

UPPER AND LOWER **GI BLEEDING**

Group:A2

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By:

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Anatomy of GI system

by: Saja Alkaabneh

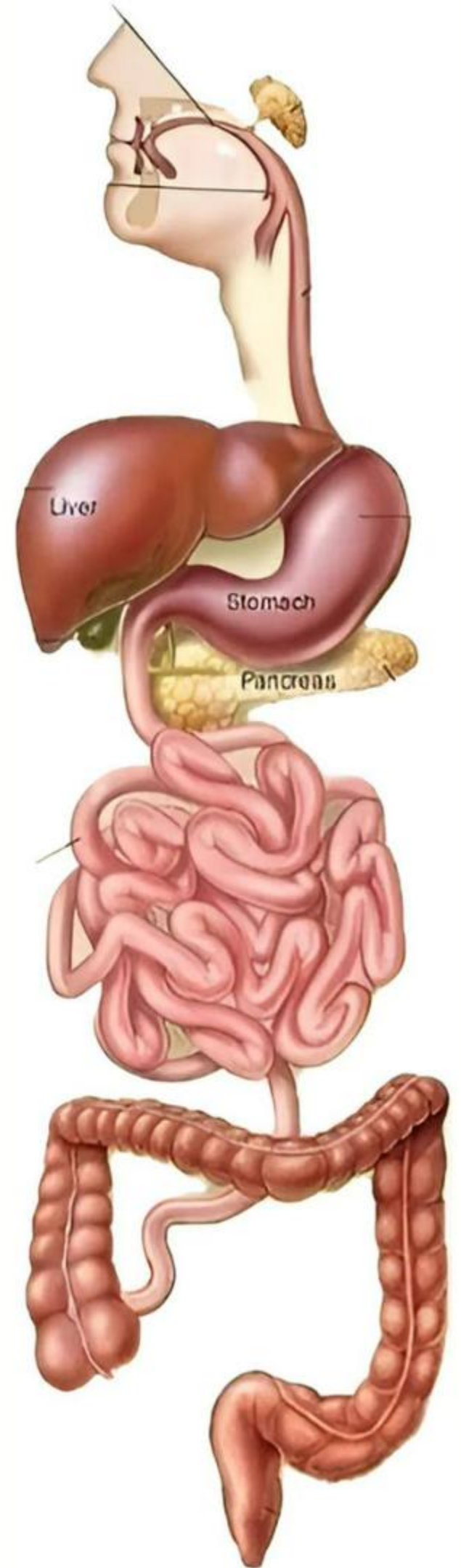
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Upper GI System

Parts of the Gastrointestinal tract that is proximal to the ligament of Treitz including The esophagus, stomach, and duodenum

Lower GI System

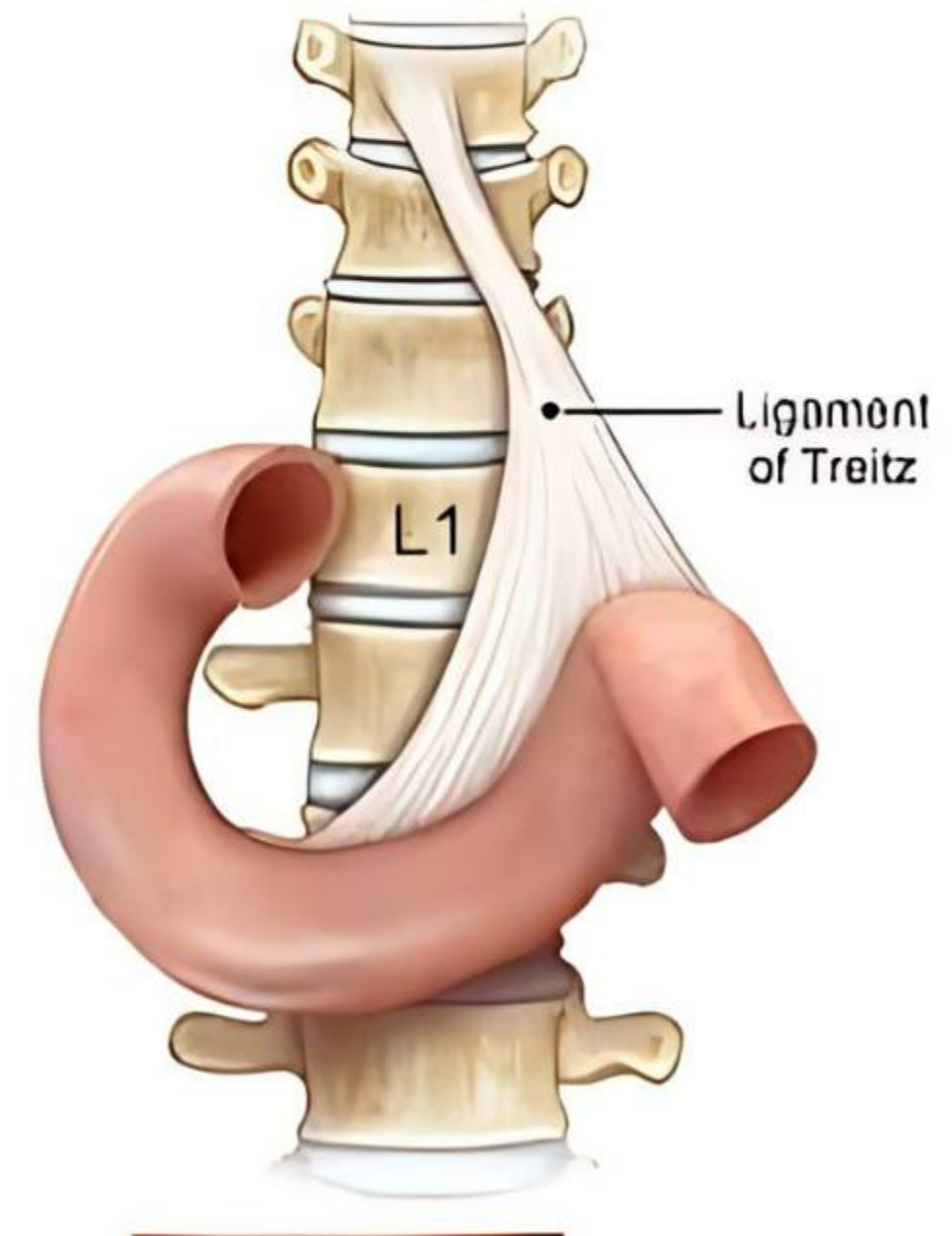
parts of the gastrointestinal tract that is distal to the ligament of Treitz including Jejunum, Ileum, anus, rectum, colon, and cecum



Ligament of Treitz

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- It is located in the **4th portion of the duodenum (the last 2 inches)**
- It connects the fourth portion of the duodenum to the diaphragm



Upper GI Bleeding

Definition and causes

...

Definition of Upper GI Bleeding

...

- Bleeding into the lumen of the proximal GI tract, **proximal to the ligament of Treitz**
- potentially **life-threatening abdominal emergency**
- it is **5 times as common as bleeding from lower GI**

Causes of Upper GI Bleeding

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Most common causes

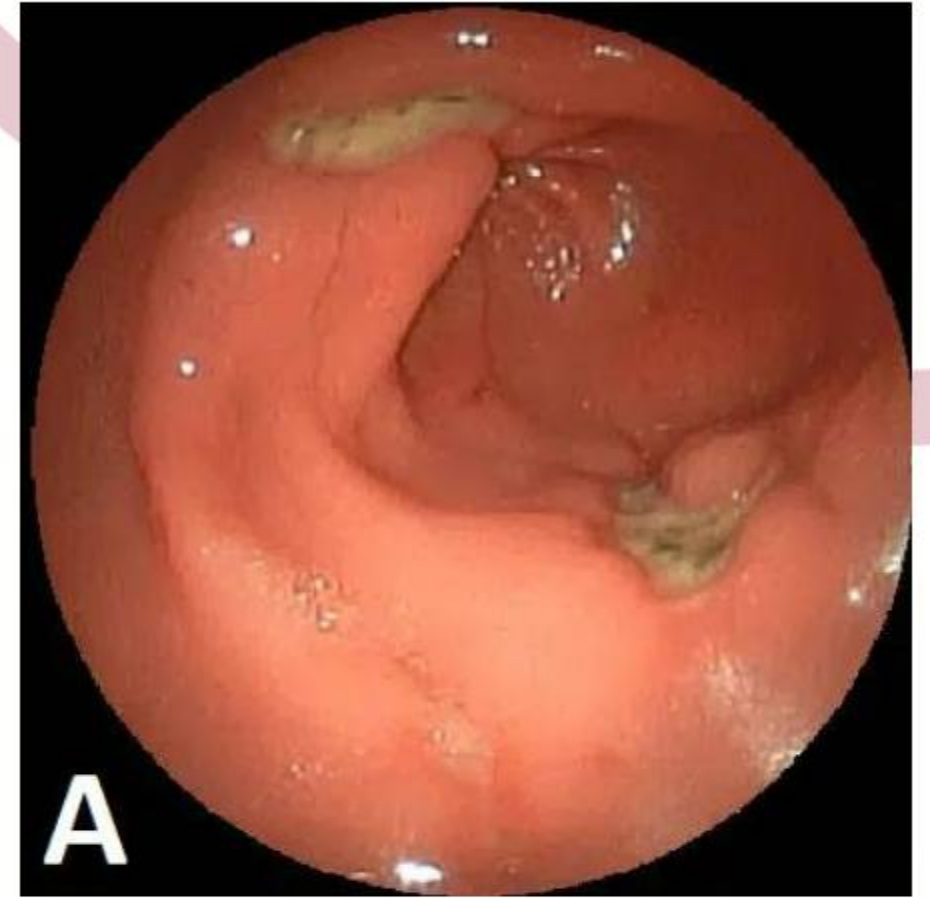
- PU bleeding
- Acute erosive gastritis
- Esophageal varices rupturing
 - Mallory-Weiss tear
 - Esophagitis

Others causes

- Dieulafoy disease
 - GI tumors
- Aortioenteric fistula

Peptic Ulcer :

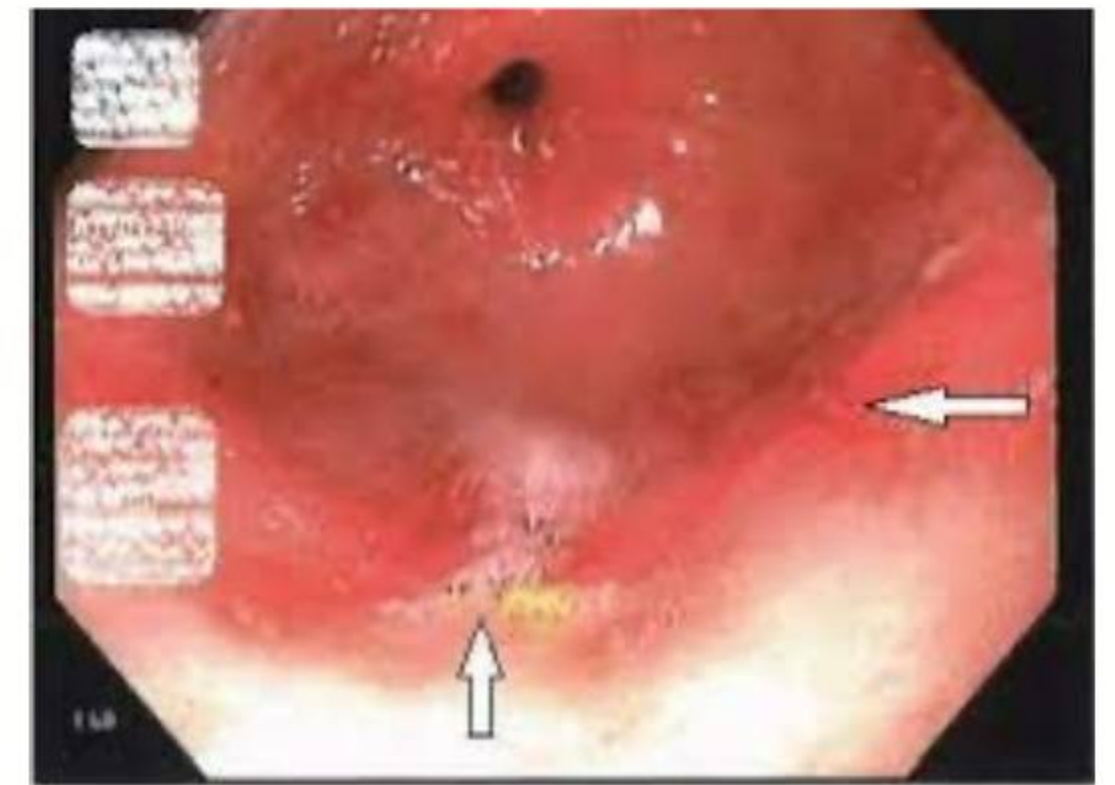
- **Most common cause of UGIB**
- DU is more common than GU to cause large bleeding
- It can only be diagnosed after endoscopic exploration or sometimes angiography
- previous history of PU bleeding, H.Pylori infection, NSAIDs and aspirin use, an abdominal pain related to food intake all favor PU as the cause of the bleeding



Acute erosive gastritis



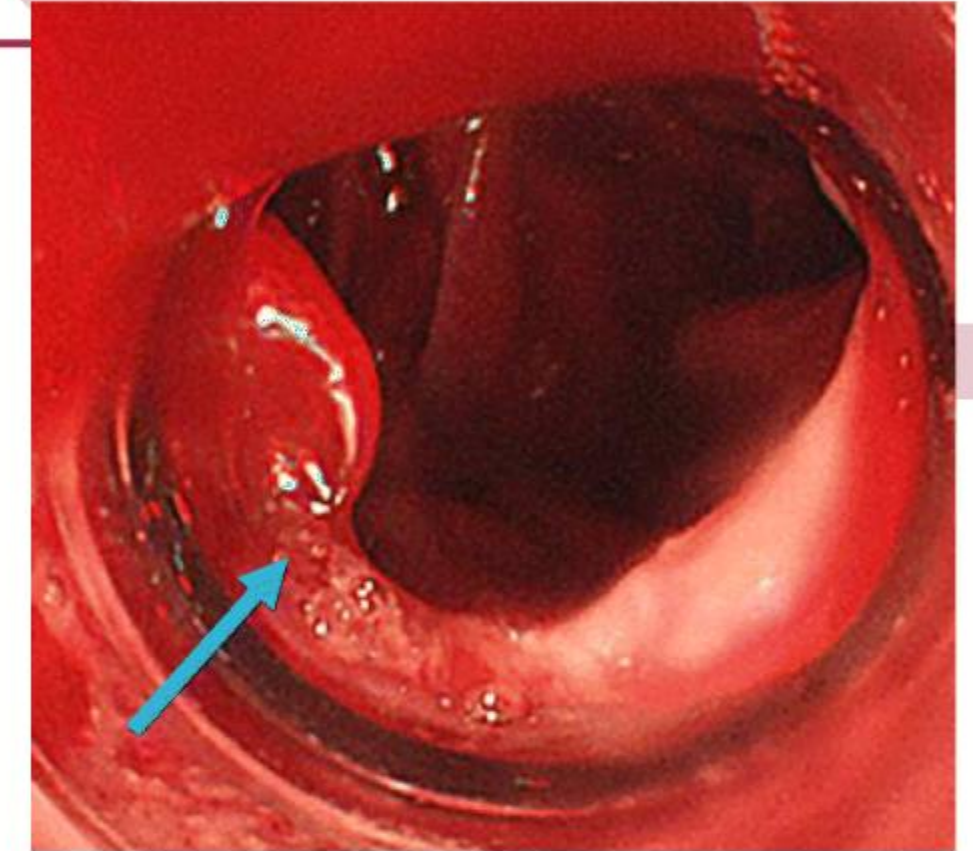
- Although acute gastritis is usually erosive and hemorrhagic, it does not usually erode into a major vessels, but when it does, the bleeding would become problematic to treat.
- Common cause is NSAID intake
- It's preferred to treat it through endoscopy, although sometimes, surgery is needed



