Peptic Ulcer Disease
Case-based Discussions

Endoscopy Skills Day 2025

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Objectives

- After this session, using clinical cases, participants should be equipped to:
  - evaluate and risk categorize the patient with upper GI bleeding patient
  - identify and classify ulcers, including their risk of rebleeding
  - understand which ulcers need endoscopic treatment
  - review options for treatment
  - discuss follow-up strategies for patients with peptic ulcer disease

CanMEDS Roles Fulfilled

X	**Medical Expert** (as *Medical Experts*, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centered care. *Medical Expert* is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.)
X	**Communicator** (as *Communicators*, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.)
X	**Collaborator** (as *Collaborators*, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.)
	Leader (as *Leaders*, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.)
X	**Health Advocate** (as *Health Advocates*, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.)
X	**Scholar** (as *Scholars*, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.)
	Professional (as *Professionals,* physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.)

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Endo Skills 2025 – Disclosure of Commercial Support

- Endo Skills is presented by the Alberta Society for Endoscopic Practice (ASEP)
- ASEP: not for profit organization, whose goal is to provide education, resources and collaboration for endoscopists and their teams
- Endo Skills planning is independent from the exhibitors
- ASEP covers expenses of speakers and provides gift+/- small honorarium to speakers and planning committee

Endo Skills 2025 – Managing Sources of Potential Conflict

- Endo Skills Planning Committee: oversees the program's content development to ensure accuracy and balance.
- Information and recommendations are evidence and/or guidelines-based, and opinions of the independent speakers will be identified as such.
- Program developed in accordance to ethical standards meeting Cert+ guidelines.

Personal Disclosures (Past 36 Months)

- **Personal Fees:**
  - Pentax Medical (speaker's fees, consultancy fees)
  - Boston Scientific (speaker's fees, consultancy fees)
  - AstraZeneca (consultancy fees)
- **Research Funding:**
  - Canadian Institutes of Health Research (CIHR)
  - American Society for Gastrointestinal Endoscopy (ASGE)
  - AHS Digestive Health Strategic Clinical Network (DHSCN)

Case #1 - History

- A 45-year-old male presents to the ER with black tar-like stools for one week
- Also reports intermittent, nausea, early satiety and bloating for about 4-6 weeks leading up to this
- Patient has decreased his oral intake secondary to these issues, and has lost about 5-10 pounds in this time
- He admits to subjective ‘dizziness’
- Patient denies any other symptoms

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Case #1 - History (cont'd)

- Patient is a smoker of ½ pack of cigarettes per day x 20 years
- He is a social drinker of EtOH but stopped drinking approximately 2 weeks ago because of epigastric pain
- He is a construction worker
- He has been taking over-the-counter ibuprofen for about the past 3-4 months because of shoulder and back pain
- He does not take any prescription medications and has no other known past medical history

Case #1 – Physical Exam and Investigations

- Patient appears pale
- Heart rate 135 bpm, blood pressure 80/60 mmHg
- Temperature 36.5 C
- Labs show hemoglobin of 69
- He receives IV fluid resuscitation and 2 units of packed red blood cells
- Following initial fluid resuscitation, his heart rate and blood pressure both improve

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Case #1 – Question A

- What is the next step in management for this patient?
  - A) Discharge home from ER and arrange outpatient investigation
  - B) Admit patient and observe/ proceed with expectant management
  - C) Admit patient and plan for upper endoscopy (EGD) within 24 hours of presentation
  - D) Admit patient and plan for upper endoscopy (EGD), ideally within 6-12 hours of presentation

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Case #1 – Risk Stratification

	Threshold	Score
History		
Melena	Present	1
Syncope	Present	2
Hepatic disease	Present	2
Cardiac failure	Present	2
Physical examination		
Heart rate (beats per min)	>100	1
Systolic blood pressure (mm Hg)	100–109	1
Systolic blood pressure (mm Hg)	90–99	2
Systolic blood pressure (mm Hg)	<90	3
Laboratory tests		
Haemoglobin (g/L)		
Male	120–130	1
Male	100–119	3
Male	<100	6
Female	100–120	1
Female	<100	6
Blood urea nitrogen (mmol/L)	6·5–7·9	2
Blood urea nitrogen (mmol/L)	8·0–9·9	3
Blood urea nitrogen (mmol/L)	10·0–24·9	4
Blood urea nitrogen (mmol/L)	≥25·0	6

GBS of 0 or 1*
can be managed
as outpatients

Blatchford O *et al.* Lancet 2000
Laine L *et al.* Am J Gastroenterol 2021

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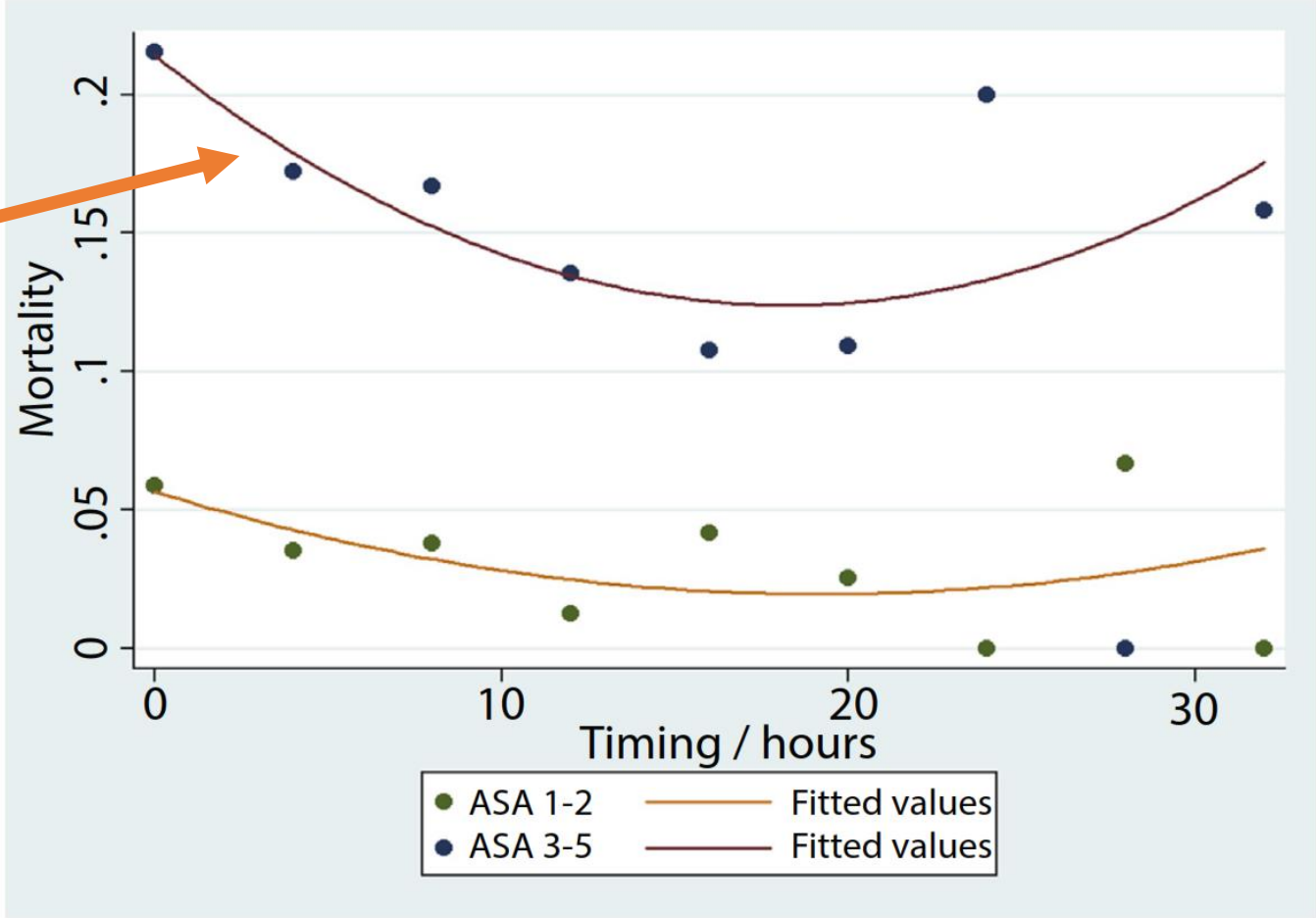
Case #1 – Timing of Endoscopy

Greater early mortality if sick patients not adequately resuscitated *first*?



