Traditional Harrison's algorithm



2-2) Lower – US (2023) guideline

CME

Management of Patients With Acute Lower Gastrointestinal Bleeding: An Updated ACG Guideline



2-2) Lower – Europe (2020) guideline

Guideline

Thieme

Diagnosis and management of acute lower gastrointestinal bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

2-2) Lower – Europe (2020) guideline

Guideline

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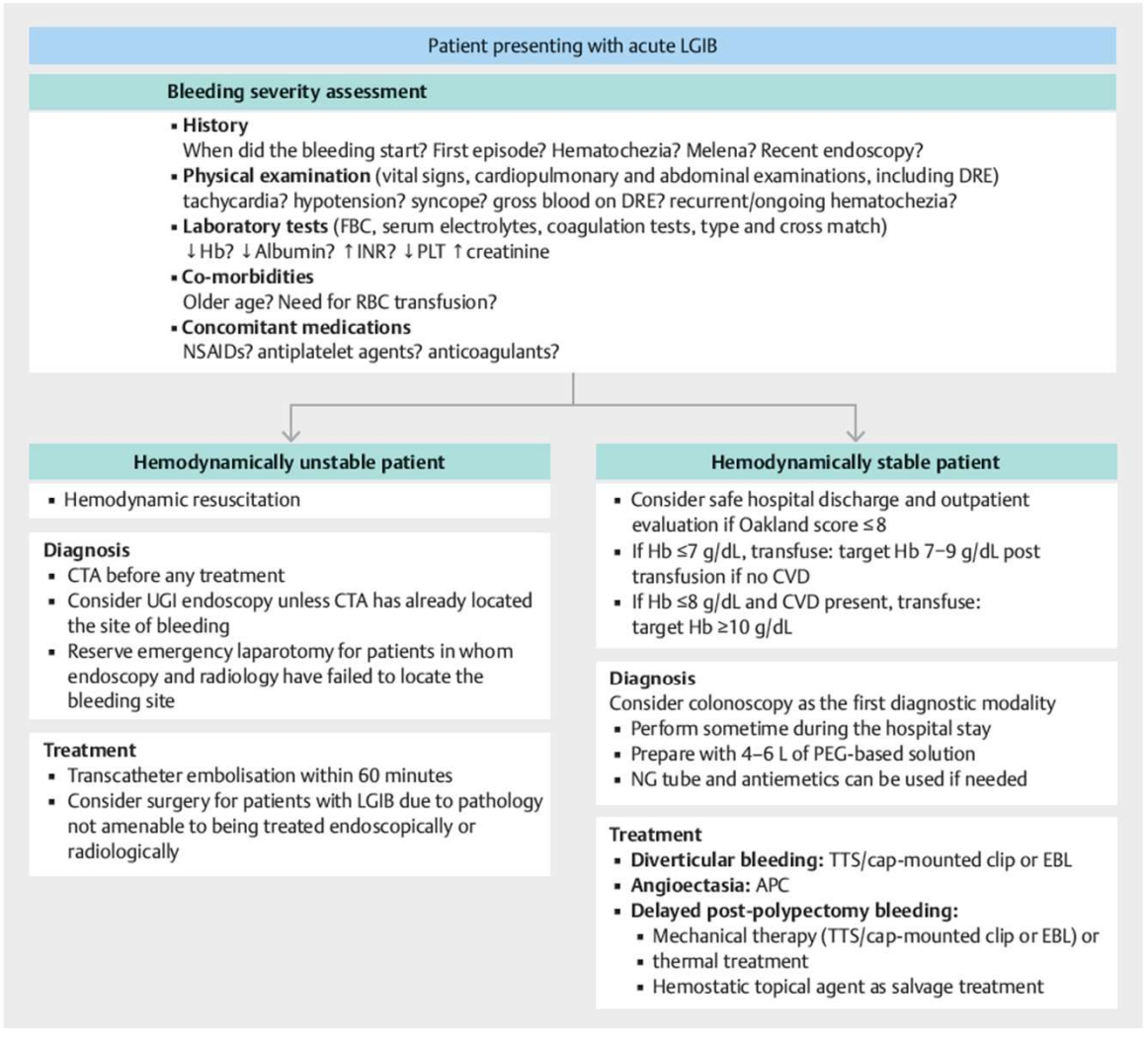
Diagnosis and management of acute lower gastrointestinal bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline



Diagn
bleed
Guide
GE)

Patient presenting with acute LGIB

Bleeding severity assessment

- **History**
  When did the bleeding start? First episode? Hematochezia? Melena? Recent endoscopy?
- **Physical examination** (vital signs, cardiopulmonary and abdominal examinations, including DRE)
  tachycardia? hypotension? syncope? gross blood on DRE? recurrent/ongoing hematochezia?
- **Laboratory tests** (FBC, serum electrolytes, coagulation tests, type and cross match)
  ↓Hb? ↓Albumin? ↑INR? ↓PLT ↑creatinine
- **Co-morbidities**
  Older age? Need for RBC transfusion?
- **Concomitant medications**
  NSAIDs? antiplatelet agents? anticoagulants?

