



SAPIENZA
UNIVERSITÀ DI ROMA

ACUTE GI HEMORRHAGE

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- 76 year-old gentleman is admitted to the ER for sudden onset of blood per rectum
- What would you ask to the patient?
- What would you ask to the nurse?
- BP 75/50, HR 115, RR 38, Sat. 96
- What would you do next?



Serum glucose 110 mg/dl (70 to 100)
Serum creatinine 1.3 mg/dL (0.5 to 1.0)
Tot Bil. 1.1 mg/dl (0.3-1.1)
Dir Bil. 0.6 mg/dl (0-0.3)
sGOT 32 UI/L (11-47)
sGPT 34 UI/L (7-53)
A.Ph. 123 UI/L (38-126)
Amilase 52 U/L
Lipase 34 U/L
Serum calcium 9.0 mg/dl (8.9-10.1)
C-reactive protein: 23 mg/L (0-10)

Hct 55% (male: 40% to 50% - women: 36% to 44%)
Hb 5.5 g/dl (13.8-17.2)
WBC 19.000/ μ l (3.800-9.800)
PLT 224.000/ μ l (140-440.000)
INR 1.0 (0.9-1.13)

Serum lactate 1.2 Arterial blood: 0.5-1.6 mEq/L or 0.5-1.6 mmol/L
Venous blood: 0.5-2.2 mEq/L or 0.5-2.2 mMol/L



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What would you do next?



GI BLEEDING



- **GI bleeding** can originate from any region of the GI tract, including the pancreas, liver, and biliary tree
- **Annual incidence: 170 cases/100,000** adults, and increases with advancing age
- **300,000 hospitalizations/year** in US
- Most of the time GI hemorrhage **stops spontaneously**
- **In 15% of cases, major bleeding persists**, requiring emergent resuscitation, evaluation, and treatment



- **Mortality:** 5%

- **Upper GI bleeding:** bleeding proximal to the **ligament of Treitz** (80% of acute GI bleeding) - most common causes: **peptic ulcer disease** and **variceal hemorrhage**

- **Lower GI bleeding** - **diverticula and angiodysplasias** accounting for most cases

- **Obscure bleeding** is defined as hemorrhage that persists or recurs after negative endoscopy



How would you approach a patient with ACUTE GI BLEEDING?

INITIAL ASSESSMENT

- Check **hemodynamic status**
- Check **airway and breathing**
- The **presentation is variable**: from positive Guaiac test to exsanguinating hemorrhage
- **Continuous re-assessment** of the patient's circulatory status determines the aggressiveness of subsequent evaluation and intervention



INITIAL ASSESSMENT

- **Obtundation, agitation, and hypotension** (BP <90 mm Hg), and **cool clammy extremities** = **hemorrhagic shock** (a loss of more than 40% of blood volume)
- **The hematocrit** is not a useful parameter in acute setting because the proportion of **RBC and plasma** initially lost is constant
- **The absence of tachycardia may be misleading:** some patients with severe blood loss may actually have **bradycardia secondary to vagal activity**
- **Also,** hemodynamic signs are less reliable in **older** patients and patients **taking beta blockers**



BOX 48-1

Risk Factors for Morbidity and Mortality in Acute Gastrointestinal Hemorrhage

Age >60 yr

Comorbid disease

Renal failure

Liver disease

Respiratory insufficiency

Cardiac disease

Magnitude of the hemorrhage

Systolic blood pressure <100 mm Hg on presentation

Transfusion requirement

Persistent or recurrent hemorrhage

Onset of hemorrhage during hospitalization

Need for surgery



RISK STRATIFICATION

- **Scoring systems:** used to predict the risk of **re-bleeding and mortality**, and the **need for ICU admission**
- Such scoring systems have been almost **exclusively used in research studies**
- Some scoring systems are non-specific to GI bleeding (e.g., APACHE II scores)
- **BLEED classification** uses five criteria:
 - ongoing bleeding
 - systolic blood pressure less than 100 mm Hg
 - prothrombin time more than 1.2 times control
 - altered mental status
 - unstable comorbid disease process that would require ICU admission



RESUSCITATION

- **The single leading cause of morbidity and mortality in GI BLEEDING is multiorgan failure** related to inadequate initial or subsequent resuscitation
- **Intubation and ventilation** should be **initiated early**
- In case of **hemodynamic instability**
 - **2 large-bore IV lines should be placed**
 - **2 liter bolus of crystalloid solution (lactated Ringer's)**
- Evaluate the response to the fluid resuscitation



RESUSCITATION

- Send blood for **type and crossmatch, hematocrit, platelet count, coagulation profile, routine chemistries, and liver function tests**
- **Foley catheter**
- **Central venous or pulmonary artery catheter** for closer monitoring
- **Administer supplemental oxygen**
- **Admit to the ICU**



RESUSCITATION

•The **decision to transfuse** blood depends on:

- the response to the fluid challenge
- age of the patient
- whether concomitant cardiopulmonary disease is present
- whether the bleeding continues

CLINICAL JUDGMENT!

i.e.: a **young healthy patient** with estimated blood loss of 25% who responds to the fluid challenge with a normalization of hemodynamics may not need any blood products, whereas **an older patient** with a significant cardiac history and the same blood loss probably requires a transfusion



RESUSCITATION

•Pts with **normovolemic anemia without significant cardiac risk or anticipated blood loss** can be **managed safely without transfusion**, with most healthy patients tolerating hemoglobin levels of 6 or 7 g/dL

Measure the hemoglobin:

<6g/dl transfusion usually required

6-10 g/dl transfusion dictated by clinical circumstance

>10 g/dl transfusion rarely required



RESUSCITATION

Hematocrit: it is commonly used as one index of the need for blood replacement

- In general, the hematocrit should be maintained
 - **above 30% in older adults**
 - **above 20% in young, otherwise healthy patients**

Packed red blood cells are preferred for blood transfusion

Defects in coagulation and platelets should be corrected

Pts requiring **>10 U of RBC** should receive **fresh-frozen plasma (FFP), platelets, and calcium empirically**

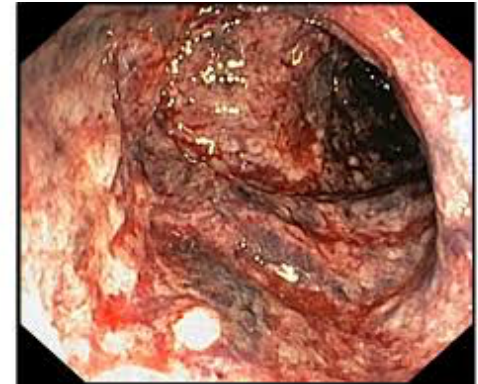


HISTORY AND PHYSICAL EXAMINATION

- **Characteristics of the bleeding, the time of onset, volume, and frequency** are important in estimating blood loss
- **Hematemesis** is the vomiting of blood
- **bleeding from the upper GI tract**
- **Melena: black, tarry, and foul-smelling stool per rectum**
 - It suggests bleeding from the **upper GI**
 - Black color results from **gastric acid degradation of blood (hemoglobin→hematin)**
 - blood loss from the distal small bowel or right colon may have this appearance
- **Hematochezia:** bright red blood from the rectum



- Antecedent **vomiting** may suggest a **Mallory-Weiss tear**
- **Weight loss** raises the suspect of **malignancy**
- **Older patients** bleed from lesions such as **angiodysplasias, diverticula, ischemic colitis, and cancer**
- **Younger patients:** peptic ulcers, varices and Meckel's diverticulum
- A history of **liver disease** = think about **variceal bleeding**
- A history of **ingestion of salicylates, nonsteroidal anti-inflammatory drugs (NSAIDs)**, is common, particularly in older patients



HISTORY AND PHYSICAL EXAMINATION

- **Abdominal examination:** exclude masses, splenomegaly, and adenopathy
- **Epigastric tenderness** is suggestive of gastritis or peptic ulceration
- **Jaundice, ascites, palmar erythema, and caput medusae** may suggest bleeding from varices
- **A rectal examination and anoscopy** should be performed to exclude a low-lying rectal cancer or bleeding from hemorrhoids



- Insert a **nasogastric (NG) tube**: **red blood** or a **coffee grounds** appearance suggests an **upper GI source**
- **NG aspirate may be negative** even in the presence of significant **duodenal bleeding**
- **Early endoscopy** should be **performed within 24 hours**, even in stable patients
- **Esophagogastroduodenoscopy (EGDS) in the urgent or emergent setting** is associated with **reduced accuracy**, often because of poor visualization
- For **slow or intermittent bleeding** from **the lower GI tract**, **colonoscopy** is the initial diagnostic maneuver of choice. If nondiagnostic, use **the tagged red blood cell (RBC) scan**
- **Obscure bleeding**: use capsule endoscopy