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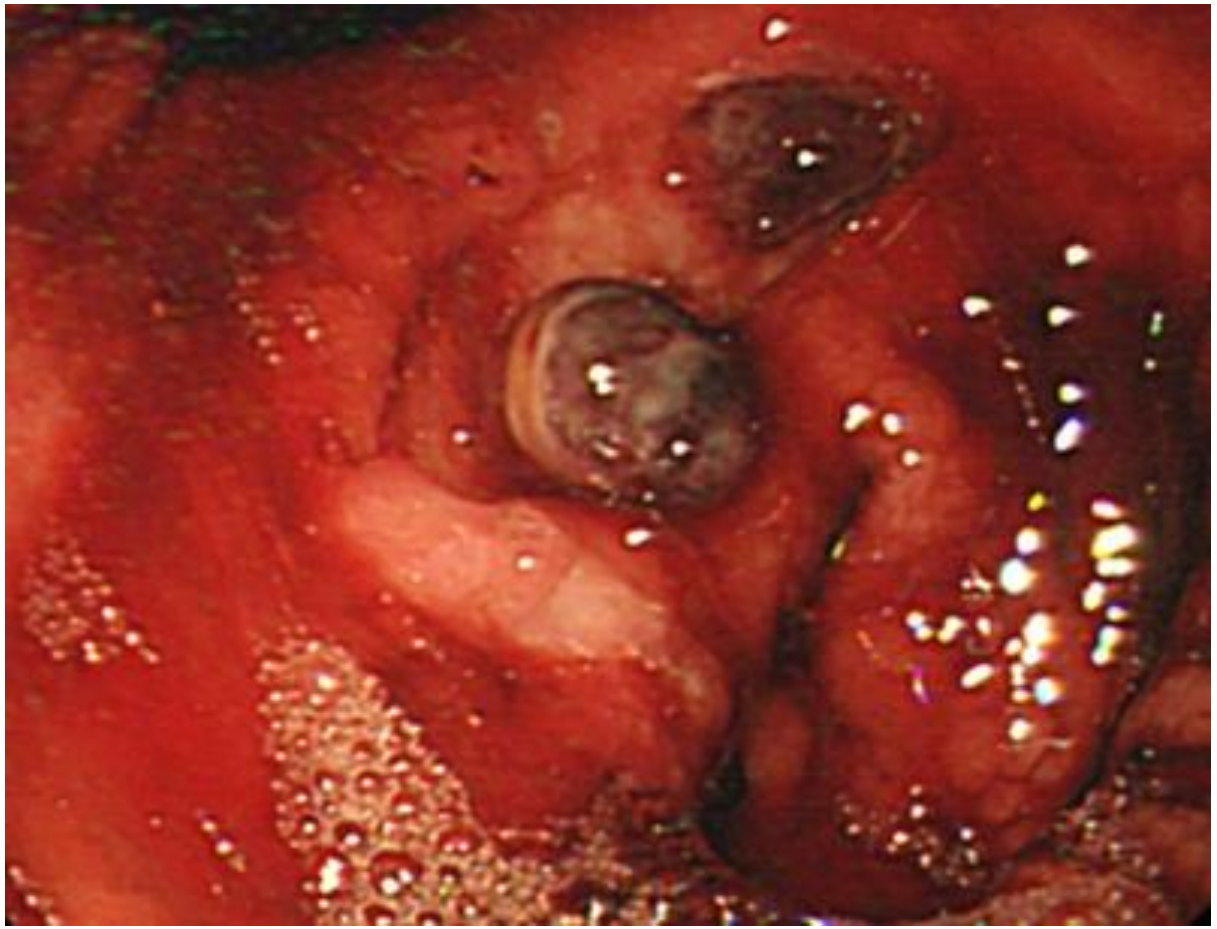
Laursen SB *et al.* Gastrointest Endosc 2017
Lau J *et al.* N Eng J Med 2020

Case #1 – Endoscopy

- Endoscopy shows this lesion in the antrum.



https://www.endoscopy-campus.com/en/classifications/forrest-classification/

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Case #1 – Question B

- What is the Forrest classification of this lesion?
  - A) Forrest Ia
  - B) Forrest Ib
  - C) Forrest IIa
  - D) Forrest IIb

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Case #1 – Question C

- What is the approximate 72-hour rate of rebleeding for this lesion, if left endoscopically untreated (i.e.: if managed medically)?
  - A) Somewhere between 75 and 100%
  - B) Somewhere between 40 and 75%
  - C) Somewhere between 20 and 40%
  - D) Under 20%

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Case #1 – Question D

- What would you do next?
  - A) Leave the adherent clot alone
  - B) Irrigate the clot with water to try to dislodge it
  - C) Try to suction the clot off with your scope
  - D) Inject epinephrine around the clot and try to remove it by any means necessary, including snaring it off

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Case #2 - History

- A 75-year-old male has been admitted to ICU for 12 days following respiratory issues after an elective vascular surgery for peripheral arterial disease
- He is on ASA and clopidogrel for coronary disease
- Overnight, the team has noted reddish-brown contents coming from his orogastric tube
- His hemoglobin has dropped from 93 to 83 overnight and otherwise he has not clinically changed

https://www.dreamstime.com/stock-photo-nasogastric-tube-use-treatment-diagnosis-upper-gastrointestinal-bleeding-patient-image67848378

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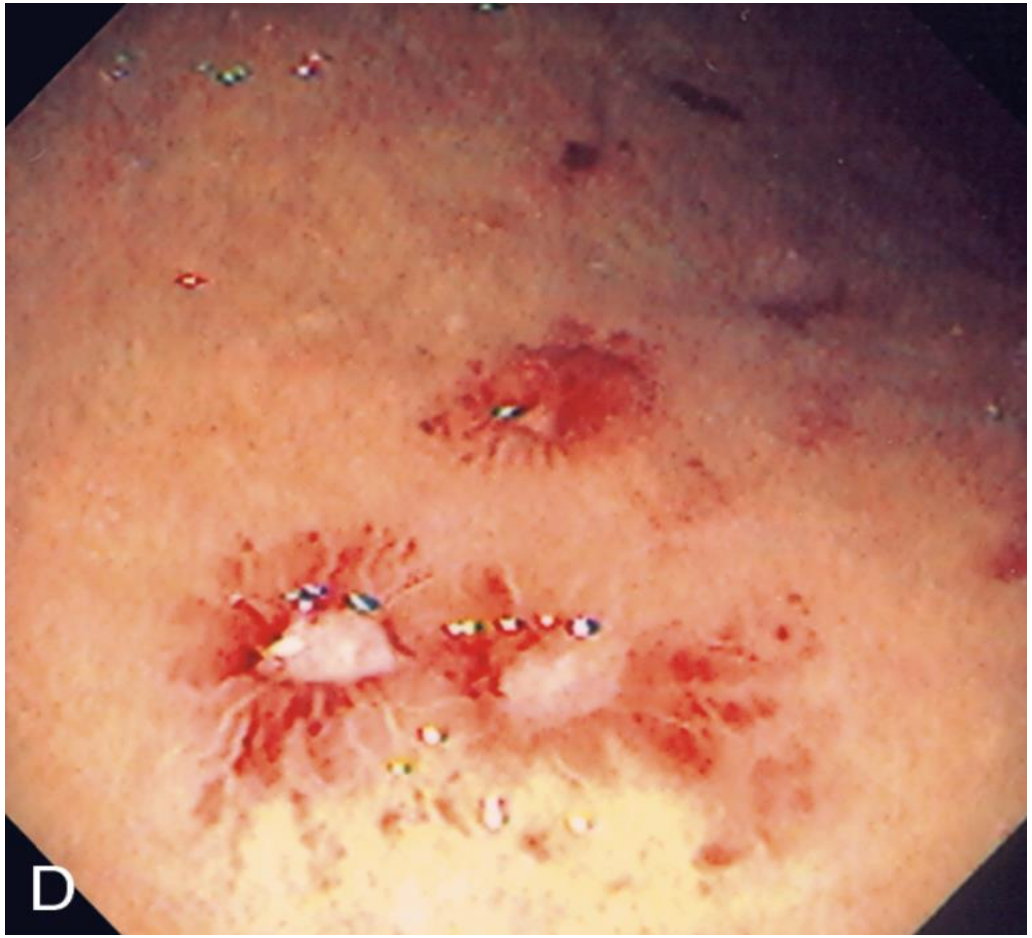
Case #2 - Endoscopy

- Endoscopy shows some old blood initially. After cleaning, this lesion is present in the gastric body/ antrum.



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Case #2 – Question A

- What would you do for these lesions?
  - A) Clip them shut using through-the-scope clips alone
  - B) Inject epinephrine around them
  - C) Inject epinephrine and use through-the-scope clips to close the defects
  - D) Nothing

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Case #2 – Question B

- Based on their appearance and the patient's history, these lesions are most compatible with:
  - A) PUD associated with *H pylori*
  - B) PUD associated with his ASA + clopidogrel
  - C) Trauma from the tip of an NG/OG tube
  - D) Stress ulcers from intensive care/ hypovolemia