Ruptured esophageal varices

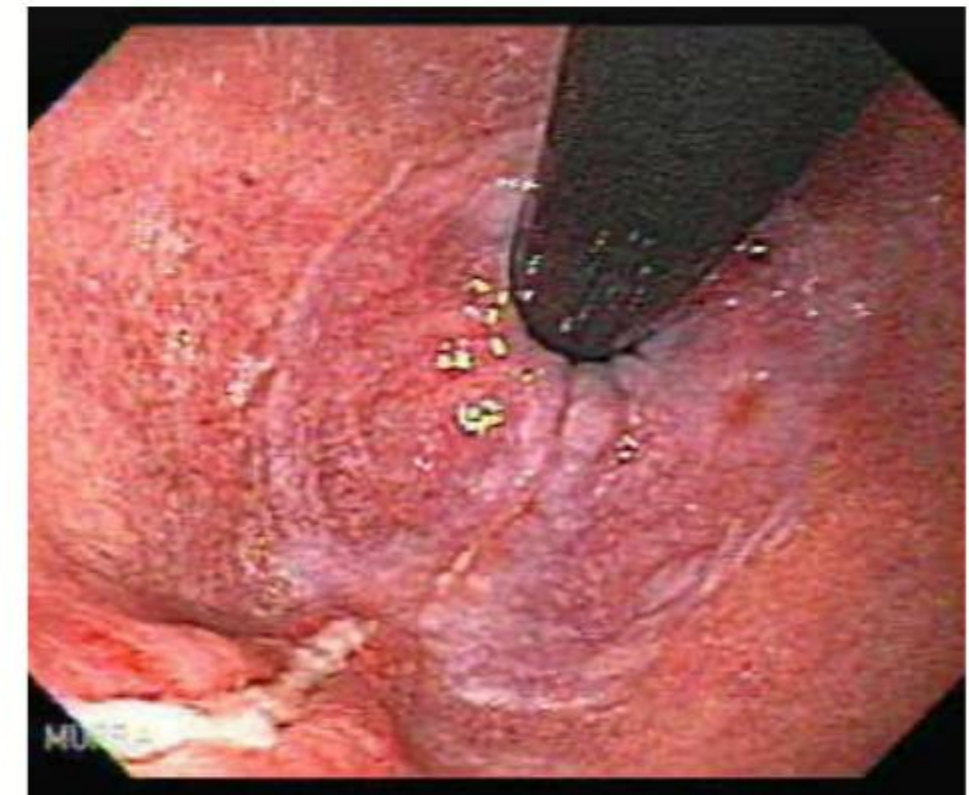
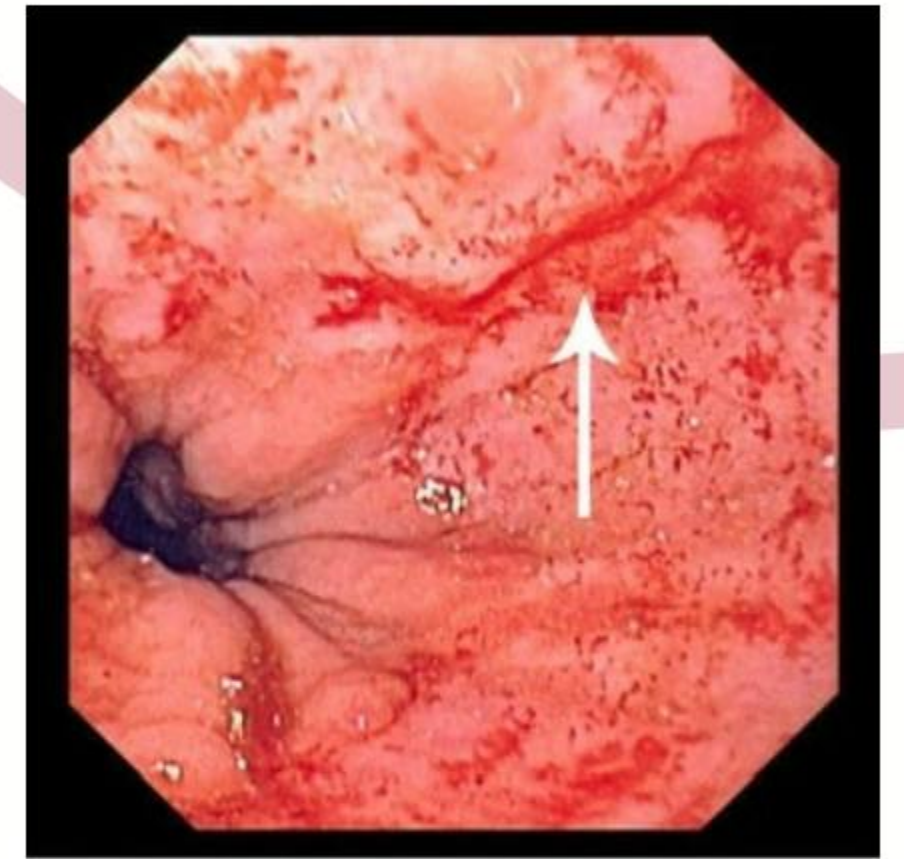


- Bleeding is often profuse, life-threatening, and challenging to manage
- A history of liver cirrhosis or portal hypertension may indicate ruptured varices



Mallory-Weiss tear

- History of the following is almost always present:
Alcoholism, Repetitive retching, And Strenuous vomiting
- These tears may be missed during endoscopy due to their location being just below the gastro-esophageal junction



Esophagitis



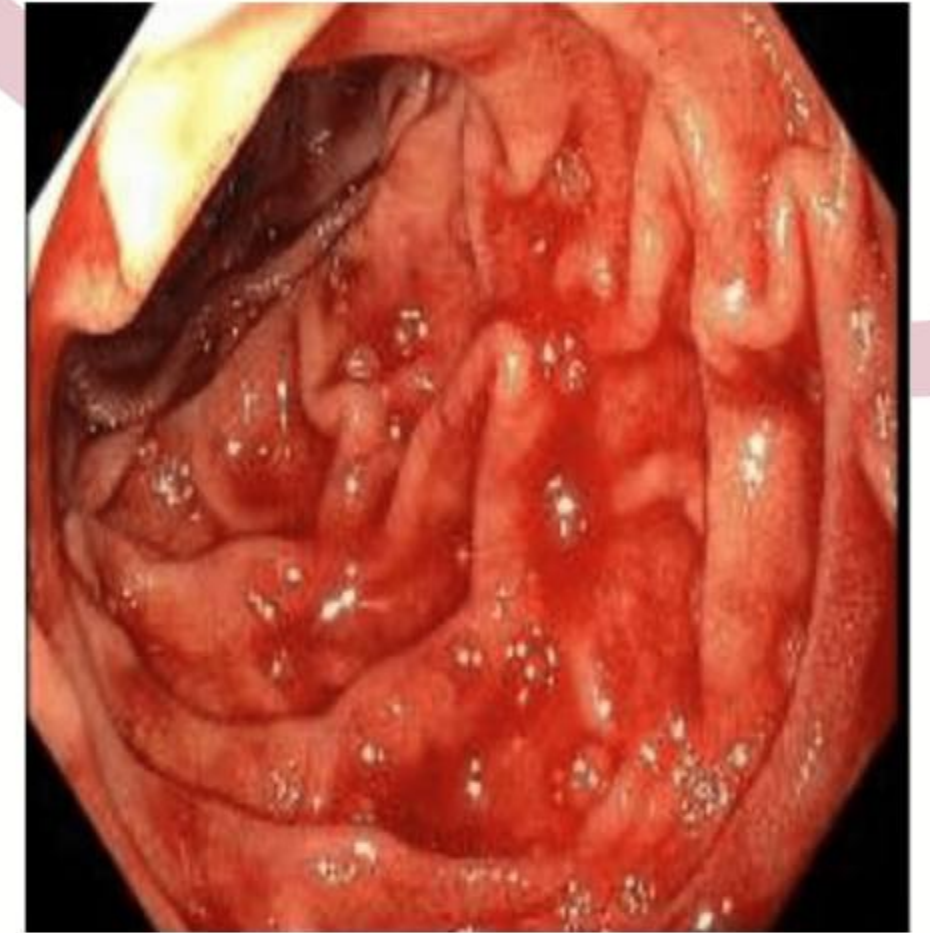
- Bleeding from the esophagus may be a complication of esophagitis due to any cause but more commonly in reflux esophagitis
- A history of GERD (reflux esophagitis), drugs (e.g.: Bisphosphonates), or chemical intake (as in erosive esophagitis) may help us to identify that the cause of bleeding may be esophagitis



Dieulafoy disease



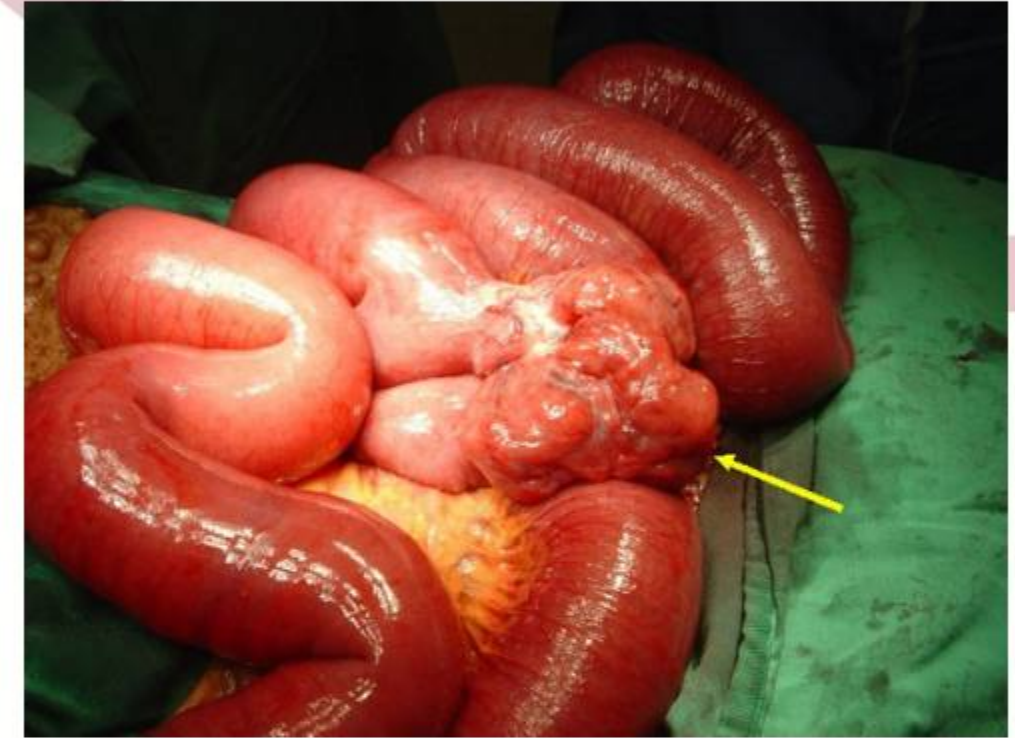
- A gastric arteriovenous malformation that causes a bleeding that's considered one of the hardest to treat
- The lesion is covered by abnormal mucosa, effectively making it invisible when not bleeding
- If it was identified endoscopically, sclerosant injection or clips can be preformed. While in an operation a local excision is usually enough



GI tumors



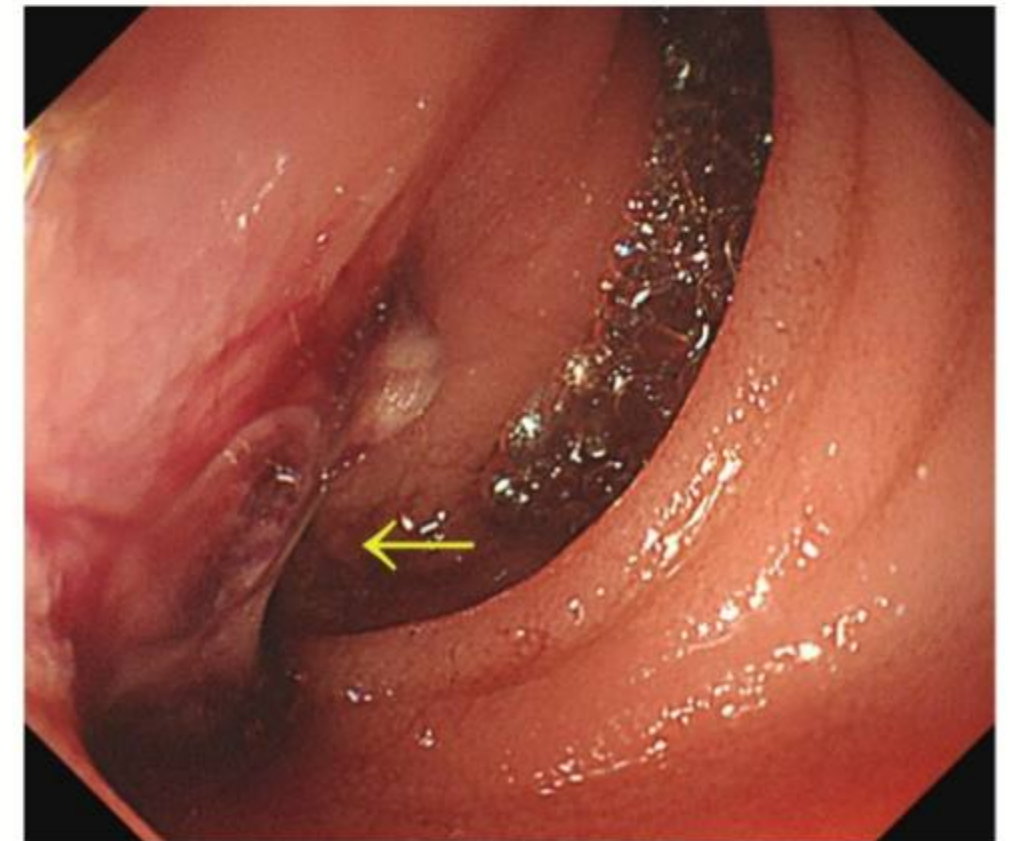
- Nearly all GI tumors can induce bleeding, especially stromal tumors
- The bleeding is not usually profuse but can be unyielding.
- Weight loss and anemia may favor such diagnosis



Aortioenteric fistula



- This diagnosis should only be considered if there's no other explanation for the bleeding.
- Almost all patients will have had an aortic graft.
- A well-performed CT scan will commonly detect the malformation with certainty.



Clinical presentation and diagnostic approach

by: Tareq AL-SOUDI

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CLINICAL PRESENTATION



WHAT IS THE SIGN AND SYMPTOMS THE PATIENT COME WITH:

1-Hematemesis: Vomiting of bright red blood (fresh blood) or coffee-ground material (partially digested blood). indicates that the source is proximal to the ligament of Treitz
It is **more common from bleeding that originates in the stomach or esophagus.**

- hematemesis denotes a **more rapidly bleeding lesion**
- **Coffee-ground vomitus** is due to vomiting of blood that has been in the stomach **long enough for gastric acid to convert hemoglobin to methemoglobin**



'Coffee ground' vomiting



CLINICAL PRESENTATION



CONT'D...

2-Melena: Black, tarry stools indicating digested blood from the upper GI tract.

- melena can be produced by blood entering the bowel at any point from mouth to cecum.
- The conversion of red blood to dark **depends more on the time it resides in the intestine than on the site of origin.**
- The **black color of melenic stools is probably caused by hematin**, the product of oxidation of heme by intestinal and bacterial enzymes.
- Melena can be produced by as little as **50–100 mL of blood in the stomach.**
- The rate of change in the stool character is a poor guide to the time when bleeding stops after an episode of hemorrhage.

Hematemesis or melena is present except when the rate of blood loss is minimal.



CLINICAL PRESENTATION



CONT'D...

3-Signs of Shock: Hypotension, tachycardia, and altered mental status in severe cases.

4- syncope

5- fatigue: Due to anemia from blood loss.

6-Pallor: Pale skin, indicating significant blood loss or anemia.

7-Lightheadedness or fainting, especially when standing up, related to hypotension or blood loss.

8-Hematochezia: the passage of bright-red blood from the rectum (**Seen only when transient time is short or the amount of blood is heavy**)

- **Other Symptoms:** Epigastric pain epigastric discomfort, epigastric tenderness (suggestive of peptic ulcers), dysphagia (difficulty swallowing), or weight loss (potential sign of malignancy).