TREATMENT

- **Angiographic techniques:** embolization (gelatin sponge and autologous clot or coils)
- The **morbidity and mortality of surgery** for GI bleeding increases significantly in patients who have lost **more than 6 U of blood**
- Morbidity increases is particularly in **older patients** and those with major comorbidities
- Elective colonic resection may still be appropriate for a patient with significant coronary disease who has already suffered a major bleed from diverticular disease



SUMMARY I

- Assess the **hemodynamic status** (BP, HR, RR)
- **Two large-bore IV lines should be placed.** Draw blood for **type and crossmatch, hematocrit, platelet count, coagulation profile, routine chemistries, and liver function tests**
- Assess adequacy of the patient's **airway and breathing**
- **Obtundation, agitation, and hypotension** (<90 mm Hg), **cool clammy extremities = hemorrhagic shock** and suggest a **loss of more than 40%** of the blood volume
- **Put Foley catheter in**
- The absence of tachycardia may be misleading
- **Scoring systems** have been almost **exclusively used in research studies**
- **Unstable patients: 2-liter bolus of crystalloid solution**
- **Central venous or pulmonary artery catheter** should be considered
- Supplemental **oxygen**
- **Clinical judgement for transfusion** (packed red blood cells)

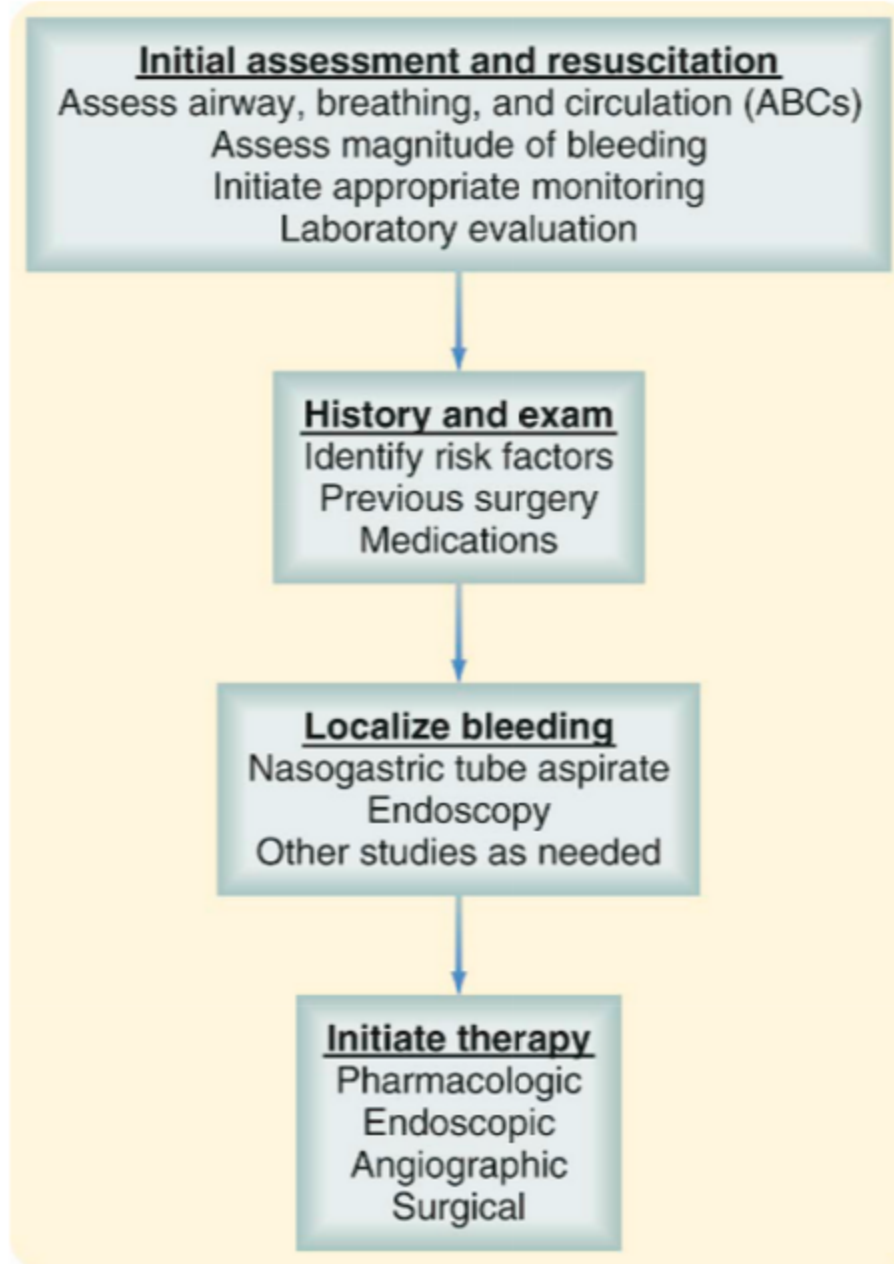


SUMMARY II

- **Defects in coagulation and platelets** should be replaced
- Pts requiring **>10 U of blood** should receive **FFP, platelets, and calcium empirically**
- **Hematemesis** is the vomiting of blood
- **Melena**, the passage of **black, tarry, and foul-smelling stool**, generally suggests bleeding from the **upper GI tract**
- **Hematochezia**: bright red blood from the rectum
- **History and physical exam**
 - **Localize the source of bleeding**
 - **NGT**
 - **Rectal exam**
- **Upper endoscopy is highly accurate** for identifying an upper GI lesion and, if negative, for directing attention to a lower GI source
 - early endoscopy should be **performed within 24 hours**
- **Colonoscopy**
- **Tagged red blood cell (RBC) scan**
- **Capsule endoscopy**



APPROACH
TO THE PATIENT



ACUTE UPPER GI BLEEDING

From the GI tract proximal to the ligament of Treitz; 80% of significant GI hemorrhage

The causes are **categorized** as **nonvariceal sources** or bleeding related to **portal hypertension**

NONVARICEAL BLEEDING*	PORTAL HYPERTENSIVE BLEEDING†
30%-50% Peptic ulcer disease	Gastroesophageal varices >90
15%-20% Mallory-Weiss tears	Hypertensive portal gastropathy, <5
10%-15% Gastritis or duodenitis	Isolated gastric varices, rare
5%-10% Esophagitis	
5% Arteriovenous malformations	
2% Tumors	
5% Others	



ACUTE UPPER GI BLEEDING

- Exam of choice: **upper endoscopy** (increased risk and poor visualization in the acute setting)
 - Aggressive lavage of the stomach
 - Bolus injection of IV erythromycin
- **Angiography** may be appropriate in the reasonably stable patient
- **Operative intervention:** if the blood loss is extreme or the patient hemodynamically unstable
- Studies have not shown any benefits in performing an endoscopy sooner (within 6 or 12 hours) than within 24 hours