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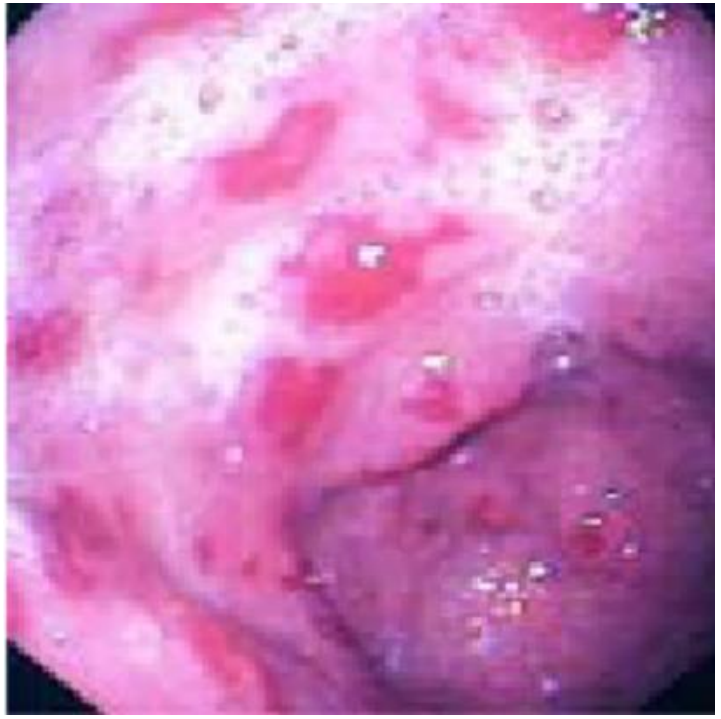
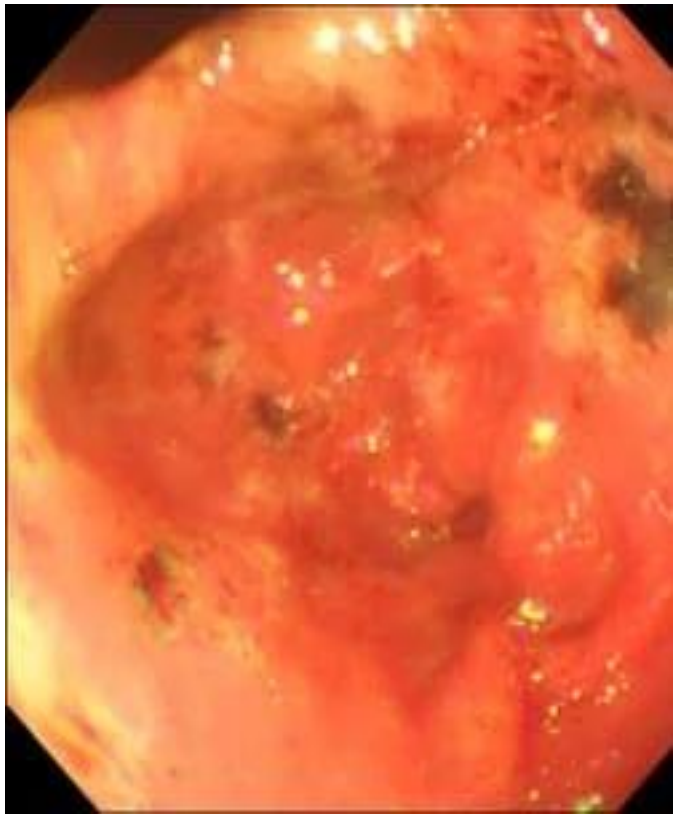
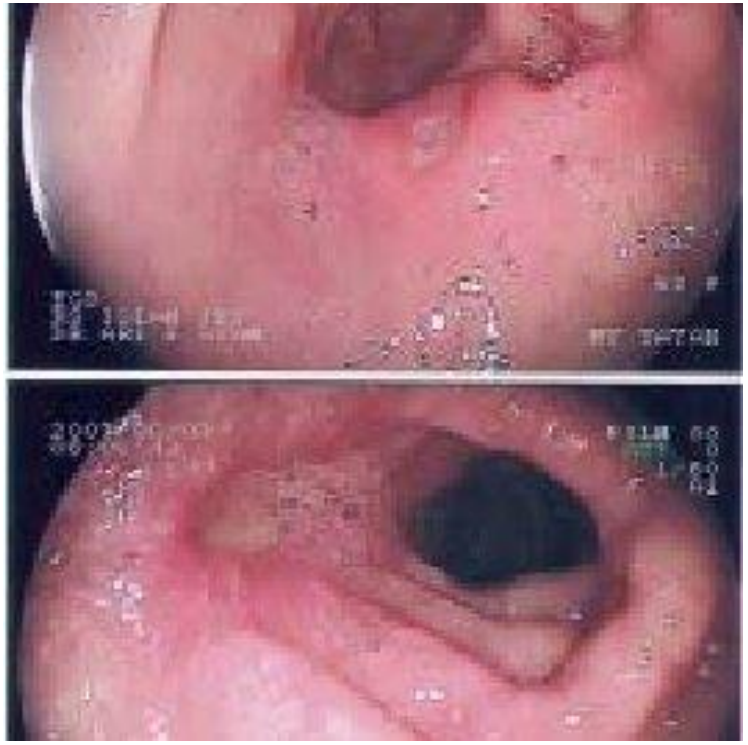
Case #2 – Examples of Stress Ulceration







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Case #3 – History

- A 68-year-old female patient from Sri Lanka presents to the ER with abdominal pain
- On further history, you determine that she has been having melena for the past 10-14 days
- She has a past medical history of prediabetes and hypertension and takes amlodipine

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Case #3 – Physical Exam and Investigations

- On examination, her HR is 115 and her BP is 110/76
- She appears diaphoretic and her abdomen is diffusely tender
- Her hemoglobin is 104 (down from 138 in November 2023 when last measured)

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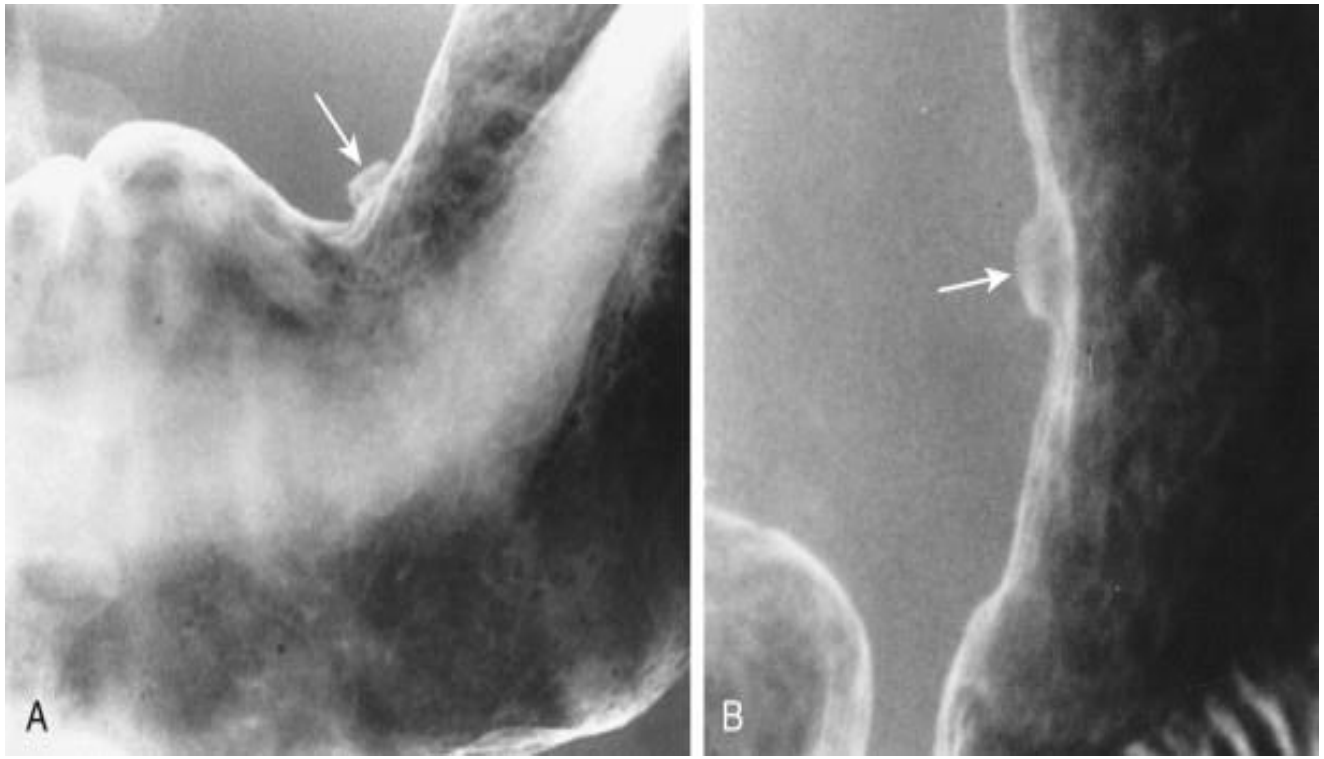
Case #3 – Physical Exam and Investigations

- You review an upper GI (barium) study that was done last week as an outpatient that just got reported yesterday – the report reads:

"There are diffusely thickened gastric folds, especially in the gastric antrum, with a focal 8 mm area strongly suspicious for an antral ulcer"



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Case #3 – Question A

- What would you do next?
  - A) Discharge the patient home for urgent outpatient endoscopy within 48 hours
  - B) Have the patient admitted and aim for EGD within 24 hours of presentation
  - C) Treat *H pylori* empirically given the patient's history and forego EGD
  - D) None of the above