Risk factors



RISK FOR UGIB

- **Acute Illness:**

1-Shock 2- Respiratory failure 3-Head trauma 4-Thermal injury

- **Chronic Conditions :**

1. Renal dysfunction 2. Liver diseases 3. Coagulopathy 4. H.pylori

- **Drugs :**

1. Anticoagulants 2. Antiplatelet agents 3. NSAIDs 4. SSRIs

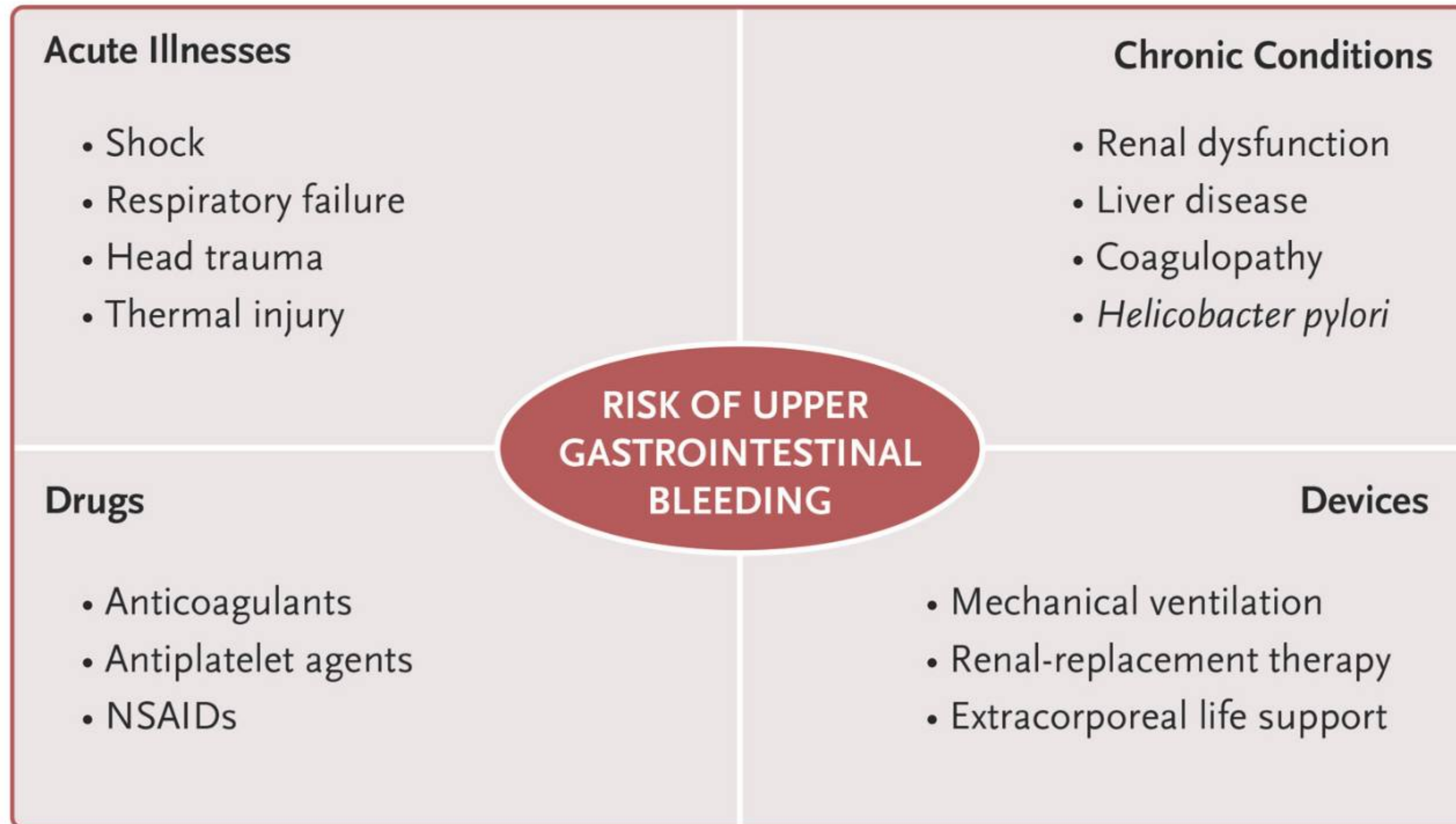
- **Devices :**

1. Mechanical ventilation
2. Renal –replacement therapy
3. Extracorporeal life support

Risk factors



RISK FOR UGIB



DIAGNOSIS



History

1. Bleeding History:

Hematemesis, Melena, Hematochezia

2. Associated Symptoms:

- **Epigastric or abdominal pain:** May suggest peptic ulcer disease or gastritis.
- **Dysphagia:** possibly indicating esophagitis or esophageal cancer.
- **Vomiting:** A history of repeated vomiting before bleeding may indicate a Mallory-Weiss tear.
- Fatigue, dizziness, syncope: Signs of anemia or hypotension due to blood loss.
- **Weight loss:** suggest malignancy.
- **Jaundice or pruritus:** Symptoms of liver disease, which can lead to esophageal varices.

3. Risk Factors: NSAID or aspirin use, Alcohol consumption, History of liver disease or cirrhosis, Helicobacter pylori infection, Smoking, Anticoagulant or antiplatelet medication use

4. PMH: Previous episodes of UGIB or ulcers.

Endoscopy findings: varices, or gastritis.

Surgeries: Prior GI surgeries

5. Family History: family history of GI malignancies As gastric or esophageal cancer

6. Social History: Dietary habits, Alcohol and drug use, Smoking history

DIAGNOSIS



Physical Exam

- **Vital Signs:** Tachycardia ,Hypotension, Orthostatic Hypotension,Tachypnea
- **Skin:**
 - 1-Pallor, Pale skin : due to anemia
 - 2-Cool, clammy skin: due to hypovolemia
 - 3-Jaundice :indicate chronic liver disease, which can lead to esophageal varices
- **Abdominal Examination:**
 - 1.Epigastric Tenderness
 - 2.Hepatomegaly (enlarged liver)
- **Rectal Examination:**
 - 1-Melena:observed on digital rectal examination
- **Signs of Shock:**
 - 1-Altered mental status:result from significant blood loss and reduced blood flow to the brain.
 - 2-Delayed capillary refill: A sign of poor perfusion, usually seen in shock.



DIAGNOSIS



Labs

- **CBC**

- 1- Anemia** :Chronic or subacute bleeding

- Hb concentration may be normal after sudden, major bleeding until hemodilution occurs.
(poor indicator of the need to transfuse)

- 2- Thrombocytopenia** hypersplenism in chronic liver disease

- **Urea and electrolytes (renal failure).**

- elevated blood urea with normal creatinine concentration implies severe bleeding

- Why is BUN elevated? Because of absorption of blood by the GI tract**

- **Liver function tests** (chronic liver disease.)

- Including PT, PTT, INR and serum albumin concentration.

- **Guaiac positive stool :(looks for occult blood in a stool sample) (best test available at present.)**

- Normal subjects lose about 2.5 mL of blood per day in their stools, presumably from minor mechanical abrasions of the intestinal epithelium.

- False-positive results may be due to dietary hemoglobin, myoglobin, or peroxidases of plant origin.

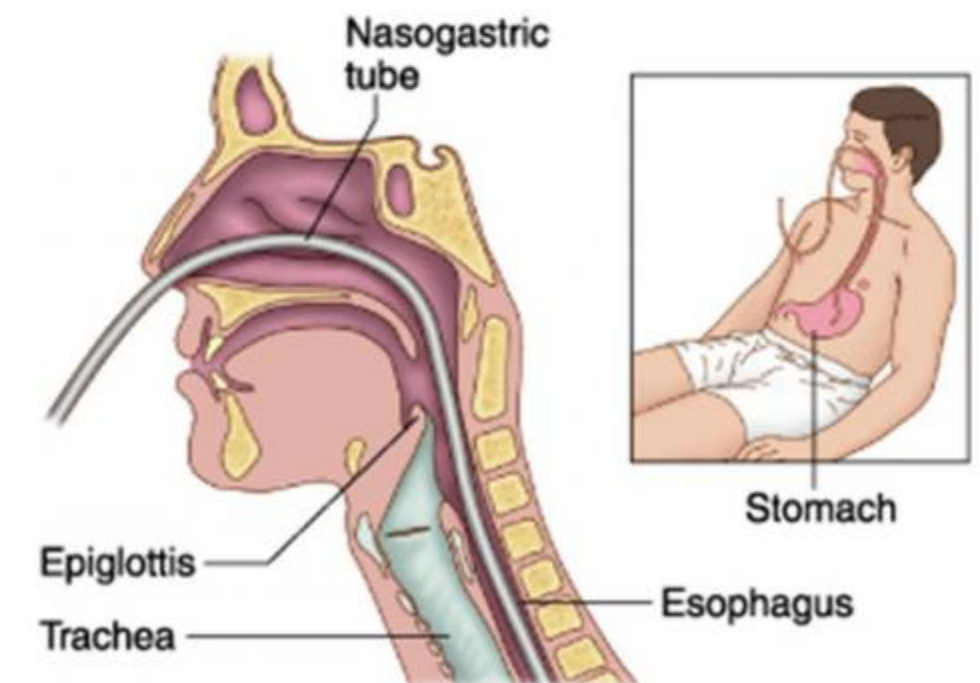
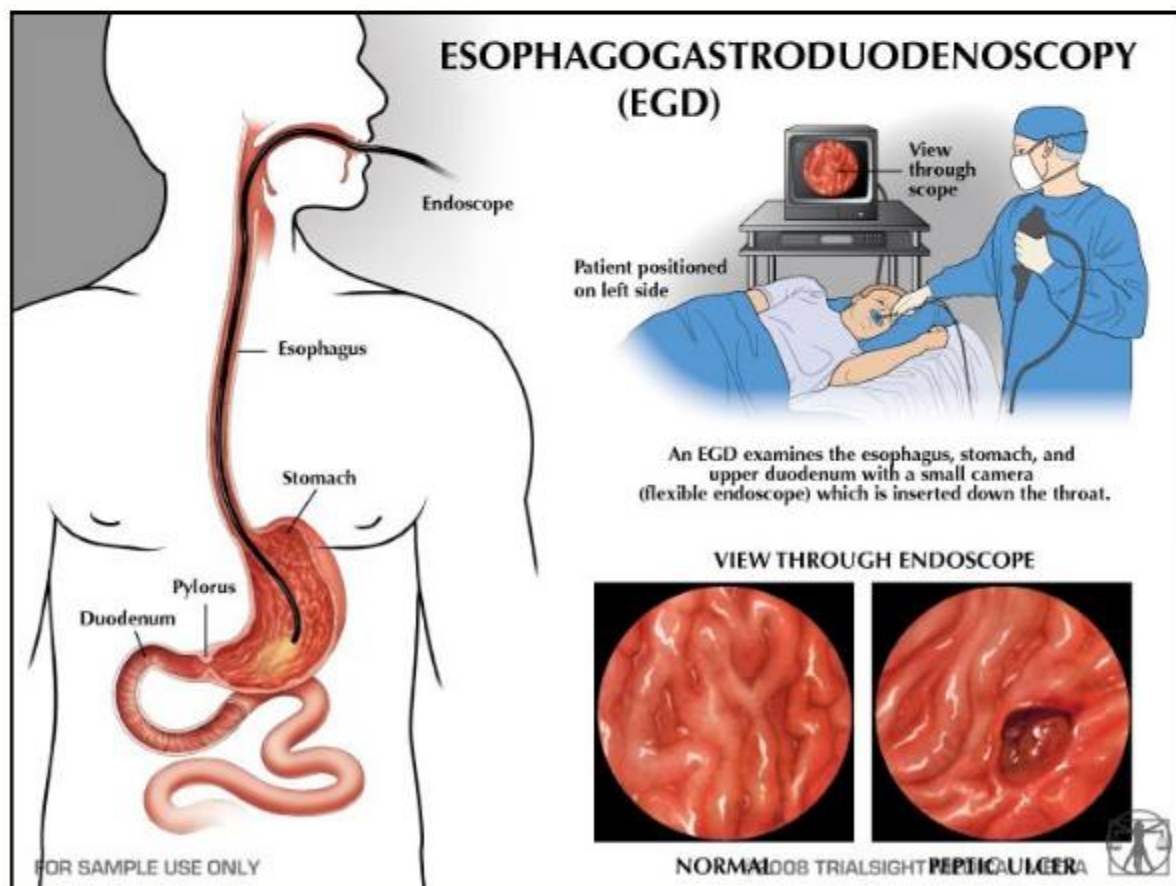


DIAGNOSIS



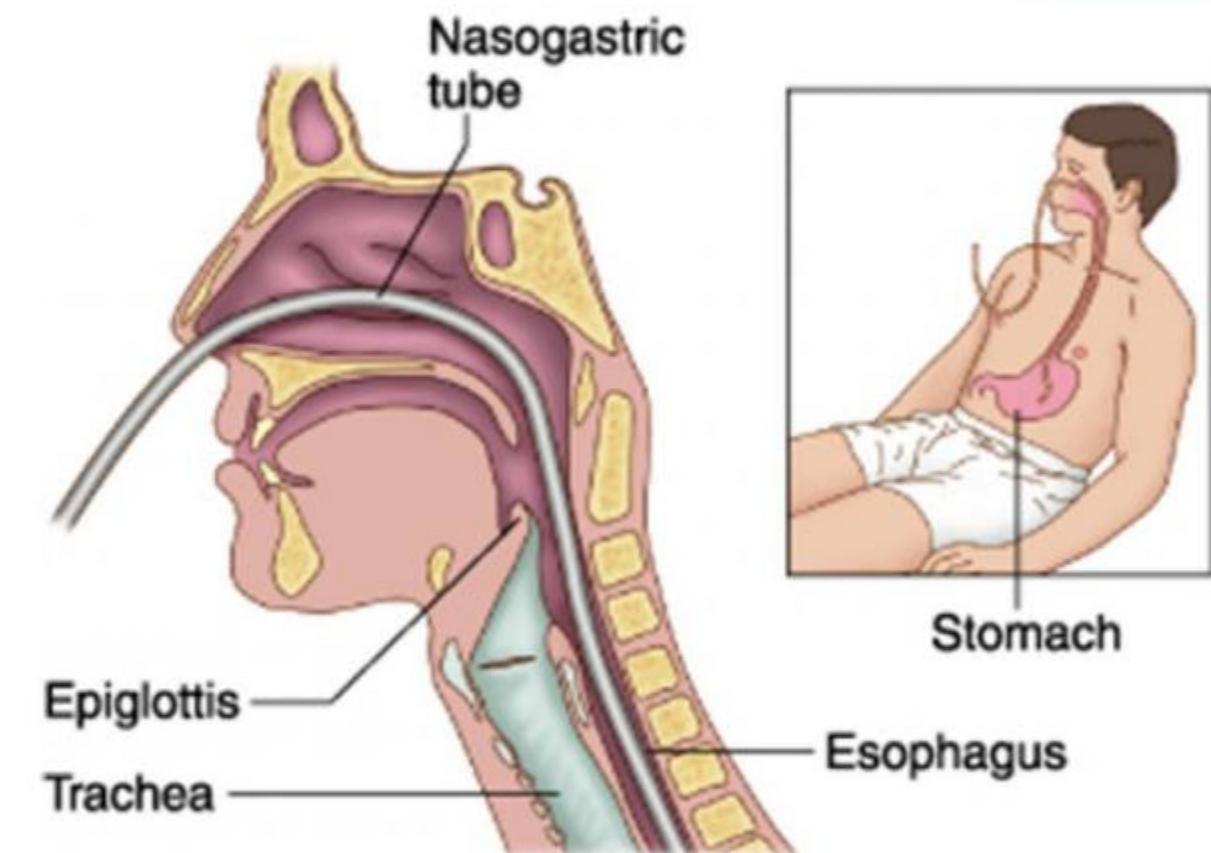
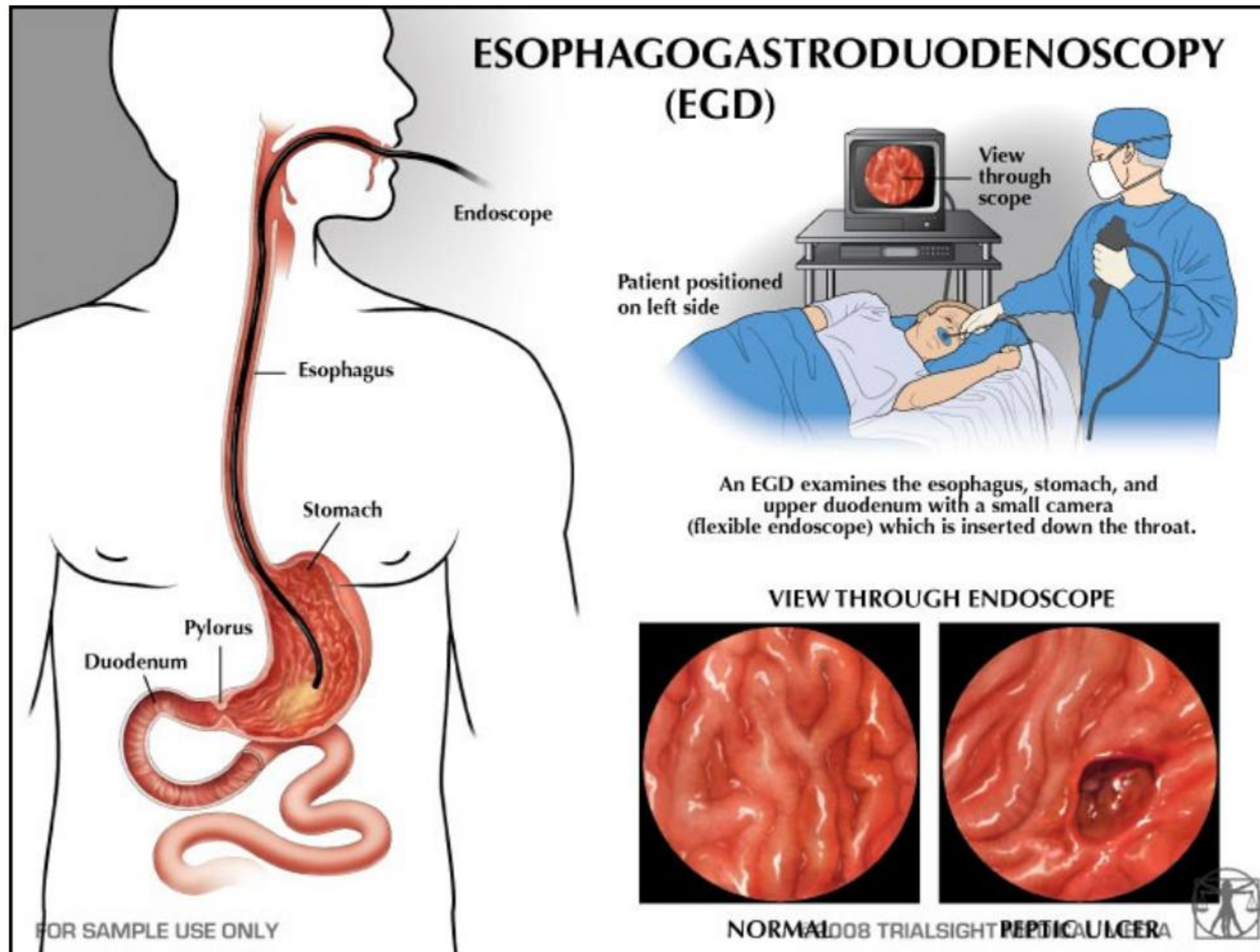
Diagnostic management

- History, NGT aspirate, abdominal x-ray, endoscopy (EGD)
- (EGD) is test of choice with UGI bleeding (95% diagnosis rate)
- Diagnosis of Cause of Bleeding Once the patient is stabilized
- endoscopy should be performed within 24 hours after admission, and under these circumstances the source of bleeding can be demonstrated in about 80% of cases



DIAGNOSIS

Diagnostic management



Complications & Management of UGIB

By: Taher Daoudi



Complications

some complications include:

1-Hypotention

2-Reflex Tachycardia

3-Anemia

4- Aspiration Pneumonia

5-Acute Kidney Injury (AKI)

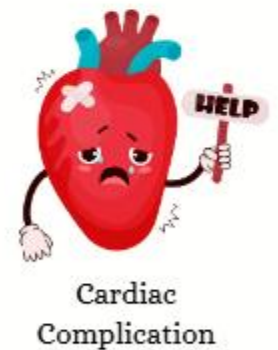
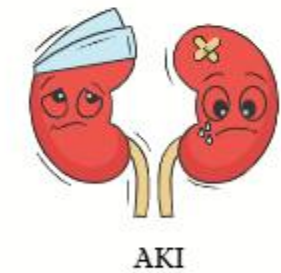
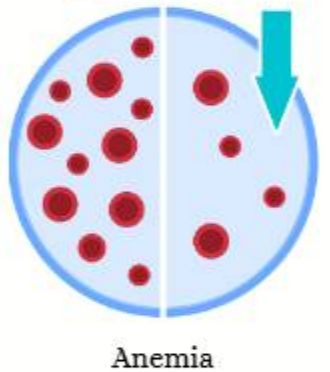
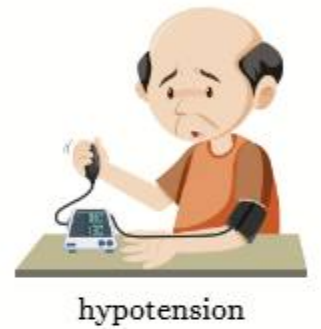
reduced perfusion due to blood loss can cause renal hypoperfusion.