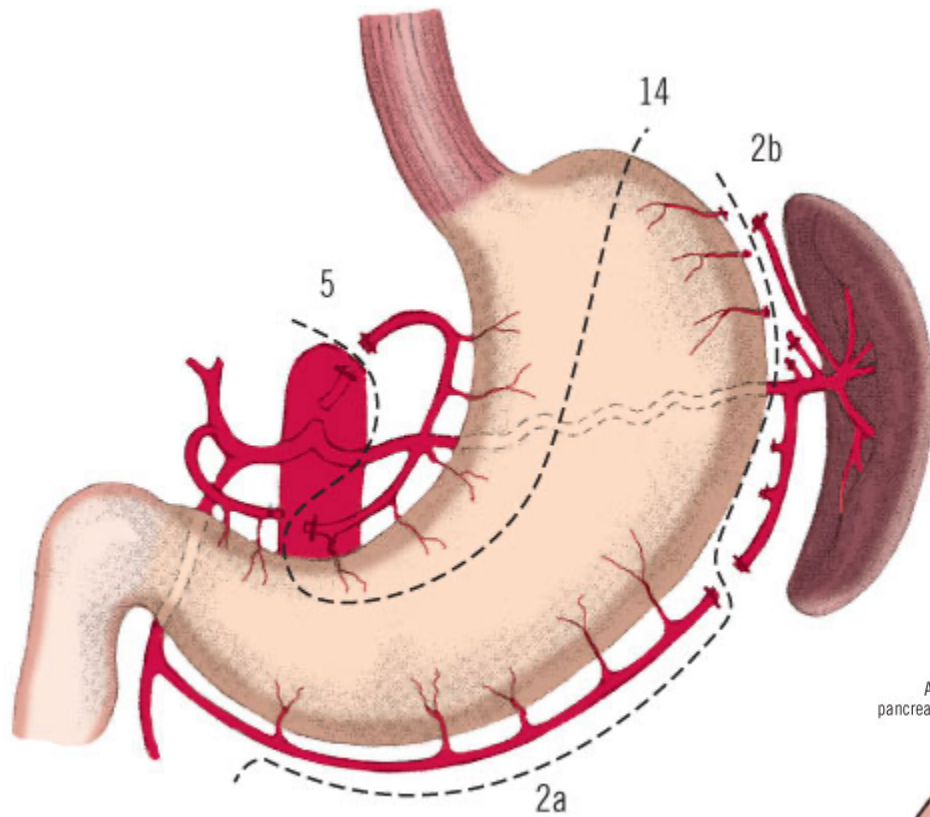


NONVARICEAL BLEEDING

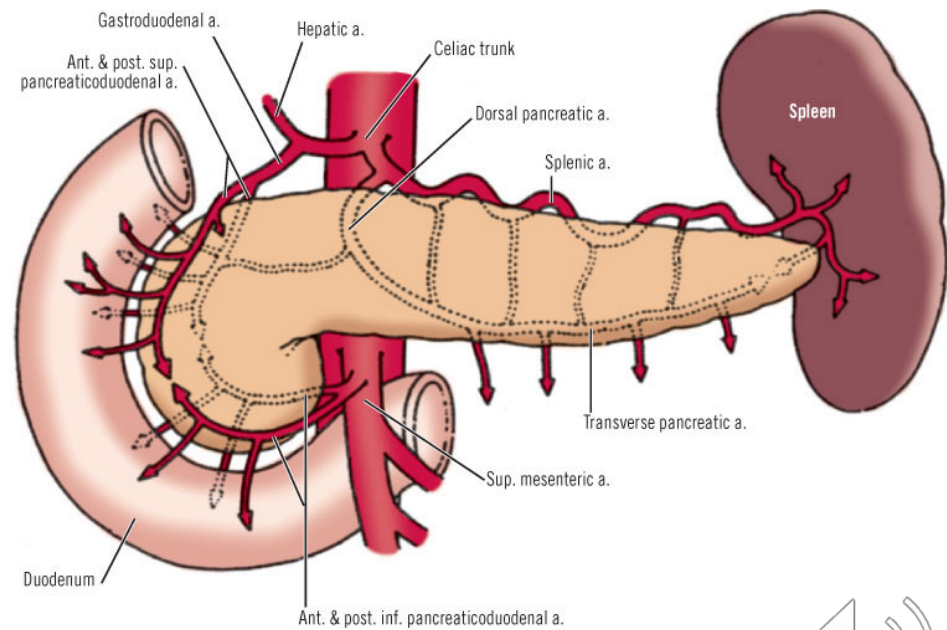
Peptic Ulcer Disease (PUD)

- **The most frequent cause** of upper GI hemorrhage (**40%** of all cases)
- Bleeding involves and **artery of the submucosa** or, with penetration of the ulcer, an **even larger vessel** (gastroduodenal artery or left gastric arteries)
- Although **duodenal ulcers** are more common than **gastric ulcers**, **gastric ulcers usually bleed**



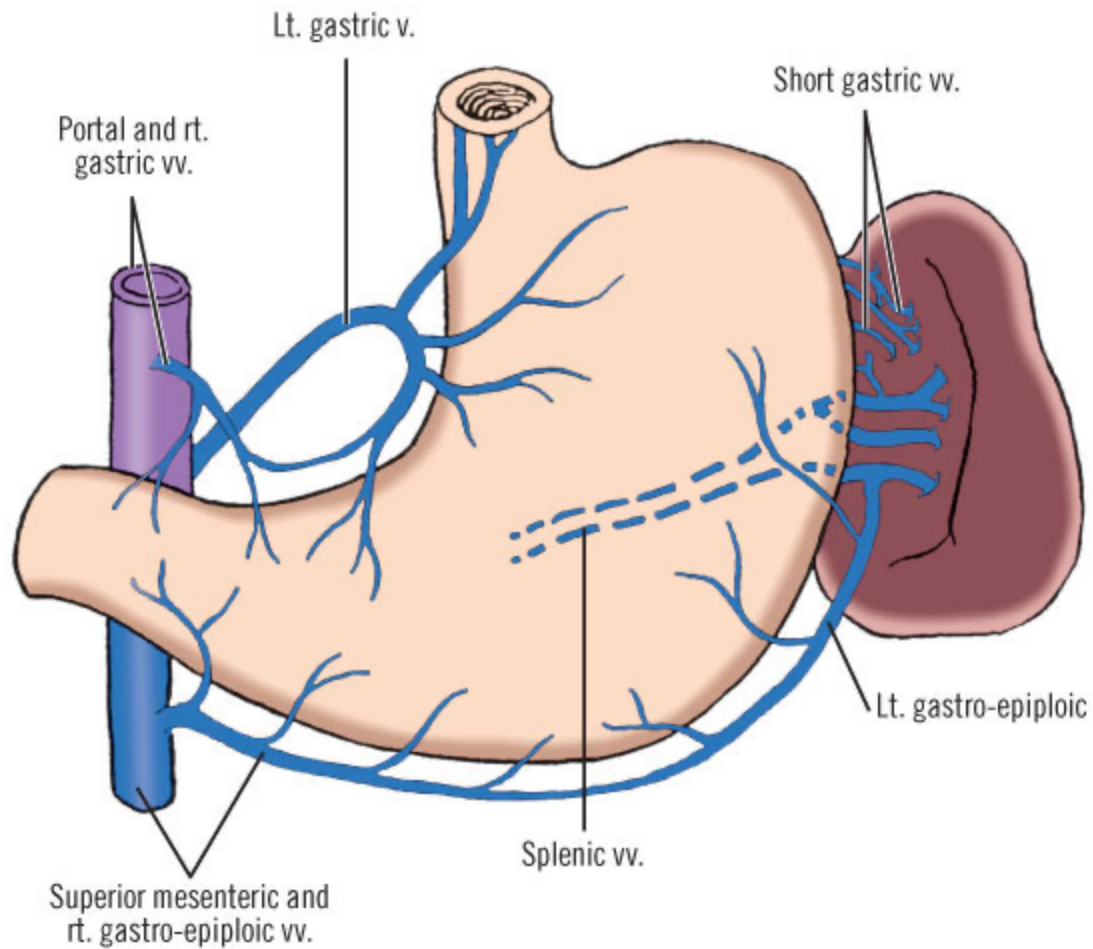


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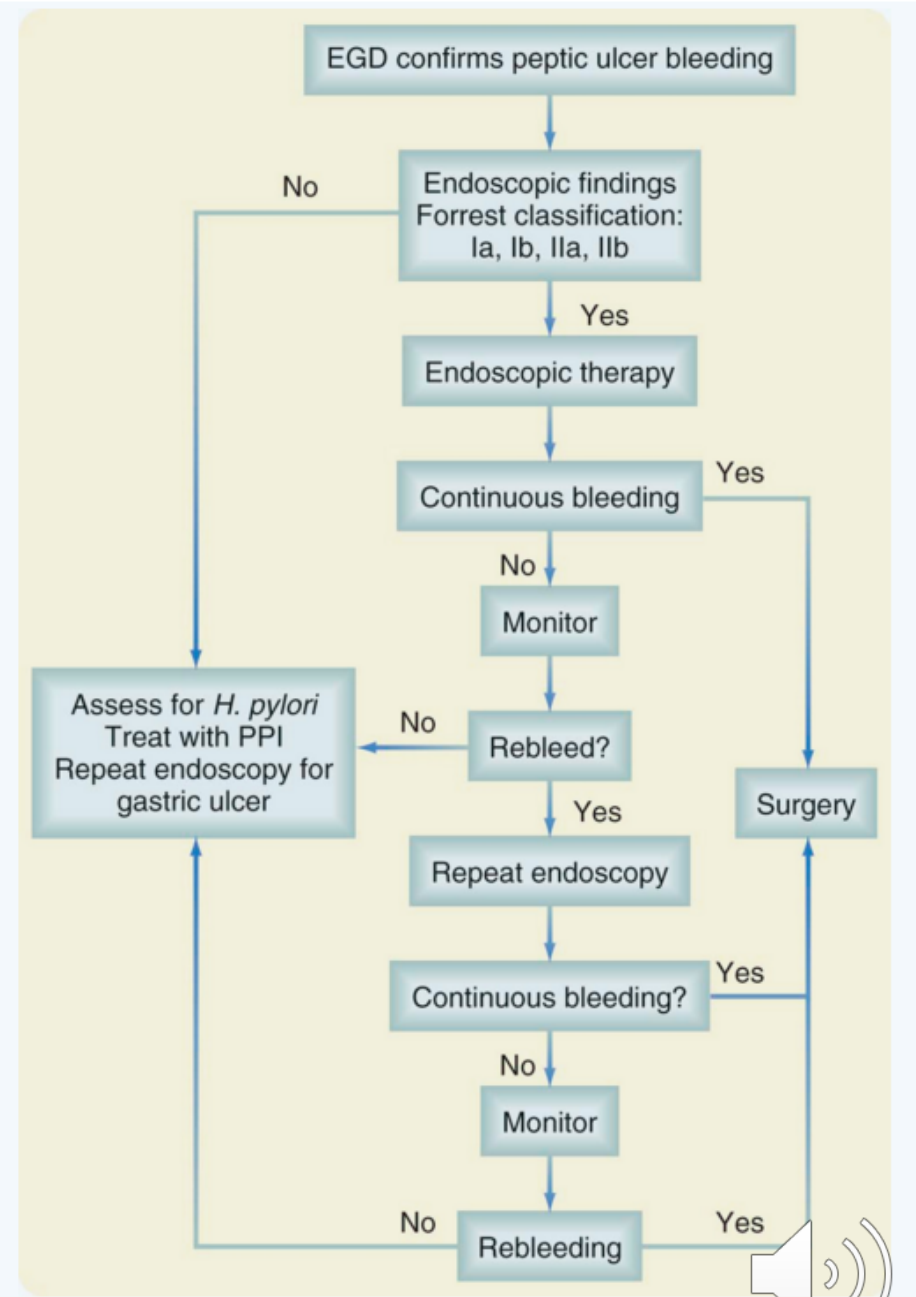