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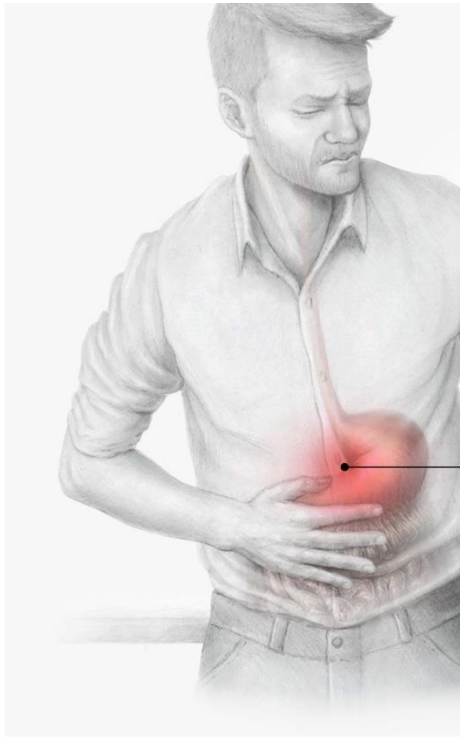
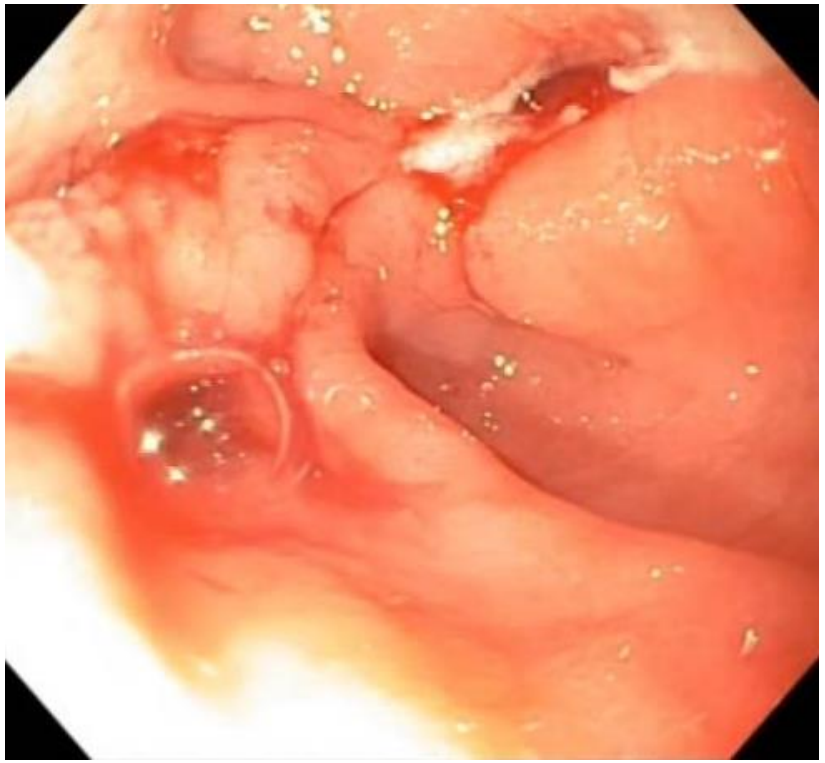
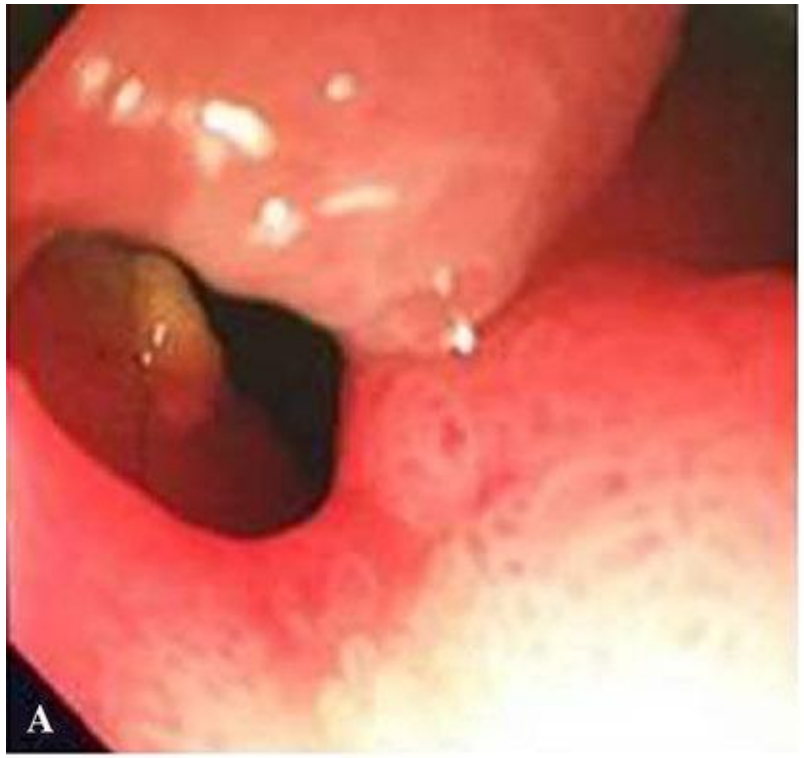
Case #3 – Complications of PUD







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Case #4 – History

- A 70-year-old male patient presents to the ER with melena for 2 weeks and weight loss of about 25 lbs over the past 2 months
- He has not been in contact with the medical system for over 2 decades, so has no real known medical history
- He has a 50 pack year history of smoking

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Case #4 – Physical Exam and Investigations

- Physical exam is largely unremarkable. Vital signs are stable
- Hemoglobin is borderline at 132
- Urea is normal

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Case #4 – Question A

- What is the next step in management for this patient?
  - A) Discharge home from ER and arrange urgent outpatient investigation
  - B) Admit patient and observe/ proceed with expectant management
  - C) Admit patient and plan for upper endoscopy (EGD) within 24 hours of presentation
  - D) Admit patient and plan for upper endoscopy (EGD), ideally within 6-12 hours of presentation

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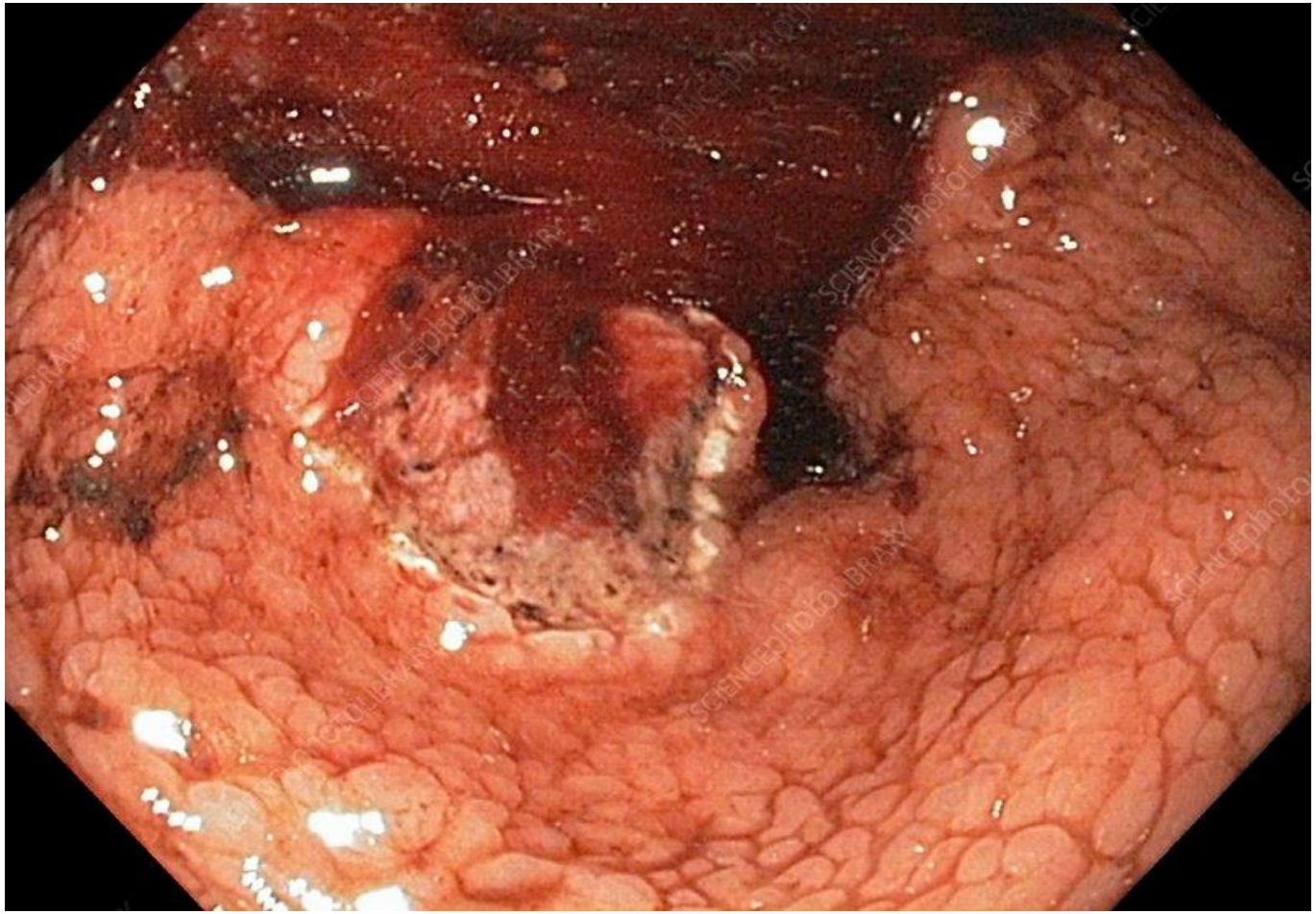
Case #4 – Endoscopy

- Endoscopy shows this lesion in the antrum.