6-Cardiac Complications

Patients with pre-existing cardiovascular disease may experience myocardial ischemia or infarction as a result of reduced oxygen delivery from anemia or hypotension.

7-Death

UGIB has 5-10% mortality rate.. especially in **old patients** with **other comorbidities**.



Management



The management is divided into 2 types depending on the presentation of the patient :

- Management of **acute UGIB**
- Management of **chronic UGIB**

Four steps:

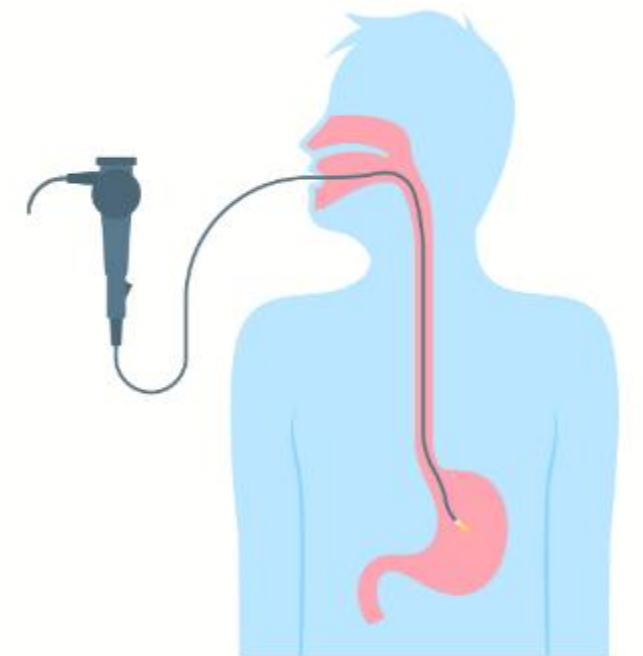
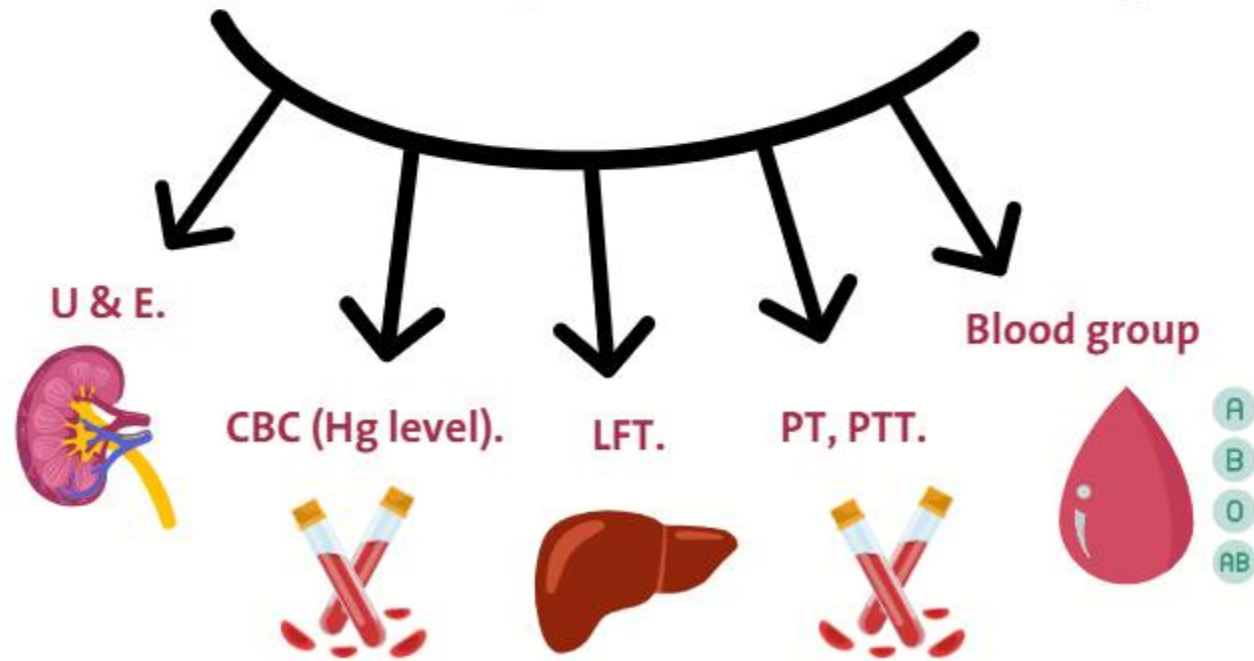
- 1 Resuscitation.
 - 2 Initial Assessment & Triage.
 - 3 Establishment of a diagnosis (Endoscopy).
 - 4 Management of specific conditions.
- 

Management



1. Resuscitation.

1. **Measure BP** and **HR** & repeat measurement hourly.
2. **Admission** (if SBP < 100 or HR > 100 → ICU admission).
3. **NPO**: for 24 hr.
4. **rest**.
5. **IV access** with two large bore cannula (IV lines).
6. **Draw blood samples** for Basic investigations:



7. Start blood transfusion. **(if needed)**
8. Central venous line
9. Insert Foley's catheter and monitor the urine output hourly.
10. **Insert NG tube (controversial).**
(NG aspirate may be negative in 10% of bleeding DU due to edema or pylorospasm; the sensitivity of NG aspirate of assessing active bleeding is 79%; NG may cause trauma or dislodge a clot!).
11. **Endoscopy after stabilization for diagnosis & treatment.**

Management

2. Initial Assessment & Triage.

To identify patients with non-variceal UGIB at greatest risk for mortality and rebleeding. .
Patients may be categorized as **low**, **intermediate** and **high risk**.

- **Pre-endoscopy scoring systems:**

1. **Blatchford Score:** BP, BUN level, Hemoglobin, heart rate, melena, syncope, liver disease, heart failure.
2. **Clinical Rockall score:** patient's age, shock & coexisting illnesses.

- **Post-endoscopy scoring system:**

1. **Complete Rockall score:** Clinical Rockall score + endoscopic findings. It correlates well with mortality & risk of rebleeding.

Management

2. Initial Assessment & Triage.

Complete Rockall score:

6.5 Prediction of the risk of mortality in patients with upper gastrointestinal bleeding: Rockall score

Criterion	Score
Age	
<60 years	0
60–79 years	1
>80 years	2
Shock	
None	0
Pulse > 100 beats per minute and systolic blood pressure > 100 mmHg	1
Systolic blood pressure < 100 mmHg	2
Comorbidity	
None	0
Heart failure, ischaemic heart disease or other major illness	2
Renal failure or disseminated malignancy	3
Endoscopic findings	
Mallory–Weiss tear and no visible bleeding	0
All other diagnoses	1
Upper gastrointestinal malignancy	2
Major stigmata of recent haemorrhage	
None	0
Visible bleeding vessel/adherent clot	2
Total score	
Pre-endoscopy (maximum score = 7)	Score 4 = 14% mortality pre-endoscopy
Post-endoscopy (maximum score = 11)	Score 8+ = 25% mortality post-endoscopy

Management



2. Initial Assessment & Triage.

1-Intravenous access

2-Resuscitations and monitoring (IV fluids)

3-Medication therapy

- Patient with suspected chronic liver disease should receive **broad spectrum antibiotics**
- IV **PPI** for bleeding ulcer
- IV **Octreotide** (somatostatinanalogue decrease portal pressure)/ **vasopressin** can be given in case of varices

4- Blood transfusion

- If Hb (trigger : less than 7 mg/dL) ; (target : 7-10 mg/dL) . A higher trigger in case of co-morbidity

5-Endoscopy after stabilization for diagnosis and treatment

- A- The endoscope using for **diagnosis and therapeutic** if needed '**Gold Standard**'
- B- **More sensitive than contrast radiography**
- C- urgent endoscopy should be performed in patients with shock, suspected varices or with continued bleeding
- D- Endoscopy can detect the cause of the hemorrhage in 80% or more of cases. After adequate resuscitation
- E- At endoscopy, Varices should be treated, usually with **banding** Or **sclerotherapy**

note:

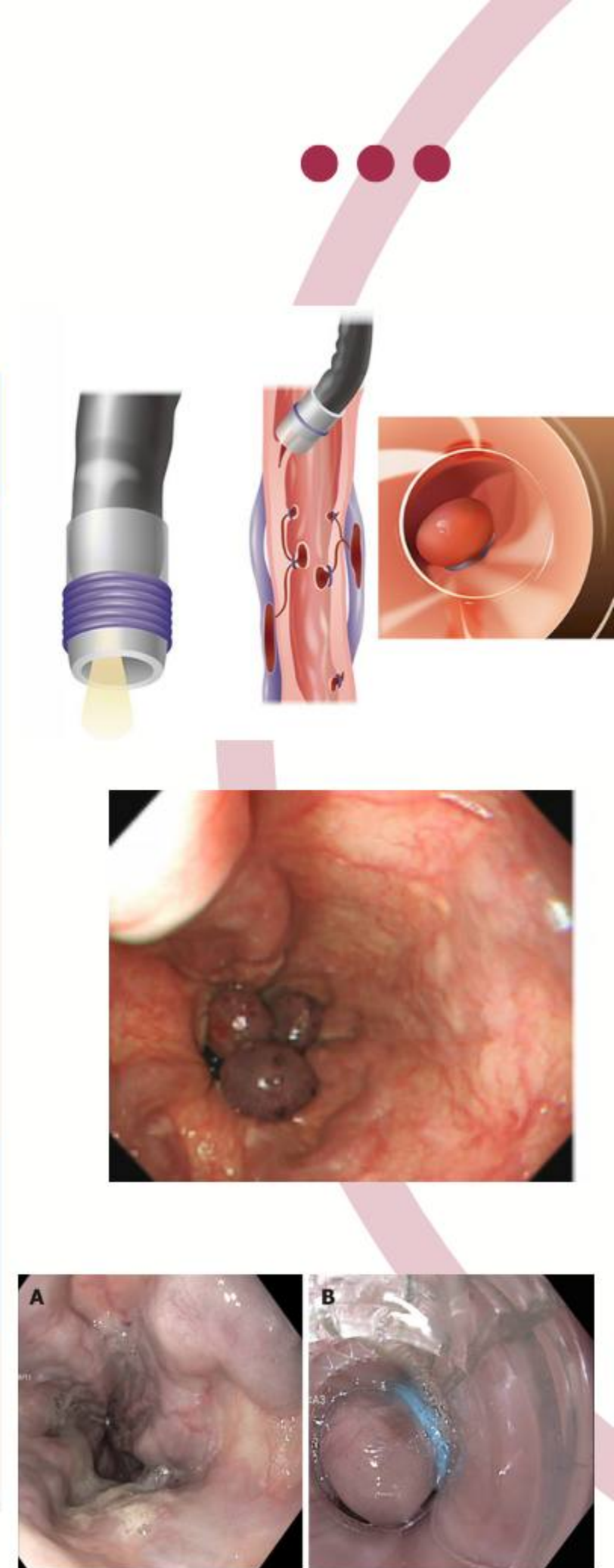
1 Unit PRBC increases Hgb by 1 mg/dl , and increase Hct by 3%

Management

Endoscopic treatment modalities

Injection	➤ Adrenaline (1:10000) ➤ Sclerosants (ethanolamine, ethanol, polidocanol) ➤ Pro-coagulants (thrombin, fibrin) ➤ Cyanoacrylate	----- Most commonly used for variceal UGIB
Thermal Devices	➤ Heater probes ➤ Electrocautery probes ➤ Argon plasma coagulation ➤ Lasers photocoagulation	
Mechanical Therapy	➤ Clips ➤ Band ligation	----- Modality of choice for variceal UGIB

Meta-analyses have found that combination therapy (adrenaline + 2nd modality) is superior to adrenaline alone in treating high risk stigmata lesions (reducing risk of rebleeding, mortality and surgery).



Management

Angiographic therapy : Embolization



Management

surgery:

To remove the site of bleeding

- Percentage of patients require surgery is only 10% Due to advances in medications and therapeutic endoscopy techniques and angiographic therapy UGIB

- Surgery is indicated if endoscopic therapy or angiographic therapy (embolization) failed

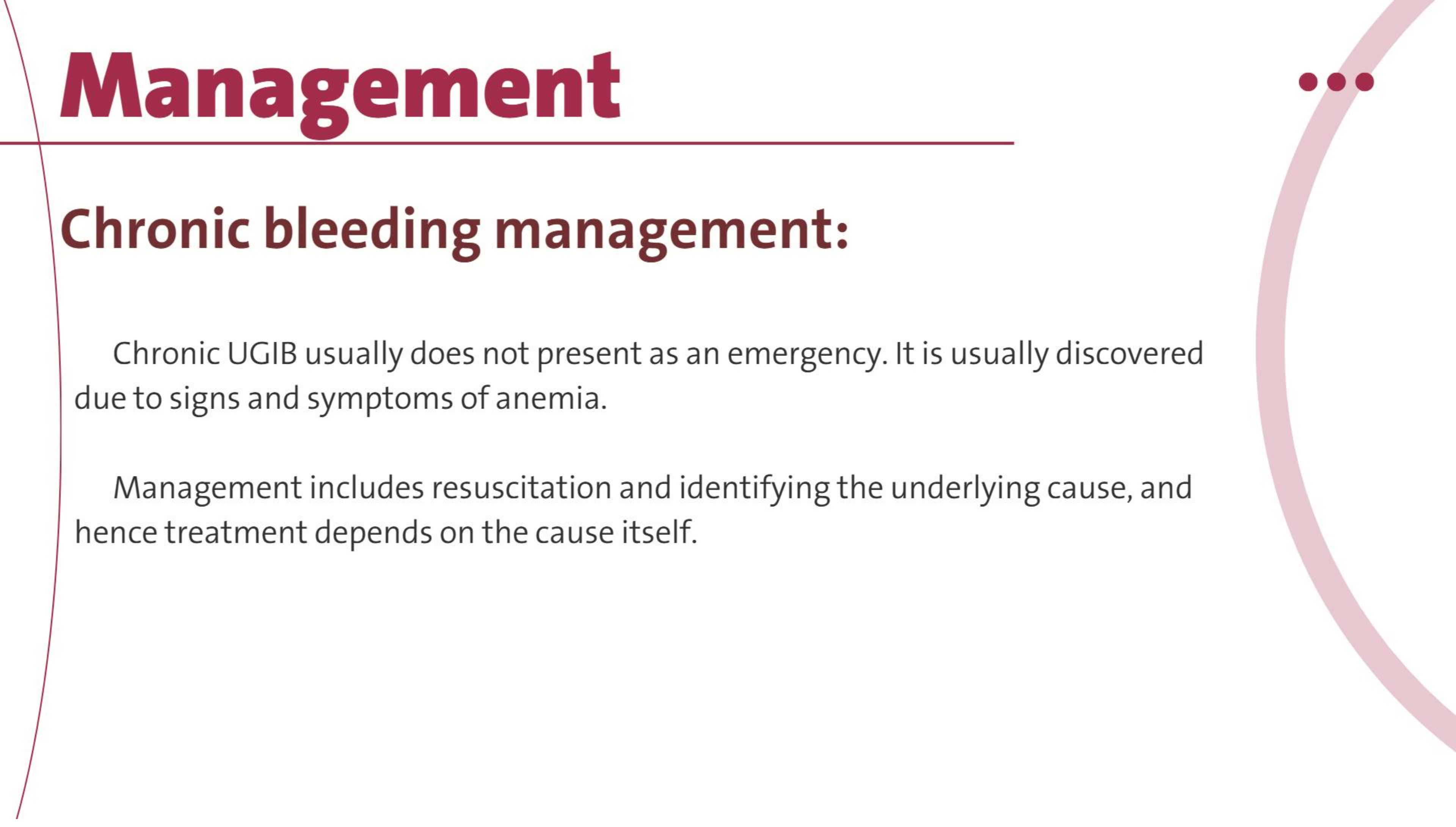
surgery is also indicated for:

1-patient with extensive bleeding

2-If more than 4 Units of blood are required for initial resuscitation. & If bleeding continues at a rate of more than 1 Unit every 8 hours.