Hemodynamically unstable patient

- Hemodynamic resuscitation

Diagnosis

- CTA before any treatment
- Consider UGI endoscopy unless CTA has alr
  the site of bleeding
- Reserve emergency laparotomy for patient
  endoscopy and radiology have failed to loca
  bleeding site

Treatment

- Transcatheter embolisation within 60 minutes
- Consider surgery for patients with LGIB due to pathology not amenable to being treated endoscopically or radiologically

Hemodynamically stable patient

- Consider safe hospital discharge and outpatient evaluation if Oakland score ≤8

1. 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. Risk scores should be used to supplement but not replace clinician judgment. (Conditional recommendation, low-quality evidence)

- NG tube and antiemetics can be used if needed

Treatment

- **Diverticular bleeding:** TTS/cap-mounted clip or EBL
- **Angioectasia:** APC
- **Delayed post-polypectomy bleeding:**
  - Mechanical therapy (TTS/cap-mounted clip or EBL) or
  - thermal treatment
  - Hemostatic topical agent as salvage treatment

2-3) Lower – Risk stratification (Oakland score)

▶ **Table 3** The Oakland score for predicting the safe discharge of patients presenting with acute lower gastrointestinal bleeding (LGIB).

Variable	Score
Age, years	
▪ <40	0
▪ 40–69	1
▪ >70	2
Sex	
▪ Female	0
▪ Male	1
Previous LGIB admission	
▪ No	0
▪ Yes	1
Digital rectal examination 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
Hemoglobin, g/dL	
▪ 36–69	22
▪ 70–89	17
▪ 90–109	13
▪ 110–129	8
▪ 130–159	4
▪ >160	0

2-4) Lower – Key point in Europe and US guideline

8 ESGE recommends temporarily withholding direct oral anticoagulants at presentation in patients with major lower gastrointestinal bleeding.
Strong recommendation, low quality evidence.

9 ESGE does not recommend withholding aspirin in patients taking low dose aspirin for secondary cardiovascular prevention. If withheld, low dose aspirin should be resumed, preferably within 5 days or even earlier if hemostasis is achieved or there is no further evidence of bleeding.
Strong recommendation, moderate quality evidence.

10 ESGE does not recommend routinely discontinuing dual antiplatelet therapy (low dose aspirin and a P2Y12 receptor antagonist) before cardiology consultation. Continuation of the aspirin is recommended, whereas the P2Y12 receptor antagonist can be continued or temporarily interrupted according to the severity of bleeding and the ischemic risk. If interrupted, the P2Y12 receptor antagonist should be restarted within 5 days, if still indicated.
Strong recommendation, low quality evidence.

5. We recommend against the administration of antifibrinolytic agents such as tranexamic acid in LGIB. (Strong recommendation, moderate quality evidence)

11a. We recommend discontinuing nonaspirin NSAIDs after hospitalization for diverticular hemorrhage. (Strong recommendation, low-quality evidence)

11b. We suggest discontinuing aspirin for primary cardiovascular prevention after hospitalization for diverticular hemorrhage given the risks of recurrent diverticular hemorrhage. (Conditional recommendation, low-quality evidence)

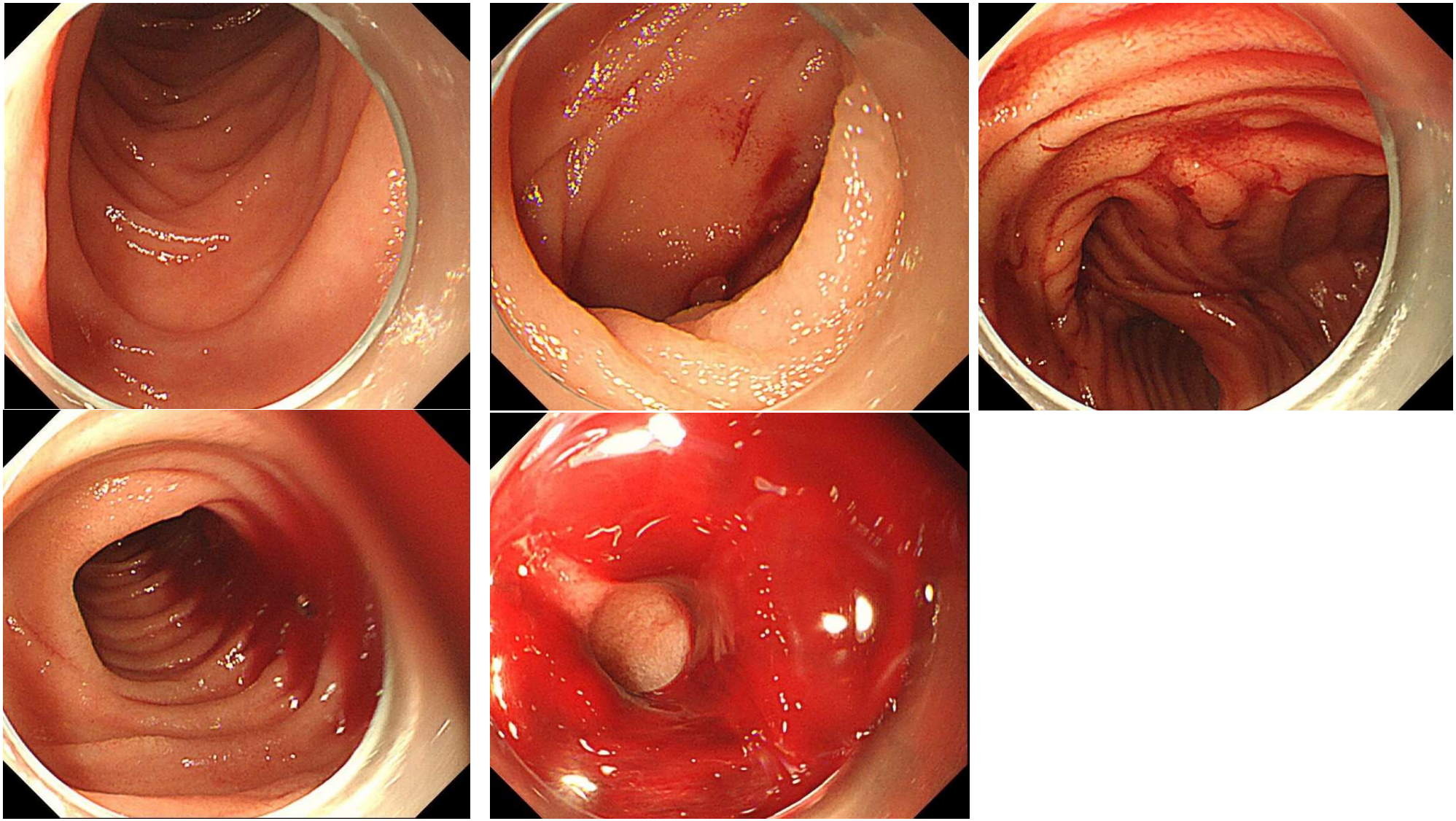
11c. We suggest continuing aspirin after hospitalization for diverticular hemorrhage for patients with an established history of cardiovascular disease given the benefits of reducing future ischemic events. (Conditional recommendation, low-quality evidence)