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Patients with clinical evidence of a GI bleed **should receive an endoscopy within 24 hours** and, while awaiting this procedure, they should be treated with a **PPI**



The Forrest classification assess the risk of rebleeding based on **endoscopic findings** and stratify the patients into **low-, intermediate-, and high-risk groups**

Endoscopic therapy is recommended in cases of active bleeding as well as those with a visible vessel (**Forrest I to IIa**). In case of an adherent clot (**Forrest IIb**), the clot is removed and the underlying lesion evaluated.

Classification		
GRADE	DESCRIPTION	REBLEEDING RISK
Ia	Active, pulsatile bleeding	High
Ib	Active, nonpulsatile bleeding	High
IIa	Nonbleeding visible vessel	High
IIb	Adherent clot	Intermediate
IIc	Ulcer with black spot	Low
III	Clean, nonbleeding ulcer bed	Low



Medical Management

- **PPIs**: reduce the risk of re-bleeding and the need for surgical intervention
- Patients with a suspected or confirmed **bleeding ulcer** should be **started on a PPI**
- **60% to 70%** of patients with a bleeding ulcer are *H. pylori*-positive
- **NSAIDs or selective serotonin reuptake inhibitors (SSRIs)** should be **stopped**
- Consider the **synergistic effect of *H. pylori* and NSAIDs**



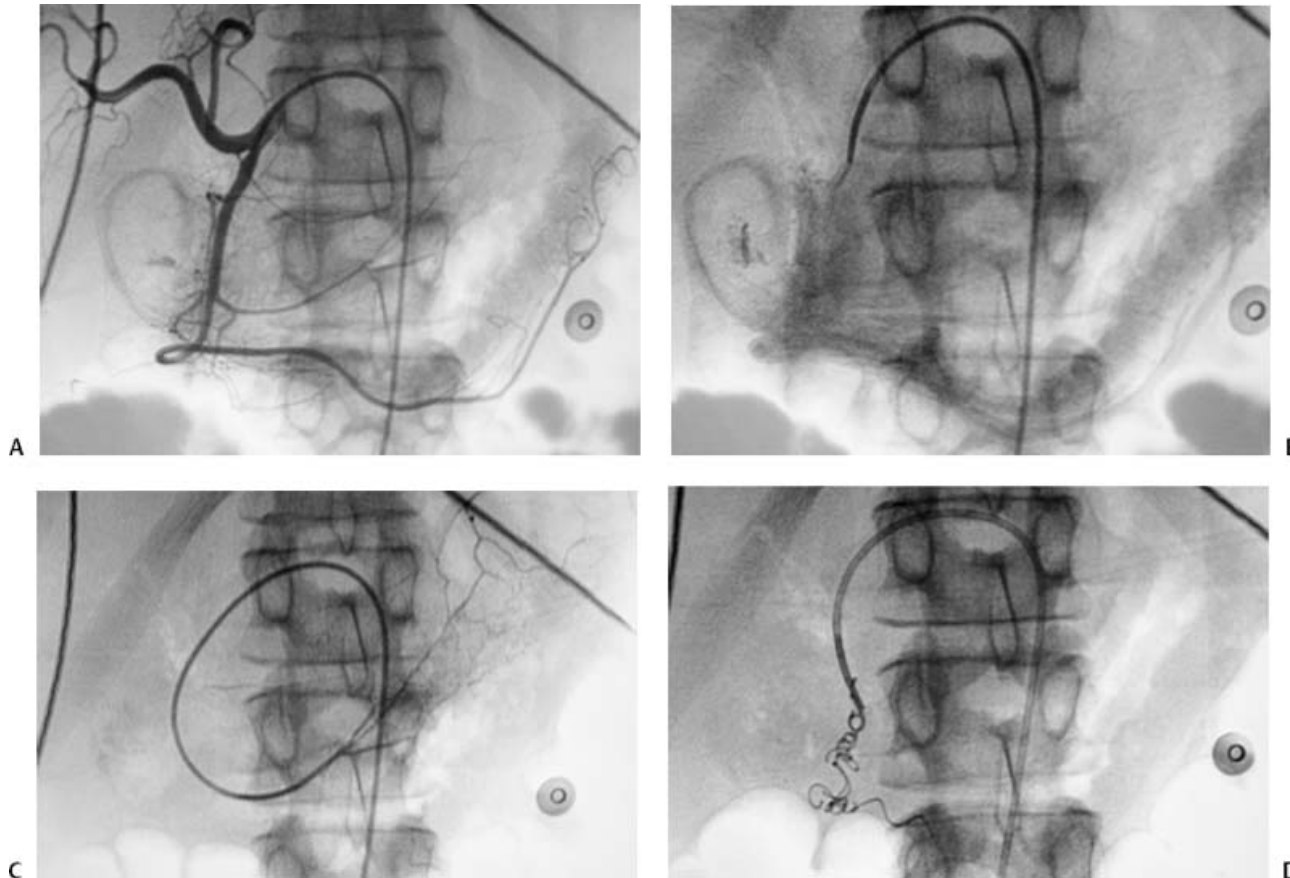
Endoscopic Management

- **Epinephrine injection (1 : 10,000), heater probes, coagulation, clips**
- **Large-volume injection (>13 mL)** is associated with better hemostasis and works also by compression
- **Epinephrine injection alone = high rebleeding rate**
- **Injection with thermal therapy** achieves hemostasis in **90% of** bleeding PUDs
- A second attempt at endoscopic hemostasis is successful in **75% of patients;** **25% of patients** will then require **emergent surgery**



ACUTE UPPER GI BLEEDING

Angiography and embolization: Embolization of the gastroduodenal artery in a patient with duodenal hemorrhage. (A) Common hepatic arteriogram shows focus of extravasation in the region of the duodenum. (B) Venous phase of common hepatic arteriogram shows persistent pooling of blood from gastroduodenal artery indicating hemorrhage. (C) Gastroepiploic arteriogram shows catheter advanced beyond the focus of bleeding. (D) Fluoroscopic image early shows coil embolization of gastroduodenal artery



Surgical Management

- Consider **shock, low hemoglobin level, the location and size** of the ulcer
- **Ulcers larger than 2 cm, posterior duodenal ulcers, and gastric ulcers** have a significantly higher risk of **re-bleeding**
- **Closer monitoring** and possibly earlier surgical intervention
- **Blood transfusion requirement >6 U of blood** is an indication for **surgical intervention** in older patients; **8 to 10-U of blood** in younger patients



ACUTE UPPER GI BLEEDING

Indications for Surgery in Gastrointestinal Hemorrhage

Hemodynamic instability despite vigorous resuscitation (>6 U transfusion)

Failure of endoscopic techniques to arrest hemorrhage

Recurrent hemorrhage after initial stabilization (with up to two attempts at obtaining endoscopic hemostasis)