3-Continued hemorrhage despite resuscitation and other treatment

Management



Chronic bleeding management:

Chronic UGIB usually does not present as an emergency. It is usually discovered due to signs and symptoms of anemia.

Management includes resuscitation and identifying the underlying cause, and hence treatment depends on the cause itself.

Lower GI Bleeding (LGIB)

Defenition & Causes

By: Abd Alkarem Rashed
and Ahmad Muath Yousef



Lower GI bleeding case :

A 54-year-old office worker, Ali , presents with rectal pain and bright red bleeding during bowel movements. His symptoms began three weeks ago and are associated with chronic constipation and occasional discomfort from a lump near his anus, which worsens after defecation. He leads a sedentary lifestyle and has a low-fiber diet. During Digital rectal exam (DRE), Mild tenderness was found but no masses or fissures.

What is Most Likely Diagnosis?

answer in next slides ...

Lower GI Bleeding

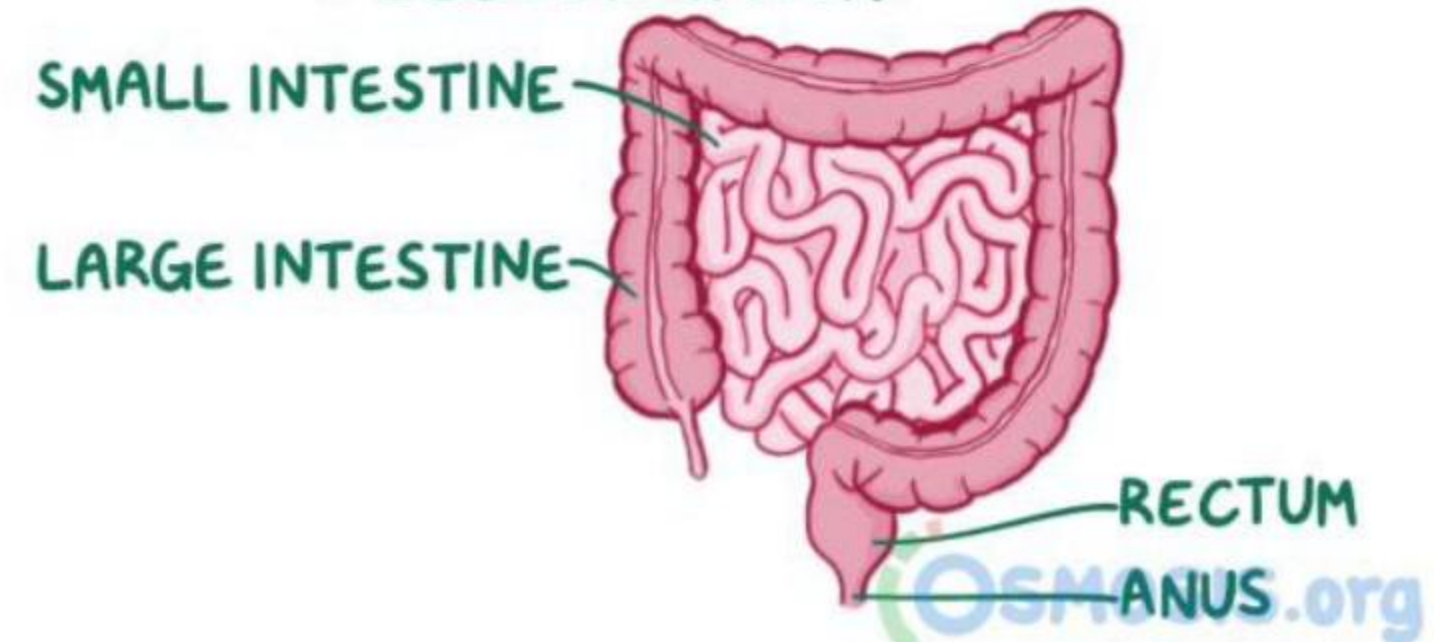
What is it?

- **Bleeding** DISTAL to the **LIGAMENT of TRIETZ**
(Mostly in COLON; 80%)
- Lower GIT includes: SI, LI, Rectum, and Anus
- It takes its Blood Supply mainly from **SMA and IMA**.

LOWER GI BLEEDING * BELOW LIGAMENT of TREITZ



* BLEEDING from:

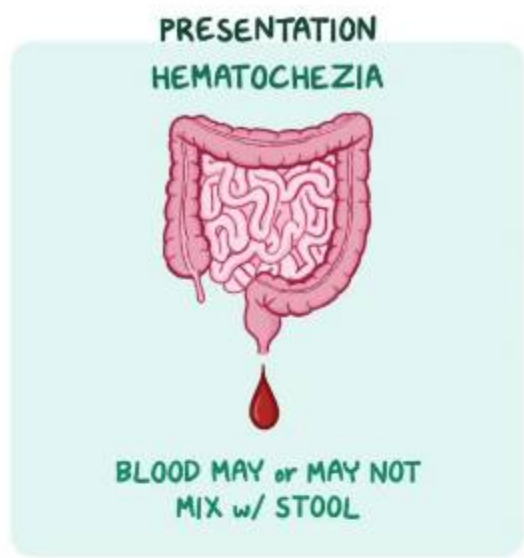


Lower GI Bleeding

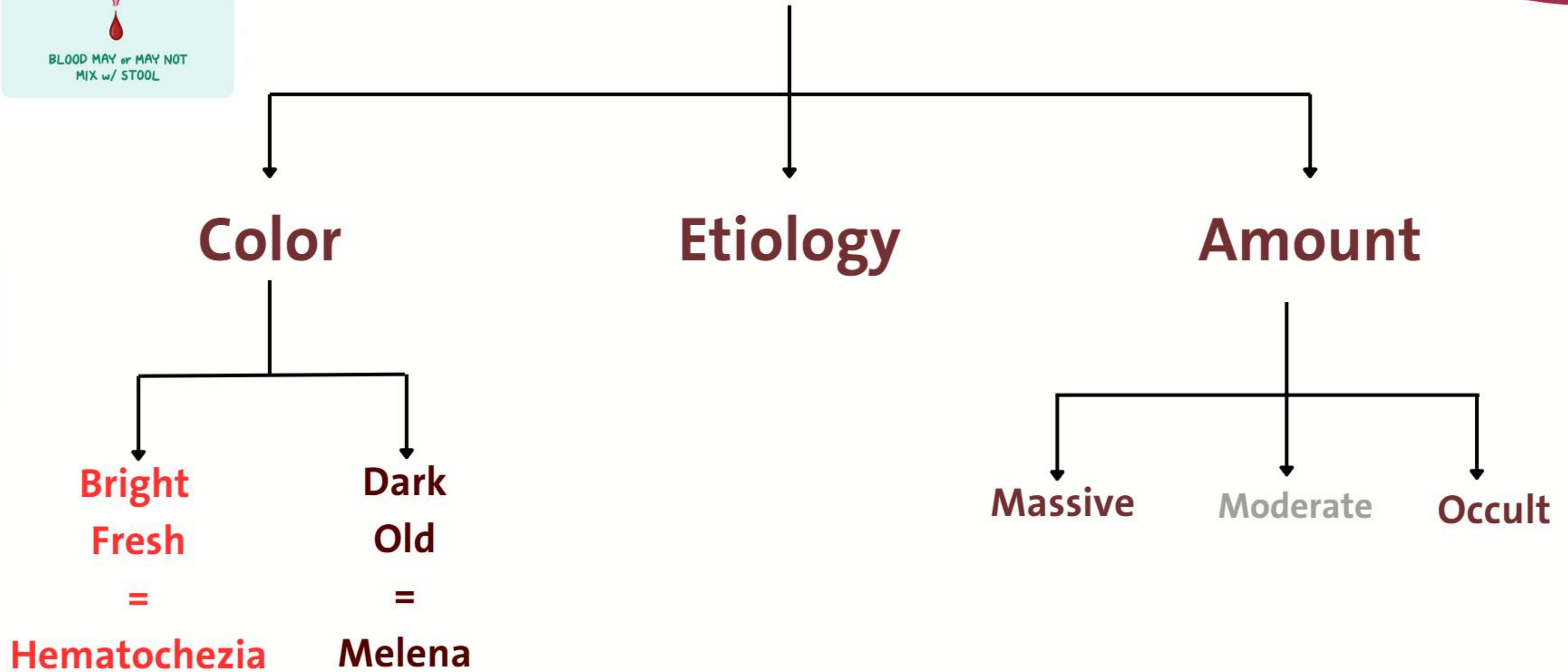
Epidemiology

- **Lower** GI bleeds are fairly common and account for **20% to 30%** of all patients presenting with major GI bleeding.
- The incidence is **higher in older** patients and patients taking **multiple medications**.

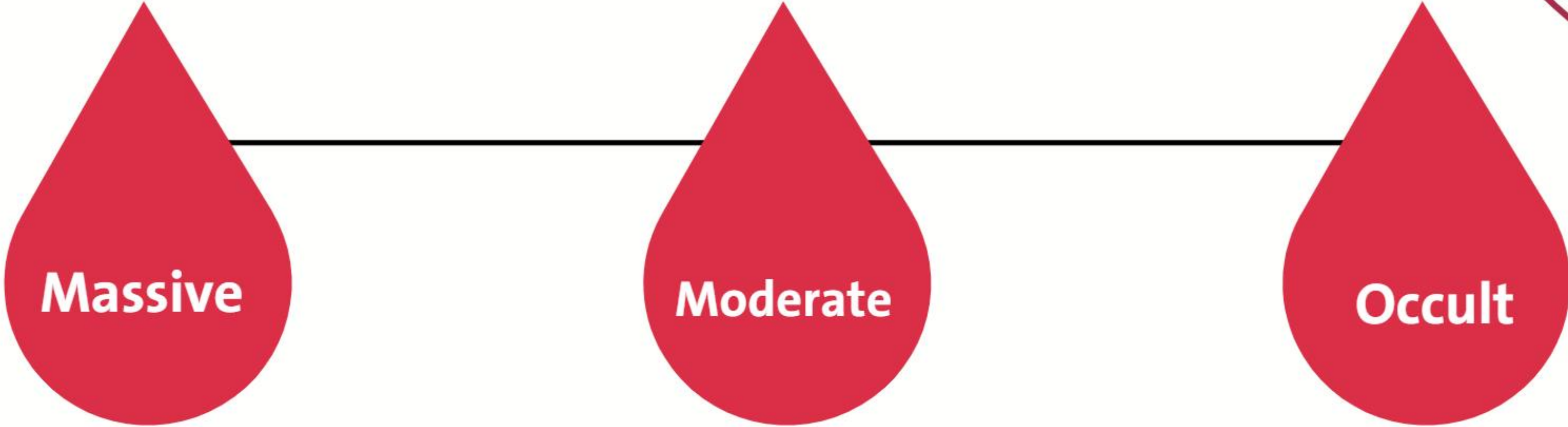




Classification



Amount



Massive

Hemodynamically Unstable:

SBP = 90mmHg

HR > 100/min

Low urine output

HB = 6 g / dl

Most commonly due to:

Diverticulosis/Angiodysplasia

High mortality rate

Moderate

**Hematochezia or Melena
Hemodynamically Stable**

Occult

**Microcytic Hypochromic Anemia
due to chronic blood loss.**

**Many diseases can cause it:
Congenital, Inflammatory,
Neoplastic...**

Vascular

Intestinal angiodysplasia
Intestinal ischemia
Hemorrhoids

Anatomical

Diverticulosis:
most common cause

Inflammatory

Colitis
Infection of GIT

Neoplastic

Colorectal cancer:
most IMP to catch

Etiology

Diverticulosis

**MOST COMMON
CAUSE OF LGIB**

note:

**Diverticulitis =
Diverticula with
inflammation**

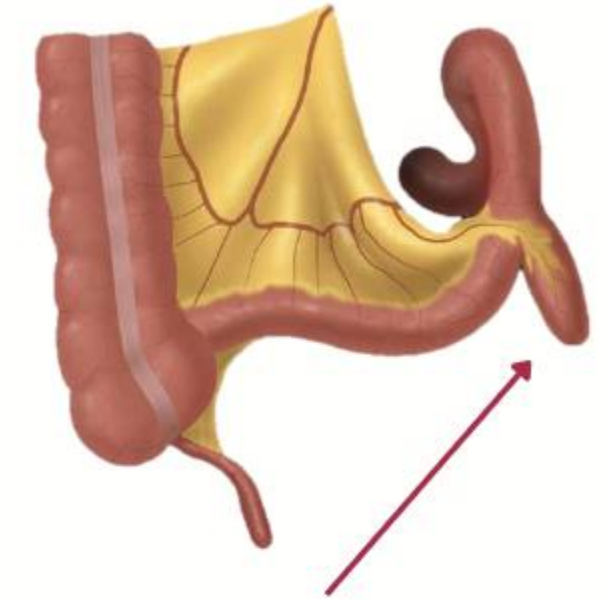
- Clinical term, **Diverticulosis** refers to the **presence of diverticula without inflammation**. its a blind pouch continuous with the lumen of a hollow viscus gut.
- Etiology is **poorly understood**, The most accepted theory is that a **lack of dietary fiber** results in smaller stool volume, **requiring high intraluminal pressure and high colonic wall tension for propulsion**.
- The majority of colonic diverticula are **false diverticula** in which the **mucosa and muscularis mucosa** have **herniated through the colonic wall**. These diverticula occur at points where the **main blood vessels penetrate the colonic wall** (relative weakness in the colonic muscle). Diverticular **bleeding can be massive** but usually is self-limited.
- Although diverticulosis is common, **most cases are asymptomatic**. **The sigmoid colon is the most common site of diverticulosis.**



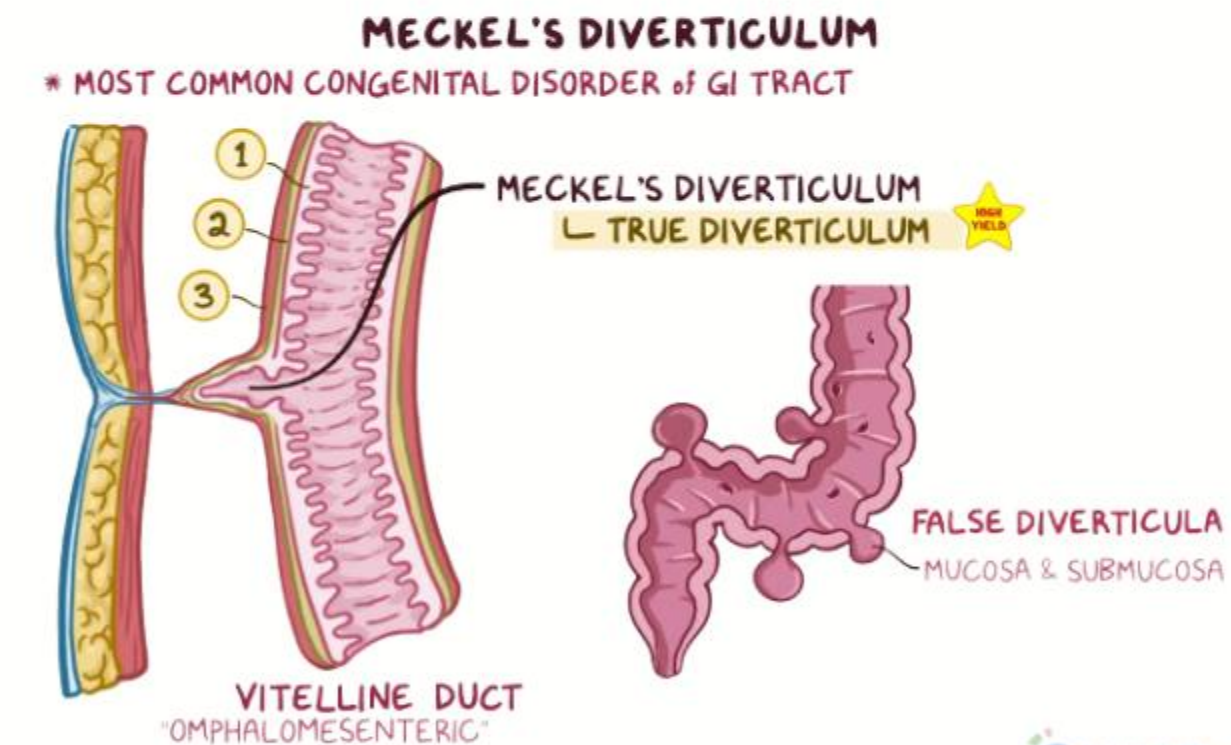
Meckel's Diverticulum

note:

**RULE OF
2**

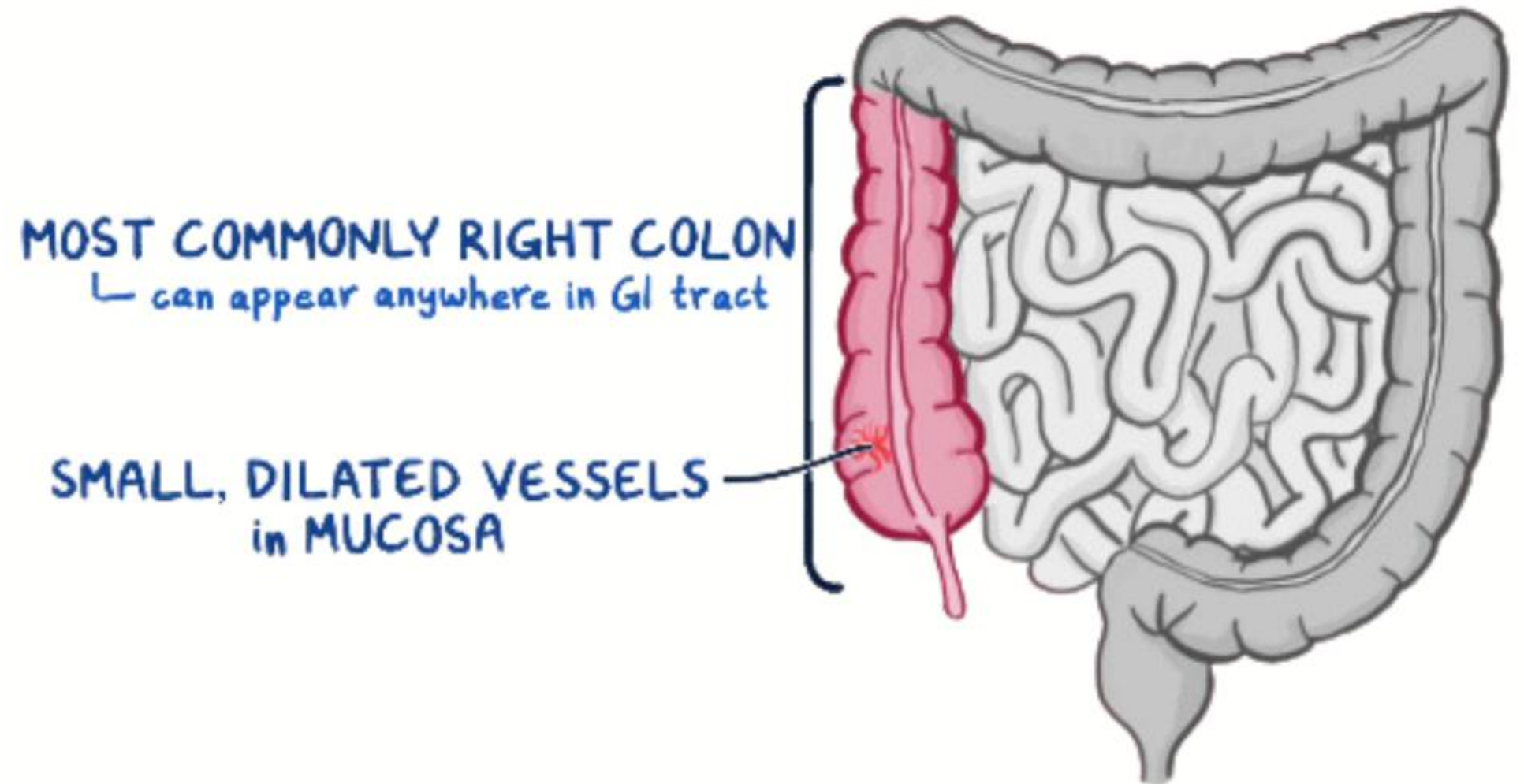


- A diverticulum is a blind pouch continuous with the lumen of a hollow viscus gut.
 - Meckel's Diverticulum is caused by **incomplete obliteration of omphalomesenteric duct** (also called **vitelline duct**).
 - The **most common cause of GIT bleeding in children**, usually **before age 2**.
 - **True diverticulum consists of all layers of intestinal wall.**
 - Generally, it is **asymptomatic**
-
- Occurring in about **2% of infants** (most common congenital malformation of GIT)
 - Usually **2 inches long**
 - Located in the ileum approximately **2 feet from ICV**
 - **M:F = 2:1**
 - **2 types of ectopic tissue (gastric or pancreatic) = causing GI bleeding**
-
- Complications: the commonest is **intestinal obstruction** that could be due to either intussusceptions or a fibrous band connecting the diverticulum to the umbilicus leading to volvulus/ traction of the ileum, **Peptic ulceration** due to ectopic gastric mucosa.

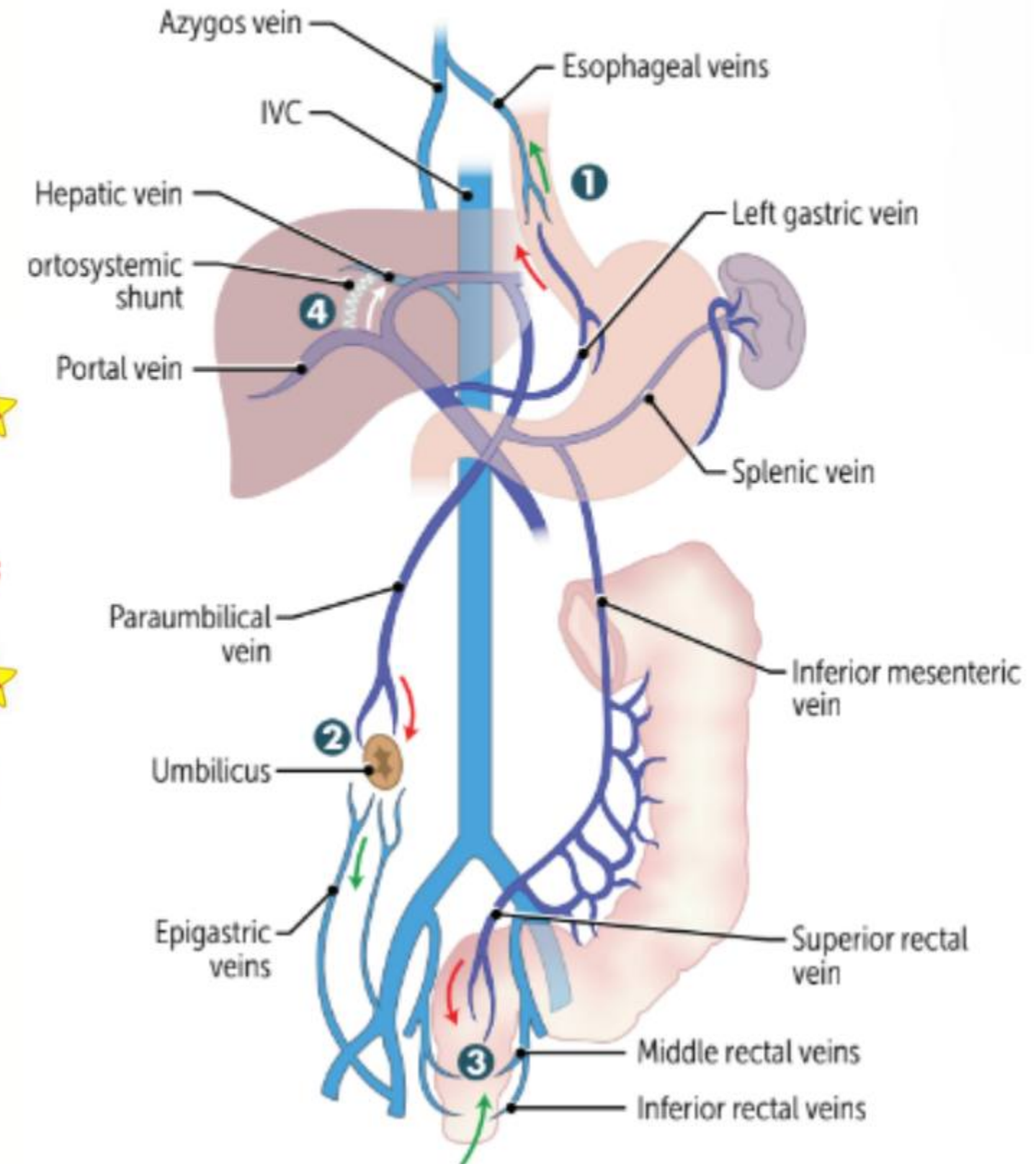
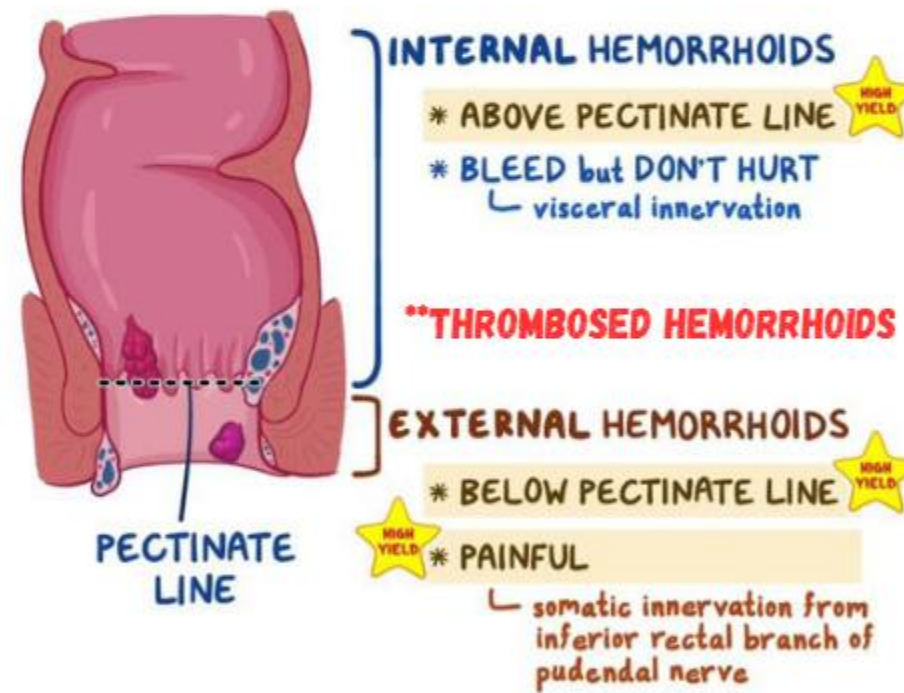
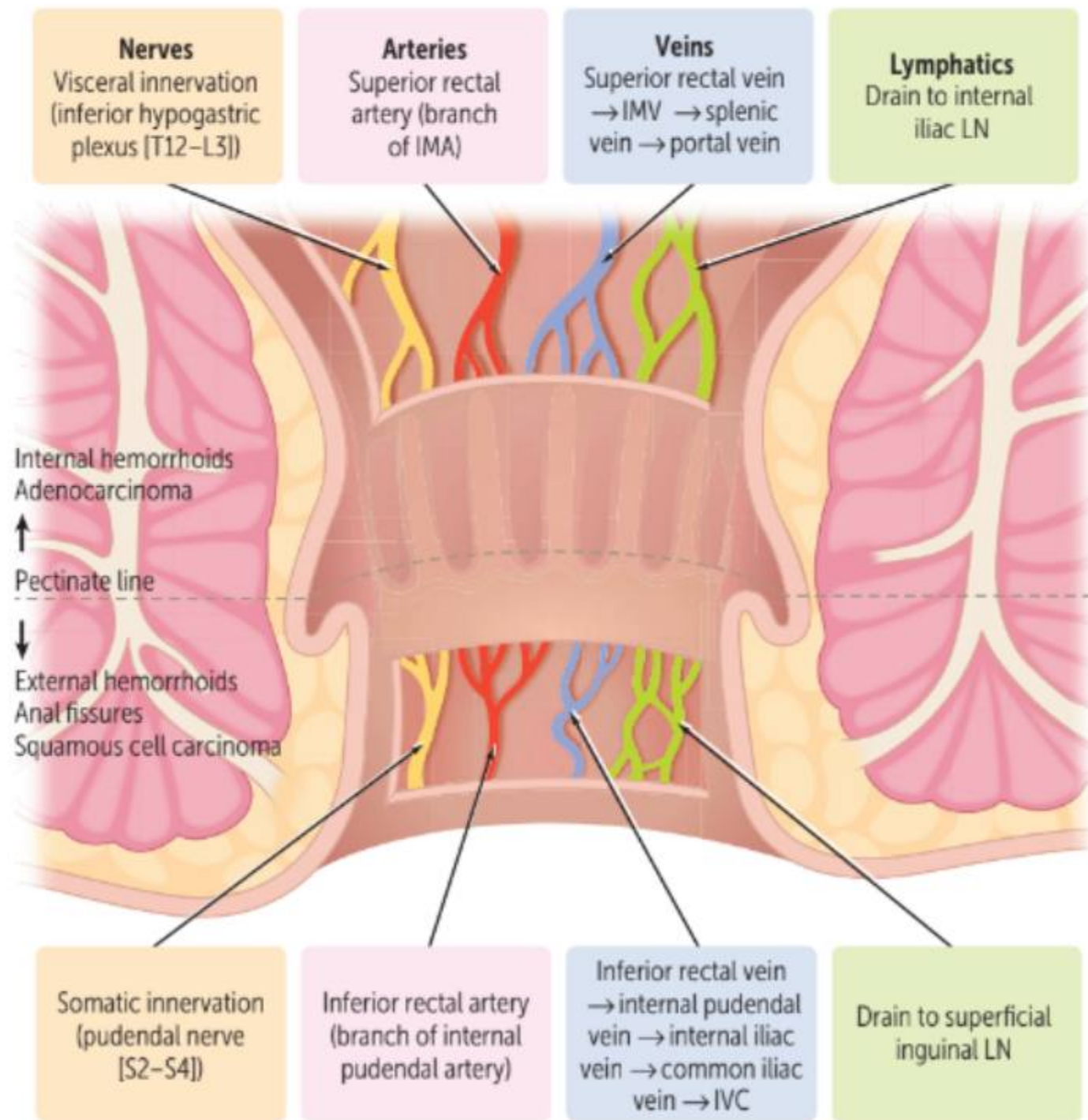


Intestinal Angiodysplasia

- 2nd most common cause of LGIB (after ?)
- **Abnormal SMALL DILATED vessels** that develop due to various reasons not wholly understood (obstructed venous drainage).
- Angiodysplasia usually results in **presentation as anemia or GI bleeding**. Generally, this is **not life-threatening**; however, it can lead to heavy bleeding in rare circumstances.
- Common risk factors include **age, CKD, aortic stenosis...**

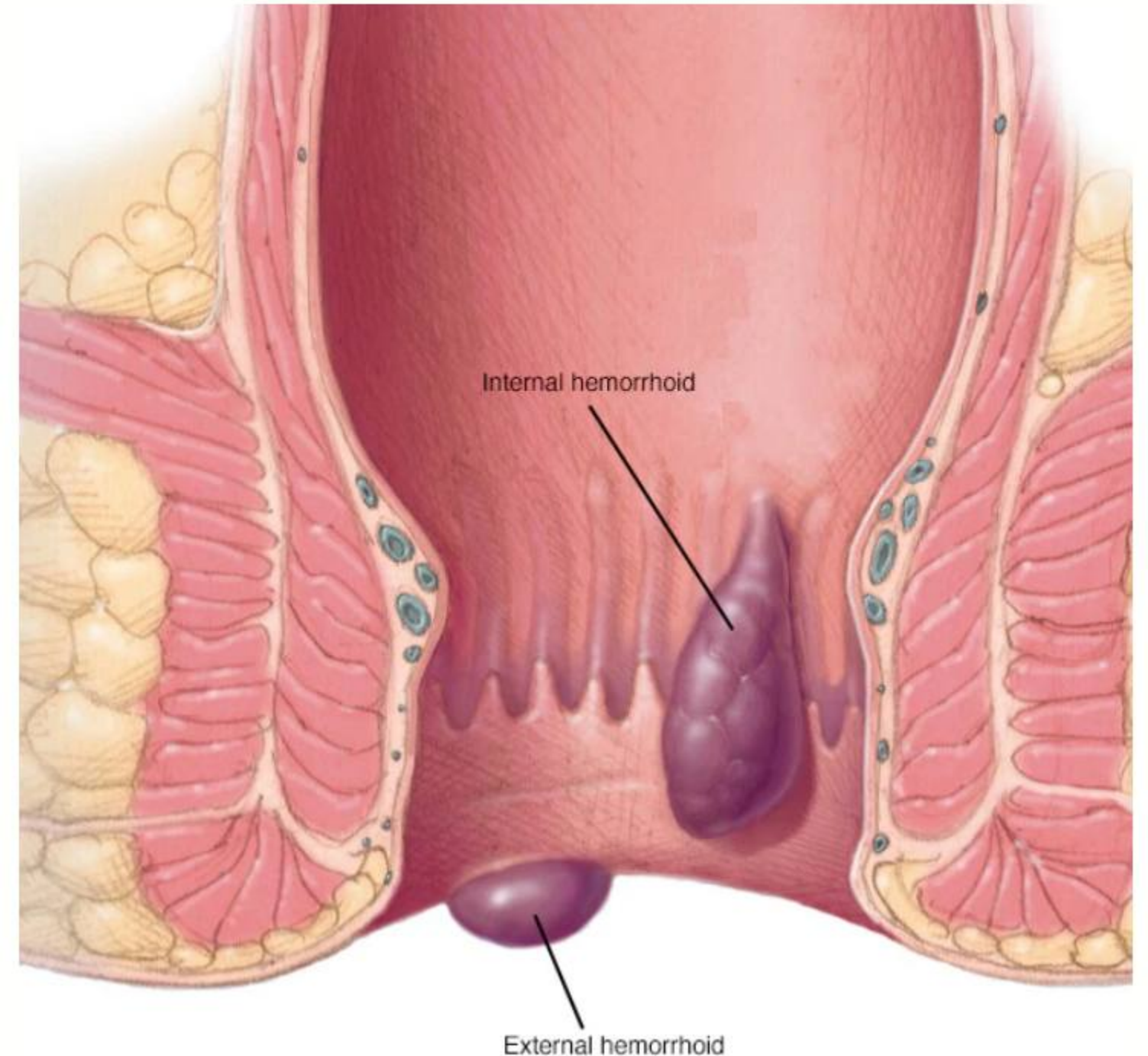


Hemorrhoids / Piles



Hemorrhoids / Piles

- The **veins around the anus** tend to **stretch under pressure** and may **bulge or swell**. Hemorrhoids can develop from **increased pressure in the lower rectum** due to:
 1. **Straining during bowel movements.**
 2. **Sitting for long periods**, especially on the toilet.
 3. **Chronic diarrhea or constipation.**
 4. **Obesity.**
 5. **Pregnancy.**
 6. **Low-fiber diet.**
 7. **Lifting heavy items.**



Colitis

- a chronic digestive disease characterized by inflammation of the inner lining of the colon

1. **Infectious** (E.Coli - Salmonella)

2. **Ischemic**

3. **IBD** (UC or Crohn's disease)

4. **Broad-spectrum antibiotics**

Ulcerative Colitis

abnormal reactions of the immune system, genetic, environmental factors cause inflammation and ulcers on the **inner lining of the large intestine**. Most common at **sigmoid and rectum** can develop at any age, but the disease is more likely to develop in people between the ages of **15 and 30**.