11d. We recommend that providers re-evaluate the risks vs benefits of continuing nonaspirin antiplatelets such as P2Y12 receptor antagonists in a multidisciplinary setting after hospitalization for diverticular hemorrhage given the demonstrated risks of recurrent diverticular hemorrhage. (Strong recommendation, low-quality evidence)

4. Actual clinical practice & cases

Surgical history is important

Recurrent melena and Hb drop, partial hepatectomy due to CCC



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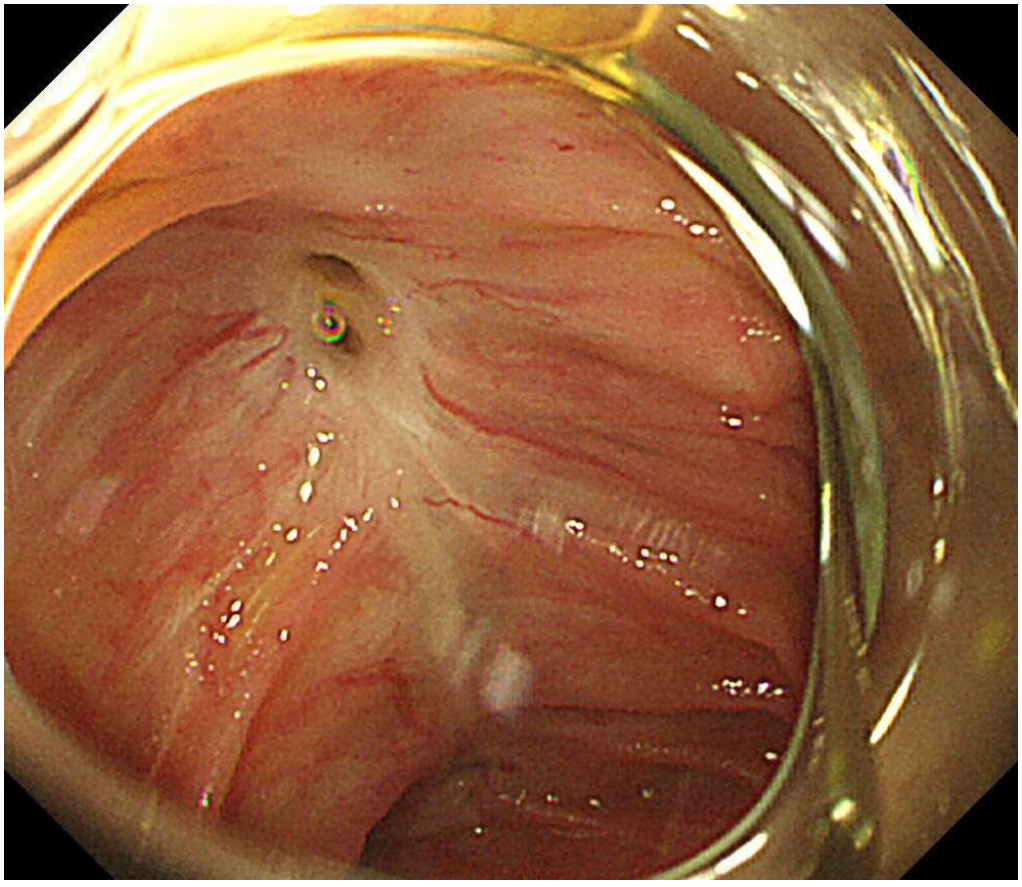
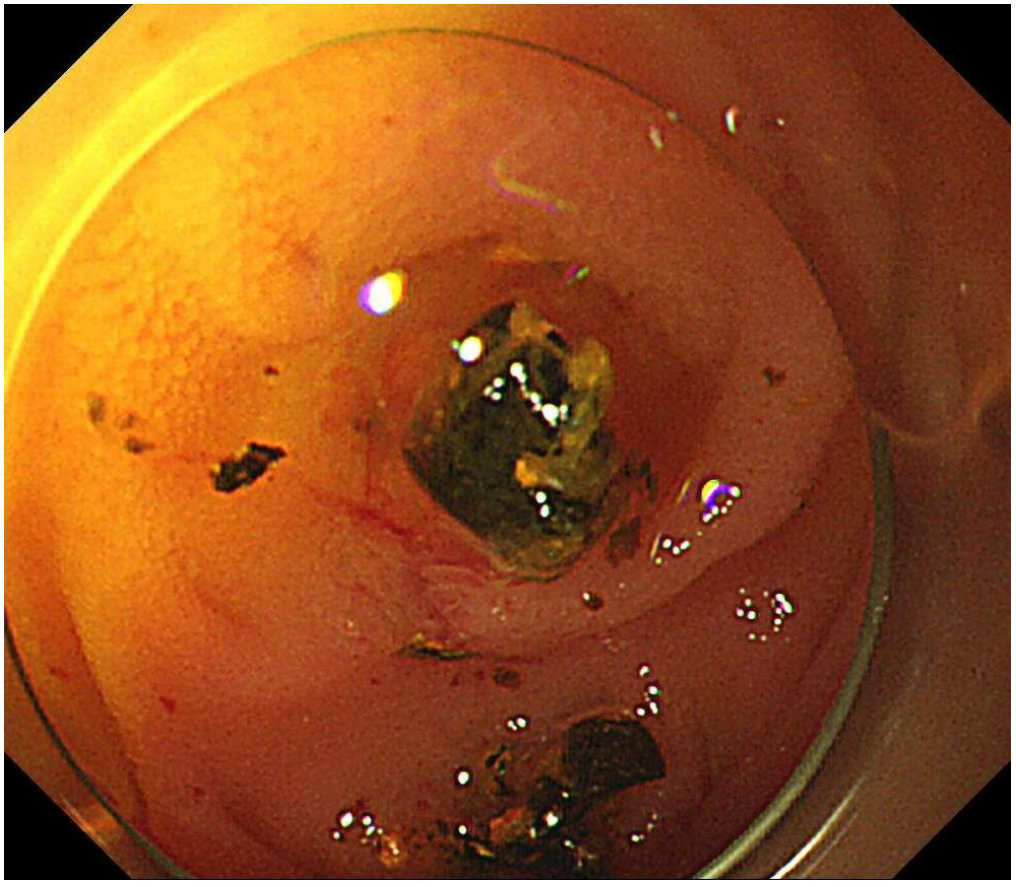
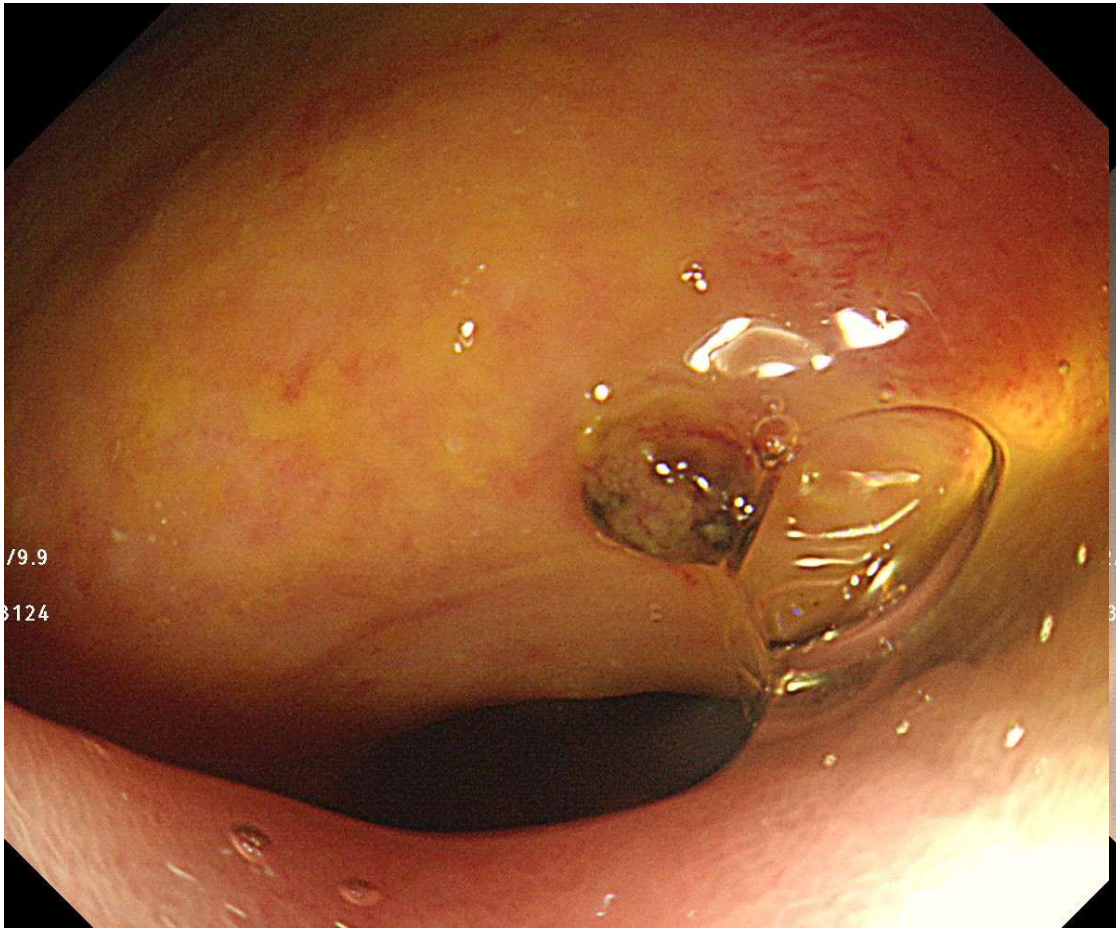
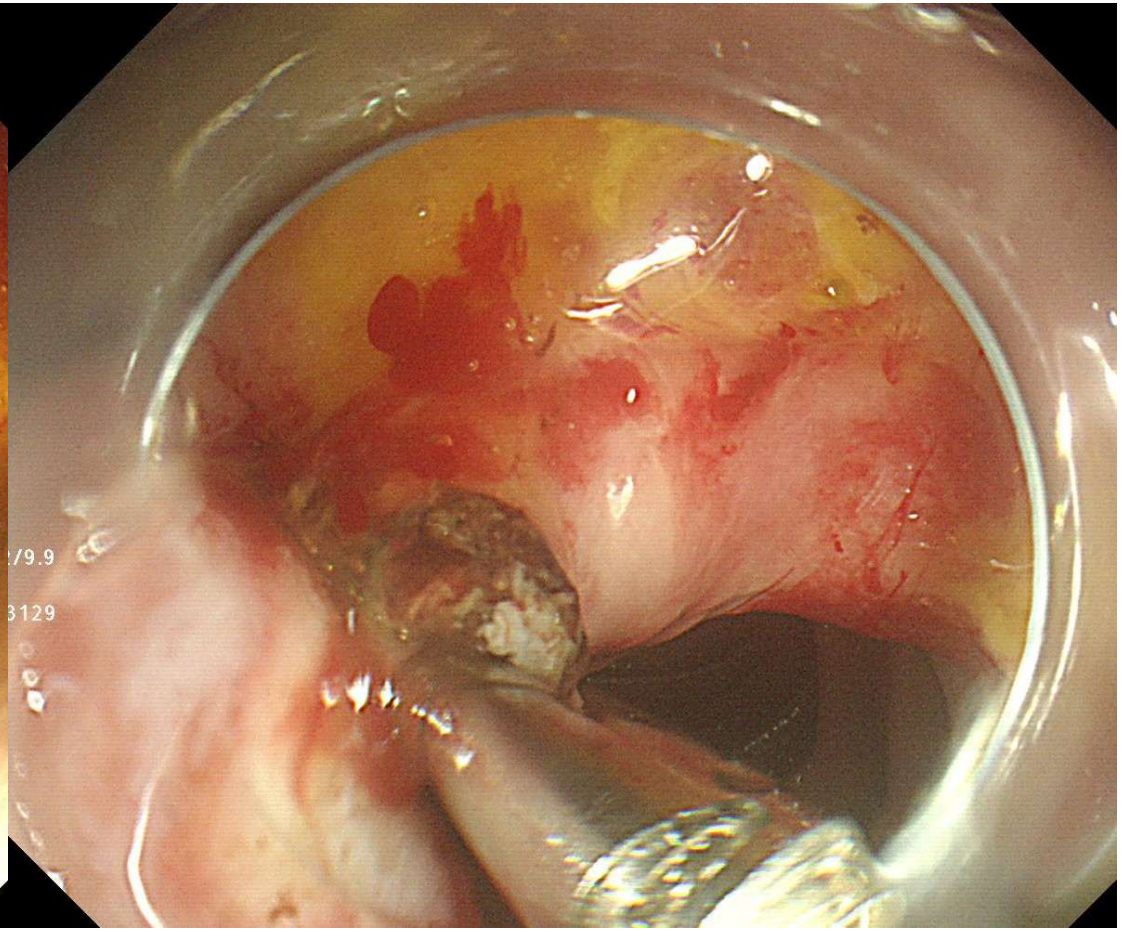