Shock associated with recurrent hemorrhage

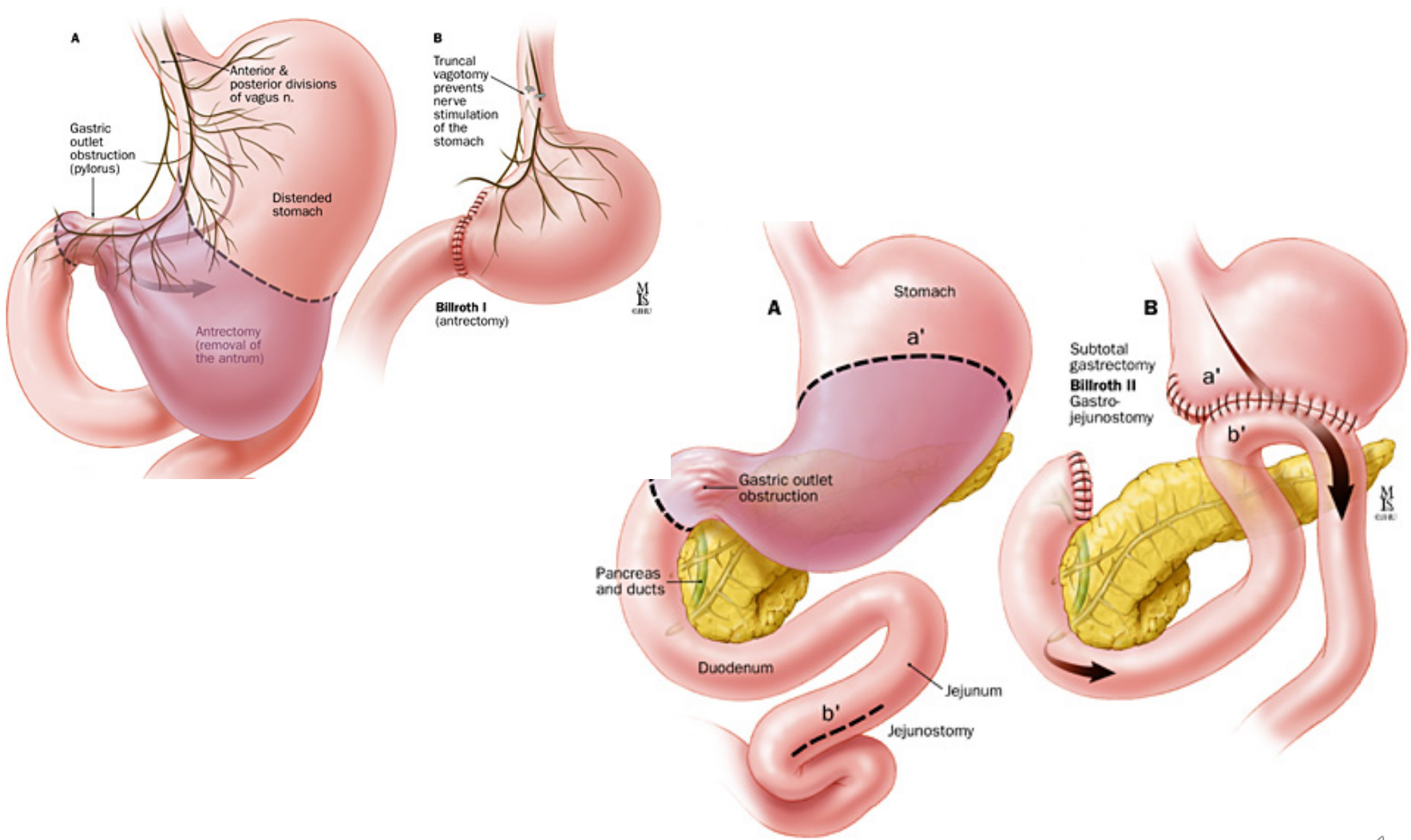
Continued slow bleeding with a transfusion requirement >3 U/day



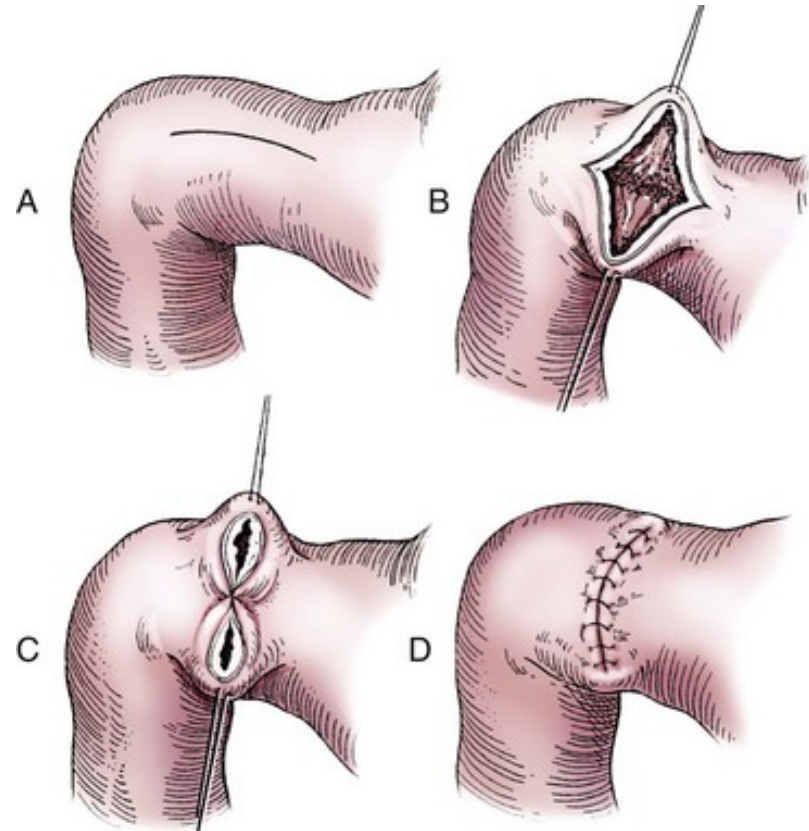
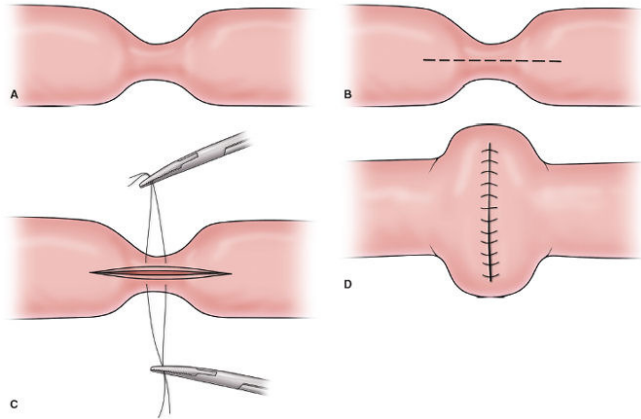
- **Gastric Ulcer:** gastrotomy and suture ligation alone is associated with a high risk of rebleeding of almost 30%
- **Distal gastrectomy is generally preferred**
- **Bleeding ulcers of the proximal stomach** near the gastroesophageal junction are **more difficult to manage**
 - Proximal or near-total gastrectomy is associated with a particularly **high mortality** in the setting of acute hemorrhage
- **Duodenal Ulcer:** duodenotomy is performed and direct suture ligation with nonabsorbable suture
- **A posterior ulcer eroding into the pancreaticoduodenal or gastroduodenal artery** may require **suture ligation of the vessel** proximal and distal to the ulcer, as well as placement of a U stich underneath the ulcer to control the pancreatic branches



ACUTE UPPER GI BLEEDING



ACUTE UPPER GI BLEEDING



Mallory-Weiss Tears: mucosal and submucosal tears that occur near the gastroesophageal junction

- **alcoholic patients** after **intense retching and vomiting**
- **Mechanism:** forceful contraction of the abdominal wall against an unrelaxed cardia, resulting in mucosal laceration of the cardia
- **5% to 10%** of cases of upper GI bleeding
- **Diagnosis** is made by endoscopy with retroflexion maneuver
- **90% of bleeding episodes are self-limited** and the mucosa often heals within 72 hours



Mallory-Weiss Tears: Treatment

- Local endoscopic therapy with injection or electrocoagulation
- Angiographic embolization
- If these maneuvers fail, **high gastrotomy and suturing** of the mucosal tear is indicated

Aortoenteric fistula

- Previous abdominal aortic aneurysm repair
- Ligation of the aorta proximal to graft, removal of the infected prosthesis, and an extra-anatomic bypass

Consider also **Iatrogenic Bleeding**: hemobilia from percutaneous transhepatic procedures, endoscopic sphincterotomy, upper GI surgery



Bleeding Related to Portal Hypertension

- From **varices**
- Most commonly seen in the **esophagus** (but also stomach and hemorrhoidal plexus)
- **Varices develop in 30% of patients with cirrhosis and portal hypertension**
- Hemorrhage is frequently **massive**, accompanied by **hematemesis** and **hemodynamic instability**
- The **hepatic functional reserve**, estimated by **Child's criteria** correlates closely with **outcomes** in these patients.