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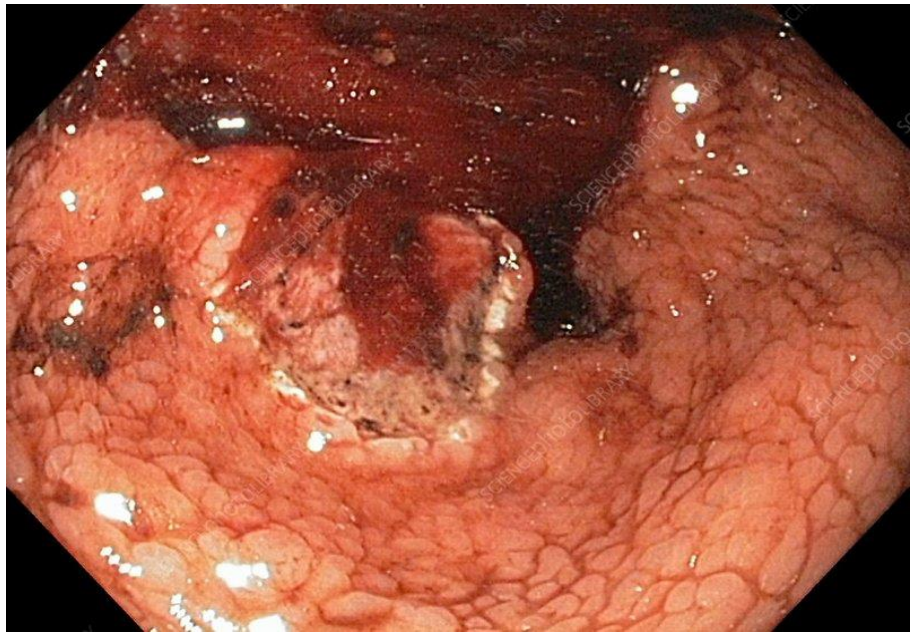
Case #4 – Question B

- What endoscopic options are likely to achieve endoscopic hemostasis for this lesion (more than one answer is possible)?
  - A) Epinephrine
  - B) Through-the-scope clip
  - C) Bipolar coagulation
  - D) Hemostatic powder
  - E) Cap-mounted clip



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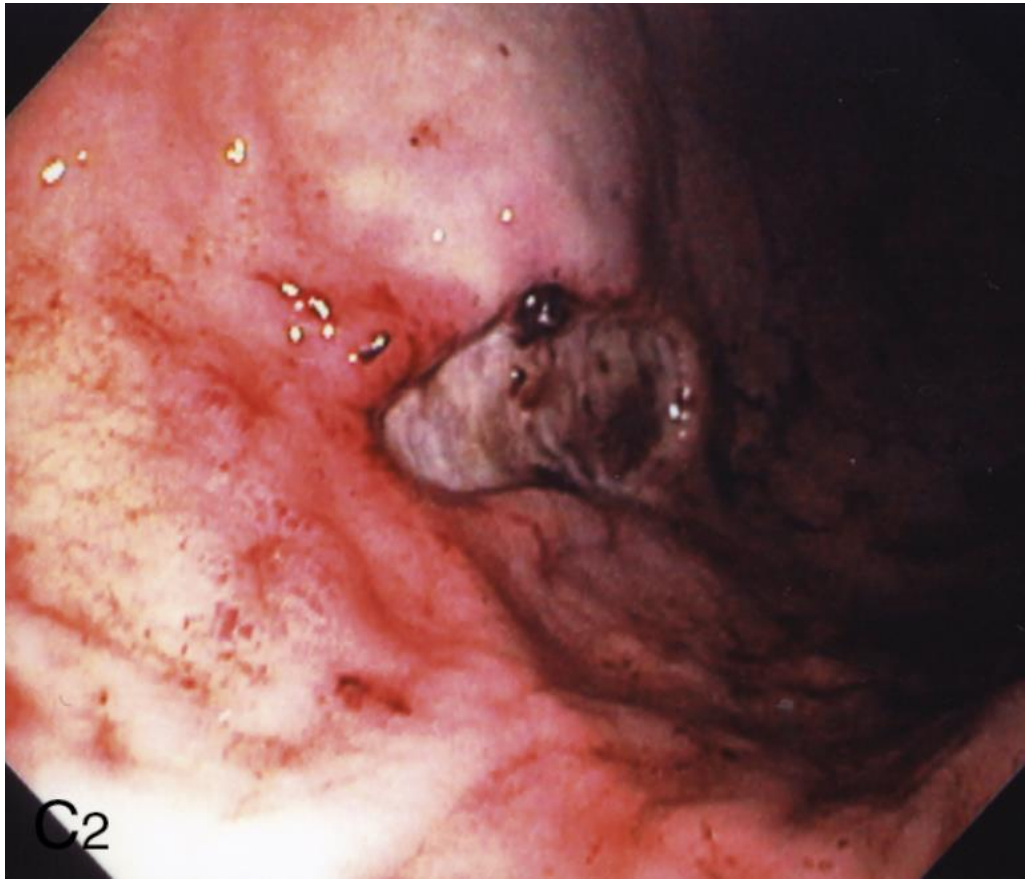
Case #4 – Malignant or Non-malignant?



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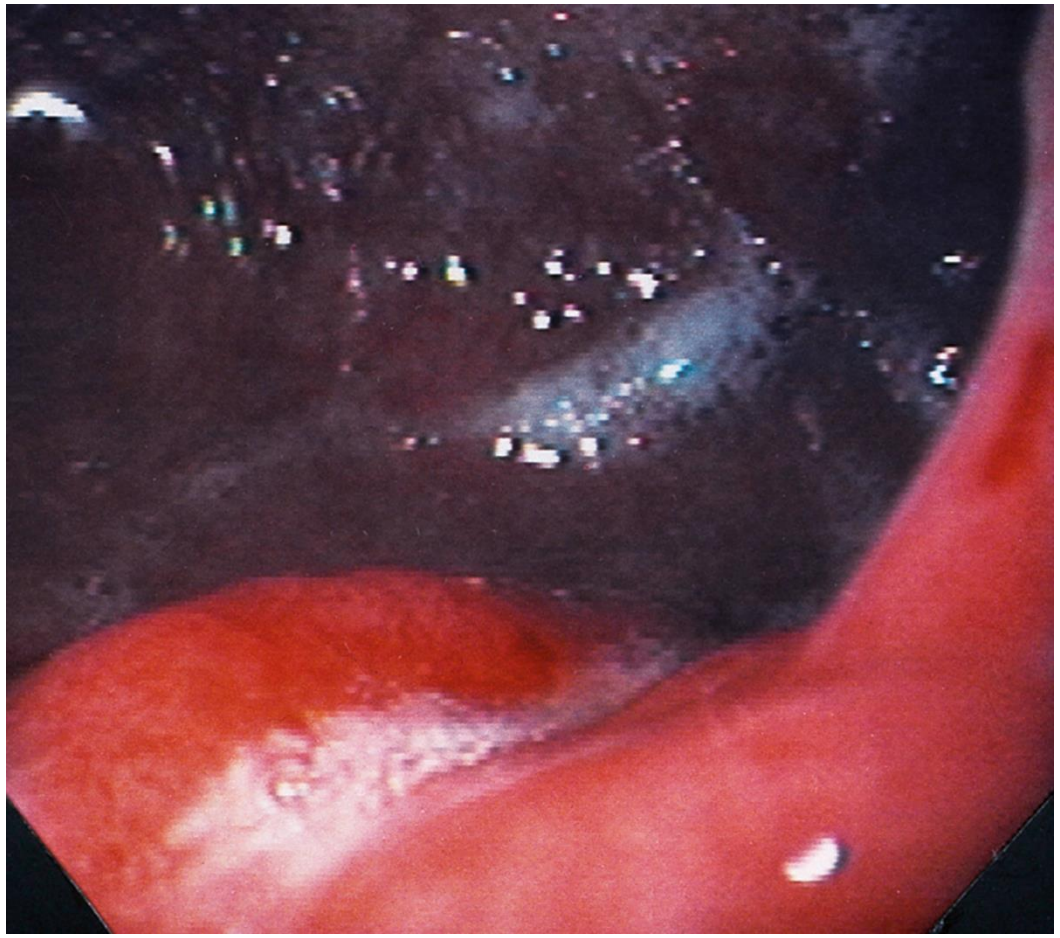