The patient comes with **chronic frequent diarrhea**, often **colicky lower abdominal pain**, **blood** and **mucus** per rectum
Persistent pain may cause acute toxic dilation of the colon

Crohn's disease

caused by genes or immunology. It causes swelling of the tissues (inflammation) in your digestive tract. The affected segments of the **colon as skip lesions commonly become adherent to adjacent structures with abscesses and multiple fistulae in anorectal** is also common and it may be the first manifestation of the disease **can happen in any part of GIT**

The patient complains of **Difficulty to pass stools**
Pain and cramps in the **abdomen**
Feeling of an **incomplete bowel evacuation**
Bleeding in the rectum
Urgency is passing bowel
Persistent diarrhea and Anal fistulas / Anal fissures

Ulcerative Colitis

VS

Crohn's Disease



Limited to the **large intestine/colon**

Location of inflammation

Inflamed areas are **continuous** with no patchiness



Typically in the **lower left abdomen**

Pattern of inflammation

Anywhere in GI tract, (from gum to bum)



Patches of inflammation found in large sections of the bowel



Typically in the **lower right abdomen**

Appearance of inflammation



Ulcers penetrate the **inner lining** of the abdomen only



Ulcers penetrate the **entire thickness** (several layers) of the abdominal lining

Location of Pain



Common during bowel movements

Bleeding



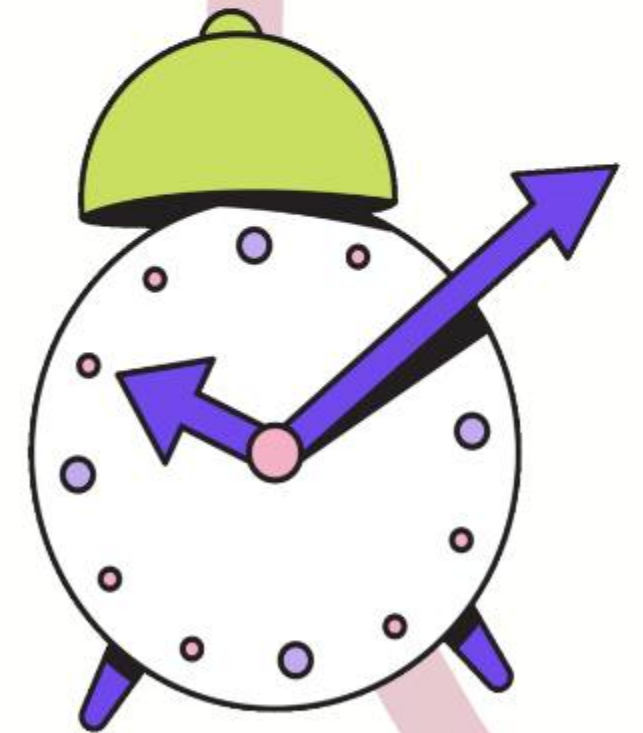
Uncommon



A 54-year-old office worker, Ali , presents with **rectal pain** and **bright red bleeding** during bowel movements. His symptoms began three weeks ago and are associated with **chronic constipation and occasional discomfort** from a **lump near his anus**, which **worsens after defecation**. He leads a **sedentary lifestyle** and has a **low-fiber diet**. During Digital rectal exam (DRE), Mild tenderness was found but no masses or fissures.

What is Most Likely Diagnosis?

Answer: External Hemorrhoids





small quiz



**the most common cause of
lower GI Bleed is:**

**the most common
important cause to exclude
in lower GI Bleed is:**

Clinical presentation

and diagnostic approach

by:Ahmad Muath Yousef

...



History



Search for:

- History of **alcoholism or chronic liver disease** raises the suspicion for bleeding due to **portal hypertension**.
- **Bright red blood** is more often seen from **ano-rectal and distal colonic sources**,
- but **brisk (large) upper GI bleeding** can also manifest this way.
- **Painless severe bleeding with clots** is more common with **diverticular hemorrhage**.
- **Bloody diarrhea** often occurs with **ischemic and inflammatory colitis like IBD**
- It's important to ask the **female patient about her menstruation cycle**.
- **Abdominal pain and weight loss**
(non-specific, but may suggest inflammatory bowel disease, ischemia, and/or malignancy).
- **Medication use**
(NSAIDs and other medications that can cause ulcers or intestinal ischemia).
- **Recent colonoscopy with polypectomy** (post-polypectomy bleed)
- prior abdominal/pelvic **radiation** (radiation proctitis/colitis).
- **Prior operations**
(possible anastomotic ulcers).
- History of **abdominal aortic aneurysm with or without surgical repair** (possible aorto-enteric fistula).

Lab Tests



1- Complete blood count (CBC)

(including RBCs, WBCs, hemoglobin, hematocrit, thrombocytes)

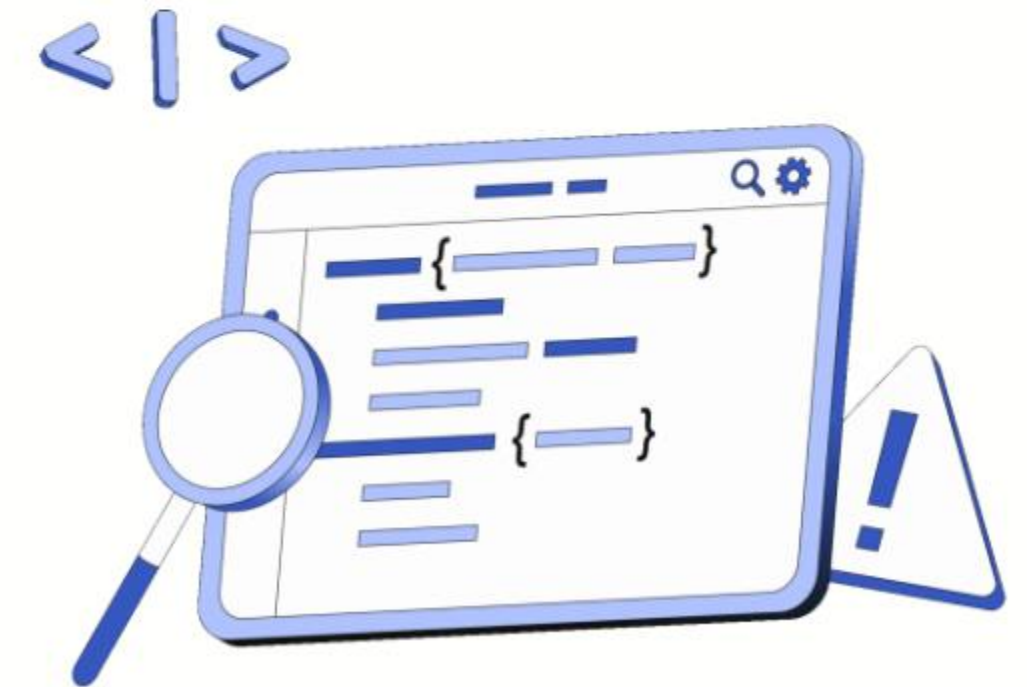
2- Coagulation profile

including activated partial thromboplastin time (**aPTT**), prothrombin time (**PT**), manual platelet count, and bleeding time.

3- serum electrolytes and creatinine

4- hemocult & stool culture

5- blood typing, cross-matching and recipient antibody screen tests are required **before blood transfusion**.



Colonoscopy

Examine the **whole length of colon** ,for majority of **cases it's the only intervention is needed.**

-the first choice for investigation because it is highly accurate and its sensitivity is very high

-needs bowel preparation

**Can identify the site of bleeding:

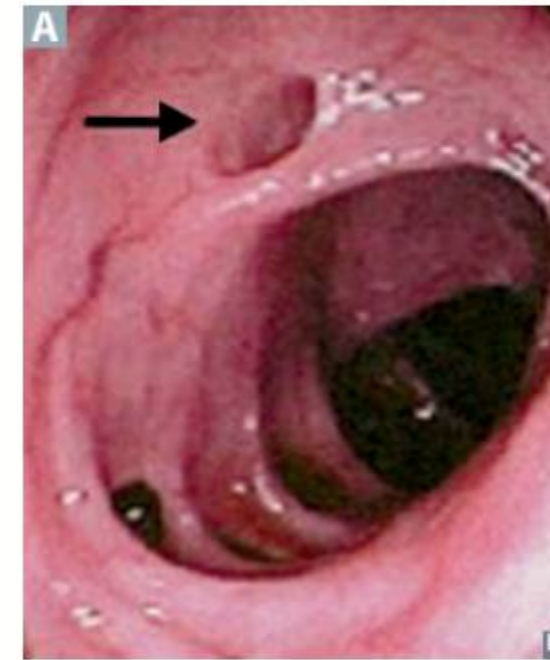
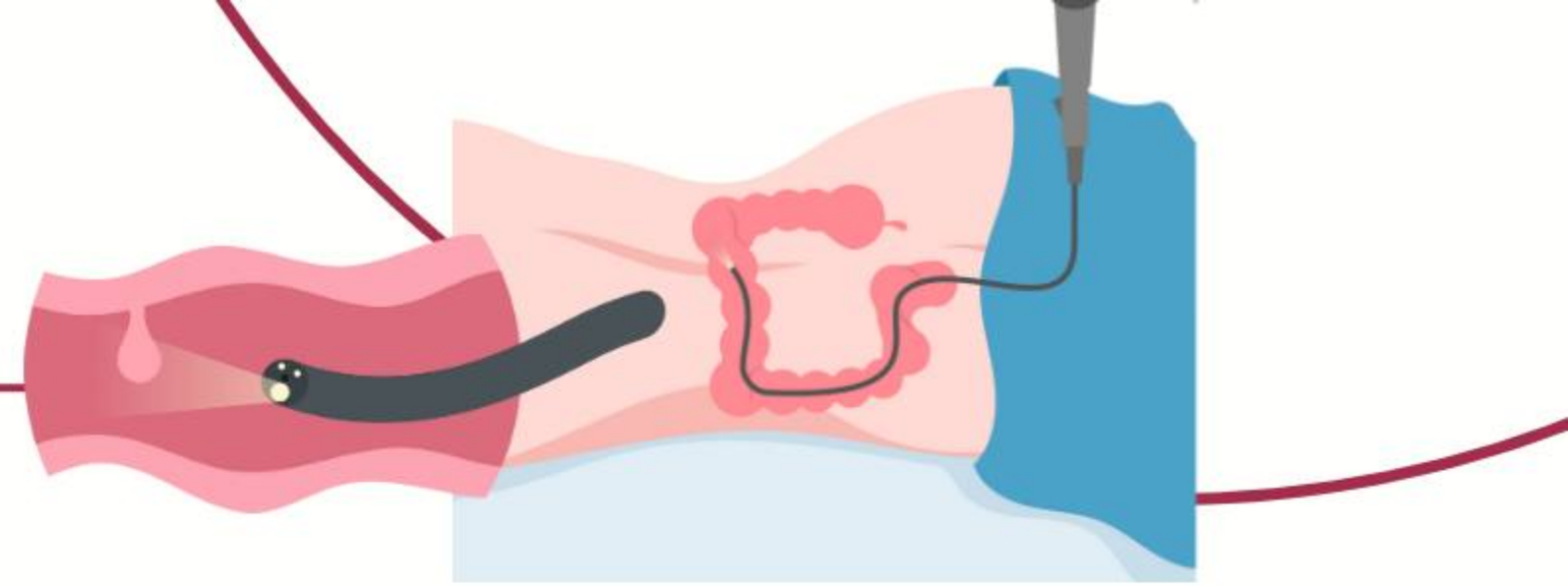
1-**active bleeding**

2-visible **vessels**

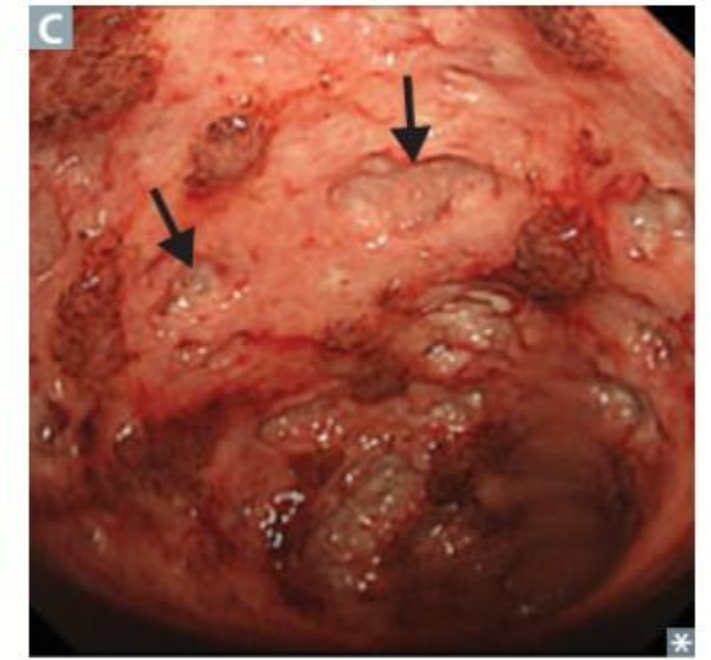
3-**blood clot**

4- **fresh blood** adherent to the colonic segment

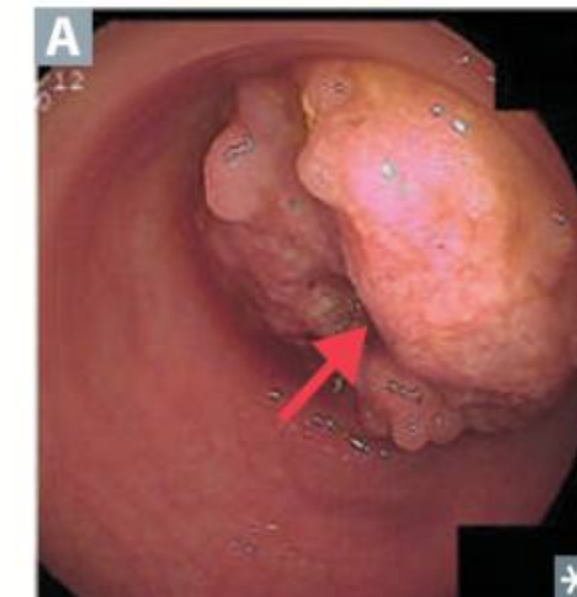
5-**ulceration in the diverticulum** with fresh blood in adjacent are



diverticulosis



UC



Colonic tumor

Angiography



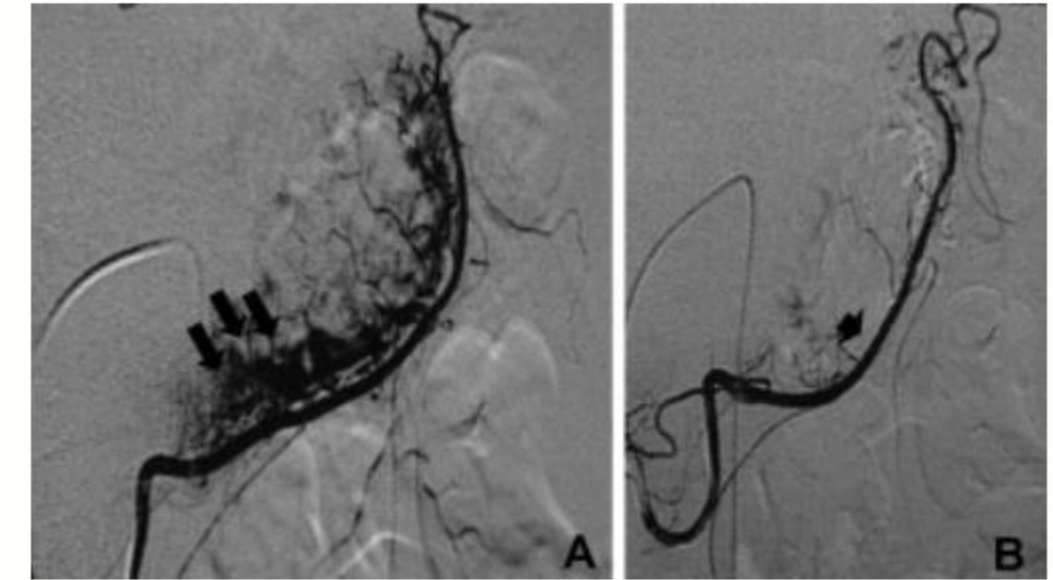
- If **colonoscopy** fails to define the site of bleeding in patients with massive bleeding, angiography is recommended but **its less sensitive than colonoscopy**
 - Identify bleeding site by showing you **extravasation of contrast into lumen**
 - **Criteria for emergency angiography :**
 - at least 4 units of blood transfusion in the first 2 hours following hospital admission and systolic blood pressure of less than 100 mm Hg.
 - By embolization or vasopressin infusion can control bleeding
 - Diagnostic yield 27% - 67%
 - Complication rate 2% - 4% (allergy, renal failure, bleeding and / or embolism)
- 

Angiography



Mechanism of Angiography:

-In a patient with **active GI bleeding**, the radiologist first cannulates the **superior mesenteric artery**, because **most of the hemodynamically significant bleeding originates in the right colon**.