Bleeding Related to Portal Hypertension

Child's criteria

Clinical and Lab Criteria	Points		
	1	2	3
Encephalopathy **	(grade 0)	(grade 1 or 2)	(grade 3 or 4)
Ascites *	None	Mild to moderate (diuretic responsive)	Severe (diuretic refractory)
Bilirubin (mg/dL)	< 2	2-3	>3
Albumin (g/dL)	> 3.5	2.8-3.5	<2.8
Prothrombin time			
Seconds prolonged	<4	4-6	>6
International normalized ratio	<1.7	1.7-2.3	>2.3

GRADE ²	DESCRIPTION	POINTS
(A)	Mild; well-compensated disease	5-6
(B)	Moderate; significant functional compromise	7-9
(C)	Severe; decompensated disease	10-15



Bleeding Related to Portal Hypertension: Treatment

- **Adequate resuscitation** is imperative
- **Fluid resuscitation** in patients with cirrhosis is a **delicate balance**. These patients have **hyperaldosteronism** associated with **fluid retention and ascites**
- **Central venous pressure monitoring** and early admission to an **ICU** are indicated
- **Defects in coagulation** should be **aggressively corrected**
- These pts have underlying **sepsis**, therefore **broad-spectrum antibiotic** should be given



Bleeding Related to Portal Hypertension:

Medical treatment

- Continuous IV infusion of **vasopressin** (causes myocardial ischemia) or **octeotride** (somatostatin analog) → splanchnic **vasoconstriction and reduce bleeding**

Endoscopic treatment

- **Early endoscopy** (within 15 hours) can **affect survival**
- **Sclerotherapy and variceal banding** control bleeding
- Definitive control of hemorrhage is reached in up to **90% of patients**



In patients for whom pharmacologic or endoscopic therapy fails to control the hemorrhage, balloon tamponade with **Sengstaken-Blakemore tube** consists of a gastric tube with esophageal and gastric balloons

Complications: **aspiration, esophageal perforation**

Hemorrhage recurs on deflation in up to **50%**

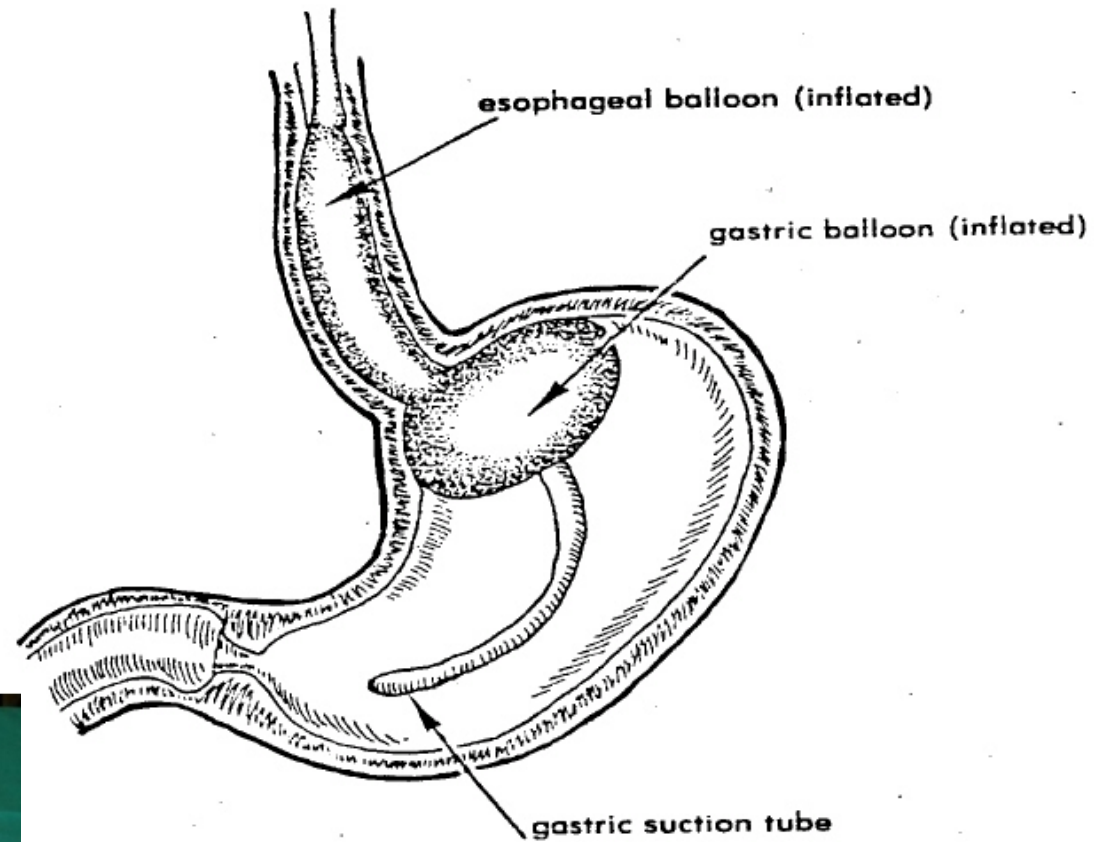
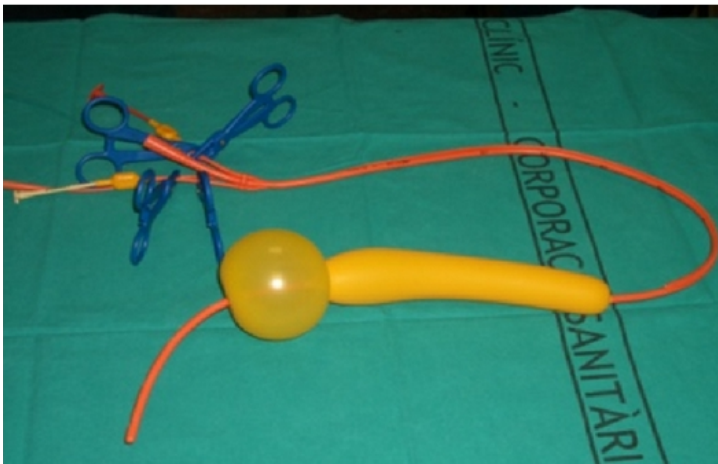


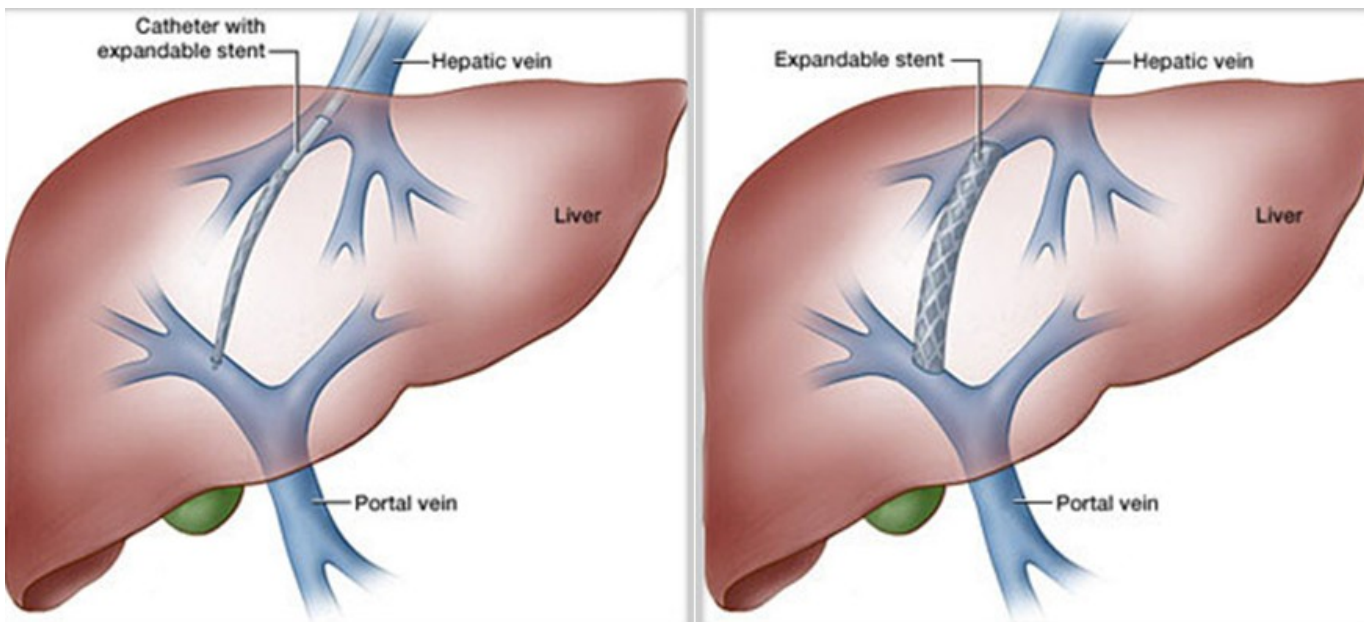
Figure 1-7. Sengstaken-Blakemore tube.