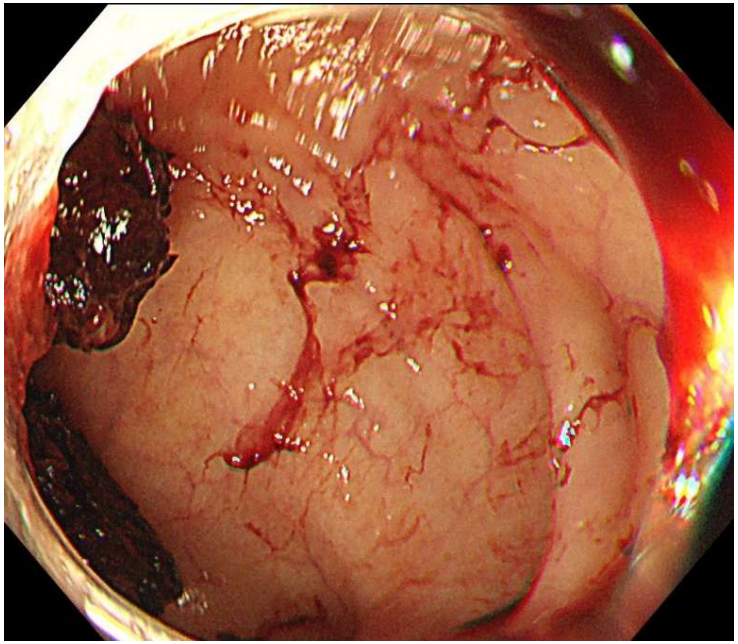
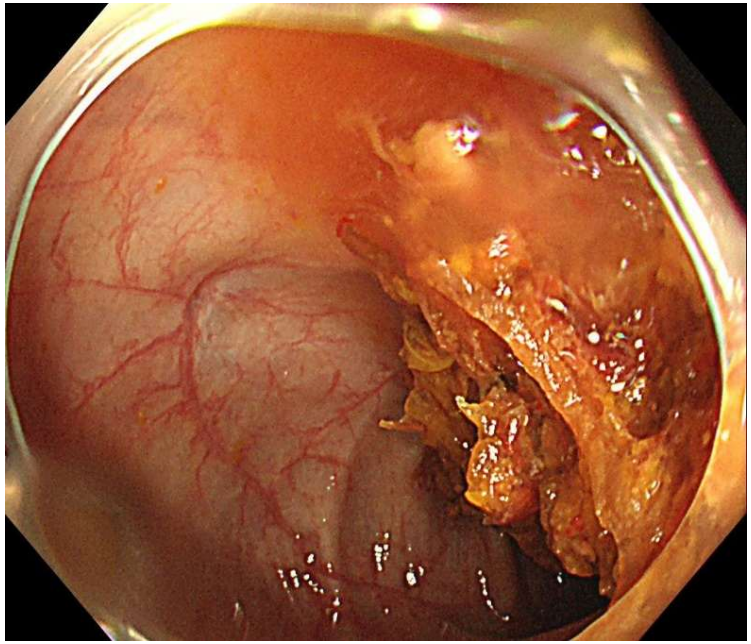
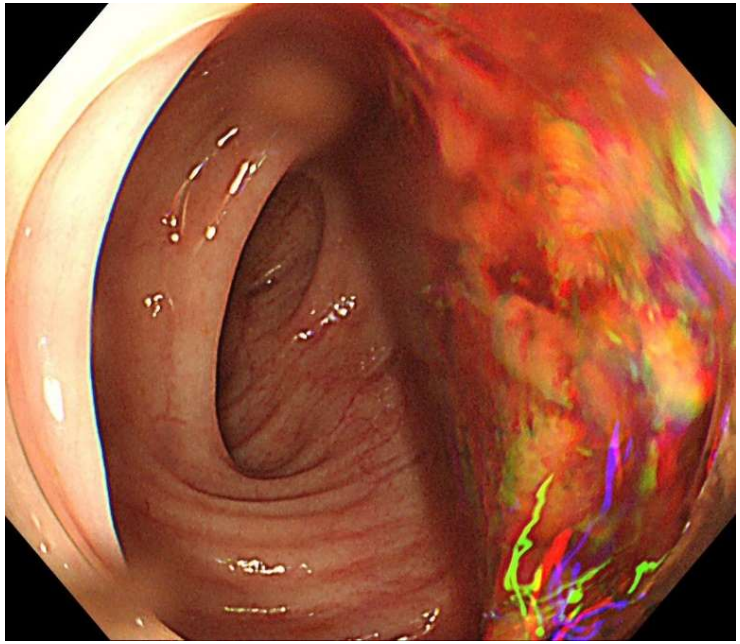
Surgical history is important