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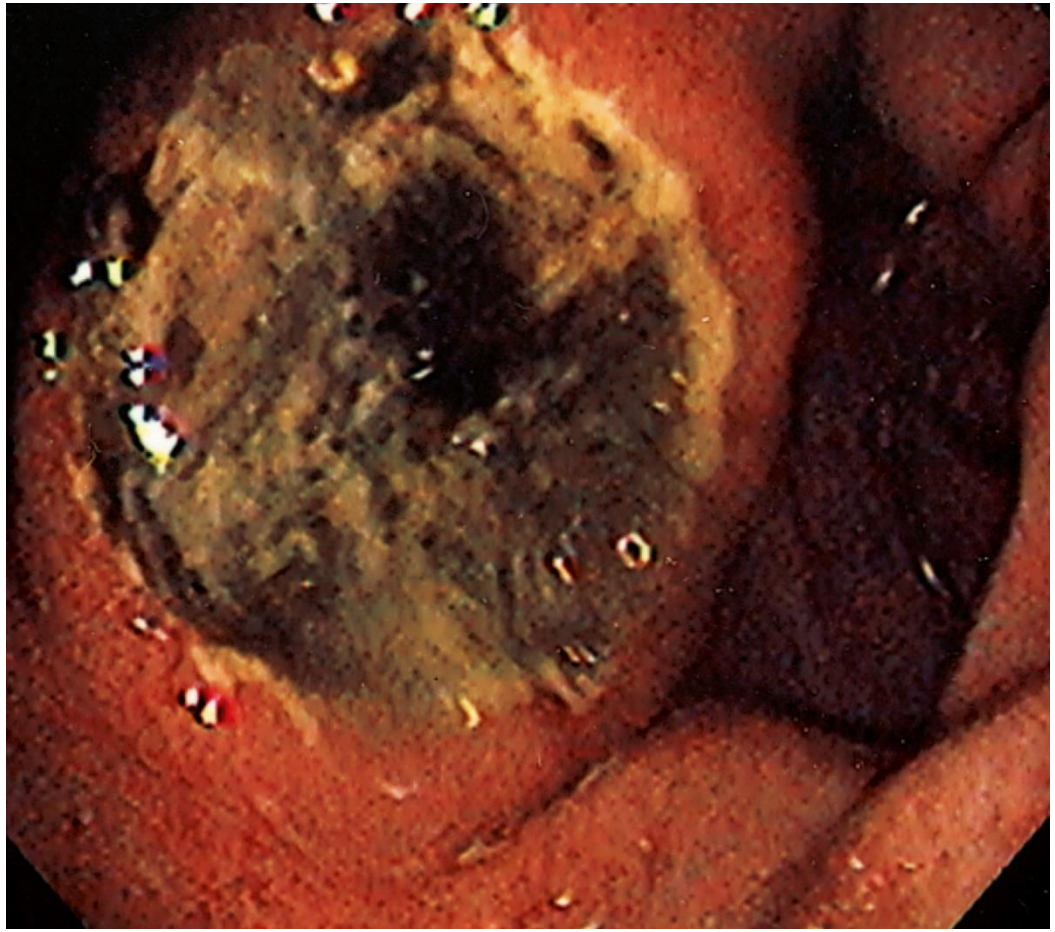

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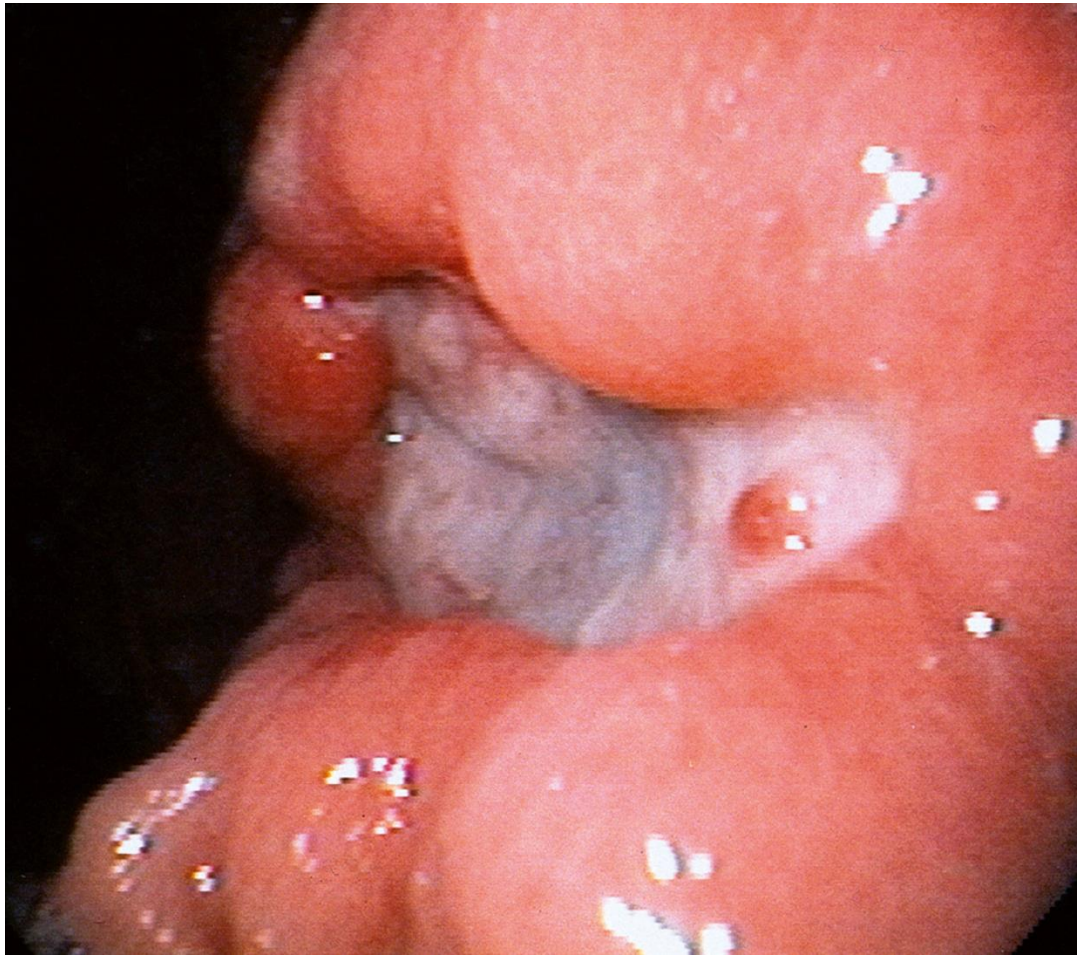

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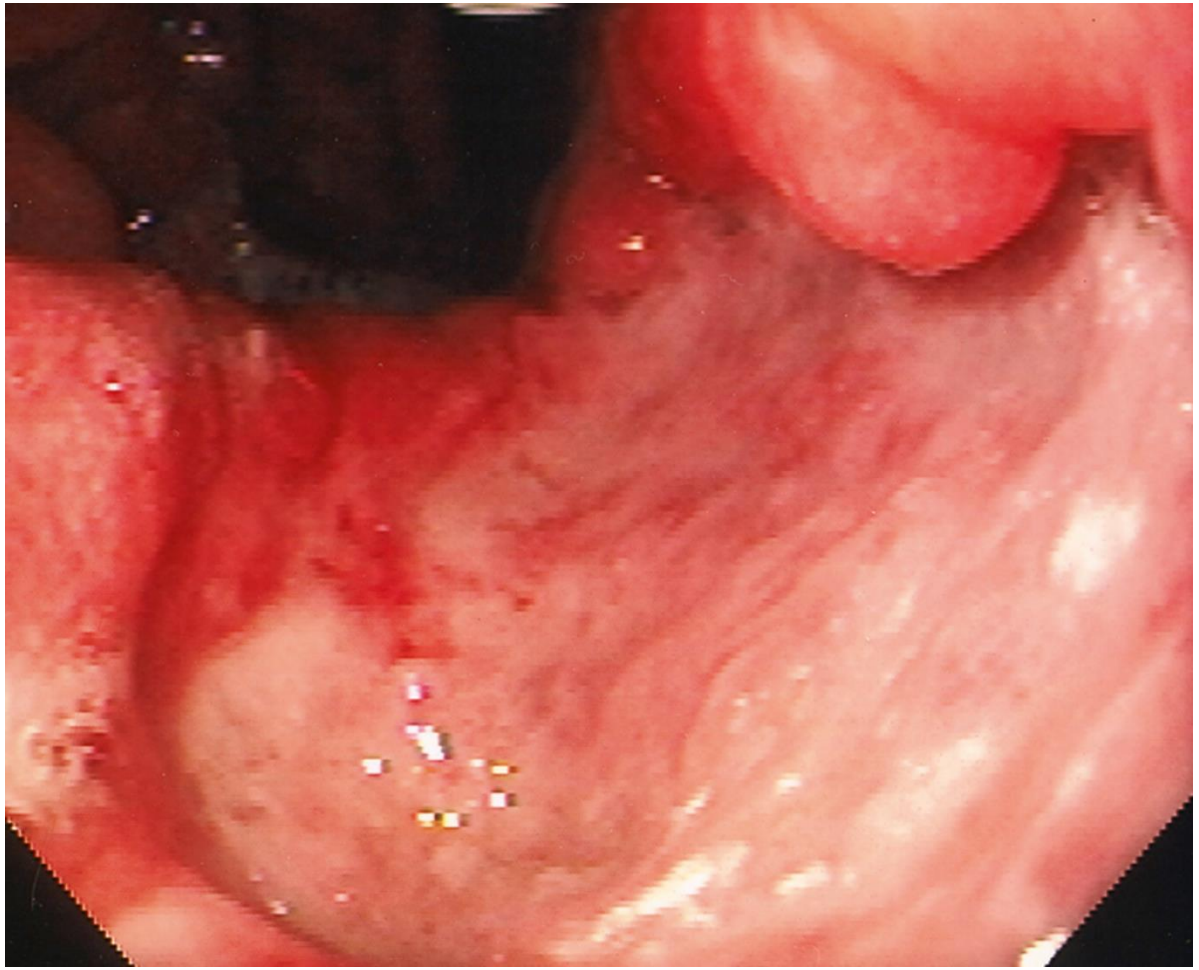