Bleeding Related to Portal Hypertension

Refractory variceal bleeding that cannot be controlled endoscopically → needs **emergent portal decompression** (10% of pts with variceal bleeding)

- **Transjugular intrahepatic portosystemic shunt (TIPS)** is lifesaving in patients who are **hemodynamically unstable** from variceal bleeding
- It has **less morbidity and mortality than surgical decompression**



Bleeding Related to Portal Hypertension

Prevention of rebleeding

- The **risk of rebleeding** is highest in the **initial few hours to days** following a first episode
- Prevent recurrence: **nonspecific beta blocker, PPI or sucralfate**
- **Endoscopic band ligation: repeated every 10 to 14 days** until all varices have been eradicated



Variceal bleeding suspected based on history

ABCs and resuscitation

Start vasopressin or octreotide infusion

Variceal bleeding confirmed on EGD

Endoscopic band ligation (or sclerotherapy)

Bleeding stopped?

Yes

No

Vasopressin/octreotide for 3-5 days
Complete 7 days of antibiotics
Repeat endoscopic banding every 10-14
days until eliminated

Balloon tamponade
Consider TIPS or surgical shunt
if TIPS fails or not available



ACUTE LOWER GI BLEEDING



- In **>95% of patients** with **lower GI bleeding**, the source is the **colon**
- **Angiodysplasias or diverticula** are most common causes
- **Sign: hematochezia** which can range **from bright red blood to old clots**
- **Diagnosis: endoscopy**
- In up to **40% of patients** with lower GI bleeding, more than one source for bleeding is identified



COLONIC BLEEDING*	SMALL BOWEL BLEEDING†
30%-40% Diverticular disease	Angiodysplasias
5%-10% Ischemia	Erosions, ulcers (e.g., from potassium, NSAIDs)
5%-15% Anorectal disease	Crohn's disease
5%-10% Neoplasia	Radiation
3%-8% Infectious colitis	Meckel's diverticulum
3%-7% Postpolypectomy	Neoplasia
3%-4% Inflammatory bowel disease	Aortoenteric fistula
3% Angiodysplasia	
1%-3% Radiation colitis, proctitis	
1%-5% Other	
10%-25% Unknown	



ACUTE LOWER GI BLEEDING

- **Truly unstable patient** (those that continues to bleed and requires ongoing aggressive resuscitation) → **operating room**
- **Colonoscopy is the mainstay of therapy:** it is most appropriate in the setting of minimal to moderate bleeding
 - **Angiodysplasias** are often difficult to visualize
 - It is successful in identifying the bleeding source in up to **95% of patients**
- **Tagged RBC scan**
- **Angiography**



ACUTE LOWER GI BLEEDING

- **Tagged RBC scan:** radionuclide scanning with technetium-99m (^{99m}Tc -labeled RBC) is **the most sensitive** but least accurate
 - The patient's **own red cells are labeled and reinjected**. The labeled blood cells can be detected scintigraphically when extravasate
 - It **detect bleeding as slow as 0.1 mL/min** and is **> 90% sensitive**
 - **Accuracy of localization** is only **40% to 60%**





ACUTE LOWER GI BLEEDING

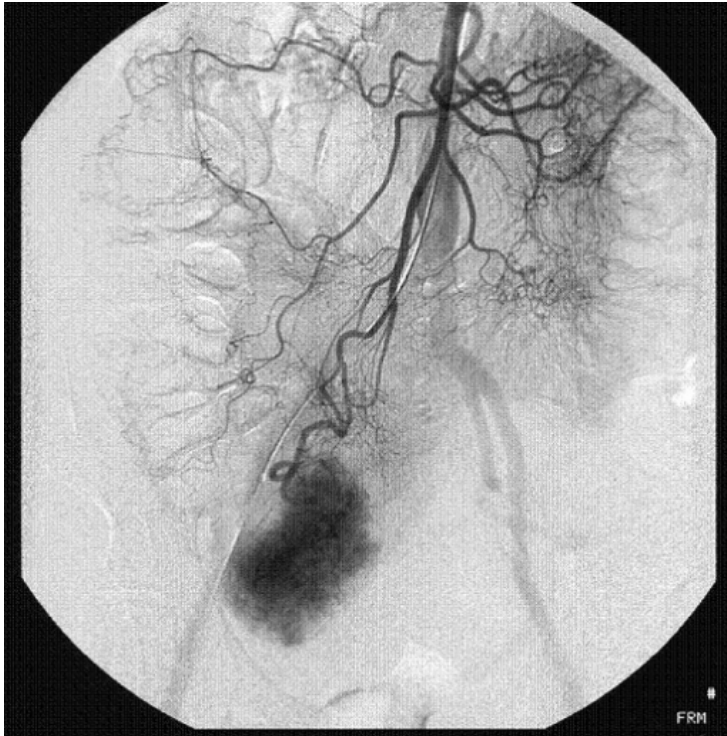
Mesenteric Angiography

- **Selective angiography** detect hemorrhage in the range of **0.5 to 1.0 mL/min** but is generally only used for the diagnosis of **ongoing hemorrhage**
- **Catheter-directed vasopressin infusion** can provide temporary control. However, **50% of patients will rebleed**
- Significant risk of complications: **hematoma, arterial thrombosis, contrast reaction, and acute renal failure**

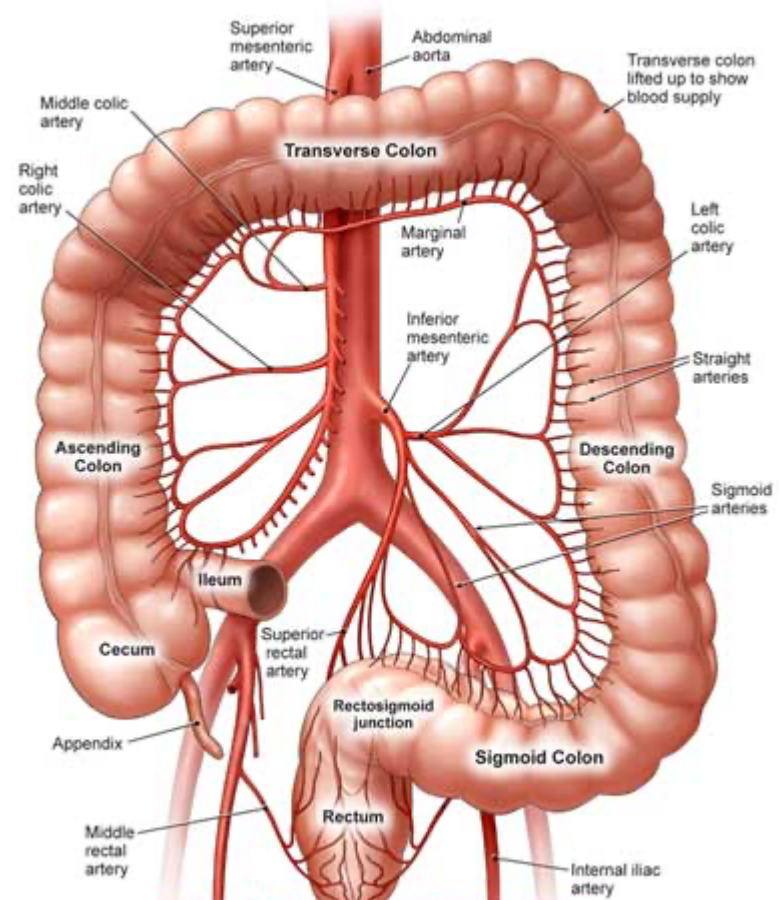


ACUTE LOWER GI BLEEDING

Mesenteric Angiography



Blood Supply to the Colon



ACUTE LOWER GI BLEEDING

Indications for Surgery in Gastrointestinal Hemorrhage

Hemodynamic instability despite vigorous resuscitation (>6 U transfusion)

Failure of endoscopic techniques to arrest hemorrhage

Recurrent hemorrhage after initial stabilization (with up to two attempts at obtaining endoscopic hemostasis)

Shock associated with recurrent hemorrhage

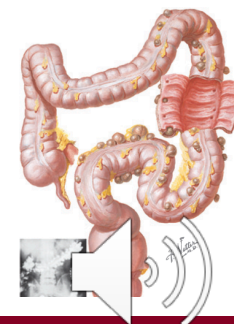
Continued slow bleeding with a transfusion requirement >3 U/day



COLONIC BLEEDING

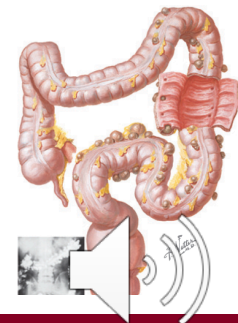
Diverticular Disease

- In US **diverticula are the most common cause** of significant lower GI bleeding
- Bleeding generally occurs at **the neck of the diverticulum**, where vasa recti penetrate through the submucosa
- **>75% stop spontaneously, 10% will rebleed** within a year, and almost 50% within 10 years
- **Colonoscopy: epinephrine injection, electrocautery or clips.**
- If it is not successful, **angiography with embolization is necessary.**
Superselective embolization: success rates >90% (however, risk of ischemic complications)