Hematochezia and anemia, s/p PPPD due to pancreatic cancer





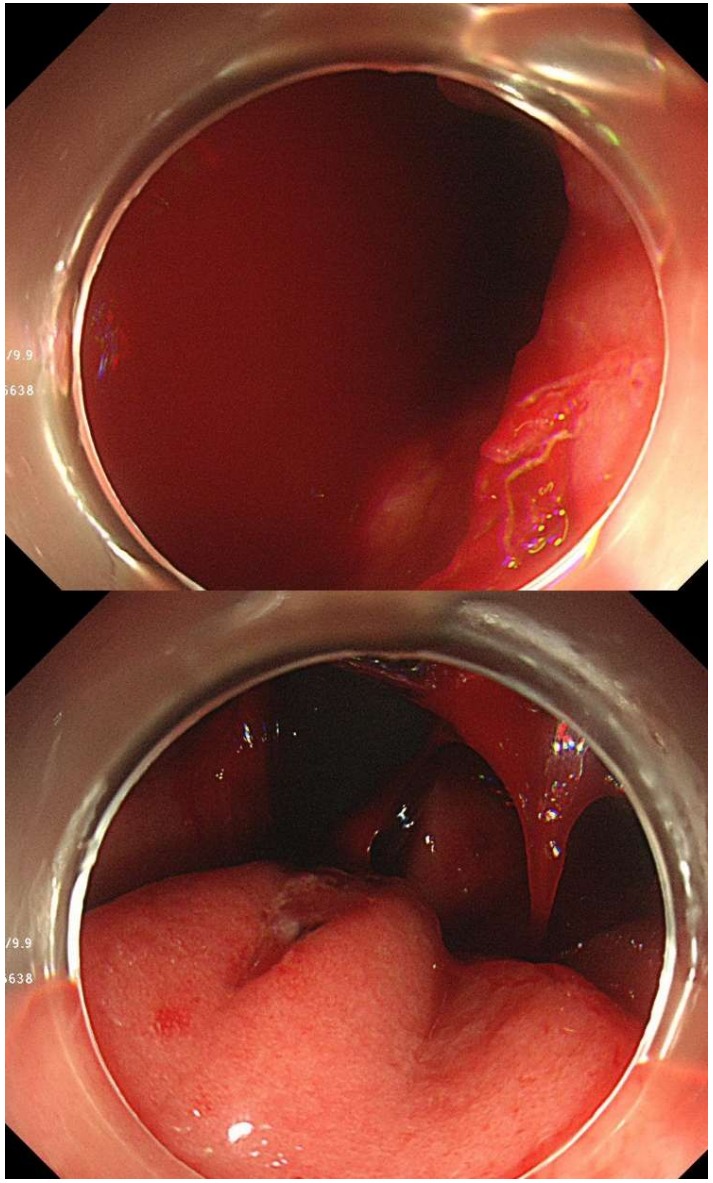
Infection may cause hematochezia

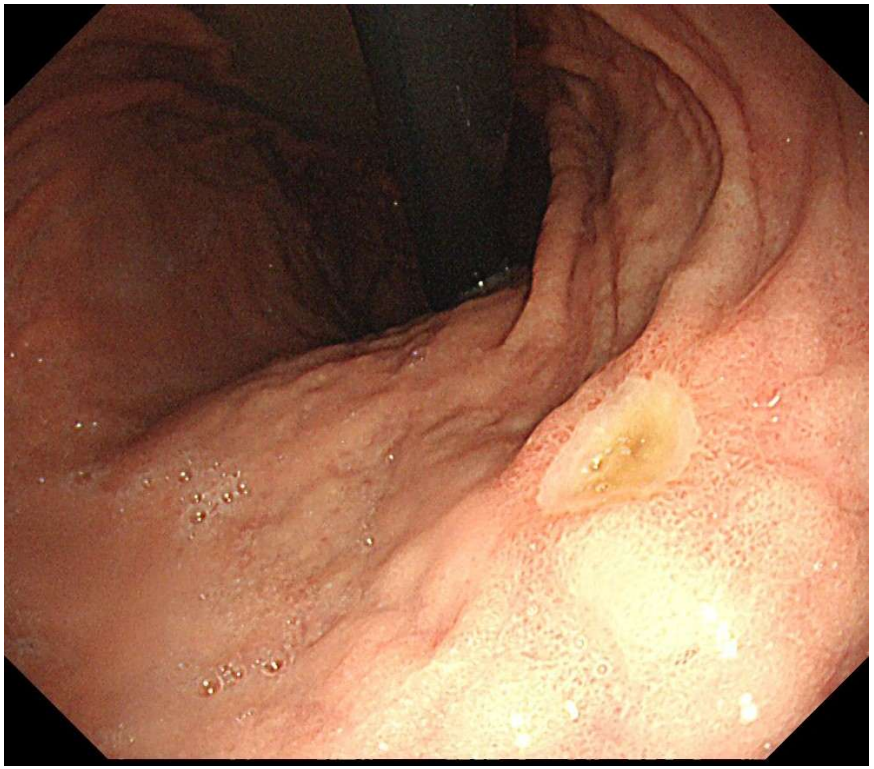
GIMD	C.difficile Toxin Gene (Xpert) <Stool> ()	Positive