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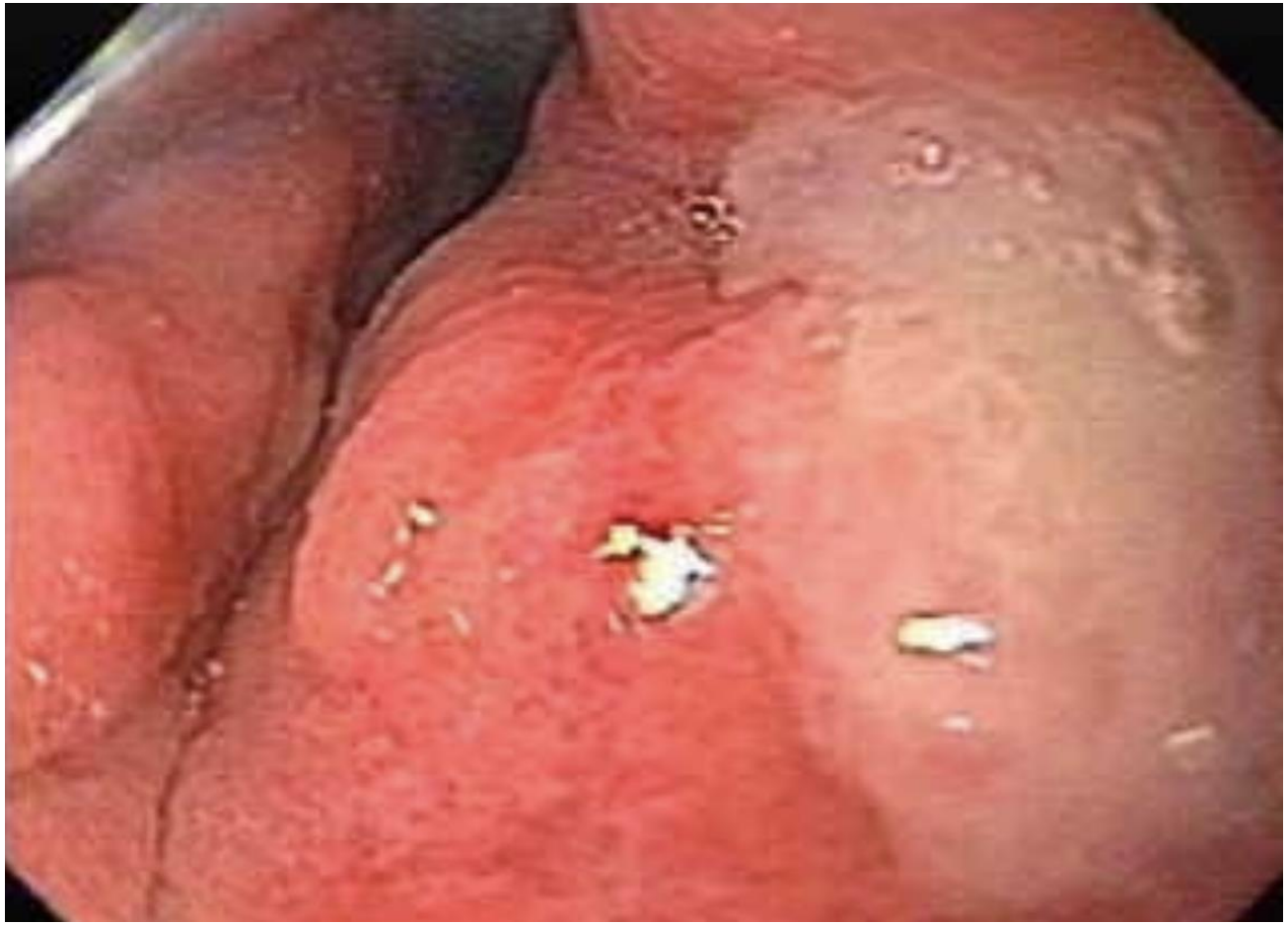

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Sidebar - The Non-healing Ulcer

- Refractory/ non-healing ulcer loosely defined as a persistent ulcer at 12-week surveillance EGD despite PPI therapy

- Issues to consider:
  - PPI compliance
  - *H pylori* – Not tested for? False negative? Not treated? Resistance? Failure?
  - Malignancy - need to biopsy even if initial biopsies negative
  - Ongoing NSAID use
  - Smoking impairing healing (or cocaine, methamphetamines)
  - Comorbid disease (renal failure/uremia, resp failure, cirrhosis, critical illness)
  - Hypersecretory syndrome (ZES, hyperparathyroidism)
  - Upper GI IBD/ Crohn's
  - Rare (sarcoid, lymphoma, eosinophilic gastritis, ischemia)

Case #5 – History and Physical Examination

- A 47-year-old female patient presents to the ER with hematemesis
- She has a longstanding history of EtOH abuse and has had 3 prior episodes of acute pancreatitis related to EtOH, but has no formally established diagnosis of liver disease
- She takes no regular medications
- On examination, she appears somewhat confused
- Hemoglobin is 98, INR is 2.2, PLT count 94

Case #5 – Question A

- After initial resuscitation, what is the most important drug/intervention that should be given to this patient with suspected UGIB and possible/probable underlying liver disease?
  - A) Pantoprazole
  - B) Octreotide
  - C) Ceftriaxone
  - D) pRBC transfusion

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Case #5 – Question B

- What should be given for this patient's INR of 2.2 prior to endoscopy?
  - A) Prothrombin complex concentrate (Octaplex)
  - B) Fresh frozen plasma
  - C) Vitamin K intravenously
  - D) Nothing

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Case #5 – Question C

- What is the most common *non-variceal* cause of UGIB in patients with chronic liver disease?
  - A) Peptic ulcer disease
  - B) Mallory-Weiss tears
  - C) Portal hypertensive gastropathy
  - D) Esophagitis/gastritis

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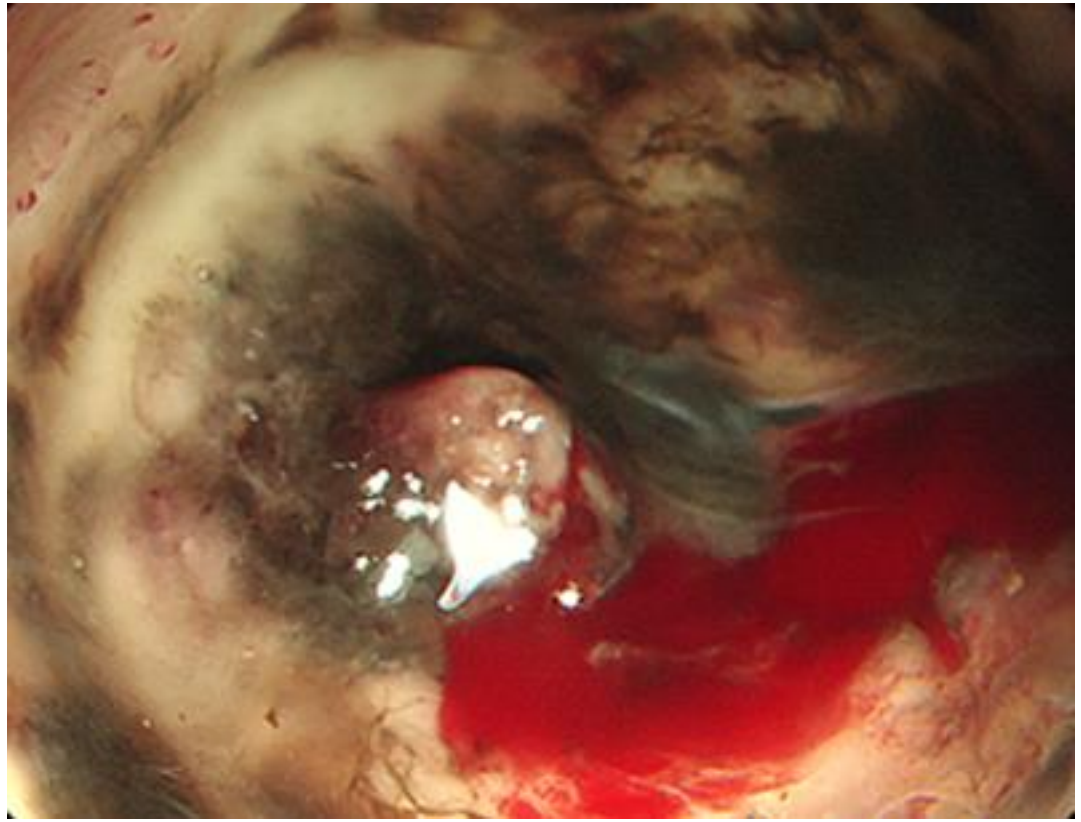
Case #5 – Endoscopy

- Endoscopy shows this lesion in the duodenum.



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Case #5 – Question D

- What is the Forrest classification of this lesion?
  - A) Forrest Ia
  - B) Forrest Ib
  - C) Forrest IIa
  - D) Forrest IIb

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Case #5 – Question E

- Let’s discuss the endoscopic approaches to treating this lesion. What modality/ modalities might you consider?