Diverticular Disease

- **Blind hemicolectomy:** rebleeding in >50% of patients
- **Subtotal colectomy** does not eliminate the risk of recurrent hemorrhage and is accompanied by a significant increase in morbidity (diarrhea)
- **Mortality of emergent subtotal colectomy** for bleeding is almost **30%**



Angiodysplasia



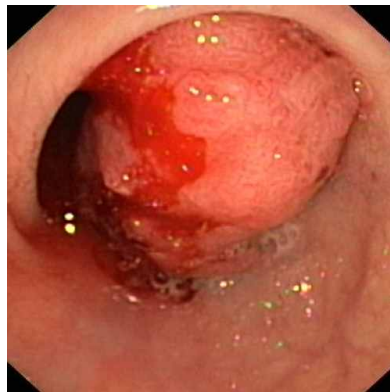
- **degenerative lesions** (dilation of vessels within the submucosa)
- **they account for 40% of lower GI bleeding**
- associated with **aortic stenosis and renal failure**
- **older patients**
- **more common in right colon**
- **they cause chronic bleeding** but, in 15% hemorrhage may be massive
- **bleeding stops spontaneously in most cases**, but approximately **50% will rebleed** within 5 years
- **diagnoses:** colonoscopy or angiography
- **Treatment is based on:** vasopressin, selective gel foam embolization, endoscopic electrocoagulation, or injection with sclerosing agents

- If these measures fail, **segmental resection** may be necessary (most commonly a right colectomy)



Neoplasia

- The bleeding is painless, intermittent, and slow in nature and is frequently associated with iron deficiency anemia
- Colorectal carcinoma is an **uncommon cause of significant lower GI hemorrhage**
- Best diagnostic tool: **colonoscopy**
- If the bleeding is due to a **polyp**, it can be treated with endoscopic therapy.



Anorectal disease

- Causes of bleeding: **internal hemorrhoids, anal fissures, and colorectal neoplasia**
- **The bleeding is low-volume bleeding** that presents as **bright red blood** per rectum
- Diagnosis: goal is **rule out malignancy**
- **Anal fissure** can be treated medically with **stool-bulking agents** (e.g., psyllium [Metamucil]), **increased water intake, stool softeners,** and **topical nitroglycerin ointment** or **diltiazem** to **relieve sphincter spasm** and **promote healing**

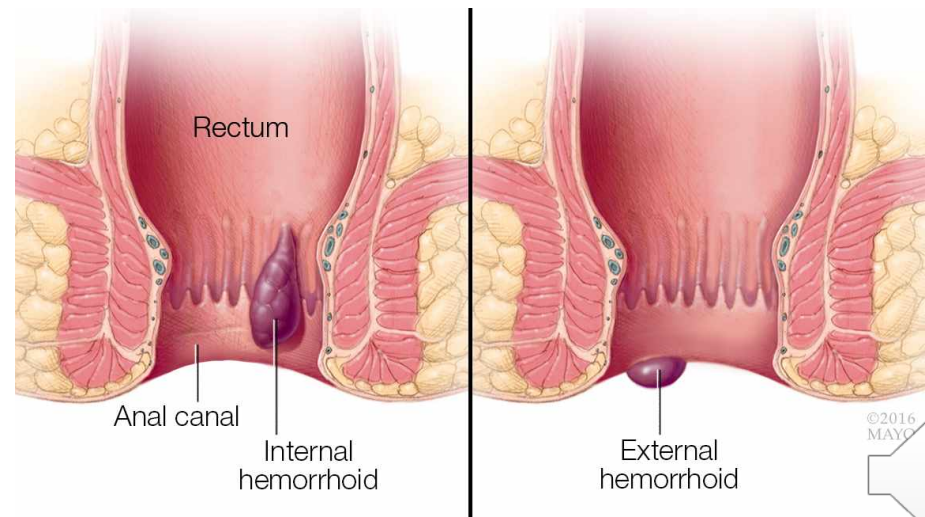


Anal Fissure



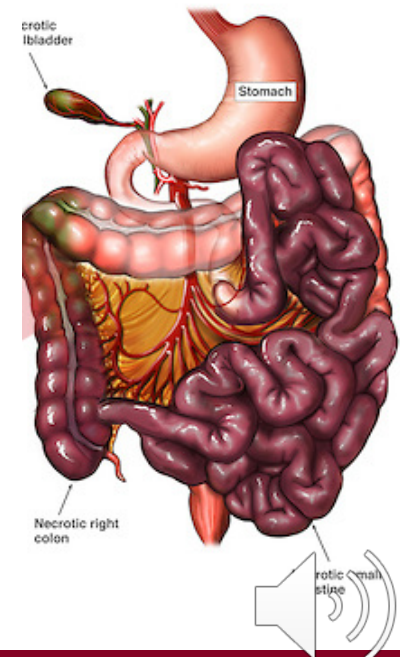
Anorectal disease

- Most hemorrhoidal bleeding arises from **internal hemorrhoids**
- Hemorrhoids: there are multiple treatments such as **rubber band ligation**, **injectable sclerosing agents**, etc
- If these measures fail, **surgical hemorrhoidectomy** might be necessary
- **Most anorectal bleeding is self-limited** and responds to dietary and local measures



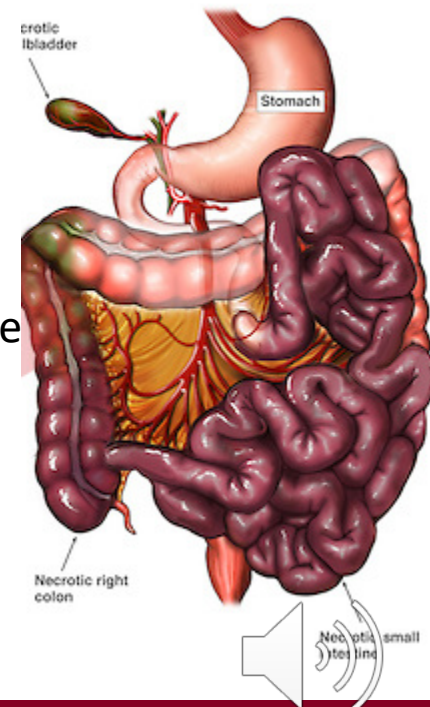
Mesenteric Ischemia

- **Cause: acute or chronic arterial or venous insufficiency**
- Predisposing factors: **atrial fibrillation**, congestive heart failure, acute **myocardial infarction**, recent abdominal **vascular surgery**, **hypercoagulable states**, **medications** (e.g., vasopressors, digoxin), and **vasculitis**
- **Acute colonic ischemia** is the most common form of mesenteric ischemia
- **Presentation: abdominal pain and bloody diarrhea**
- **CT scan show thickened bowel wall, reduced contrast media in it**
- **Flexible endoscopy: edema, hemorrhage, and demarcation**



Mesenteric Ischemia

- Tx: bowel rest, IV antibiotics, cardiovascular support, and correction of the low-flow state
- In **85% of cases** the ischemia is **self-limited** and resolves, although some pts develop a **colonic stricture**
- In **15%**, **surgery** is indicated because of progressive ischemia and gangrene
- **Marked leukocytosis, fever, fluid requirement, tachycardia, acidosis, and peritonitis** indicate a failure of the ischemia to resolve and the need for surgical intervention
- Surgery is based on: **resection of the ischemic intestine and creation of an ostomy**



OBSCURE GI BLEEDING

- Obscure GI hemorrhage is defined as bleeding that persists or recurs after an initial negative evaluation with an EGD and colonoscopy



Differential Diagnosis of Obscure Gastrointestinal Bleeding

Upper GI Bleeding

Angiodysplasia

Peptic ulcer disease

Aortoenteric fistula

Neoplasia

HIV-related causes

Dieulafoy's lesion large tortuous arteriole (submucosal) that erodes and bleeds

Lymphoma

Sarcoidosis

Hemobilia

Hemosuccus pancreaticus

GAVE Gastric Antral Vascular Ectasia (Watermelon Stomach)

Metastatic cancer



Small Bowel Bleeding

Crohn's disease

Meckel's diverticulum

Lymphoma

Radiation enteritis

Ischemia

HIV-related causes

Bacterial infection

Metastatic disease

Angiodysplasia

NSAID-induced erosions



Colon Bleeding

Colitis

- Ulcerative colitis
- Crohn's colitis
- Ischemic colitis
- Radiation colitis
- Infective colitis

Solitary rectal ulcer

Amyloidosis

Lymphoma

Endometriosis

Angiodysplasia

Neoplasia

HIV-related causes

Hemorrhoids

Adapted from McFadden DW: Occult and obscure sources of GI bleeding. In Cameron JL (ed): Current surgical therapy, ed 8, Philadelphia, 2004, Mosby, pp 117–121.





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