The **extravasation of contrast** material **indicates a positive study finding**.

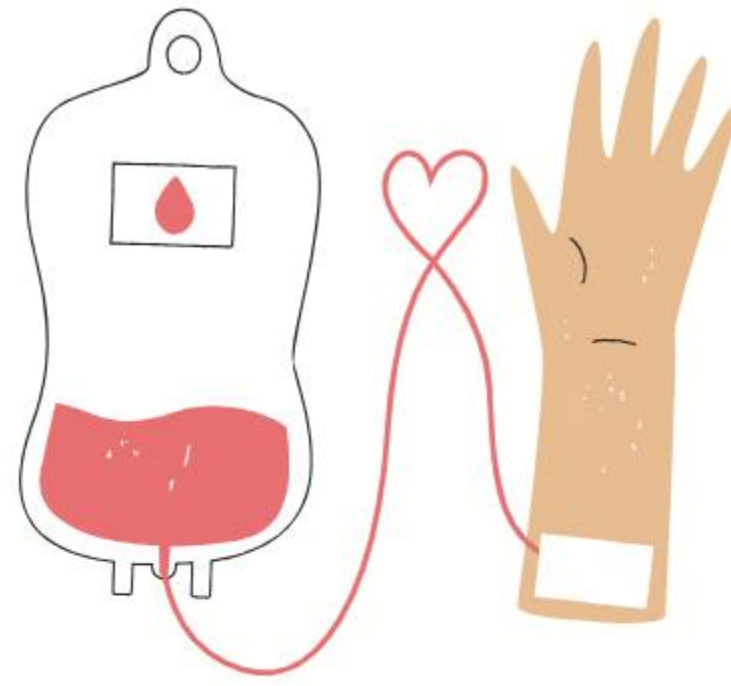
-If the findings from the study are negative, **the inferior mesenteric artery is cannulated, followed by the celiac artery**

Radio-labeled Red Blood Cell Scanning



- # Highly sensitive 80% - 98%
- # Accuracy rate 93%
- # Bleeding rate 0.1 — 0.4 ml/min
- # Tc-labeled sulfur colloid
- # Considerable **disagreement in literature concerning specificity in identifying the anatomic site of bleeding**
- # **No therapeutic intervention capabilities**
- # Used in patients with **none-life threatening lower GIT bleeding as guide to mesenteric angiography**





Managment

by:Hamza Abu Ali



Management



The **first goal** in evaluating and treating a patient with gastrointestinal hemorrhage is **adequate resuscitation**.

The **second goal** is to identify the **source** of hemorrhage and **stop** the bleeding.



Management

Initial Management:

ABCDE: Airway, Breathing, Circulation, Disability, Exposure

Supplemental oxygen via nasal cannula

NPO (nothing by mouth)

Two large bore Ivs

IV Normal Saline

After that **take CBC** (complete blood count).

Management

Be aware that blood transfusion may be needed

If hb is **less than 7mmgh** transfuse blood.

If **HB is 10 mmgh** and patient is still having **anemia symptoms**, then transfuse blood.

If patient is **thrombocytopenic** (platelets **less than 50000**), transfuse platelet.

Management

- The treatment of lower gastrointestinal (GI) bleeding depends **on the source of the bleeding.**
- In **most cases** bleeding **cease spontaneously** and supportive care is sufficient.
- **Some therapies used in LGIB:**

1. Endoscopic Therapies.

2. Angiographic Therapy

3. Embolization

4. Surgery

Management

Endoscopic Therapies:

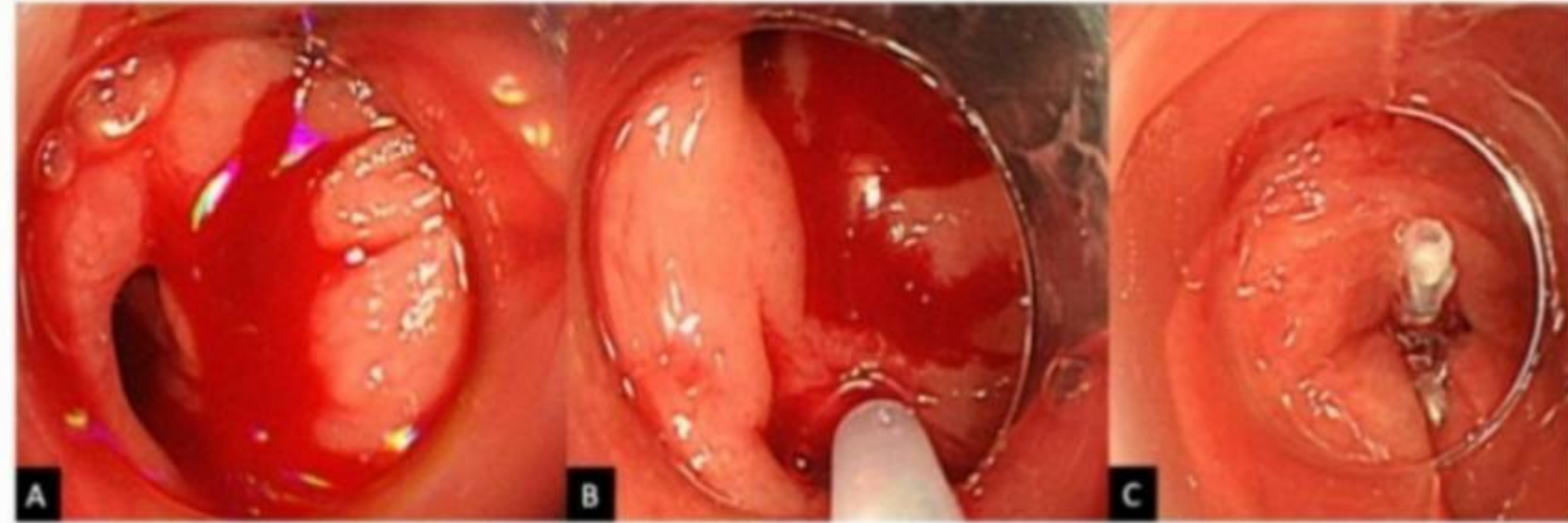
Thermocoagulation: electrical current passing through tissue from a bipolar probe (Bipolar electrocoagulation) or a unipolar probe (Unipolar electrocoagulation).



Management

Endoscopic Therapies:

Injection (ex; epinephrine)



Mechanical hemostasis (endoscopic clips): have been described for the treatment of **localized lesions**. These methods have the advantage of avoiding tissue injury.



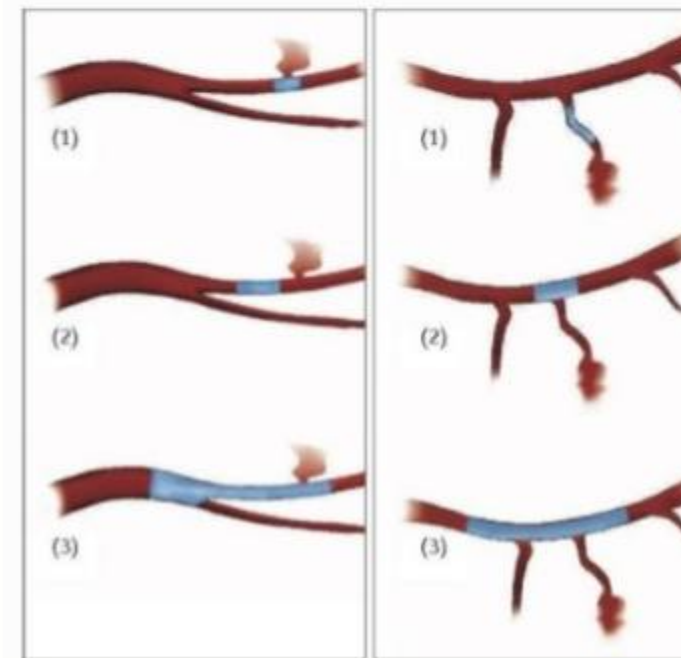
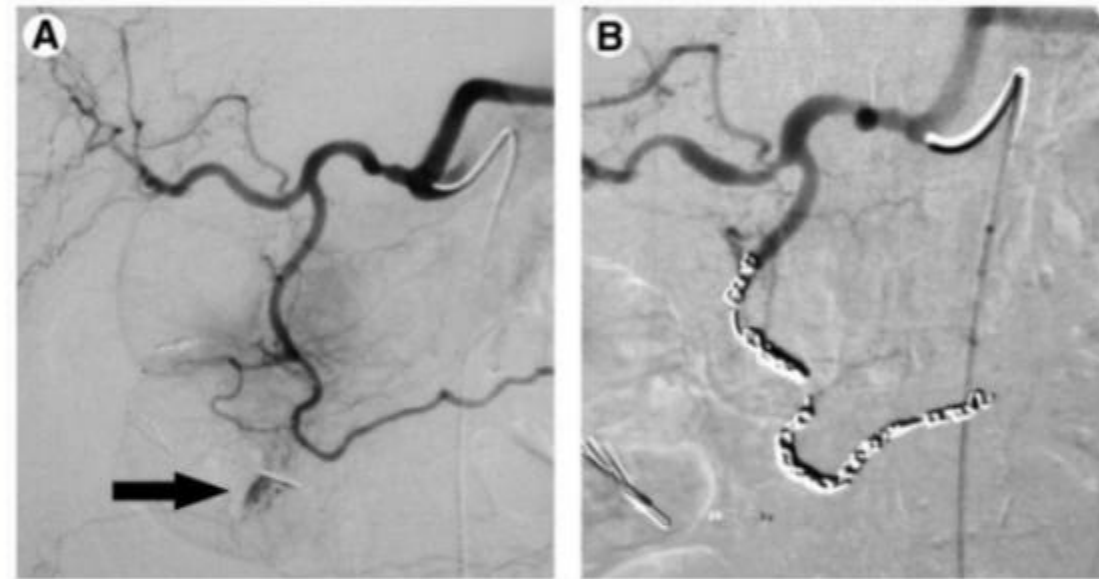
Management

Angiographic therapy:

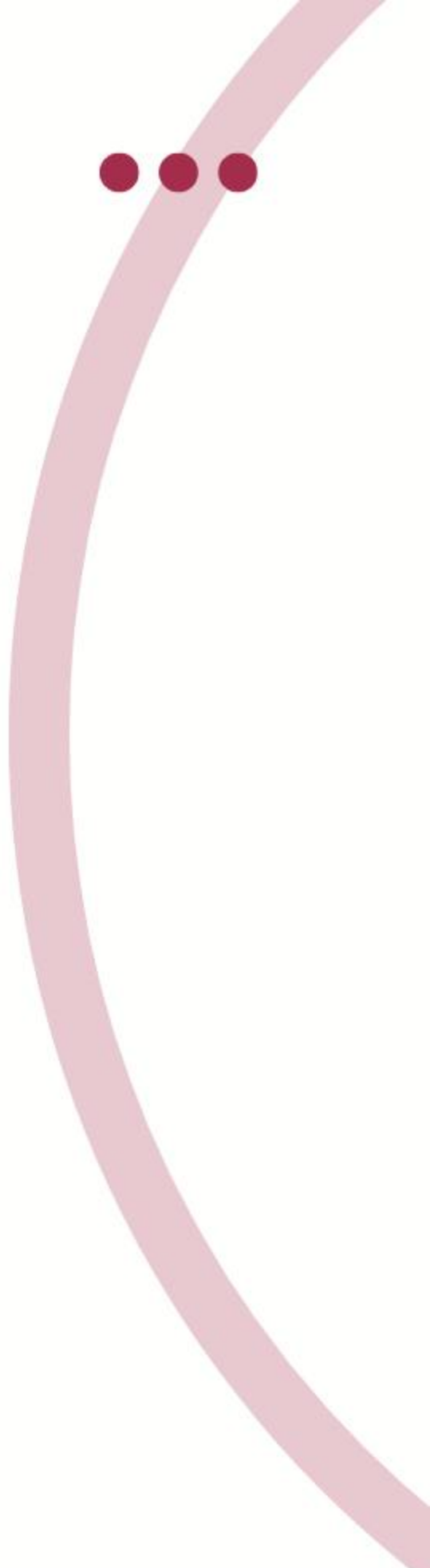
By 2 methods :

1) injection of vasopressin

2) transcatheter embolization



Management



SURGERY:

Indications for Surgery in Gastrointestinal Hemorrhage:

Patients who **have failed** medical, colonoscopic, angiographic intervention.

Ongoing bleeding >4U of PRBC **per 24h.**

Shock associated with **recurrent hemorrhage.**

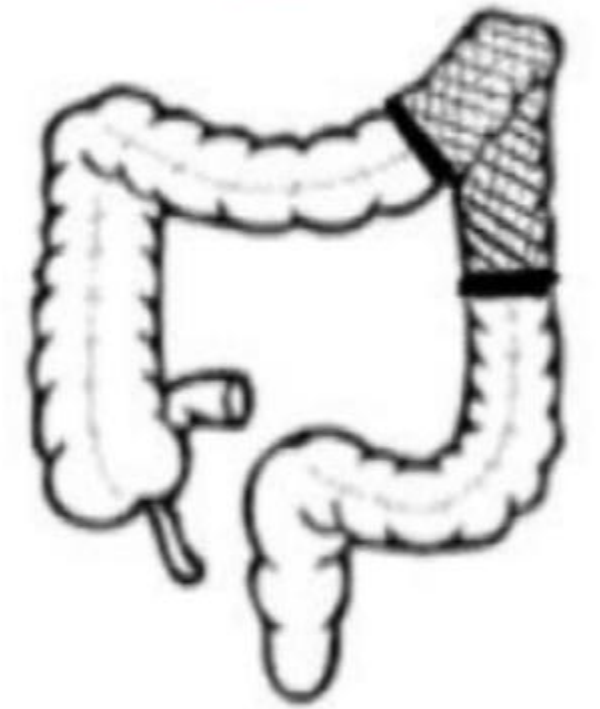
Management

SURGERY:

Efforts should be made to localize the source before surgery.

If the patient is hemodynamically stable **preoperative**
localization segmental colectomy

In **hemodynamically stable patients**, once the bleeding site is preoperatively localized, **intra-arterial vasopressin** is used as a temporizing measure to reduce the bleeding before patients undergo segmental colectomy.

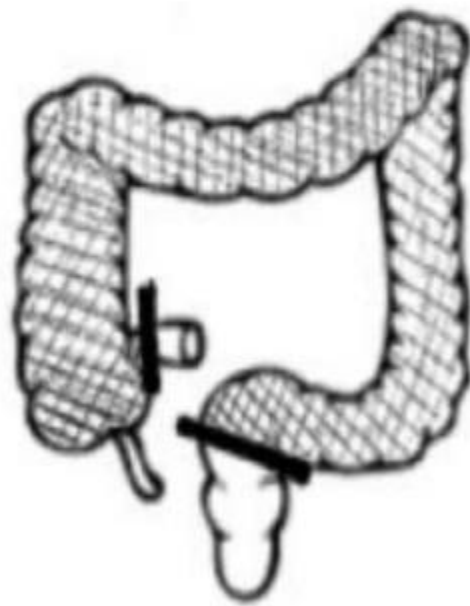


Segmental bowel resection (SBR)

Management

SURGERY:

Subtotal colectomy is the procedure of choice in patients who are **actively bleeding** from an **unknown source**.



Subtotal colectomy (SC)



Total proctocolectomy (TPC)

References

- Surgical Recall 7th Edition: Chapters 40 & 50
- Case Files - Surgery
- Epidemiology:
<https://www.ncbi.nlm.nih.gov/books/NBK448126/#:~:text=Epidemiology%20Lower%20GI%20bleeds%20are%20fairly%20common%20and,patients%20and%20patients%20taking%20multiple%20medications%20or%20multi-pharmacy.>
- American College of Gastroenterology: <https://gi.org/topics/angiodysplasia-of-the-gi-tract/>
- Mayo Clinic: <https://www.mayoclinic.org/diseases-conditions/hemorrhoids/symptoms-causes/syc-20360268>
- Osmosis: https://www.osmosis.org/learn/Gastrointestinal_bleeding:_Clinical_practice



ANY QUESTIONS?