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Case #5 – Patient's Course

- Patient recovers well after initial hemostasis with combination epinephrine + bipolar cauterization, and stabilizes clinically. They are getting ready for discharge (5 days later) when they suddenly go pre-syncopal and have a massive melena stool.

Case #5 – Question F

- After proper resuscitation, what is the most reasonable next investigation?
  - A) Full medical management
  - B) Second/repeat endoscopy
  - C) Interventional radiology
  - D) Surgery

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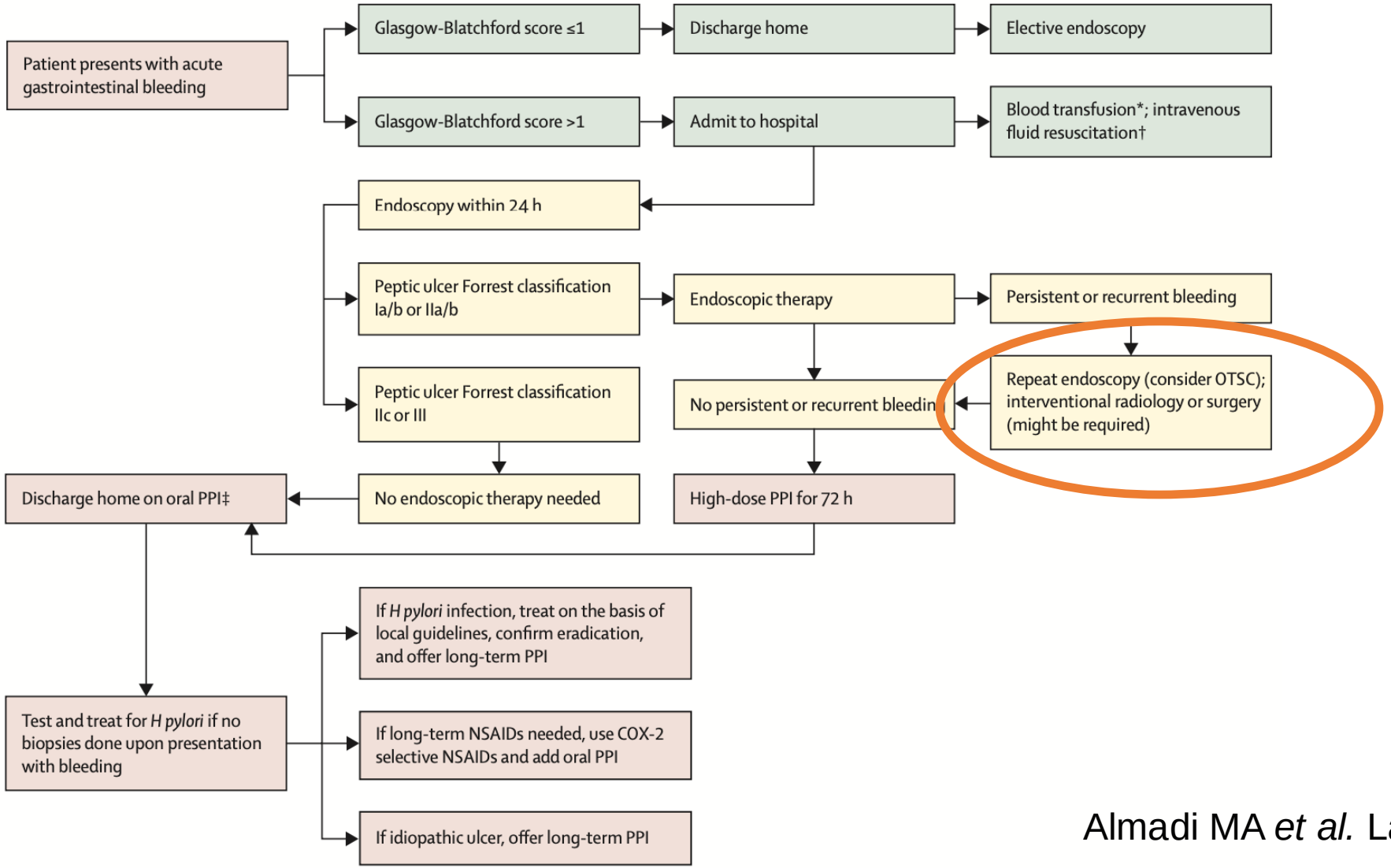
Case #5 – Management Algorithm



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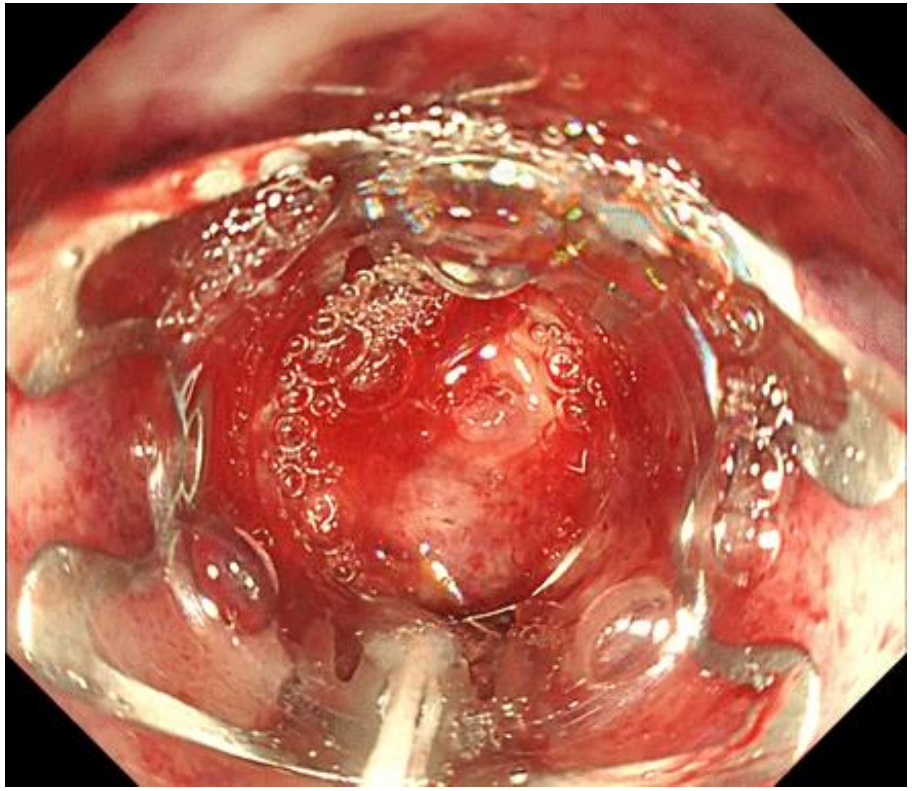
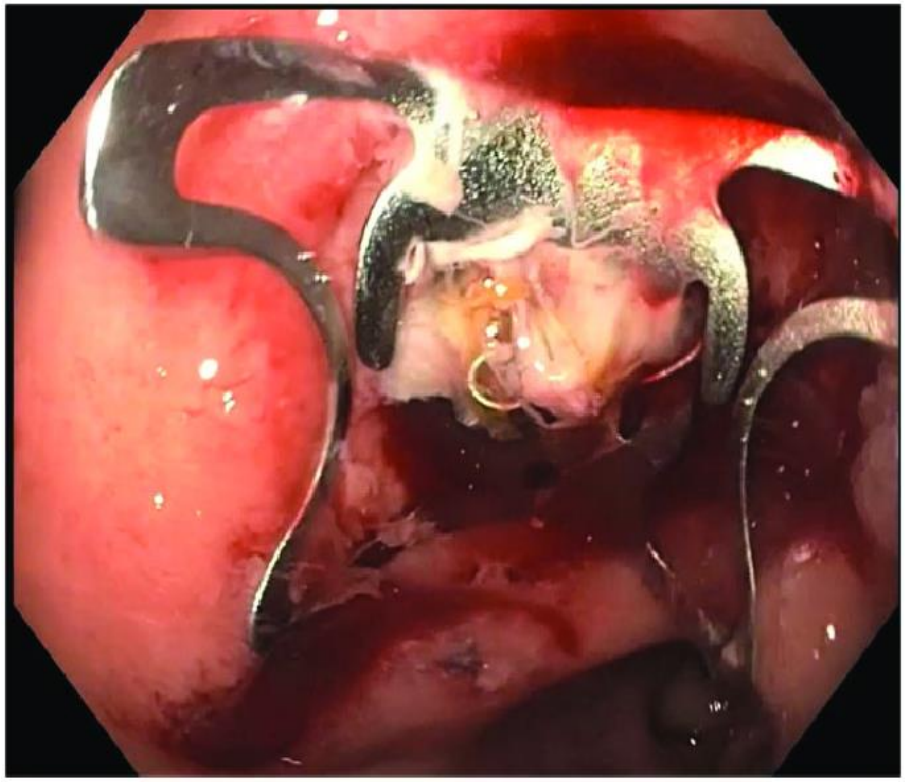
Almadi MA *et al.* Lancet 2024

Case #5 – Treatment with Cap-mounted Clip





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Thank You!

- Questions?

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