Fitfalls of hemoglobulin

Hb – 14.0g/dL

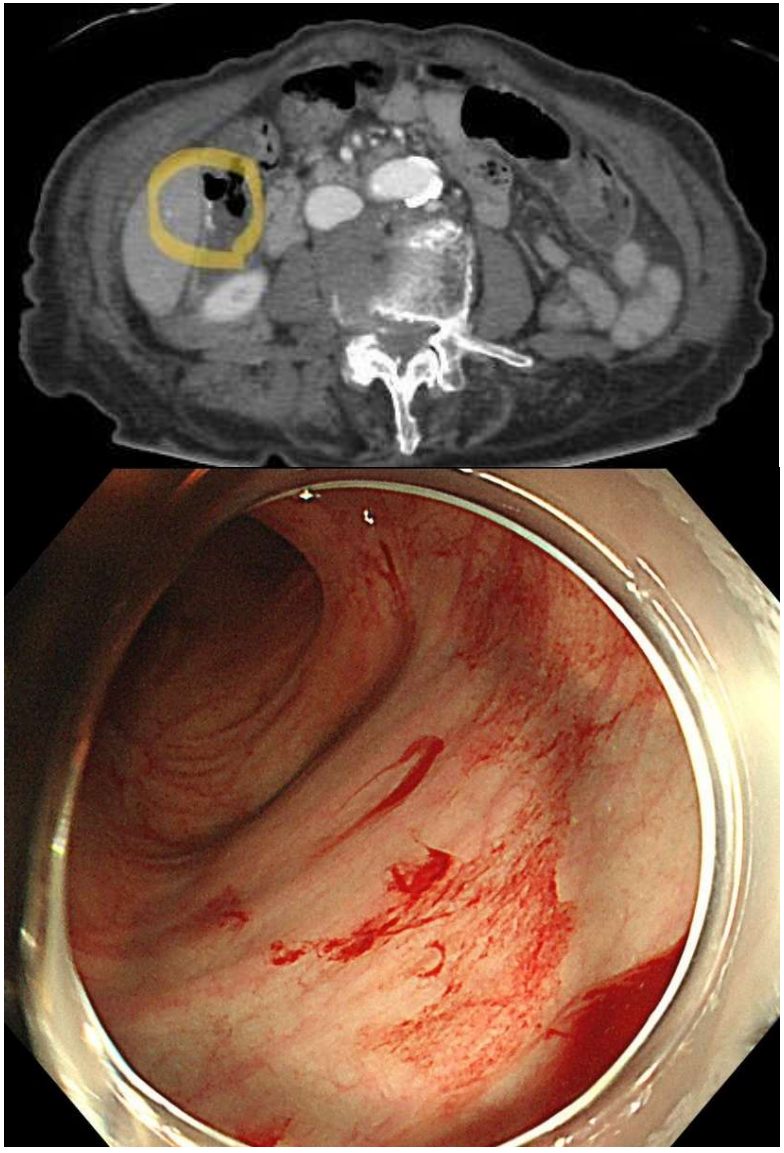


Hb – 8.1g/dL

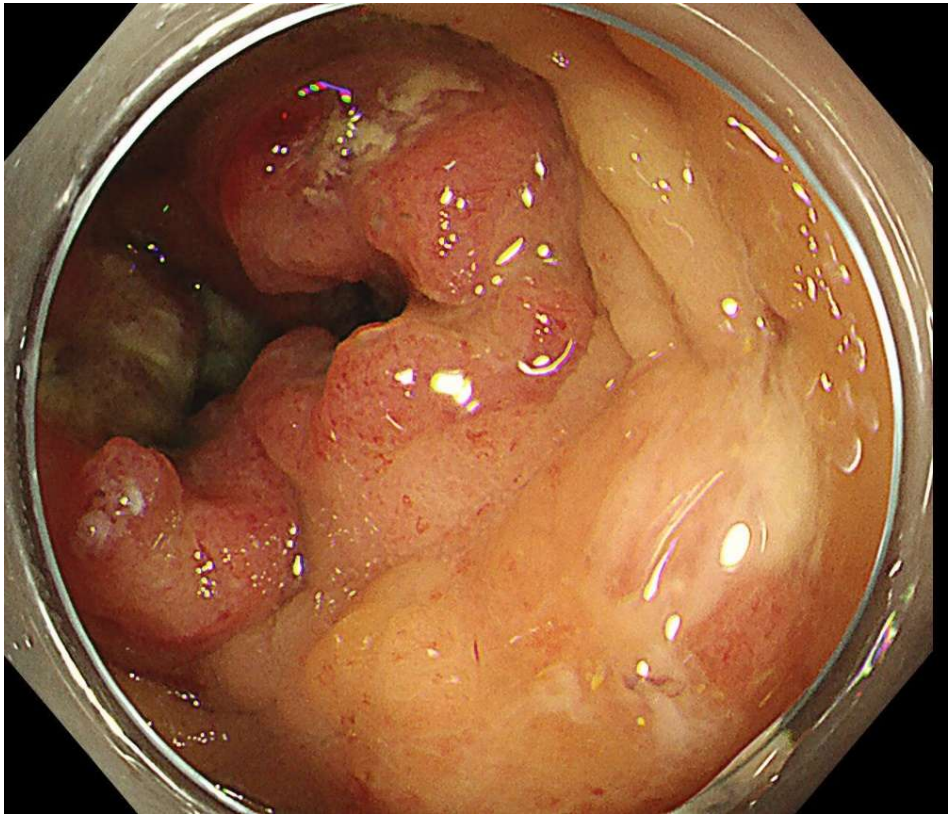


Fitfalls of hemoglobulin

Hb – 11.5g/dL



Hb – 6.3g/dL



5. Summary

Summary

1. Careful history taking is most important in determining whether or not the bleeding is significant.
2. Risk stratification may reduce unnecessary emergency room visits
3. Discontinuation of antithrombotic agents should be done cautiously.
4. Since gastrointestinal bleeding occurs for a variety of reasons, its treatment varies from case to case.